

**THE ROLE OF KNOWLEDGE MANAGEMENT IN
eBUSINESS AND CUSTOMER RELATIONSHIP
MANAGEMENT**

Marina du Plessis

September 2002

Presented in full compliance of the requirements of a D.Phil (Information Science)

The role of knowledge management in eBusiness and customer relationship management

ABSTRACT

TITLE: The role of knowledge management in eBusiness and customer relationship management

CANDIDATE: Marina du Plessis

DEGREE: D.Phil. (Information Science)

PROMOTOR: Prof. J.A. Bosh

Knowledge management is a prerequisite for efficiency and effectiveness of the entire organisation. It is essential to an organisation's achievement of its strategic goals. The successful implementation of knowledge management requires a variety of factors, including the organisational structure, employee skills and the technology environment. This research focuses on the role of knowledge management in eBusiness and customer relationship management. The research is conducted in the context of a South African eBusiness organisation. The research is conducted in the context of a South African eBusiness organisation. The research is conducted in the context of a South African eBusiness organisation.

The financial assistance of the National Research Foundation towards this research is hereby acknowledged. Opinions expressed in this thesis and conclusions arrived at, are those of the author and are not necessarily to be attributed to the National Research Foundation.

The research is conducted in the context of a South African eBusiness organisation. The research is conducted in the context of a South African eBusiness organisation. The research is conducted in the context of a South African eBusiness organisation.

The role of knowledge management in eBusiness and customer relationship management is discussed. The role of knowledge management in eBusiness and customer relationship management is discussed. The role of knowledge management in eBusiness and customer relationship management is discussed.

The role of knowledge management in eBusiness and customer relationship management is discussed. The role of knowledge management in eBusiness and customer relationship management is discussed. The role of knowledge management in eBusiness and customer relationship management is discussed.

The role of knowledge management in eBusiness and customer relationship management

ABSTRACT

TITLE: The role of knowledge management in eBusiness and customer relationship management

CANDIDATE: Marina du Plessis

DEGREE: D.Phil (Information Science)

PROMOTER: Prof. JA Boon

Knowledge management is a prerequisite for eBusiness and its increasing client centric focus. To operate in an eBusiness environment, an organisation has to have a good command of knowledge on its markets, customers, products and services, methods and processes, competitors, employee skills and its regulatory environment. This is due to the fact that organisations can, with the advent of eBusiness, do business electronically, seamlessly across the globe, via the Internet and via intranets, which has caused an explosion of the richness and reach of information and knowledge. Knowledge management systems are now essential to ensure that value is extracted from knowledge internal and external to the organisation. eBusiness also broadens an organisation's customer base due to the possibility of operating globally through electronic means. Customer relationship management in the global and digital economy has therefore forced organisations to rethink the ways in which they build relationships with a broadened customer base. Customer relationships cannot take place without knowledge management. To enable organisations to become more efficient and effective in delivering products and services to customers, knowledge on customers will have to be managed to ensure that the services organisations provide are those that will address customer needs.

To date the role of knowledge management in eBusiness and customer relationship management has not been formally defined. It is critical for organisations to understand the role of knowledge management in eBusiness and customer relationship management to enable them to manage and leverage knowledge as a corporate asset that supports the organisation's business strategy and operating model, and therefore the execution of the strategic intent of the business.

This study defines the nature of the role of knowledge management in eBusiness and customer relationship management and secondly the value that knowledge management can add to eBusiness and customer relationship management. It tests the validity of this role and value proposition of knowledge management in eBusiness and customer relationship management, as defined by the researcher, in the South African context. Questionnaires were sent to large South African corporates where knowledge management has been implemented. The Diagnostic Management Application Profile (DMAP) tool was customized

The role of knowledge management in eBusiness and customer relationship management

for this purpose. Respondents of the questionnaires cover a variety of South African industries, including insurance, banking, telecommunications and professional services.

This study makes a contribution to the understanding of the inherent nature of knowledge management, as concept in its own right, or as concept within an eBusiness or customer relationship environment. This study also contributes in understanding how knowledge management is perceived and applied in the South African market, given the advent of eBusiness and customer relationship management. The final contribution that this study makes is in understanding that knowledge management in South Africa has its own unique challenges, e.g. with reference to literacy levels and level of technology application, and that knowledge management programmes cannot be carbon copied from systems and programmes in Europe and the USA.

Keywords: knowledge management, intellectual capital, KM, knowledge, innovation management, KM, knowledge, knowledge base, knowledge flow, innovation, intellectual assets; eBusiness, e-business, e-commerce, virtual communities, collaboration, customer relationship management, CRM, eCRM, customer service, DMAP

Executive Summary

The role of knowledge management in eBusiness and customer relationship management

The study is a contribution to the understanding of the inherent nature of knowledge management, as concept in its own right, or as concept within an eBusiness or customer relationship environment. This study also contributes in understanding how knowledge management is perceived and applied in the South African market, given the advent of eBusiness and customer relationship management. The final contribution that this study makes is in understanding that knowledge management in South Africa has its own unique challenges, e.g. with reference to literacy levels and level of technology application, and that knowledge management programmes cannot be carbon copied from systems and programmes in Europe and the USA.

Keywords: knowledge management, intellectual capital, KM, knowledge, innovation management, KM, knowledge, knowledge base, knowledge flow, innovation, intellectual assets; eBusiness, e-business, e-commerce, virtual communities, collaboration, customer relationship management, CRM, eCRM, customer service, DMAP

The role of knowledge management in eBusiness and customer relationship management

OORSIG

TITEL: Die rol van kennisbestuur in elektroniese handel en kliënte verhoudingsbestuur.

KANDIDAAT: Marina du Plessis

GRAAD: D.Phil (Information Science)

PROMOTOR: JA Boon

Kennisbestuur is 'n voorvereiste vir elektroniese handel en die gepaardgaande kliënt-sentriese fokus. Om suksesvol handel te dryf in 'n elektroniese handel omgewing, moet 'n organisasie 'n goeie begrip hê van relevante market, kliënte, produkte en dienste, metodes en prosesse, konkurrente, werknemer vaardighede en wetlike aspekte. Dit is noodsaaklik aangesien, met die ontstaan van elektroniese handel, organisasies elektronies sake kan doen regoor die wêreld, via intranette en die Internet, wat 'n ontploffing in die reikwydte en diepte van inligting en kennis meebring. Kennisbestuurstelsels raak dus al meer noodsaaklik om te verseker dat waarde uit interne en eksterne kennis ontsluit word. Elektroniese handel verbreed ook organisasies se kliënte basisse aangesien organisasies makliker wêreldwyd elektronies handel kan dryf. Kliënte verhoudingsbestuur in die digitale era forseer organisasies om te herbesin oor die manier waarop verhoudings met kliënte gebou word binne die konteks van 'n vergrootte kliënte basis. Die navorser meen dat kliënte verhoudings nie bestuur kan word sonder kennisbestuur nie. Kennisbestuur is noodsaaklik vir meer effektiewe lewering van dienste en produkte wat kliënte behoeftes aanspreek.

Die doel van hierdie studie is om die rol van kennisbestuur in elektroniese handel en kliënte verhoudingsbestuur te definieer. Hierdie rol is tans nêrens duidelik omskryf nie. Dit is krities dat organisasies die rol van kennisbestuur in elektroniese handel en kliënte verhoudingsbestuur verstaan om te verseker dat hulle kennis kan bestuur en benut as 'n korporatiewe bate wat die organisasie se besigheidstrategie en bedryfsmodel ondersteun, en derhalwe ook die uitvoering van die strategiese doelwitte van die organisasie.

Eerstens definieer die studie die aard van die rol van kennisbestuur in elektroniese handel en kliënte verhoudingsbestuur in die digitale ekonomie, en tweedens die waarde wat kennisbestuur kan toevoeg tot elektroniese handel en kliënte verhoudingsbestuur. Die studie toets ook die geldigheid van die rol en die waardeproposisie van kennisbestuur in elektroniese handel en kliënte verhoudingsbestuur, soos gedefinieer deur die navorser, binne die Suid-Afrikaanse konteks. Vraelyste is uitgestuur na Suid-Afrikaanse organisasies waar kennisbestuur reeds geïmplementeer is. Die Diagnostic Management Application Profile (DMAP) hulpmiddel is doelgemaak en benut vir hierdie doeleinde. Respondente dek 'n aantal

The role of knowledge management in eBusiness and customer relationship management

industriële in Suid-Afrika, onder andere telekommunikasie, bankwese, versekeringswese, en professionele dienste.

Hierdie studie lewer 'n bydrae in die begrip van die inherente aard van kennisbestuur as 'n alleenstaande konsep of as konsep binne elektroniese handel en kliënte verhoudingsbestuur. Die studie lewer ook 'n bydrae om te verstaan hoe kennisbestuur gesien en toegepas word in Suid-Afrika, gegewe die ontstaan van elektroniese handel en kliënte verhoudingsbestuur. Die studie lewer ook 'n bydrae om kennisbestuur in Suid-Afrika en die unieke uitdagings wat daarmee gepaard gaan, bv. geletterdheid en implimentering van gesofistikeerde tegnologie , te omskryf.

Trefwoorde: kennisbestuur, intellektuele kapitaal, kennis, innovasie bestuur, kennisbasis, kennisvloei, innovasie, intellektuele bates, elektroniese handel, e-handel, virtuele gemeenskappe, kliënte verhoudingsbestuur, kliëntediens, DMAP

1. Introduction	1
1.1. Background	1
1.2. Objectives of the study	2
1.3. Scope of the study	2
1.4. Structure of the study	3
2. Literature Review	4
2.1. Knowledge Management	4
2.2. Customer Relationship Management	10
2.3. E-Business	15
2.4. Knowledge Management in E-Business	18
2.5. Knowledge Management in Customer Relationship Management	22
2.6. Conclusion	25
3. Methodology	26
3.1. Introduction	26
3.2. Research Design	27
3.3. Data Collection	28
3.4. Data Analysis	29
3.5. Conclusion	30
4. Nature of Knowledge Management, E-Business and Customer Relationship Management	31
4.1. Knowledge Management	31
4.1.1. Definition of Knowledge Management	31
4.1.2. Objectives of Knowledge Management	32
4.1.3. Characteristics of Knowledge Management	33
4.1.4. Factors that affect Knowledge Management	34
4.1.5. Specific issues regarding the nature of Knowledge Management	35
4.1.6. Role of communities of practice in Knowledge Management	36
4.1.7. The role of the Chief Knowledge Officer (CKO)	37
4.1.8. The role of Knowledge Management	38
4.1.9. Comparison of Knowledge Management	39

CONTENTS

CHAPTER	PAGE
1. INTRODUCTION	10
2. PROBLEM STATEMENT	11
2.1. Problem statement	11
2.2. Objectives	11
2.3. Methods, approach and techniques	12
2.4. Hypothesis	13
2.5. Fields of study	13
2.6. Expected results	13
3. DEFINITIONS	16
3.1. Knowledge management and related terminology	16
3.1.1. Data	17
3.1.2. Information	17
3.1.3. Knowledge	17
3.1.4. Information management	20
3.1.5. Knowledge management	20
3.1.6. Business intelligence	23
3.1.7. Distinction between information management and knowledge management	23
3.1.8. Distinction between knowledge management and business intelligence	26
3.2. eBusiness related terminology	27
3.2.1. eCommerce	27
3.2.2. eBusiness	28
3.2.3. Collaboration	30
3.2.4. Infomediary	31
3.3. Customer relationship management (CRM)	31
3.3.1. Customer relationship management (CRM)	31
3.3.2. eCRM	34
3.4. Conclusion	35
4. OBJECTIVES	37
4.1. Knowledge management	37
4.2. eBusiness	39
4.3. Customer relationship management	40
4.4. Conclusion	43
4.4.1. Knowledge management as eBusiness objective	43
4.4.2. Knowledge management as customer relationship management objective	44
5. NATURE OF KNOWLEDGE MANAGEMENT, eBUSINESS CUSTOMER RELATIONSHIP MANAGEMENT	46
5.1. Knowledge management	46
5.1.1. Definition of knowledge management	46
5.1.2. Objectives of knowledge management	46
5.1.3. Characteristics of knowledge	46
5.1.4. Tacit versus explicit focus	47
5.1.5. General aspects of the nature of knowledge management	49
5.1.6. Specific issues regarding the nature of knowledge management	55
5.1.7. Role of communities of practice in knowledge management	59
5.1.8. The role of the Chief Knowledge Officer (CKO)	60
5.1.9. The value of knowledge management	61
5.1.10. Current knowledge management statistics	62

The role of knowledge management in eBusiness and customer relationship management

CHAPTER	PAGE
5.1.11. Conclusion	64
5.1.12. Relevant quotation from the literature	64
5.2. eBusiness	65
5.2.1. New business models versus traditional models	65
5.2.2. Electronic marketplaces	66
5.2.3. Stages in the development of an eBusiness	74
5.2.4. Approaches in creating an eBusiness	74
5.2.5. Factors to consider in setting up and managing an eBusiness	75
5.2.6. New business realities in the electronic world	80
5.2.7. Guiding principles for developing a strategy in the eBusiness environment	82
5.2.8. eBusiness obstacles and pitfalls	84
5.2.9. Value added by eBusiness	85
5.2.10. Statistics and interesting findings on eBusiness	85
5.2.11. Relevant quotations from the literature	86
5.3. Customer relationship management	87
5.3.1. The need for customer relationship management	87
5.3.2. Customer relationship management as integral part of the business strategy	87
5.3.3. Customer relationship management strategies	89
5.3.4. Customer relationship management phases	98
5.3.5. Types of customer relationships	99
5.3.6. eCRM	99
5.3.7. Front office applications	100
5.3.8. Customer relationship management outsourcing	100
5.3.9. Industry focuses	101
5.3.10. Customer relationship data	101
5.3.11. Relevant quotations from the literature	101
5.4. Conclusion	102
5.4.1. The role of knowledge management in eBusiness	102
5.4.2. The role of knowledge management in customer relationship management	109
6. DRIVERS OF KNOWLEDGE MANAGEMENT, eBUSINESS AND CUSTOMER RELATIONSHIP MANAGEMENT	115
6.1. Knowledge management drivers	115
6.1.1. Knowledge as commodity	115
6.1.2. Knowledge attrition	115
6.1.3. Competitive advantage	115
6.1.4. Effective decision-making	116
6.1.5. Internet, improved telecommunications and technology	116
6.1.6. Organisational and geographical distribution	117
6.1.7. Collaboration	117
6.1.8. Time and cost savings	117
6.1.9. Internal inefficiencies	118
6.1.10. Knowledge hoarding	118
6.2. eBusiness drivers	118
6.2.1. Alternative channel	118
6.2.2. New products and services	118
6.2.3. Global reach	119
6.2.4. Competitive threat	119
6.2.5. Cost	119
6.2.6. Knowledge harvesting abilities	120
6.3. Customer relationship management drivers	120
6.3.1. Changing environment and business rules	120
6.3.2. More options available to customers	120
6.3.3. One view of the customer	121

The role of knowledge management in eBusiness and customer relationship management

CHAPTER	PAGE
6.3.4. Cross-selling and up-selling	121
6.3.5. Repeat business	121
6.3.6. Improved customer service	121
6.4. Conclusion	122
6.4.1. Drivers of knowledge management in the eBusiness environment	122
6.4.2. Drivers of knowledge management in the customer relationship management environment	124
7. CRITICAL SUCCESS FACTORS	127
7.1. Knowledge management	127
7.1.1. Formulating a knowledge management strategy	127
7.1.2. Linking knowledge management strategy to the business strategy	128
7.1.3. Knowledge management is a holistic approach	129
7.1.4. Business case / value proposition	129
7.1.5. Top management support	129
7.1.6. Incentives and rewards	130
7.1.7. Performance measurement	131
7.1.8. Creating a knowledge creating and sharing culture	131
7.1.9. Change management and communication	133
7.1.10. Knowledge management must be seen as a new way of working	133
7.1.11. Appointment of dedicated staff and leadership	134
7.1.12. Managing knowledge through its lifecycle	134
7.1.13. Defining criteria for selected content	135
7.1.14. Explicit and tacit knowledge	135
7.1.15. Structuring of the knowledge base	136
7.1.16. Knowledge management processes, policies and procedures	136
7.1.17. Infrastructure management	137
7.1.18. Training	137
7.2. eBusiness	138
7.2.1. eBusiness strategy	138
7.2.2. Linking of eBusiness strategy to general business strategy	139
7.2.3. Define strategic objectives	139
7.2.4. Establish the business case	139
7.2.5. Analyse the competitive environment	140
7.2.6. First mover advantage and entry timing	140
7.2.7. Holistic approach	140
7.2.8. Identify and prioritise eBusiness initiatives	141
7.2.9. Customer segmentation	141
7.2.10. Customer orientation	142
7.2.11. Map core business processes across domains	142
7.2.12. Top management involvement	142
7.2.13. eBusiness team compilation	143
7.2.14. Change management	144
7.2.15. Measurement	144
7.2.16. Fulfilment	144
7.2.17. Risk management	145
7.2.18. Security	145
7.2.19. Speed and flexibility	145
7.2.20. Understanding legal requirements	146
7.2.21. Integration	146
7.2.22. Knowledge management	146
7.2.23. Creating awareness	147
7.2.24. Adequate resources	148
7.2.25. Ease of use	148
7.3. Customer relationship management	148
7.3.1. Customer relationship management strategy	148
7.3.2. Strategic segmentation	149

The role of knowledge management in eBusiness and customer relationship management

CHAPTER	PAGE
7.3.3. Well-defined marketplace	150
7.3.4. Defining the value proposition	150
7.3.5. Holistic approach	150
7.3.6. Executive sponsorship	150
7.3.7. Staff involvement	151
7.3.8. Change management	152
7.3.9. Communication	153
7.3.10. Getting the right skills and providing adequate training	154
7.3.11. Horizontal organisational structure	154
7.3.12. Integration between technology and business processes	155
7.3.13. Process design	155
7.3.14. Measurement	156
7.3.15. Re-attracting customers	156
7.3.16. Ensuring an excellent digital customer experience	157
7.3.17. Providing customer care options	158
7.3.18. Utilisation of customer knowledge	158
7.3.19. Marketing	159
7.3.20. Adequate resources	159
7.3.21. Phased implementation approach	160
7.3.22. Scalability	160
7.3.23. Valuing employees	160
7.4. Conclusion	161
7.4.1. The role of knowledge management as critical success factor in eBusiness	161
7.4.2. The role of knowledge management as critical success factor in customer relationship management	165
8. VALUE PROPOSITION	168
8.1. Knowledge management	168
8.1.1. Knowledge management supports the strategic direction of an organisation	168
8.1.2. Knowledge management increases organisational agility	168
8.1.3. Knowledge management allows quicker adaptation to the eBusiness model	168
8.1.4. Knowledge management provides the basis for improved decision making	169
8.1.5. Knowledge management reduces organisational complexity	169
8.1.6. Knowledge management facilitates integration	169
8.1.7. Knowledge management increases collaboration	169
8.1.8. Knowledge management prevents duplication	170
8.1.9. Knowledge management improves innovation	170
8.1.10. Accelerated learning and skills development	170
8.1.11. Knowledge management provides easy access to knowledge resources	171
8.1.12. Knowledge management leads to improved communication	171
8.1.13. Knowledge management provides inputs towards building customer relationships	171
8.1.14. Knowledge management ensures the leveraging of intellectual assets	172
8.1.15. Cost saving	172
8.1.16. Increased productivity	172
8.1.17. Improved quality of work life	172
8.1.18. Knowledge management manages knowledge as resource in business process design	173
8.1.19. Examples of the value proposition of knowledge management	173
8.1.20. The knowledge management value proposition in South Africa	173
8.1.21. Conclusion	173

The role of knowledge management in eBusiness and customer relationship management

CHAPTER	PAGE
8.2. eBusiness value proposition	174
8.2.1. Global reach	174
8.2.2. Increased agility	175
8.2.3. Decreased time to market	175
8.2.4. Improved customer service and improved customer relationships	176
8.2.5. Cost saving and revenue increase	177
8.2.6. Access to knowledge and information	179
8.2.7. Automation and streamlining of custom business processes	180
8.2.8. Increased efficiency	180
8.2.9. Greater choice of suppliers and products/services	181
8.2.10. More effective communication	181
8.2.11. Better connectivity	181
8.2.12. Increased quality	181
8.2.13. Increased convenience	182
8.2.14. Examples of value propositions in the eBusiness environment	182
8.3. Customer relationship management value proposition	182
8.3.1. More effective customer targeting and retention	182
8.3.2. Reduced marketing cost and improved effectiveness	183
8.3.3. Development of strategic partnerships	183
8.3.4. Access to knowledge and information	183
8.3.5. Cost saving and increased revenues	184
8.3.6. Streamlined processes	184
8.3.7. Improved communication	184
8.3.8. Better utilisation of resources	184
8.3.9. Increased stability	184
8.3.10. Competitive advantage	185
8.4. Conclusion	185
8.4.1. The value proposition of knowledge management in the eBusiness environment	185
8.4.1. The value proposition of knowledge management customer relationship management environment	190
9. DMAP: QUESTIONNAIRE METHODOLOGY	195
9.1. DMAP Introduction	195
9.2. DMAP Purpose	196
9.3. DMAP process description	196
9.4. Framework for analysis	197
10. DMAP INTERPRETATION TESTED AGAINST HYPOTHESIS	199
10.1. Approach	199
10.2. Findings and conclusions relating to DMAP closed questions	202
10.2.1. Virtual communities and knowledge sharing	202
10.2.2. Knowledge management as integration and change agent	212
10.2.3. Knowledge management efficiency improvements	219
10.2.4. Increased organisational and knowledge base complexity	227
10.2.5. Pooling of expertise	234
10.2.6. Knowledge management in the learning environment	240
10.2.7. Knowledge attrition	245
10.2.8. Organisational agility	248
10.2.9. Organisational strategic direction	253
10.2.10. Adoption of the eBusiness model	260
10.3. Interpretation and conclusions relating to the performance-importance matrix	268
10.4. Interpretation and conclusions relating to the DMAP open questions	272
10.4.1. Most critical requirements for flow of knowledge across divisional, organisational and geographical boundaries	272

The role of knowledge management in eBusiness and customer relationship management

CHAPTER	PAGE
10.4.2. Most prevalent performance measurements relating to knowledge management in your organisation	274
10.4.3. Most critical leadership elements in knowledge management in your organisation	277
10.4.4. Role of communication in knowledge management	279
10.4.5. Most critical operational efficiencies effected by knowledge management	282
10.4.6. Most critical strategic efficiencies effected by knowledge management	284
11. RELATION OF DMAP FINDINGS TO HYPOTHESIS	288
11.1. Closed questions: comparison of findings per strategic dimension	289
11.2. Open questions: comparison of findings according to strategic themes	292
11.3. Hypothesis in the South African context: proved or disproved?	293
11.4. Potential impact of South African specific market conditions on organisations	297
11.4.1. Strategic impact	298
11.4.2. Operational impact	299
12. CONCLUSIONS	300
12.1. Realisation of objectives	300
12.2. Hypothesis testing	301
12.3. Expected results	301
12.4. Utilisation of DMAP	302
12.5. Conclusion	303
12.6. Value added by the study	304
12.7. Recommendations for the future	305
BIBLIOGRAPHY	307
APPENDIX A	328
APPENDIX B	329
B. KNOWLEDGE MANAGEMENT QUESTIONNAIRE: DMAP	330
B.1. Aim of the questionnaire administered in this study	330
B.2. Design and administering of the questionnaire	330
B.3. Data analysis and interpretation	331
B.3.1. Summary	331
B.3.2. Framework for analysis	332
B.4. Questionnaire results	332
B.4.1. Results: closed questions	333
B.4.2. Results: open questions	360

INDEX OF FIGURES

FIGURE	PAGE
Figure 1. Comparison: data, information and knowledge	20
Figure 2. The difference between information management and knowledge management	25
Figure 3. Knowledge representation for the purpose of this study	26
Figure 4. Business intelligence as knowledge management tool	27
Figure 5. Relationship between eBusiness and eCommerce	30
Figure 6. Collaborative knowledge sharing communities	30
Figure 7. Customer relationship management's role in knowledge management	34
Figure 8. eBusiness objective	40
Figure 9. Customer relationship management objective	43
Figure 10. Knowledge management as objective of eBusiness and CRM	44
Figure 11. Value proposition of knowledge management as objective for eBusiness and customer relationship management	45
Figure 12. Non-linear progression of data to wisdom	47
Figure 13. Knowledge management framework strategies	55
Figure 14. The transformation from old to new business	66
Figure 15. Example of a marketplace / value added community	67
Figure 16. The MetaMarket: a portfolio of value added communities	73
Figure 17. The five pillars of strategic customer care	92
Figure 18. Value-based segmentation	97
Figure 19. Knowledge management as part of the inherent nature of eBusiness and Customer Relationship Management	112
Figure 20. Reasons for knowledge management as part of the inherent nature of eBusiness and Customer Relationship Management	113
Figure 21. Knowledge management as driver of eBusiness and customer relationship management	125
Figure 22. Reasons for knowledge management being a driver of eBusiness and CRM	126
Figure 23. Knowledge management strategy tied to the business strategy	162
Figure 24. Virtual customer relationship management teams	166
Figure 25. Knowledge management as critical success factor in eBusiness and customer relationship management	167
Figure 26. Reasons for knowledge management being a critical success factor for eBusiness and customer relationship management	167
Figure 27. Perceived benefits of electronic commerce: mapping of priorities	175
Figure 28. Driving shareholder value	177
Figure 29. Aligning value drivers to achieve competitive advantage	177
Figure 30. The value proposition of knowledge management in eBusiness and customer relationship management	193
Figure 31. Summary: the value proposition of knowledge management in eBusiness and customer relationship management	194
Figure 32. DMAP process description	196
Figure 33. DMAP framework for analysis	198
Figure 34. Approach of testing hypothesis and formulating conclusions and recommendations	199
Figure 35. Areas of impact of virtual communities and knowledge sharing on generic organisational value chain	203
Figure 36. Areas of impact of knowledge management as integration and change agent on organisational value chain	213
Figure 37. Areas of impact of knowledge management efficiency improvements on generic organisational value chain	220
Figure 38. Areas of impact of knowledge management as factor that overcomes growing organisational and knowledge base complexity	228

The role of knowledge management in eBusiness and customer relationship management

FIGURE	PAGE
Figure 39. Areas of impact of knowledge management in the pooling of expertise	235
Figure 40. Areas of impact of knowledge management in the learning environment	241
Figure 41. Areas of impact of knowledge management in the prevention of knowledge attrition	245
Figure 42. Areas of impact of knowledge management in increased organisational agility	249
Figure 43. Areas of impact of knowledge management in determining the organisation's strategic direction	254
Figure 44. Areas of impact of knowledge management in adopting the eBusiness model	260
Figure 45. Approach of testing hypothesis and formulating conclusions and recommendations	288
B1. Overall DMAP: all respondents	200, 333
B2. DMAP by company: all companies included	336
B3. DMAP by company: companies with only one respondent excluded	201, 337
B4. DMAP dimensions by company: all companies included	350
B5. DMAP dimensions by company: companies with only one respondent excluded	351
B6. DMAP dimensions by sector	201, 354
B7. DMAP: Knowledge workers vs. other respondents	356
B8. Relative importance vs. performance of 10 dimensions	269, 358
B9. Performance – importance matrix	269, 359
B10. Relative importance vs. performance of 10 dimensions in context	270, 360
B11. Two most critical requirements for knowledge flow across divisional, organisational and geographical boundaries	272, 361
B12. Two most prevalent performance measurements relating to knowledge management	274, 362
B13. Two most essential leadership elements in knowledge management	277, 363
B14. Role of communication in knowledge management	279, 365
B15. Two most critical operational efficiencies effected by knowledge management	282, 366
B16. Two most critical strategic efficiencies effected by knowledge management	284, 367

The role of knowledge management in eBusiness and customer relationship management

DIVISION A

OVERVIEW: CHAPTERS 1 & 2

In Chapter 1 a short introduction is given to the proposed study, including the background against which the study is being executed.

In Chapter 2 the problem statement of the study is detailed. It includes the objectives of the study as well as the methods, approach and techniques utilised. Also included is the proposed hypothesis, together with the fields of study and expected results.

The role of knowledge management in eBusiness and customer relationship management

1. INTRODUCTION

eBusiness is the buzzword of the new millennium. It is seen as an event of the same magnitude as the development of the printing press and the advent of the Industrial Revolution, with an impact on the economy, social structures and culture of society today. The traditional bases of economic power, e.g. land, capital and labour, are no longer the critical success factors for business. Most organisations today are focused on the value of knowledge and information as base of power and competitive advantage.

eBusiness has positioned itself to lead the world into a new era where business fundamentals change and new rules govern market activity, presenting virtually unlimited opportunities. The changes in the constantly evolving marketplace have been sparked by an explosion in the availability and accessibility of knowledge, the development in technology, a more globalised view of business, deregulation and customers that are more knowledgeable about their needs as well as the products and services that can satisfy those needs. The Internet and other technological developments have increased the capacity of organisations to do business and share information at a higher speed than ever before. This channel has the power to connect people and organisations all over the world, thus making global relationship building with partners, suppliers and customers possible. It also distinctly changes the way these relationships are initiated, strengthened and maintained.

Organisations that have made the shift from traditional business rules to the rules of the new economy will succeed and prosper in this new wave of opportunity. It will, however, require that organisations adapt their business models and business strategies. It is clear that eBusiness represents a radically new model of doing business. This model is fundamentally changing industries, requiring unparalleled change from marketplace leaders and their competitors. The rapid growth of industry related electronic marketplaces are compelling organisations to review their business strategies to address the new rules of competition.

The drivers of competitive advantage in the new economy have changed significantly and predicting their competitive position in the marketplace has become a challenge for many organisations. In the eBusiness environment there are many new opportunities, but also many new risks that must be considered and addressed in organisations' business strategies. Two of the most crucial opportunities and risks in the new economy are the leveraging of knowledge as corporate asset, as well as building and maintaining strong customer relationships, which will both be discussed in-depth in this study.

The role of knowledge management in eBusiness and customer relationship management

2. PROBLEM STATEMENT

2.1. Problem statement

This study aims to define the role of knowledge management in eBusiness and customer relationship management. To date this role has not been formally defined. It is critical for organisations to understand the role of knowledge management in eBusiness and customer relationship management to enable them to manage and leverage knowledge as a corporate asset that supports the organisation's business strategy and operating model, and therefore the execution of the strategic intent of the business.

The researcher is of the opinion that the knowledge management has a role to play in eBusiness and customer relationship management because:

- Knowledge management is a prerequisite for eBusiness and its increasing client centric focus. To operate in an eBusiness environment, an organisation has to have a good command of knowledge on its markets, customers, products and services, methods and processes, competitors, employee skills and its regulatory environment. This is due to the fact that organisations can, with the advent of eBusiness, do business electronically, seamlessly across the globe, via the Internet and via intranets, which has caused an explosion of the richness and reach of information and knowledge. Knowledge management systems are now essential to ensure that value is extracted from knowledge internal and external to the organisation.
- eBusiness also broadens an organisation's customer base due to the possibility of operating globally through electronic means. Customer relationship management in the global and digital economy has therefore forced organisations to rethink the ways in which they build relationships with a broadened customer base. The researcher is of the opinion that customer relationships cannot take place without knowledge management. To enable organisations to become more efficient and effective in delivering products and / or services to customers, thus creating customer delight, knowledge on customers will have to be managed to ensure that the services organisations provide are those that will address customer needs. Knowledge management is therefore an integral part of customer relationship management.

2.2. Objectives

The first objective of the study is to define the role of knowledge management in eBusiness and customer relationship management in the new economy. The first step to enable this objective would include looking at a variety of issues:

The role of knowledge management in eBusiness and customer relationship management

- The three concepts need to be clearly defined to determine their conceptual boundaries. This would include an investigation of the goals or aims of each of the three concepts.
- The nature or characteristics of these concepts also need to be discussed to create a high level understanding of the nature and implications of probable relationships.
- There are numerous similarities between the drivers of the three concepts, but also some unique drivers to each. Studying the drivers of these concepts would provide an overview of the commonality and differences between the concepts with reference to the reasons for their existence.
- A discussion around the critical success factors of each of the three concepts will provide a better understanding of the nature of the concepts and will provide more insight into their relationship.
- The value proposition, i.e. the value that each concept adds to a business, will provide an understanding of the nature of the concepts and their interrelationship.

The second step, subsequent to the investigation of all of the issues as mentioned above, is to define the nature of the role that knowledge management plays in eBusiness and customer relationship management, as well as the value that knowledge management can add to eBusiness and customer relationship management.

The second objective of the study is to test the validity of this role and value proposition of knowledge management in eBusiness and customer relationship management, as defined by the researcher, in the South African context through the administering of questionnaires to large South African corporates where knowledge management has been implemented.

2.3. Methods, approach and techniques

The study will mainly be qualitative in nature based on research from books, articles and Internet based resources. Research will have a management consulting focus, with main resources originating from top management consultancies, including Accenture (formerly Andersen Consulting), PricewaterhouseCoopers, Deloitte & Touche, Ernst & Young, KPMG, McKinsey, Bain & Company, AT Kearney, and Booz, Allen & Hamilton. The research will, however, not exclude important perspectives outside of the management consulting realm.

As stated above, the study will also test the validity of the defined role and value proposition of knowledge management in eBusiness and customer relationship management through the administering of questionnaires to large South African corporates where knowledge management has been implemented. Results will test the hypothesis per individual organisation.

The role of knowledge management in eBusiness and customer relationship management

Each of the chapters has been compiled in a specific order and according to the following analysis:

- Analysis regarding factors affecting knowledge management.
- Analysis regarding factors affecting eBusiness.
- Analysis regarding factors customer relationship management.
- Analysis of the role of knowledge management in eBusiness based on the interpretation of the above.
- Analysis of the role of knowledge management in customer relationship management based on the interpretation of the above.

2.4. Hypothesis

Knowledge management plays an integral part in the design, implementation and management of eBusiness and customer relationship management in organisations.

2.5. Fields of study

Main subject fields include knowledge management, eBusiness and customer relationship management. Fields of study that are relevant include, but are not limited to, information science, economics, general management, intellectual property law, and marketing.

2.6. Expected results

The researcher is of the opinion that the research will identify knowledge management as having a significant impact in the design, implementation and management of a business environment where eBusiness and customer relationship management plays a critical role.

Expected results include:

- eBusiness drives faster reaction times - it creates a greater demand to consolidate knowledge faster, which makes knowledge management imperative.
- eBusiness success demands increased customer intimacy over new channels. Knowledge is required to build customer intimacy. However, sharing knowledge on customers is currently poorly developed in most organisations.
- eBusiness expands the competitive arena. Increased competition requires greater inventiveness and improved competitive intelligence, which can be provided by knowledge management.
- Customer data resulting from eBusiness distribution will be much richer than was traditionally available to business, because more context of the transactions can be captured.

The role of knowledge management in eBusiness and customer relationship management

- Knowledge management seeks to leverage this richer knowledge, e.g. by achieving an intelligent supply chain.
- Explicit knowledge is exposed in the eBusiness environment and the demand for it is well understood. Demand will increase for more of the enterprise's tacit knowledge to be distributed to a wider audience external to the organisation through one central interface. This has wide-ranging implications, from security to assessing and providing context for knowledge-based interactions.
- Knowledge management and collaboration allows organisations to quickly communicate precise, reliable knowledge across all internal and external processes and all stakeholders.
- Knowledge management allows the building of trust and collaboration among diverse business partners.
- Knowledge management provides all stakeholders with access to the right knowledge at the right time.
- Knowledge management enables the creation, sharing, harvesting and leveraging of knowledge, whether in tacit or explicit format, through provision of access to knowledge through a single point of access, using search and retrieval capability, categorised content, knowledge on expert skills to enable one-to-one contact and the creation of knowledge sharing and collaboration environments e.g. communities of interest, communities of practice, project teams, through which knowledge can be shared by an organisation, its business partners and customers.
- Knowledge management can put knowledge into context, i.e. personalise knowledge, thus minimising knowledge overload.
- Knowledge management provides the ability to internalise external knowledge.

The role of knowledge management in eBusiness and customer relationship management

DIVISION B

OVERVIEW: CHAPTERS 3, 4 & 5

In Chapter 3 of this study, the **definitions** are provided for all of the fundamental concepts relevant to the scientific fields of knowledge management, eBusiness and customer relationship management within the context of this study. Each of the three concepts is broken down into more detail, providing definitions related to each of the main concepts. The definitions provided are by no means exhaustive with reference to the generic concept, but cover those definitions relevant to this study specifically.

In Chapter 4 of this study, the **objectives** of knowledge management, eBusiness and customer relationship management are examined.

In Chapter 5 of this study, the **nature** of knowledge management, eBusiness and customer relationship is examined within the context of this study. The objective of this chapter is to detail the researcher's understanding and interpretation of knowledge management, eBusiness and customer relationship management within the context of this study. This understanding and interpretation is fundamental and serves as basis for the following chapters, with specific reference to Chapter 8 where the hypothesis of the study is detailed.

The role of knowledge management in eBusiness and customer relationship management

3. DEFINITIONS

Prior to exploring the problem statement in depth, a clear understanding should be gained of each of the concepts involved. In this chapter an overview will be provided of definitions as identified in the literature. The researcher will also formulate definitions for the purpose of this study.

Definitions obtained from scientific journals have been tracked in the Science Citation Index to determine the amount of times an author has been referenced by other authors, thereby attempting to establish the authority of the author and the definitions. However, due to the focus of this study, the majority of definitions were taken from documents other than scientific journals, i.e. books, documents drawn from the Internet, etc. By nature these documents are not covered by the Science Citation Index. A holistic view of the authority of the authors and their definitions are therefore not possible. The definitions provided in these information sources are, however, not of any lesser value. Many of these definitions have been compiled by practitioners, thereby providing working, practical definitions. This is therefore in agreement with the assumption that this study will be focused on knowledge and information sourced from people practicing in these arenas, thus providing a practical rather than theoretical overview. The researcher has, however, included the information provided by the Science Citation Index as far as possible.

3.1. Knowledge management and related terminology

The discipline of knowledge management is ill defined. Many different definitions exist, which demonstrates clearly that knowledge management means different things to different people.

The first issue surrounding defining knowledge management as a concept lies in the distinction between information management and knowledge management. These two concepts are often equated or seen as very similar, which leads to a lot of confusion. For the purpose of this study, the distinction between these terms has to be drawn clearly. The second issue surrounding defining the concept of knowledge management is in understanding the difference between knowledge management and business intelligence. Once again these terms are sometimes used interchangeably in the literature, and therefore needs to be defined clearly.

The literature research has yielded quite a few definitions in the field of knowledge management, as set out below. The researcher also provides definitions for each of these terms to be used within the context of this study.

The role of knowledge management in eBusiness and customer relationship management

3.1.1. Data

Data represent observations or facts out of context that are therefore not meaningful (Zack, 1999).

Data is a set of discrete, objective facts about events. In an organisational context, data is most usefully described as structured records of transactions (Davenport & Prusak, 1998, p.2). Davenport & Prusak (1998) has been referenced 8 times according to the Science Citation Index.

The researcher defines data as facts that have not been interpreted in any way and have not been internalised by an individual.

3.1.2. Information

Information results from placing data within some meaningful context, often in the form of a message (Zack, 1999).

Davenport & Prusak (1998, p.3) describes information as a message, usually in the form of a document or an audible or visible communication. As with any message, it has a sender and a receiver. The information is aimed at changing the perceptions of the receiver, i.e. to have an impact on his / her judgement and behaviour. The information is meant to shape the person who receives it, and therefore to make some difference in his/her insight or outlook.

The researcher defines information as data that has been put into context and acted upon.

3.1.3. Knowledge

"Knowledge, in contrast to information, could be thought of as the best understanding that we have about a particular topic at a given point in time" (Havens & Knapp, 1999).

Knowledge is that which we come to believe and value on the basis of the meaningfully organised accumulation of information through experience, communication, or inference (Zack, 1999).

Ettore (1999) defines knowledge as tapped, shared brainpower.

"Knowledge is a fluid mix of framed experiences, values, contextual information, and expert insight that provides a framework for evaluating and incorporating new experiences and

The role of knowledge management in eBusiness and customer relationship management

information. It originates and is applied in the minds of knowers. In organisations, it often becomes embedded not only in documents or repositories, but also in organisational routines, processes, practices and norms" (Davenport & Prusak, 1998, p.5). An example of these organisations where knowledge is embedded in the way work is done, is management consultancies. Management consultancies have only one commodity to sell, and that is their staff's knowledge. Knowledge is therefore embedded in all services sold to clients and it is embedded in all processes followed by consultants. This also explains why their knowledge management systems are more advanced than those in most other industries.

KPMG (2000) defines knowledge as the knowledge in the business about customers, products, processes, competitors, etc. that can be locked away in people's minds or in electronic form.

Parlby & Taylor (2000) defines knowledge as experience, facts, rules, assertions and concepts about those subject areas that are crucial to the business (e.g. customers, markets, processes, regulations). Knowledge is a key resource in intelligent tasks such as decision making, assessment, forecasting, design, planning, diagnosis and analysis.

Knowledge differs from information. Knowledge has a richer social and psychological dimension. It is formed in and shared between individual and collective minds and evolves over time. Knowledge is also more inter-connected, generalised and explanatory than information since it is based on experience and learning. Knowledge has its own characteristic problems, such as the problems of creativity, co-operative problem solving and getting people to share their insights and experiences (Parlby & Taylor, 2000).

"Knowledge is data, it is information – and it is more. It is also interpretation, nuance and know-how" (PricewaterhouseCoopers, 1999a).

The researcher defines knowledge as interpreted information put into action through use in processes, procedures, documents and repositories, to add value to the resulting activity of an individual, team or organisation.

3.1.3.1. Tacit knowledge

Tacit knowledge has been defined as early as 1966 (Polyani, 1966; Polyani, 1974), serving as base for the latest thinking on definitions of tacit knowledge as provided below.

Tacit knowledge is defined by Yu (2000) as highly subjective and hard-to-codify insight, wisdom and expertise.

The role of knowledge management in eBusiness and customer relationship management

Havens & Knapp (1999) describe tacit knowledge as personal, hard to formalise and communicate to others. Tacit knowledge often takes the form of a mental model, i.e. beliefs and perspectives that are so ingrained that they are difficult to articulate. It is the wisdom and expertise in people's heads – ideas and know-how that may or may not be proprietary to the business. Tacit knowledge is more difficult to extract and codify due to the fact that it is knowledge embedded in the way things are done and is most commonly shared in verbal rather than written form. Tacit knowledge can be a mix of facts and perceptions, some culturally based. An example of tacit knowledge can be the reaction a client has to getting files of paper-based deliverables in stead of electronic copies. Once it is identified that the client does not like paper-based copies, the situation can be rectified by giving him only electronic copies in future, thereby contributing to client satisfaction.

Tacit knowledge is subconsciously understood and applied, difficult to articulate, developed from direct experience and action and is usually shared through highly interactive conversation (Zack, 1999).

Tacit knowledge is the personal knowledge resident within the mind, behaviour and perceptions of individuals. Tacit knowledge includes skills, experiences, insight, intuition and judgement. Tacit knowledge is typically shared through discussion, stories, analogies and person-to-person interaction. It is therefore difficult to capture or represent in explicit form. Because individuals continually add personal knowledge, which changes behaviour and perceptions, tacit knowledge is by definition, uncaptured (PricewaterhouseCoopers, 1999e, p.5).

The researcher defines tacit knowledge as a combination of skills, experiences, perceptions and expertise that is hard to articulate and codify, and mostly resides in people's heads.

3.1.3.2. Explicit knowledge

Explicit knowledge is defined by Yu (2000) as documented information and data found in methodologies, handbooks, or company patents. Explicit knowledge is what has been written or otherwise recorded. It includes books, manuals, patents, databases, reports, libraries, and policies (Havens & Knapp, 1999).

Explicit knowledge is precisely formulated and articulated, although removed from the original context of creation or use (Zack, 1999).

The researcher defines explicit knowledge as knowledge that can be shared through and captured in a common language.

The role of knowledge management in eBusiness and customer relationship management

To conclude this section of definitions, a summary is provided in Figure 1.

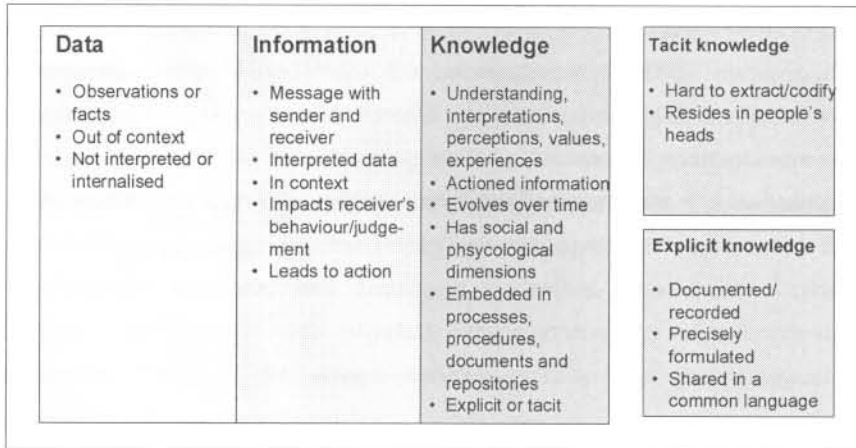


Figure 1. Comparison: data, information and knowledge

3.1.4. Information management

Havens & Knapp (1999) describes information management as typically associated with the industrial era. It focuses on using information technology to enable the collection and management of explicit business information, largely for purposes of management reporting within hierarchical organisations.

The researcher defines information management as the management of the resource pool of explicit business information residing in disparate systems across the organisation, e.g. ERP systems, which is used for day-to-day operational decision making and execution of business activities.

3.1.5. Knowledge management

Community is the most significant differentiator between knowledge management and information management. The spirit of knowledge management may be defined as knowing individually what we know collectively and applying it; knowing collectively what we know individually and applying it; and knowing what we don't know and learning it (Havens & Knapp, 1999).

Yu (2000) explains that successful knowledge management applies a set of approaches to organisational knowledge – including its creation, collection, codification, personalization and dissemination – leading to achievement of corporate goals, meeting performance targets and implementation of business-wide strategies in support of those objectives.

The role of knowledge management in eBusiness and customer relationship management

Managing knowledge is a three dimensional process. It requires the effective concurrent management of four domains: content, culture, process and infrastructure (Chait, 1999). Chait (1999) has been referenced once according to the Science Citation Index. An example is PricewaterhouseCoopers Management Consulting Services. They manage their content through creating of knowledge sharing forums on a Lotus Notes based system. They create a culture of knowledge sharing by rewarding staff for knowledge management activities like creation and sharing through their annual performance appraisals. PricewaterhouseCoopers also utilises processes as part of their knowledge management function, e.g. for executing secondary research requests, and dispersing marketing materials and other important documentation. Finally they have physical infrastructures for knowledge management, including approximately 12 knowledge centres globally and technology infrastructure, including a Lotus Notes system that is replicated worldwide.

Knowledge management is a new business process for managing intellectual capital with a similar discipline as other corporate assets (PricewaterhouseCoopers, 1999g). Knowledge management can be defined as a management discipline focused on increasing the leverage and value of intellectual assets (PricewaterhouseCoopers, 1999f, p.5). It includes fostering the creation of new ideas; identifying and capturing knowledge, both internal and external, then turning both into integrated organisational assets; distributing and sharing knowledge within a corporate culture that rewards such activities; and leveraging knowledge by using it to create value for the business (PricewaterhouseCoopers, 1999a).

KPMG (2000) defines knowledge management as the systematic and organised attempt to use knowledge within an organisation to improve performance.

Knowledge management is concerned with the whole spectrum of data, information and knowledge, whether general or specific, explicit or tacit, shared or individual, recorded or not. Knowledge management comprises the set of management processes and initiatives designed to ensure that organisations are efficient and effective in using these assets to support the business (Parlby & Taylor, 2000).

Knowledge management is about supporting innovation, the generation of new ideas and the exploitation of the organisation's thinking power. Knowledge management also includes capturing insight and experience to make them available and useable when, where and by whom it is required. Knowledge management also allows easy access to expertise and know-how, whether it is formally recorded or in someone's mind. Knowledge management further allows collaboration, knowledge sharing, continual learning and improvement. It underpins better quality decision-making and ensures that the value and contribution of intellectual

The role of knowledge management in eBusiness and customer relationship management

assets, as well as their effectiveness and their exploitation, is well understood (Parlby & Taylor, 2000).

Snowden (2000, pp.8-9) defines knowledge management as the identification, optimisation and active management of intellectual assets, either in the form of explicit knowledge held in artefacts or as tacit knowledge possessed by individuals or communities. Knowledge management is the developing body of methods, tools, techniques and values through which organisations can acquire, develop, measure, distribute and provide a return on their intellectual capital assets.

Harris (1999a) defines knowledge management as a business process that formalises management and leverage of a firm's intellectual assets. Knowledge management is an enterprise discipline that promotes a collaborative and integrative approach to the creation, capture, organisation, access and use of information assets, including the tacit, uncaptured knowledge of people.

GartnerGroup (2000a) as well as Logan, Caldwell & Young (2001) express the opinion that knowledge should be viewed as a process for managing the intellectual assets of the enterprise. The assets include information assets such as data records or text stored in structured or workgroup databases; digitised documents in textual, video, or other formats; purchased information from external content providers in any form; knowledge shared with or residing with customers and business partners; competitive or business intelligence about the behaviour of customers, markets or competitors; intellectual property (i.e. intellectual assets with legal status and financial value) such as patents or regulatory licenses; tacit or uncaptured knowledge (experience, skill and expertise) residing with the individual employees of the enterprise.

Knowledge management is a business model that embraces knowledge as an organisational asset to drive sustainable business advantage. At the operational level it includes those activities an organisation carries out to create, organise, share, apply and maintain the knowledge needed to produce and deliver goods and services (Collier & Morris, 2000).

The researcher defines knowledge management as a planned, structured approach to manage the creation, sharing, harvesting and leveraging of knowledge as an organisational asset, to enhance a company's ability, speed and effectiveness in delivering products or services for the benefit of clients, in line with its business strategy. Knowledge management takes place on three levels, namely the individual level, team level and organisational level. It is a holistic solution incorporating a variety of perspectives, namely people, process, culture and technology perspectives, all of which carry equal weighting in managing knowledge.

The role of knowledge management in eBusiness and customer relationship management

3.1.6. Business intelligence

Business intelligence is an interactive process of analysing and exploring structure, domain-specific information (often stored in a data warehouse) to discern trends or patterns, thereby deriving insights and drawing conclusions. The business intelligence process includes communicating findings and effecting change. Business intelligence domains include customers, products, services or competitors (Harris, 1999).

Collier & Morris (2000) are of the opinion that business intelligence strategies can help organisations find insights and knowledge hidden in the data. Business intelligence technologies transform data and information into knowledge to aid in business decision making. They can help companies segment customers, predict loyalty and analyse market share. Example: Company X sells life insurance. Company X's call centre database can be analysed using business intelligence tools to segment customers in terms of age. The results show that most customers are between the ages of 25 and 35. Company X may decide to offer these customers additional products relevant to needs for that age group, e.g. retirement annuities. Cross selling can therefore be done to customers on the basis of information provided by business intelligence tools, thereby enhancing the company's revenue base.

Bentley West Management Consultants define business intelligence as the result of a process (internal and external) whereby all relevant data and information is gathered regarding a specific issue / phenomenon. This process evolves through analysis of accurate evaluation, interpretation and synthesis, into a weighted value adding reliable source of knowledge and intelligence. This result enables decision-makers to pro-actively manage future trends and events.

The researcher defines business intelligence as a process used as a tool to extract either data or information from a repository, and to interpret this data or information within a specific context or business problem to create knowledge that must then be managed as a separate entity. This interpreted data or information, transformed into knowledge, provides business intelligence to enhance corporate decision-making.

3.1.7. Distinction between information management and knowledge management

To enable an understanding of the difference between information management and knowledge management, one first needs to understand the difference between information and knowledge.

The role of knowledge management in eBusiness and customer relationship management

Knowledge differs from information. Knowledge has a richer social and psychological dimension. It is formed in and shared between individual and collective minds and evolves over time. Knowledge is also more inter-connected, generalised and explanatory than information since it is based on experience and learning. Knowledge has its own characteristic problems, such as the problems of creativity, co-operative problem solving and getting people to share their insights and experiences (Parlby & Taylor, 2000).

Nonaka & Takeuchi (1995, pp.58-59) give a very apt description of the difference between information and knowledge. They firstly distinguish information from knowledge through the fact that knowledge, unlike information, is about beliefs and commitment. They define knowledge as part of a particular stance, perspective or intention. Secondly, they indicate that knowledge differs from information because knowledge is about action, i.e. it is always knowledge "to some end". Thirdly, knowledge is about meaning, i.e. context specific and relational.

Information can be described as a flow of messages, in which knowledge is created (Nonaka & Takeuchi, 1995, pp. 58-59). This emphasises that knowledge is essentially related to human action. Nonaka & Takeuchi (1995, p.59) quotes Berger and Luckman as arguing that people interacting in a certain historical or social context share information from which they construct social knowledge as a reality, which in turn influences their judgement, behaviour and attitude.

It can therefore be deduced that information serves as input towards the creation of knowledge. The information does not carry the context and interpretation required to create knowledge.

The difference between knowledge management and information management is not clearly defined by the literature, as is the case in defining the difference between information and knowledge. The researcher is of the opinion that the main difference between the two concepts is that knowledge management is more strategic than information management. Information management is aimed at managing information critical to the day-to-day running of the business, whilst knowledge management is aimed at managing the knowledge based on which strategic decisions are made. Knowledge management focuses mainly on knowledge of customers, products and services, markets, competitors, methods and processes, employee skills, and the regulatory environment. Knowledge management is also more focused on creating, sharing, harvesting and leveraging of tacit knowledge, whilst information management is aimed at creating, sharing, harvesting and leveraging explicit information as found in documents, databases, ERP systems, etc.

The role of knowledge management in eBusiness and customer relationship management

Havens & Knapp (1999) identifies community as the most significant differentiation between knowledge management and information management. The sharing element is therefore of primary concern in knowledge management, which is not necessarily true for information management. This results in people and culture issues having a major impact on knowledge management. People and culture do not have a major impact on information management.

Knowledge management is also closely tied to innovation, where knowledge is used as an input to creative thinking. Information does not link to innovation directly – information will be interpreted to become knowledge prior to being used as a base for innovation.

The final differentiation can be identified as the use of knowledge in business processes. Knowledge is used as an integral part of business processes, which is not always true of information. Information may or may not be embedded in business processes, while knowledge will definitely be embedded as in the organisation's business processes.

The difference between information management and knowledge management is highlighted in Figure 2.

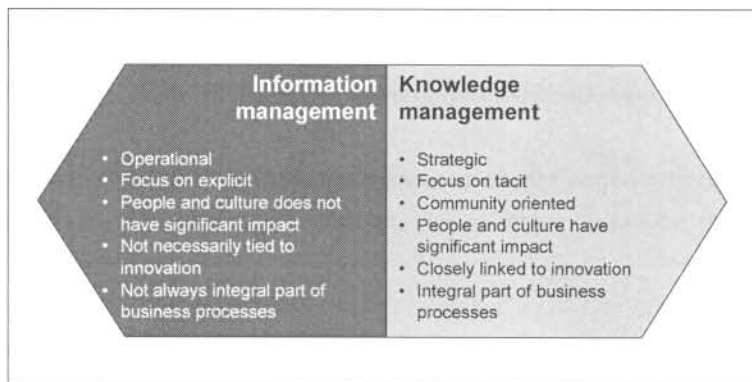


Figure 2. The difference between information management and knowledge management

It is important to note that there is no cut-off point where information management ends and knowledge management starts. The two concepts lie on a continuum, meaning that knowledge management may contain some elements of information management.

For the purpose of this study, any references to knowledge will imply the following (refer Figure 3):

- Knowledge on products and services, methods and processes, customers, markets, competitors, employee skills or the regulatory environment.

The role of knowledge management in eBusiness and customer relationship management

- Strategic knowledge, which in some way relates to the business strategy.
- Knowledge is an integral part of business processes.
- Knowledge can act as the base for business related innovations.

Any references to knowledge management will imply the management of knowledge as a corporate asset, with the focus as set out in the above paragraph.

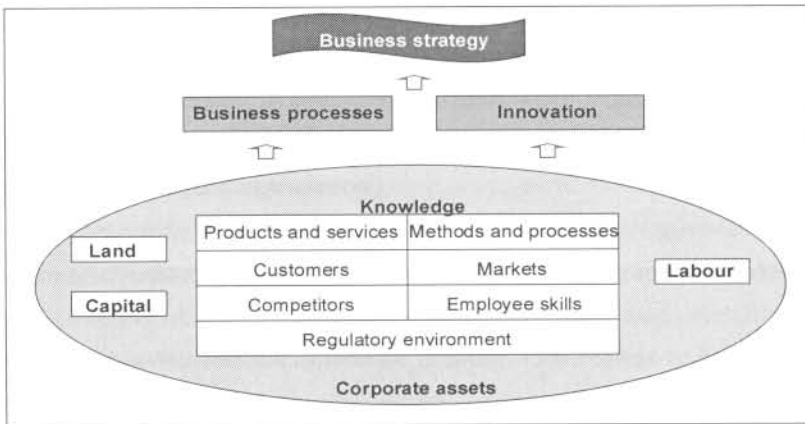


Figure 3. Knowledge representation for the purpose of this study

3.1.8. Distinction between knowledge management and business intelligence

Knowledge management and business intelligence is often equated with one another. These two concepts are not identical and should be clearly distinguished for the purpose of this study.

The researcher distinguishes business intelligence from knowledge management by defining business intelligence as one of many knowledge management tools. Business intelligence is a process, combined with technology, which is used as a tool to extract knowledge from the knowledge base and to repackage that knowledge to enable decision-making based on trends and predictions. Business intelligence is therefore just an element of knowledge management. It does not encompass all knowledge in the knowledge base; it has virtually no people or culture issues that affects it; the processes involved are very specific, e.g. processes to extract and analyse the knowledge, and the technology used may differ from that of the corporate-wide knowledge base. The intelligence created by business intelligence tools need to be fed back into the organisation-wide knowledge management system. In conclusion, business intelligence can be seen as a subset of knowledge management (refer Figure 4).

The role of knowledge management in eBusiness and customer relationship management

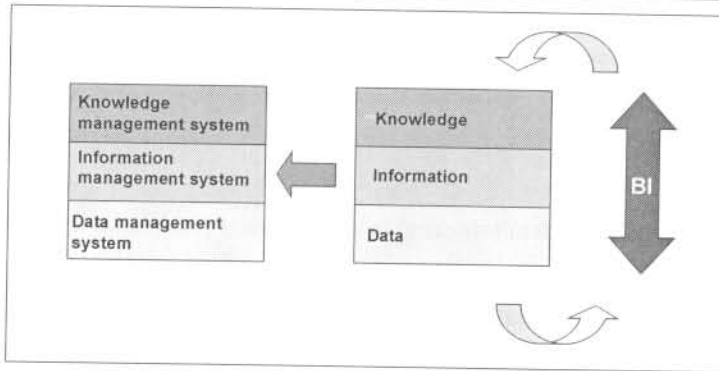


Figure 4. Business intelligence as knowledge management tool

3.2. eBusiness and related terminology

In the domain of eBusiness, there are a number of terms that need to be defined in view of this study. The terms eBusiness and eCommerce are often used interchangeably. These concepts differ, however, and the difference between them needs to be clarified. There are also related terminology that needs to be understood, such as collaboration and infomediaries. An overview is provided of definitions as they appear in the literature surveyed, as well as the researcher's definitions of these concepts.

3.2.1. eCommerce

Electronic commerce is defined by Kosiur (1997) as a system that includes not only those transactions that center on buying and selling goods and services to directly generate value, but also those transactions that support revenue generation, such as generating demand for those goods and services, offering sales support and customer service, or facilitating communications between business partners. From its inception, electronic commerce has included the handling of purchase transactions and funds transfers over computer networks. It also includes buying and selling commodities such as information

eCommerce involves the marketing, selling and buying of products and services on the Internet (PricewaterhouseCoopers, 2000d; Subramanian, 2000).

PricewaterhouseCoopers (1999b) defines electronic commerce as the use of computers and electronic networks to conduct business over the Internet or another electronic network. In this definition, the term business refers to all activities that generate value within the firm as well as with suppliers and customers.

The role of knowledge management in eBusiness and customer relationship management

McManus (1999) defines eCommerce as the buying or selling of goods over the Internet – i.e. Internet based business-to-business or business-to-consumer. The term eCommerce is lower in the overall hierarchy.

GartnerGroup defines eCommerce as the use of telecommunication technologies to transmit business information and to transact business. Internet commerce is also eCommerce, but it is only one form of several advanced forms of eCommerce that uses that technology, integrated applications and business processes to link enterprises (Harris, 1999).

"...e-commerce has little to do with customer relationships but more to do with the impersonal exchange of specified information between customer and computers coupled with an exceptional impersonal albeit efficient transaction process" (Freemantle, 2001).

Bentley West Management Consultants (2000) describe eCommerce as conducting commercial transactions electronically.

The researcher defines eCommerce as commercially transacting over the Internet, whether buying or selling.

3.2.2. eBusiness

eBusiness transforms a business and its value chain relationships to exploit electronic communications with customers and suppliers (PricewaterhouseCoopers, 1999f, p.5). eBusiness is using electronic information to improve performance, create value and enable new relationships between businesses and customers. It is a broader concept reflecting the use of Intranet-working technologies to conduct business between buyers, sellers and other trading partners. eBusiness may encompass eCommerce and may impact upon every aspect of a firm's strategy and operations. It is less about technology than it is about business, and can serve as a mechanism for industry transformation. eBusiness has gone far beyond a mere means of communication – it is a way to build lasting relationships and increased revenues in the process (PricewaterhouseCoopers, 1999c). eBusiness extends to the nature of the organisation – the philosophy, markets and value to customers (PricewaterhouseCoopers, 2000a, p.157).

Electronic business is the use of electronic information technologies to conduct business transactions among buyers, sellers and other trading partners to improve customer service, reduce costs and open new channels to help drive shareholder value (Subramanian, 2000).

The role of knowledge management in eBusiness and customer relationship management

McManus (1999) states that the term eBusiness is much broader and includes more than just online transacting. It is a generic term for high-value business activities that use electronic tools to help companies empower employees, engage customers and extend their enterprise. It is a concept that permeates every functional area of the enterprise.

Stewart (2000) describes business as the Web bringing together customers, vendors, suppliers, employees, and other stakeholders in a way never possible before. eBusiness is commerce conducted in cyberspace. It is the result of combining the broad reach and vast resources of the Internet with information technology systems. eBusiness spans public and private networks, the Internet, private intranets, and extranets.

GartnerGroup analysts provide the following GartnerGroup definition of eBusiness: "eBusiness is any net-enabled business activity that transforms internal and external relationships to create value and exploit market opportunities driven by new rules of the "commercial economy"...A business is an eBusiness to the degree that it targets the market opportunities of conducting business under new electronic channels, which revolve around the Internet". The Internet and Web are essential components of an eBusiness strategy. Because of the shift in the nature of relationships between business entities in a networked economy, a company must participate in external business relationships – business to business or business to consumer – if it is to be considered an eBusiness. In simple terms a company must be using electronic interactions (Harris, 1999; Plummer, 1999).

Bentley West Management Consultants (2000) define eBusiness as the process of conducting business electronically generally using Internet technologies.

The researcher is of the opinion that eBusiness is a much broader term than eCommerce. eBusiness is about conducting business electronically over the Internet. This could include activities such as communication, marketing, and collaborating, i.e. it is not necessarily limited to commercial transactions over the Internet, but includes general business activities now taking place over the Internet. eBusiness is about creating an electronic Internet based platform to allow customers, suppliers, and employees to collaborate with one another through the sharing of data, information and knowledge.

The relationship between eBusiness and eCommerce is clearly shown in Figure 5.

The role of knowledge management in eBusiness and customer relationship management

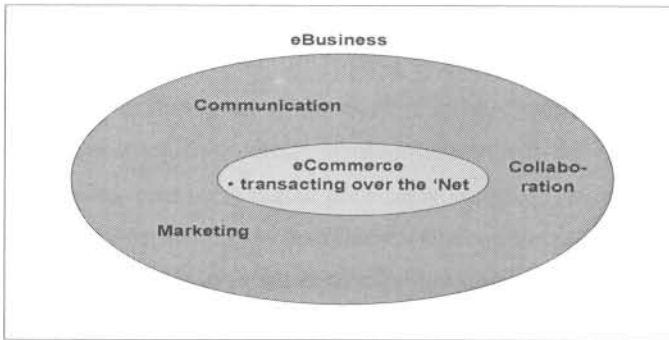


Figure 5. Relationship between eBusiness and eCommerce

3.2.3. Collaboration

Collaboration centres on communities. Often the collaboration centres on a business issue in which all community members have a vested interest. Community is the most significant differentiator between knowledge management and information management (Havens & Knapp, 1999).

Bentley West Management Consultants (2000) define collaboration as the sharing of knowledge between individuals and / or communities internal or external to the organisation, aimed at achieving complimentary objectives and mutual benefits.

The researcher defines collaboration as the ability of customers, suppliers and employees to form knowledge sharing communities across organisational boundaries, that can work together to achieve a shared business objective, resulting in benefits to all community members (see Figure 6).

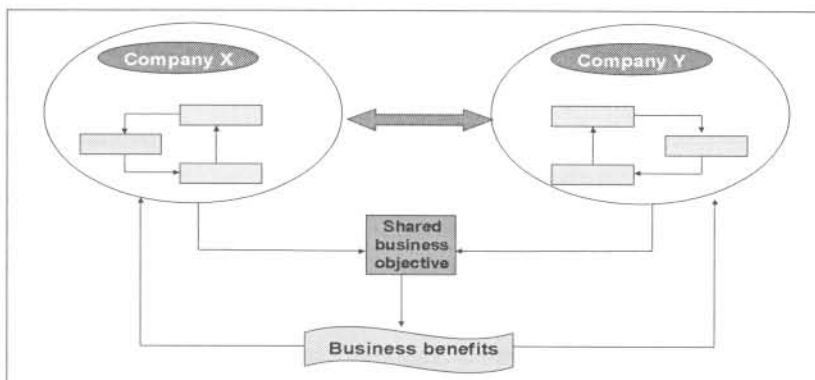


Figure 6. Collaborative knowledge sharing communities

The role of knowledge management in eBusiness and customer relationship management

3.2.4. Infomediary

Hagel & Rayport (1997b) define an infomediary as a business whose sole or main source of revenue derives from capturing consumer information and developing detailed profiles of individual customers for use by selected third-party vendors. Hagel & Rayport (1997b) have been referenced 5 times according to the Science Citation Index.

It is interesting to note that Hagel & Rayport do not define an infomediary as an eBusiness or a virtual operation. According to the researcher an infomediary can therefore be equated with a knowledge broker or information broker.

The researcher defines an infomediary as any business creating, harvesting, organising information and selling this information to a third party, whether in the virtual or physical world.

3.3. Customer relationship management (CRM)

In the section below, an overview is provided of definitions of customer relationship management and eCRM, two closely related terms. The researcher also provides definitions of these concepts that will be used for the purpose of this study.

3.3.1. Customer relationship management (CRM)

Mullin (1999) defines customer relationship management as the management of any system or process characterised by interaction between a company and its customers. It gives customers access to a company's resources for sales and a range of services by harnessing advances in ERP, Internet and supply chain management technologies. Mullin describes customer relationship management as a "virtual storefront" through which customers and suppliers can access a company's IT and database systems and do business unassisted. Customer relationship management uses a broad IT technology mix to streamline sales, marketing, and service and allows much more leeway for business process development than standard utility computing systems, such as ERP.

Hopkins, Lusher & Manasco (1999) defines customer relationship management as a subset of enterprise relationship management.

"CRM is a technology-enabled business strategy whereby companies leverage increased customer knowledge to build profitable relationships, based on optimising value delivered to and realised from their customers" (Sue & Morin, 2001).

The role of knowledge management in eBusiness and customer relationship management

Raaen (2000) defines customer relationship management as a discipline that encompasses all the activities that go into identifying, attracting and retaining the most valuable customers in order to sustain profitable growth. It includes marketing, sales and service.

"CRM is a comprehensive set of processes and technologies for managing relationships with potential and current customers and business partners across marketing sales and service" (Mukund, 2001).

Conlon (1999) explains that customer relationship management systems are often enterprise-wide applications that integrate sales, marketing, and customer service and in some cases, online activities and channel partners.

Ernst & Young (2000a) defines customer relationship management as a company's ability to continuously maximise the value of its customer franchise by effectively allocating scarce resources to specific customers or customer segments in those areas viewed as having a significant impact on the profit-impacting behaviours of customers or segments. They are of the opinion that there is no single concept called customer relationship management – that customer relationship management is a spectrum rather than a point. Customer relationship management refers to any strategy for managing customers and customer relationships (Ernst & Young, 1999d).

Collier & Morris (2000) define customer relationship management as the practice of identifying, attracting and retaining the most valuable customers to sustain profitable growth and reduce marketing costs.

Brown (2000a; 2000e, p.139) is of the opinion that customer relationship management is neither a concept nor a project. Instead, it's a business strategy that aims to understand, anticipate and manage the needs of an organisation's current and potential customers. It is a journey of strategic, process, organisational and technical change whereby a company seeks to better manage its own enterprise around customer behaviours. It is a market segment that must be tailored to each market segment.

Customer relationship management is the process of acquiring, retaining and growing profitable customers. It requires a clear focus on the service attributes that represent value to the customer and create loyalty. Customer relationship consists of five elements: strategy, segmentation, technology, process and organisation (Handen, 2000a, pp.7, 15).

Customer relationship management is about the interactions between computers and customers by way of e-commerce (Freemantle, 2001).

The role of knowledge management in eBusiness and customer relationship management

Assabi (2001) defines customer relationship management as building of intimate relationships with customers.

“Customer relationship is a strategy to encourage customers to part with their money and to feel better by doing so, and so, part with even more later” (Beatty, 2001).

Bergeron (2001) defines customer relationship management as the dynamic process of managing a customer company relationship such that customers elect to continue mutually beneficial commercial exchanges and are dissuaded from participating in exchanges that are unprofitable to the company. Customer relationship management is fundamentally about the ongoing relationship between people – the suppliers and customers of goods and services. Customer relationship management is not part of the sales process and should not be confused with sales relationship management. Sales people are rewarded for sales, not for the long-term cost to their company. If a customer turns out to be a drain to the company, it's not the sales department's problem, but it becomes a customer service problem.

GartnerGroup analysts have extensive definitions of customer relationship management. Nicolett, Andren & Gilbert (2000) define customer relationship management as an enterprise-wide business strategy designed to optimise profitability, revenue and customer satisfaction by organising the enterprise around customer segments, fostering customer-satisfying behaviours and linking processes from customers through suppliers. Key customer relationship management technology investments provide better customer understanding, increased customer access, more effective customer interactions, and integration throughout customer channels and back-office enterprise functions. The application domains of customer relationship management include technology-enabled selling, customer service and support, and technology-enabled marketing. Harris (1999) defines customer relationship management as a technology-enabled strategy to convert data-driven decisions into business actions in response to, and in anticipation of, actual customer behaviour. From a technology perspective, customer relationship management represents a process to measure and allocate organisational resources to those activities that have the greatest return and impact on profitable customer relationships. According to Nelson & Berg (2000), customer relationship management refers to the moving of ownership of the customer up to enterprise level and away from individual departments. These departments are still responsible for customer interactions, but the enterprise is responsible for the customer. Customer relationship management deals with making the customer process more efficient. Nelson and Berg also states clearly that customer relationship management is not a technology, nor is it a particular vendor solution – it is a business strategy designed to optimise profitability, revenue and customer satisfaction.

The role of knowledge management in eBusiness and customer relationship management

The researcher defines customer relationship management as the building and managing of customer relationships on an organisational level through understanding, anticipating and managing of customer needs, based on knowledge gained of the customer, to increase organisational effectiveness and efficiency and thereby increasing profitability. Customer relationship management has a big knowledge management element to it. The two terms cannot be equated, however, as knowledge management has a far wider reach than just customer knowledge. Knowledge management also spans product and service knowledge, industry knowledge, competitor knowledge, methods and process knowledge, and regulatory environment knowledge. Customer relationship management systems can therefore be seen as a subset of knowledge management systems (refer Figure 7).

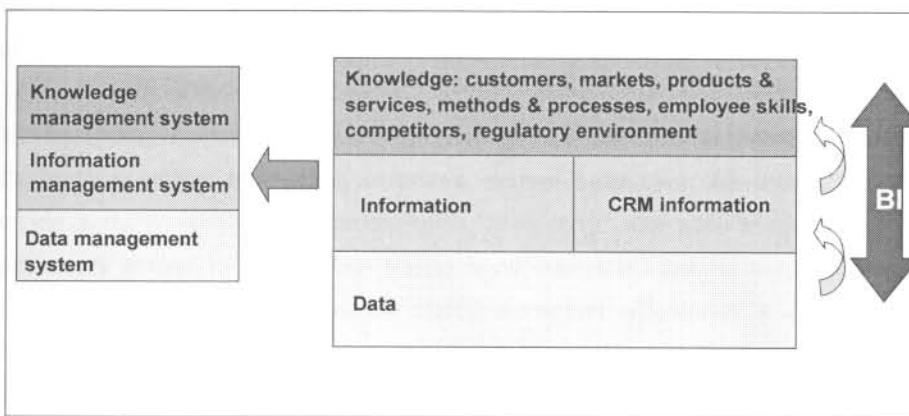


Figure 7. Customer relationship management's role in knowledge management

3.3.2. eCRM

Frook (2000) describes eCRM as all the ways companies acquire and retain customers through Internet and e-mail channels. There are three keys to customer relationship management systems, namely engaging the customer, selling the customer and serving the customer.

GartnerGroup analysts describe eCRM as involving the integration of web channels into the overall enterprise customer relationship management strategy. The goal is to drive consistency within all channels relative to sales, customer service and support and marketing initiatives to achieve a seamless customer experience and maximise customer satisfaction, customer loyalty and revenue. As a component of business and customer relationship management, eCRM includes such web-based customer channels as e-sales, e-service, e-marketing, and e-retailing (Fluss, 2000; Nicolett, Andren & Gilbert, 2000).

The role of knowledge management in eBusiness and customer relationship management

The researcher defines customer relationship management as the building and managing of customer relationships on an organisational level through understanding, anticipating and managing of customer needs, based on knowledge gained of the customer, through means of web-based channels, to increase organisational effectiveness and efficiency and thereby increasing profitability. In essence eCRM is customer relationship management using an alternative channel – the principles and other issues relevant to customer relationship management remain the same, excluding channel related issues e.g. marketing.

3.4. Conclusion

The role of knowledge management in eBusiness and customer relationship management is highlighted in the definitions of both of these concepts:

- The researcher is of the opinion that eBusiness is a much broader term than eCommerce. eBusiness is about conducting business electronically over the Internet. This could include activities such as communication, marketing, and collaborating, i.e. it is not necessarily limited to commercial transactions over the Internet, but includes general business activities now taking place over the Internet. eBusiness is about creating an electronic Internet based platform to allow customers, suppliers, and employees to collaborate with one another **through the sharing of data, information and knowledge**.
- The researcher defines CRM as the building and managing of customer relationships on an organisational level through understanding, anticipating and managing of customer needs, **based on knowledge gained of the customer**, to increase organisational effectiveness and efficiency and thereby increasing profitability.

If one looks closely at these definitions, it is clear that the philosophies of both eBusiness and customer relationship management are based on knowledge and activities related to managing knowledge as an organisational asset. Looking at the researcher's definition of knowledge management, one can see that all the aspects highlighted in that definition pertain to the definitions of eBusiness and customer relationship management:

- The researcher defines knowledge management as a planned, structured approach to manage the **creation, sharing, harvesting and leveraging of knowledge** as an organisational asset, to **enhance a company's ability, speed and effectiveness in delivering products or services for the benefit of clients**, in line with its business strategy. Knowledge management takes place on three levels, namely **the individual level, team level and organisational level**. It is a holistic solution incorporating a variety of perspectives, namely people, process, culture and technology perspectives, all of which carry equal weighting in managing knowledge.

The role of knowledge management in eBusiness and customer relationship management

Both eBusiness and customer relationship management are based on a structured approach for the creation, sharing, harvesting and leveraging of knowledge. Both eBusiness and customer relationship enhances a company's ability speed and effectiveness in delivering products and services through the application of knowledge. Customer relationship management has an emphasis on making decisions pertaining to customers, based on knowledge of the customer and external knowledge that may impact the relationship with the customer. eBusiness is largely based on providing an electronic platform through which businesses can create and share knowledge with their customers and suppliers. In both the cases of eBusiness and customer relationship management, knowledge management takes place on an individual, team and organisational level.

It is therefore clear that knowledge has an impact in eBusiness and customer relationship management, and should therefore be managed like any other organisational asset to maximise the benefits that can be gained from it, in general, but in eBusiness and customer relationship environments particularly.

The role of knowledge management in eBusiness and customer relationship management

4. OBJECTIVES

The objectives of each of these concepts need to be defined, to enable an understanding of the role that knowledge management plays in eBusiness and customer relationship management.

4.1. Knowledge management

Knowledge management provides a framework for the creation of knowledge to meet a wide range of business objectives and to improve decision-making (Ernst & Young, 1999e).

Martiny (1998) defines the objective of knowledge management as delivering more value to customers without increasing working hours; bringing more intellectual capital to working solutions; and to create an environment where everyone is enthusiastic about sharing knowledge and leveraging the knowledge of others.

Havens & Knapp (1999) is of the opinion that knowledge management is aimed at getting people to innovate, to collaborate, and to make good decisions efficiently. In short it is aimed at getting people to act by focusing on high-quality knowledge. "KM takes aim at evolving people's attitudes and work behaviours to affect new heights of collaboration – the international sharing of ideas, information, knowledge, and work itself – in support of a business need. It is about changing people's value paradigm from "my information is power" to "sharing is power". It's about large-scale cultural change, new incentive systems and performance metrics, and learning and education. It focuses on (re)shaping the attitudes and behaviours of people so they can ensure the ready availability and resolute application of both personal and institutional knowledge".

"Knowledge management will allow businesses to sense important opportunities that can result in innovations in products, services, processes and distribution channels" (Barnett, 1999).

PricewaterhouseCoopers has a wide variety of knowledge management objectives that they have identified. "Successful knowledge management applies a set of approaches to organisational knowledge – including its creation, collection, codification, personalisation and dissemination – leading to achievement of corporate objectives, meeting performance targets and implementation of business-wide strategies in support of those objectives" (PricewaterhouseCoopers, 1999d, pp.1-2). Knowledge management is also aimed at achieving corporate objectives, hitting performance targets and enhancing support

The role of knowledge management in eBusiness and customer relationship management

operational strategies (PricewaterhouseCoopers, 1999d, pp.1-2). The aim of knowledge management can also be cost saving, increased organisational capacity, better customer service, and reduced cycle time (PricewaterhouseCoopers 1999g, p.8; PricewaterhouseCoopers, 1999h, pp.11-12).

Van der Spek & Kingma (2000, p.21) state that the main objective of knowledge management is to arrange, orchestrate and organise an environment in which people are invited and facilitated to apply, develop, share, combine and consolidate knowledge. An example is that of Bentley West Management Consultants, where Friday mornings before work, so called breakfast sessions are held where knowledge about a business related topic is presented and discussed. After this a breakfast is served, creating an environment where knowledge exchange is encouraged. The environment is thus created for knowledge exchange to take place amongst professionals. According to Van der Spek & Kingma, such an environment should primarily focus on creating a vision of knowledge and related processes in the business, and fostering an environment that supports the creation of smart businesses and ways of working.

Reiss (1999) and Harley (1997, p.157) define the main aim of knowledge management as enabling knowledge to assist in solving business problems and in achieving business objectives.

Viedge (1997, p.45) quotes Karl Wiig as stating that the aim of knowledge management is to make organisations act intelligently.

GartnerGroup analysts describe the various objectives of knowledge management in their research articles. "The aim of knowledge management is to manage information in the unique context of the enterprise – context is embedded in the enterprise's business values, strategic direction and experiences, and in the insight and expertise of employees. Such contextual application of knowledge is hard to duplicate and thus is the source of the sustainable competitive advantage in mature knowledge management" (GartnerGroup, 1999a). They also add that management of infoglut is a major issue and that keeping pace with the growth in knowledge and avoidance of productivity loss due to this fact, knowledge management will be critical in years to come to assist organisations in maintaining productivity and closing knowledge gaps (GartnerGroup, 1999a). It can also assist through provision of knowledge as foundation of innovation and the creation of new organisational capabilities (GartnerGroup, 2000a). According to Caldwell (1999), knowledge management is aimed at preventing the loss of intellectual capital and to minimise risks related to innovation. Knowledge management is, in a nutshell, aimed at achieving business value (GartnerGroup, 2000a).

The role of knowledge management in eBusiness and customer relationship management

According to the researcher, the objective of knowledge management is to create, share, harvest and leverage knowledge in order to achieve:

- Taking action based on knowledge.
- Support of business strategy implementation and realisation of business objectives.
- Creation of an intelligent enterprise.
 - Retention of corporate and individual knowledge.
 - More accurate prediction of important opportunities.
 - Growth of the corporate knowledge base.
- Increased competitive advantage.
- Creation of an innovative culture and environment.
- Vesting of collaboration as a work practice.
- Improved work efficiency, i.e. increased organisational capacity through:
 - Improved decision-making.
 - Improved customer service.
 - Improved solution of business problems.
 - Increased productivity.
 - Improved leveraging of corporate and individual knowledge.

4.2. eBusiness

The objectives of the eBusiness world are accurately described in Online purchasing frees buyers for strategic work (1999) in the words of Jay M Tannenbaum: "...the Internet would become a vast electronic marketplace in which every business exists in 24-hour contact with all its suppliers, all its employees, all its competitors, all its customers, everywhere in the world. To be competitive, companies and their suppliers would form global trading communities where organisations of all sizes would be able to easily and inexpensively exchange purchase orders, requests for quotes, catalogs, and do all the other buying and selling that is part of the corporate purchasing function".

PricewaterhouseCoopers believes that eBusiness has as a major aim the improvement of customer service through e.g. process streamlining and cost control and efficiency. eBusiness will assist in providing premier service to customers, any time and anywhere (PricewaterhouseCoopers, 2000a; PricewaterhouseCoopers, 2000d).

The researcher is of the opinion that eBusiness has as its objective the provision of an electronic platform to allow collaboration of stakeholders (internal and external to the organisation e.g. customers and suppliers), through the sharing of knowledge, anytime and anywhere, for the purpose of improving the efficiency and effectiveness of individuals, teams

The role of knowledge management in eBusiness and customer relationship management

and organisations, albeit in terms of improved customer service, improved productivity, cost saving, or streamlining of processes (refer Figure 8).

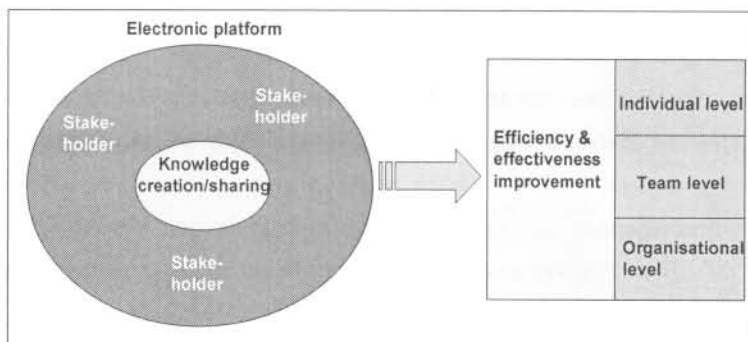


Figure 8. eBusiness objective

4.3. Customer relationship management

Patmore and Renner (1997) states that the objective of customer relationship management is to enable an organisation's front line to easily relay customer requirements and issues to upstream portions of the process, i.e. driving the voice of the customer to all layers in the organisation and using it to guide business processes.

"For CRM, objectives include compiling comprehensive knowledge about customers that enables selling from a position of understanding – about trends, needs, buying habits, etc. Those objectives also incorporate delivering data to marketers who attempt to be more focused in traditional marketing, though experts espouse the virtues of one-to-one marketing. Finally CRM objectives entail providing comprehensive information to service and support functions so that call centre personnel, for example, can respond more quickly and accurately to customer questions" (Harris, 1999).

Customer relationship management seeks to find a balance between attracting the largest number of profitable customers that fit within the mission of the company or a smaller number of very profitable customers when the goal is to maximise profits. Customer relationship management is one way to keep customers that would otherwise go elsewhere. As such, customer relationship management is a way to manage a company's resources in a way that maximises long term return on investment, although this doesn't necessarily imply retaining old customers. The goal is not to please customers, but to foster the right kind of repeat customers (Bergeron, 2001).

The role of knowledge management in eBusiness and customer relationship management

Raaen (2000) defines customer relationship management's objective as providing a broader reach to enable the attraction and retention of customers.

Freemantle (2001) states that the sole objective of customer relationship management should be to put people on a high, motivating them, and making them feel special. Dunster (2001) sees the objective of customer relationship management as not just to be nice to clients, but rather serve them better with the objective of obtaining genuine business benefits from them.

Conlon (1999) defines the objective of customer relationship management as giving all customer-facing departments access to shared customer data in real time.

Hagel & Rayport (1997a) state that collection of customer information is the main aim of customer relationship management, resulting in targeting valuable prospects more effectively, tailoring offerings to specific customer needs, improving customer satisfaction and retention, and identifying opportunities for new products or services. Ody (1999) agrees with Hagel and Rayport by saying that presentation of one view of the customer, gained by capitalising on customer information, is the ultimate objective of customer relationship management. It is also aimed at providing personalised service, whether the contact with the customer takes place in the physical or virtual world. An example is Amazon.com that suggests alternative authors if one selects books by author X, knowing that these authors have a similar writing style or address similar themes that the customer may find attractive.

"Effective CRM takes a holistic perspective on each customer, examining the gap between a customer's current value to the company and what it could be if a customer behaved in a more optimal manner. The resource allocation process, the brains of the CRM capability, determines how to reconfigure customer touching investments to close this gap. During the lifetime of a customer's relationship with a company, all of a customer's experiences are configured so that, in total, the investment made in serving the customer at each touch point yields the highest return to the company based upon the value of the customer behaviours that are generated. The CRM resource allocation process determines the level and type of investments to make in each customer or customer segment at every touch point and communicates instructions on how the customer is to be treated to the appropriate touch point(s)" (Ernst & Young, 2000a). Financial performance is determined by the profitability of individual customer relationships, therefore customer relationship management has improved profitability as an important objective (Ernst & Young, 2000b).

Customer relationship management programs are aimed at winning back customers who have defected, creating loyalty among existing customers, to up-sell or cross-sell services or products, and to prospect for new customers. These programs allow organisations to address

The role of knowledge management in eBusiness and customer relationship management

all of their customers in various points in their lifecycle and to select a marketing program that best fits the needs of the customer (Falque, 2000, p.230; Handen, 2000a, p.11).

McEachern (2000) states that customer relationship management aims at taking information generated or shared through customer contact, turning it into knowledge and using it strategically to derive better business processes. "It's getting knowledge of your customers, understanding their needs and requirements and offering products or services accordingly and even being able to predict their needs in the future". This sentiment is also shared by Falque (2000, p.229).

Nelson & Berg (2000), GartnerGroup analysts, mention four aims of customer relationship management. The first is to ensure that the right products and services are marketed to the right customers, i.e. not flooding them with marketing material of sometimes irrelevant products or services. The second is to manage channels of customer contact – not all customers prefer all channels of contact. The third is to track customer changes over time, mainly focusing on changing needs of the customer. The fourth is gaining an understanding of how to satisfy unhappy customers and thereby attracting them to do business with the organisation once again. An example would be to know and remember that a client has logged a complaint, e.g. regarding a specific product, and not inadvertently try and market that product to the customer after the complaint. That would create the impression for the customer that the company does not care about his/her experience of the product and the company's service, and will aggravate the negative perceptions held by the customer. These perceptions will be difficult to change.

According to the researcher the aim of customer relationship management is to create, share, harvest and leverage knowledge on customers, on a real-time basis as far as possible, to enable plans of action to win back defecting customers, attract new customers, up-sell or cross-sell products and services, and create loyalty in current customers. This can be done through:

- Provision of one view of customer (i.e. the customer relationship is owned by the organisation, not individual departments).
- Targeting of valuable prospects based on knowledge of the customer, gained via tracking of customer behaviour and customer needs.
- Delivery of information and customer requirements to marketers and call centre personnel, or other appropriate staff members, to address customer requirements on contact with the customer at various points in the customer lifecycle.
- Turning information into knowledge to improve organisational business processes on the one hand and customer efficiency on the other.
- Managing channels of customer contact (refer Figure 9).

The role of knowledge management in eBusiness and customer relationship management

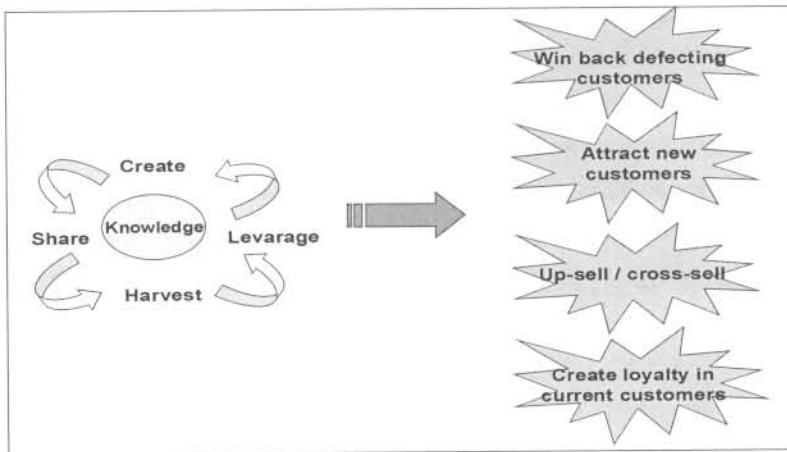


Figure 9. Customer relationship management objective

4.4. Conclusion

Through analysis of the concept of knowledge management as defined by the researcher, it becomes clear that knowledge management objectives underpin the objectives of both eBusiness and customer relationship management (refer Figure 10).

4.4.1. Knowledge management as objective of eBusiness

If the main aim of eBusiness is holistically seen as creating an electronic collaboration forum to enable various parties internal and external to the organisation to create and share knowledge to achieve a common business objective, then it is clear that knowledge management has a large role to play. Knowledge management systems can bring about the following to achieve this objective:

- A collaboration forum where knowledge can be created and shared.
- A collaboration forum that can act as a catalyst for decisions and actions to be taken based on knowledge shared or created in that forum, in order to maximise opportunities.
- Retention of knowledge created and shared through the collaboration forum and make it available for reuse later in a different context.
- Internal business information and external information turned into knowledge through the use of knowledge management tools, e.g. business intelligence, whereby trends relating to the business and its external environment can be identified and acted upon.
- Increased individual, team and organisational efficiency in the collaboration forum.

The role of knowledge management in eBusiness and customer relationship management

4.4.2. Knowledge management as customer relationship management objective

In the case of customer relationship management, the main aim is to create, share, harvest and leverage knowledge on customers to create or strengthen customer relationships. Knowledge management systems can provide the following towards achieving this objective:

- One view of the customer through consolidation of all knowledge on a customer and making it available at one central point. This is done by a customer relationship management system (e.g. Siebel), which can be seen as a subset of knowledge management, as explained in the chapter on definitions.
- Knowledge that acts as a base for decision-making relating to customers or other business related issues.
- Customer information turned into knowledge through the use of knowledge management tools, e.g. business intelligence, whereby trends relating to customers can be identified and acted upon.
- Channel management, through the availability of knowledge on usage patterns and requirements of different customers operating within various channels.

Through the role that knowledge and knowledge management plays in achieving business and customer relationship management objectives, knowledge management objectives are achieved in itself, e.g. being driver for actions, supporting the business strategy through more efficient decision making, creating an intelligent enterprise and vesting of collaboration as a work practice.

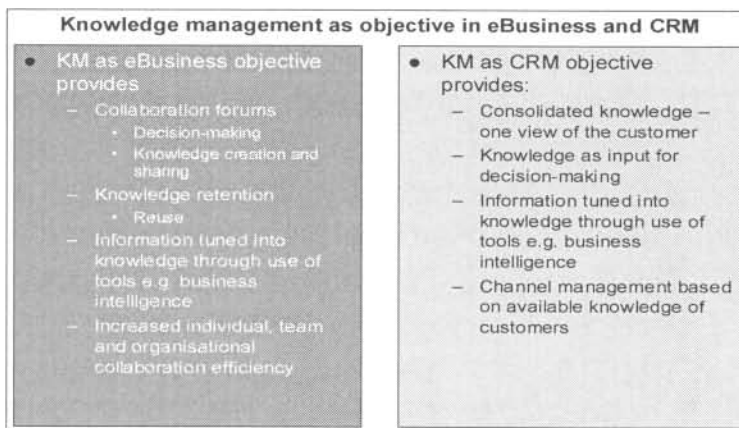


Figure 10. Knowledge management as objective of eBusiness and CRM

The role of knowledge management in eBusiness and customer relationship management

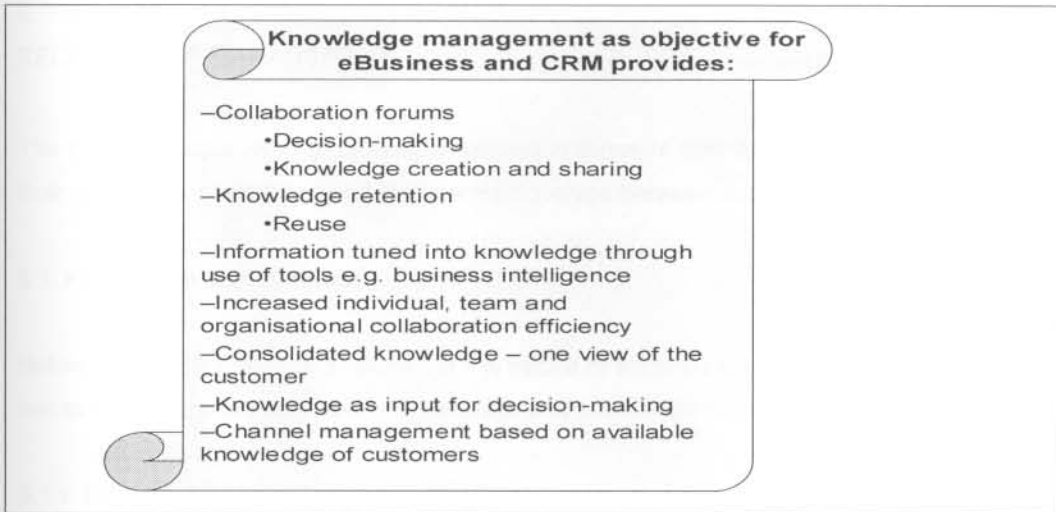


Figure 11. Value proposition of knowledge management as objective for eBusiness and CRM

The role of knowledge management in eBusiness and customer relationship management

5. NATURE OF KNOWLEDGE MANAGEMENT, eBUSINESS AND CUSTOMER RELATIONSHIP MANAGEMENT

The three concepts need to be clearly defined in terms of their inherent nature to determine their conceptual boundaries and the interrelationships between the concepts.

5.1. Knowledge management

Before an overview can be sketched of the nature of knowledge management, a brief review has to be done on the concepts of knowledge and knowledge management.

5.1.1. Definition of knowledge management

Refer Chapter 3.4.

5.1.2. Objective of knowledge management

Refer Chapter 4.1.

5.1.3. Characteristics of knowledge

To enable an understanding of the nature of knowledge management, it is critical to understand the characteristics of knowledge:

- Knowledge can be used on various levels in the organisation, e.g. individual and team level (Ernst & Young, 1999e).
- Knowledge has a lifecycle or level of persistence (Ernst & Young, 1999e).
- Knowledge is contextual, i.e. the value of knowledge depends on the context it is used in. Knowledge is worthless unless people turn it into action and apply it for business benefit (Van der Spek & Kingma, 2000, p.20).
- Knowledge can only be volunteered, it cannot be conscripted (Snowden, 2000).
- Many people can have knowledge at the same time (researcher).
- When someone sells knowledge, both the buyer and the seller have the knowledge. It therefore differs from the selling of other products or services where ownership changes hands (Stadler, 2001).
- Value of knowledge does not diminish due to the use of it. It can be used over and over again without losing any value, unlike other products that have a finite capacity (Young, 2001).
- Knowledge is an organisational asset equal to other organisational assets, e.g. land, capital and labour (researcher).

The role of knowledge management in eBusiness and customer relationship management

- Knowledge is often described as an element of a linear progression originating from data, turned into information, turned into knowledge, turned into wisdom. The researcher agrees with Snowden (2000, p.10) that this is not always a true reflection, as there is an iterative process in that linear progression, i.e. through use of knowledge, either wisdom can be created, or information that can be used as a base to generate new knowledge (refer Figure 12).

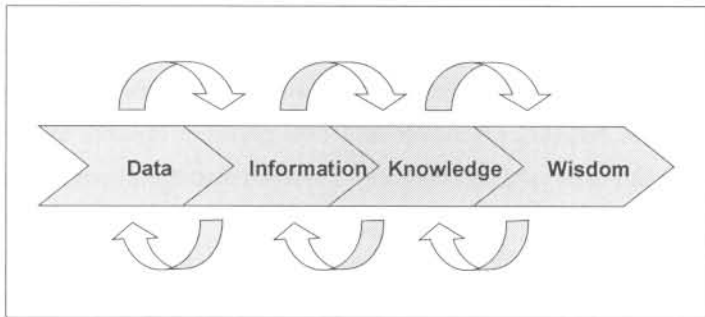


Figure 12: Non-linear progression of data to wisdom

From this description it is clear that knowledge has some distinct characteristics that differentiate it from other products, assets or resources. Due to these unique characteristics, it will therefore require alternative ways of management.

5.1.4. Tacit versus explicit focus

The researcher defines knowledge as interpreted information put into action through use in processes, procedures, documents and repositories, to add value to the resulting activity of an individual, team or organisation. Knowledge can be split into two distinct categories, namely tacit knowledge and explicit knowledge. Tacit knowledge is defined as a combination of skills, experiences, perceptions and expertise that is hard to articulate and codify, and it mostly resides in people's heads. Explicit knowledge is defined as knowledge that can be shared through and captured in a common language.

It is important to differentiate between these types of knowledge, as knowledge management addresses each differently. Knowledge management's focus is more on tacit knowledge and the transformation of tacit into explicit knowledge, than it is on explicit knowledge. This is one of the most distinguishing factors between knowledge management and information management. If the role of e.g. communities of practice is researched, it is clear that the purpose thereof is the sharing of tacit knowledge in the form of experiences, skills and intuition. This is also true of discussion forums, newsgroups, etc. Although the sharing of explicit knowledge in these forums cannot be ruled out, the focus is more on tacit knowledge.

The role of knowledge management in eBusiness and customer relationship management

Knowledge management also addresses explicit knowledge in the form of making documents, manuals, forms containing knowledge, articles, etc. available through mechanisms such as intranets, extranets and databases. It also assists in the creation of these documents or knowledge nuggets, as well as in the indexing, storage, retrieval, application and destruction thereof.

Explicit knowledge is easier to manage than tacit knowledge. Once knowledge is made explicit, it is easier to get the creator of the knowledge to share it, either through giving it away to someone else, or via selling it to someone at a cost. Once explicit it is easy to make it available for retrieval through indexing and / or taxonomy creation and logging it onto a database, intranet or other electronic platform. It can also be shared in paper-based format.

On the other hand, if an organisation has a number of employees with very valuable knowledge, and this knowledge is not made explicit, it can be very difficult for the organisation to manage that knowledge in terms of identification, categorisation or indexing, and sharing. These individuals may choose to leave the organisation with the knowledge, whereby it is lost to the organisation that has not managed to turn it into explicit knowledge, available in codified format to others. To get individuals to translate their tacit knowledge into explicit knowledge is, however, often a difficult process. People still cling to the view that "knowledge is power" and are therefore often reluctant to part with it.

Often these individuals need to be incentivised in some way to translate their tacit knowledge into explicit knowledge. Incentivising people to share knowledge in tacit or explicit format, is critical to the success of the knowledge management programme. Examples of such incentives and rewards are tying knowledge sharing and participation in the knowledge management programme to the annual performance appraisal of a staff member. Other ways are to give prizes, e.g. weekends away. Recognition through newsletters or announcements at staff meetings is also ways to incentivise people to share knowledge.

However, even incentives and rewards may still not be enough to encourage individuals to part with their knowledge. Once individuals decide to translate their tacit knowledge into explicit knowledge, it must be taken into account that a percentage of knowledge will be "lost" in the explicit account, as tacit knowledge can never be translated one hundred percent accurately, as it is based on beliefs, intuition and perceptions.

Incentivising people to share knowledge in tacit or explicit format, is critical to the success of the knowledge management programme. Examples of such incentives and rewards are tying knowledge sharing and participation in the knowledge management programme to the annual performance appraisal of a staff member. Other ways are to give prizes, e.g. weekends away.

The role of knowledge management in eBusiness and customer relationship management

Recognition through newsletters or announcements at staff meetings is also ways to incentivise people to share knowledge.

The challenge of knowledge management therefore lies in creating and managing processes, platforms and mechanisms through which tacit knowledge can be managed *per se*, through which it can be translated to explicit knowledge as effectively as possible, and through which explicit knowledge can be managed using a structured approach.

5.1.5. General aspects of the nature of knowledge management

5.1.5.1. Knowledge management as management discipline

Knowledge management is a management discipline. It can be defined as such because processes can be defined and implemented to capture and tend to knowledge, to make it available to staff, to keep track of who is contributing to knowledge repositories, who is applying knowledge to the benefit of the organisation, etc. These are techniques that can be defined, taught, learned and customised and applied to yield predictable outcomes. Technology is used as an enabler and a knowledge management policy provides the required structure. From this perspective, knowledge management has the same characteristics as other management disciplines (Havens & Knapp, 1999). Knowledge management as a discipline interfaces mainly interfaces with Information Science. It also interfaces with other disciplines such as business administration, communication science, organisation psychology, sociology and information technology (Van der Spek & Kingma, 2000, p.22).

PricewaterhouseCoopers (1999g, p.7) sees knowledge management as a new business process for managing intellectual capital with a similar discipline as other corporate assets. Knowledge management produces business results by driving reuse, innovation and collaboration. As a business process, knowledge management requires an organisational structure, strategic and operational planning, business goals, well-designed operational processes, a budget, etc. Organisations that manage their knowledge successfully do it as a mission-critical process.

5.1.5.2. Knowledge management lifecycle

Knowledge management addresses knowledge in the various stages of its lifecycle. These stages are:

- Creation / Acquisition

An organisation either creates new knowledge or acquires it, or revises existing knowledge (Gilbert et al., 2000; O'Dell & Grayson, 1999).

The role of knowledge management in eBusiness and customer relationship management

- Refinement

Before adding knowledge capital to a knowledge management system, an organisation subjects the knowledge to a refinement process, including value added processes such as labelling, cleansing, indexing, sorting, abstracting, standardising, integrating and re-categorising (Gilbert et al, 2000; O'Dell & Grayson, 1999). There may also be an approval process through which knowledge is approved in terms of the value of its contents to the business.

- Storage and retrieval

Storage and retrieval stage includes repository creation and knowledge distribution (Gilbert et al., 2000; O'Dell & Grayson, 1999). Knowledge distribution may take the form of searches performed by a knowledge manager, who then forwards the required knowledge to the person that requested it.

- Distribution

Distribution includes mechanisms an organisation creates to make content repository content accessible (Gilbert et al., 2000; O'Dell & Grayson, 1999).

- Presentation

The context in which an organisation leverages knowledge influences the value of the knowledge to the business. Organisations have to develop capabilities that enable flexibility to arrange, select and integrate knowledge for presentation purposes in the business context (O'Dell & Grayson, 1999).

- Application

This refers to using or applying knowledge, e.g. for problem solving (Parlby & Taylor, 2000).

- Destruction

When knowledge is no longer valuable to the organisation, it may be weeded from the knowledge management system and destroyed (Gilbert et al., 2000).

The two main balance activities in the knowledge management lifecycle is knowledge creation and knowledge application (Van der Spek & Kingma, 2000, p.22).

5.1.5.3. Knowledge management services

The main focus of knowledge management is knowledge sharing. In terms of knowledge sharing, content delivery is the main service delivered by the knowledge management function in the organisation. Content delivery can take place in one of three modes (Votsch & Linden, 2000):

- Provider controlled

The owner of the content, application or site delivers content through a user interface according to predefined criteria as set by the owner. Access may be controlled in terms of

The role of knowledge management in eBusiness and customer relationship management

content or functionality. The business professional user can manipulate the rules of content delivery in most instances with intervention from the site owner.

- End-user controlled

The consumer of the content sets criteria according to which they would like to view the content. An example is portal content, e.g. Yahoo that users can control. The content can be controlled by push and pull means, e.g. new items on a specific topic may be sent to a user's mailbox, or a user can access a menu of favourites to view information on a specific topic.

- Data-controlled

Data-controlled content delivery implies that content is filtered based on affinities or similarities, e.g. on Amazon's site books of other similar authors are suggested.

To enable content delivery in any of the three modes described above, knowledge in a knowledge management system is organised and hence retrieved according to a knowledge management taxonomy. GartnerGroup (1999a) describes the taxonomy as constructed according to business usage of knowledge and topical entries in the taxonomy are labelled in business terms. These taxonomies function as navigation directories and maps to enterprise knowledge assets.

Knowledge management can provide a range of functions and services, mainly focused on content delivery. These services are:

- Repackaging of knowledge

Knowledge packages are developed to meet ad hoc business requirements. This implies that information is filtered and value added. Examples are current awareness services and on demand research (Kennedy, 1996).

- Knowledge integration

Knowledge is used to build intelligence across functional groups in an organisation, e.g. competitor intelligence is merged with sales information to create knowledge useful to sales, marketing and product development groups in the organisation (Kennedy, 1996).

- Business process design

Knowledge is used to optimise business processes. Information is used e.g. to review current business products and its forecasted performance (Kennedy, 1996). Decisions based on this information and conclusions arrived at create new knowledge for the organisation.

- Pro-active knowledge harvesting/imagineering

This involves creating knowledge environments to assist organisations in gaining competitive advantage, e.g. evaluating "what-ifs" and subsequent repositioning of the business based on the possible scenarios. Examples include environmental scanning, trends analysis, systematic review, synthesis of key technological and management developments (Kennedy, 1996). Business intelligence tools can play a large role in creating these scenarios.

The role of knowledge management in eBusiness and customer relationship management

- Create and exploit business opportunities through knowledge provision

Exploiting of business opportunities can take place due to decision-making on knowledge that identifies opportunities or pitfalls in competing strategies (Kennedy, 1996).

5.1.5.4. Elements of knowledge management

Knowledge management as discipline can consist of a variety of elements. These elements include, but are not limited to:

- Knowledge vision

This is a strategy for the acquisition and sharing of knowledge, and identification of responsibilities for knowledge management activities in the organisation (Ernst & Young, 1999e).

- Knowledge centres

Development of knowledge centres with dedicated staff that assists in developing formal procedures for the sharing of knowledge, as well as for the organisation and retrieval of knowledge (Ernst & Young, 1999e).

- Knowledge networks

A knowledge network is a network of expert practitioners that can create, share and package their knowledge (Ernst & Young, 1999e; Hickins, 1999; Van der Spek & Kingma, 2000, p.22). These networks can also be referred to as communities of practice or communities of interest. Innovation Centres of Excellence are created in many organisations with the focus of problem solving and creation of knowledge (Ernst & Young, 1999e). These networks can also be divided into subnetworks. This has been used successfully at large, multinationals like Shell, Accenture and McKinsey (Hasrgaddon & Sutton, 2000; Van der Spek & Kingma, 2000, p.22s). Guides may be created to identify members of these networks. These guides may take the form of a yellow pages directory (Ernst & Young, 1999e).

- Packaged knowledge

Knowledge is organised, reformatted and updated by experts to ensure easy access (Ernst & Young, 1999e).

- Yellow pages

A directory aimed at making expertise in the organisation visible. It is a means of understanding who knows what in the organisation (Mudge, 1999). Accenture and McKinsey found this to be particularly useful (Hargaddon & Sutton, 2000).

5.1.5.5. Types of knowledge to be managed

Knowledge in a knowledge management system can be categorised into various types or categories.

The role of knowledge management in eBusiness and customer relationship management

Chait (1999) is of the opinion that a knowledge management system should contain key elements of an organisation's knowledge capital, e.g. knowledge on staff, clients, methodologies, and tools.

O' Dell & Grayson (1999) is of the opinion that organisations should strive to have the following in their knowledge management system:

- Meaningful concepts, categories and definitions (declarative knowledge)
- Processes, actions and sequences of events (procedural knowledge). Procedural knowledge is about how something happens or how actions are performed. Shared procedural knowledge is the foundation for co-ordinated activities in an organisation.
- Rationale for actions or conclusions (causal knowledge). Shared causal knowledge enables organisations to co-ordinate strategies to achieve set goals.
- Circumstances and intentions of knowledge development and application (specific contextual knowledge). Knowledge retained and shared has to be codified together with its context. This requires defining contextual categories and relationships meaningful to the organisation as a whole.
- Linkages among the various types of knowledge.

Hall & Andriani (2000, p.45) categorise knowledge as follows:

- Undistributed tacit knowledge / "personal knowledge".
- Undistributed explicit knowledge / "specialisms".
- Distributed explicit knowledge / "protocols".
- Distributed tacit knowledge / "embedded organisational routines".

Van der Spek & Kingma (2000, p.23) divide the content of a knowledge management system into three distinct areas:

- Processes and tools for corporate-wide accessibility of knowledge and information about best practices, guidelines, experiences, good ideas, results of projects, etc. An example is Arthur Andersen's Knowledge Space and Accenture's Knowledge X-change.
- Learning tools for individuals and teams to improve performance on projects and team activities and to bring a learning perspective into daily work activities. Examples at BP are peer assists, after-action reviews and retrospects.
- Inventories of knowledge areas to answer specific questions, e.g. what are the relationships between processes and key knowledge areas. An example is Unilever tying their knowledge base to the organisation's value chain.

The researcher believes that knowledge management systems should contain knowledge that is strategic to the organisation. This could include knowledge on individuals and their expertise, either internal or external to the organisation. It should also contain knowledge on

The role of knowledge management in eBusiness and customer relationship management

competitors and where opportunities and threats lie with reference to these competitors. A knowledge management system should definitively include knowledge on customers – their requirements, their behaviour, etc. (the link between knowledge management and customer relationship management knowledge is explained later in this study). A knowledge management system should also contain knowledge on methods and processes employed by the organisation, or that may be useful in the organisation on an ad hoc basis. Knowledge on markets that the organisation operates in is essential to ensure the competitive advantage of the organisation through anticipation of opportunities and / or threats. Finally a knowledge management system should contain knowledge on the organisation's products and services. Any other knowledge strategic to the organisation may also be included in addition to the mentioned categories, depending on the strategy and identified needs and requirements of the organisation.

5.1.5.6. Knowledge management frameworks

The way in which a knowledge management system is integrated into staff's daily work depends on the type of model chosen for the organisation. There are four knowledge management framework strategies (Donaghue, Harris & Weitzman, 1999) as shown in Figure 13:

- Transaction model

There is a low degree of both interdependence and complexity. Work done is routine work, which is highly reliant on formal rules and procedures and training, and little discretion is expected of the workforce.

- Integration model

There is a high degree of interdependence and a low degree of complexity. Work is systematic and repeatable, and relies on formal processes, methodologies and standards, and depends on tight integration across functional boundaries.

- Expert model

There is a low interdependence and high complexity. Work requires judgement.

- Collaboration model

There is a high degree of interdependence and complexity. Work involves improvisation and learning by doing, and relies on deep expertise across functions and the use of flexible teams.

The role of knowledge management in eBusiness and customer relationship management

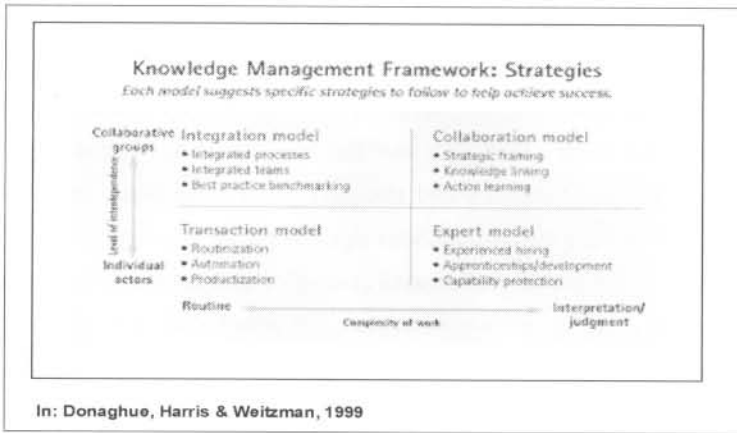


Figure 13: Knowledge management framework strategies

According to the researcher, the way knowledge management is implemented will be highly dependent on which framework is applicable within an organisation. These differences in the management of knowledge will lie in the types and complexity of knowledge repositories, the kind of technologies deployed, and the nature of the processes implemented in each model.

5.1.5.7. Knowledge management methodologies

The researcher could not find any specific methodologies for knowledge management implementations in the literature. The researcher knows of two management consultancies that have their own knowledge management methodologies, but these are proprietary and cannot be shared.

The researcher is, however, also of the opinion that only very generic methodologies exist. Each organisation's situations and requirements are so unique, that most knowledge management solutions are unique to a particular environment and circumstances.

5.1.6. Specific issues regarding the nature of knowledge management

There are specific issues relating to knowledge management that needs to be addressed in this chapter. These include the fact that knowledge management is an integral part of business processes, that it is not only a technological issue, that culture plays a large part in it and that knowledge management is faced by a myriad of challenges.

The role of knowledge management in eBusiness and customer relationship management

5.1.6.1. Knowledge management as integral part of business processes

Knowledge management is not an administrative function according to the researcher. It is an integral part of the way people work and get their daily tasks done, i.e. it is embedded in the business processes. Davenport (1999) supports this viewpoint. Davenport argues, however, that the only way to ensure that knowledge management is part of the people's everyday work, is to design jobs from scratch by putting knowledge management activities in and taking other less critical activities out. In the literature a suggestion is made to try to find the people who are already thinking about or working on knowledge sharing and learning and turn them into leaders of knowledge management. These leaders or champions can then bring about change through leading by example. When enough people start working in new ways, there will be no turning back. So rather than controlling change in traditional ways, leaders can pave the way for it and guide it with new leadership behaviour and organisational constructs (Lessons learned on the knowledge highways and byways, 1996).

It is crucial that staff view knowledge management as "the way things are done". It should not be seen as additional tasks, or as something that would take time and focus away from their primary daily tasks.

5.1.6.2. Knowledge management is not a technology issue

It is clear from the literature that knowledge management is not deemed to be a technology solution. Knowledge management is not about technology – it is approximately 10% technology and 90% people (GartnerGroup, 1999a; Lessons learned on the knowledge highways and byways, 1996; O'Dell & Grayson, 1999; PricewaterhouseCoopers, 1999d, pp1-2). Stephenson and Davies (2000) emphasise that neither knowledge management nor innovation can result from the introduction of technology alone. A balanced combination of cultural, process, organisational leadership, content and environmental initiatives are required to make knowledge management initiatives successful.

However, technology is seen as an important enabler for knowledge management. "Technology, in itself does not constitute a KM program, but rather facilitates one, especially in large, geographically dispersed organisations..." (KPMG, 2000). Parlbly & Taylor (2000) explains that technology can act as an enabler for knowledge management through:

- Finding an expert or a recorded source of knowledge by using on-line directories and searching databases.
- Sharing knowledge and working together in virtual teams over internal and external communication networks.

The role of knowledge management in eBusiness and customer relationship management

- Brainstorming with the help of advanced applications that provide process and technique support to group and individual creativity.
- Making a decision with the help of advisory systems, access to information on past cases and management information systems.
- Learning more about customer needs and behaviour by analysing transaction data.
- Monitoring both financial and non-financial indicators of organisational health using the balanced scorecard.

"...the stronger reason for buying technology for knowledge management is business-oriented: to optimise inter- and extraprise collaboration (human processes for sharing, creating and applying knowledge); and to leverage knowledge and collaboration to improve business responsiveness, reuse and innovation. Knowledge management requires cultural and business advancements, and the technology for knowledge management must stimulate and augment knowledge sharing, collaboration and innovation..." (GartnerGroup, 1999a).

Technology is critical to knowledge management, but equally so are knowledge management processes, as well as management of people and culture issues.

5.1.6.3. Knowledge management culture issues

The cultural issues around knowledge management are very important. A specific environment needs to be created to foster knowledge management. When creating new knowledge, for example, old thought patterns must be broken. Intuition should be encouraged in a knowledge management environment. Chaos is an imperative precondition for a new perspective or mindset (Stahle, 2000, p.41). Knowledge management is aimed at learning to understand the nature of the chaos, and to create methods, practices and culture that utilise the ability of chaos to self-organise (Stahle, 2000, p.42).

According to the researcher the values of an organisation plays a large part in the knowledge management cultural issues. If an organisation has the values of transparency and trust, knowledge sharing will take place more readily. If an organisation does not have a knowledge creating and knowledge sharing culture, it is a very difficult and slow process to bring about change, due to the fact that the organisation's and people's values have to change to create such a culture.

5.1.6.4. Challenges facing knowledge management

Knowledge management programmes are faced with many challenges.

The role of knowledge management in eBusiness and customer relationship management

The first is generating new knowledge. An organisation can do that in two ways, the first being through acquisition of knowledge in the form of appointment of skilled staff; the second being through research and innovation, utilising current skills and knowledge in the organisation (Ernst & Young, 1999e).

The second challenge facing organisations is the codification of knowledge. Codification of knowledge will always involve trade-offs between richness and reach. If application of knowledge is broad, the depth may have to be sacrificed and *vice versa*. In order to determine where the boundaries of the trade-offs lie, the organisation needs an understanding of the aim of the use of the knowledge, e.g. knowledge aimed at strategic decision making will need to have a high accuracy rating (Ernst & Young, 1999e; Ernst & Young, 1999f).

The third challenge is getting people to utilise knowledge management systems. These systems and the knowledge they carry have no value unless they are utilised. Utilisation can be stimulated through appointment of knowledge champions that can raise awareness of the knowledge management systems and newsgroups for specific knowledge areas. Utilisation can also be enhanced through ensuring that outdated knowledge is removed from the knowledge management system and more current knowledge added by means of a set of evaluation criteria for determining of relevance (Ernst & Young, 1999e; Lessons learned on the knowledge highways and byways, 1996).

The fourth challenge is turning tacit knowledge into explicit knowledge. There are various inhibitors to turning tacit knowledge into explicit knowledge. O' Dell & Grayson (1999) states that it may not always be culturally legitimate to articulate tacit knowledge, i.e. it may not be socially or politically correct. Making private knowledge public may also lead to a redistribution of power that organisations may strongly resist. The lack of a formal language or model to articulate tacit knowledge may impede efforts to make it explicit. The transformation of tacit knowledge into explicit may also have consequences for an organisation. If left unarticulated, organisations may lose the opportunity to leverage the knowledge and therefore lose its competitive advantage. However, attempting to make inherently inarticulable knowledge explicit, may result in losing the essence of the knowledge, rendering it less valuable. "Determining when to make articulable knowledge explicit...and when to leave inarticulable knowledge in its "native" form...is central to managing an appropriate balance between tacit and explicit knowledge" (O' Dell & Grayson, 1999).

Another challenge for knowledge management lies in applying the organisational reward system fairly and correctly. Generally a dual system of carrot and stick, i.e. push and pull factors, are used to incentivise people to create and share knowledge (Reiss, 1999;

The role of knowledge management in eBusiness and customer relationship management

Snowden, 2000, p.9). According to the researcher this is the factor most critical to the success of a knowledge management system. People will not share knowledge voluntarily due to the perception that "knowledge is power". Unless incentivised by being shown "what's in it for them", people will not share knowledge.

5.1.7. Role of communities of practice in knowledge management

Knowledge management is mainly characterised by collaboration within communities around business issues in which community members have vested interests. This is one of the distinguishing factors between knowledge management and information management (Havens & Knapp, 1999). These communities are called communities of practice, communities of competence or communities of interest.

Snowden (2000, p.13) sees communities of competence and communities of practice at the heart of knowledge management. The concept behind them is members of a common group sharing expertise. Merali (2000, pp.81-82) defines a community of practice as an interdependent group of people inhabiting the same information space and interacting with each other through (resource and other) relationships. Critical success factors for these communities include a clear identity, a sense of belonging and attachment for members, a clear idea of self, i.e. what falls within the community boundaries and what is excluded, and a voluntary commitment from members.

The knowledge-based community of practice is characterised by:

- Membership of knowledge workers.
- Level of access to internal and external information.
- High degree of individual autonomy with regard to what is done with personal knowledge.
- Need for a high level of co-ordination between individuals.
- Need to maintain a shared dynamic knowledge base.
- Complex, dynamic inter- and intra-organisational relationships.
- Dynamic, context dependent articulation of knowledge.
- Context dependent valuation of knowledge.
- Continual sensory awareness of the state of the environment.
- Co-ordinated intelligent behaviour in response to environmental threats and opportunities (Merali, 2000, p.83).

Merali (2000, p.82) also mentions six features that appear common in the development of communities of practice. The first is interdependence of individual endeavours. If individuals need to communicate and exchange knowledge and information for mutually successful outcomes of their endeavours, they are more likely to learn from each other and to articulate

The role of knowledge management in eBusiness and customer relationship management

their personal knowledge in a way that is useful to the community. The second is co-specialisation of knowledge. If synergistic relationships between people can be realised, such that the co-specialisation of their personal knowledge creates new knowledge, or enables the community to do something more effectively, the community will be better able to leverage its intellectual capital. The third factor is language and communication. A societal process mediates the transformation of individual knowledge to communal language. "New knowledge diffuses through the community as people work and communicate with each other and, over time, it becomes absorbed into the way that people do things. For knowledge to become absorbed in organisational practice, individuals need to make sense of it, talk about it, to reinterpret it, and to incorporate it into their own context. The language that is used to communicate new knowledge affects the ease with which it can be absorbed. A viable community will support the context-dependent evolution of the language for articulating knowledge as it traverses the organisation over time" (Merali, 2000, p.83). The fifth factor that Merali (2000, p.83) mentions, is environmental sensemaking. The community as a whole must have mechanisms through which they can ensure that local adjustment to external changes does not disrupt the network of community co-ordination. The sixth factor Merali (2000, p.83) mentions is co-evolution. To continue viable, dynamic operation a community must change over time. The requisite changes in individual behaviours and competence must be orchestrated in a co-ordinated fashion.

5.1.8. The role of the Chief Knowledge Officer (CKO)

A number of large organisations have appointed Chief Knowledge Officers (CKOs). These chief knowledge officers take on a variety of roles (Earl & Scott, 1999):

- CKOs need to have sufficient knowledge on technology to do technology selections.
- CKOs are responsible to create adequate environments for knowledge sharing, e.g. by creating communities of interest.
- CKOs are also designers of knowledge repositories, knowledge based systems and knowledge management processes, as well as knowledge exchange events and knowledge protection policies.

Earl & Scott (1999) distinguish CKOs from CIOs (chief information officers) quite clearly. CIOs have distinct responsibilities, namely IT strategy, IT operations and managing the IT function. They have not taken on any knowledge management responsibilities. Where a CKO exists, there is also likely to be a CIO, but the corollary is not necessarily true.

The researcher is of the opinion that a dedicated knowledge management professional has to take responsibility for the knowledge management function in an organisation. This

The role of knowledge management in eBusiness and customer relationship management

professional may be a CKO or just a knowledge manager (depending on the size of the organisation and its knowledge management requirements), but it should be this person's primary focus to manage all knowledge-related processes and systems to ensure maximum utilisation and optimal efficiency thereof. Knowledge management can never be a part-time responsibility of an organisational staff member. Practice has shown that in such a case, knowledge management is of secondary importance and always takes a back seat. The knowledge management culture can therefore never be created and maintained and the effort will invariably fail.

5.1.9. The value of knowledge management

In a following chapter, the value proposition of knowledge management is clearly stated, but a short overview is provided below.

The value and purpose of knowledge management lies in adding value to information or knowledge (Yu, 2000). This value adding can take a variety of forms:

- Delivery of personalised knowledge (GartnerGroup, 1999a; Yu, 2000). Profiling or personalisation has both a personal and a corporate view. Profiles work on behalf of the user to provide relevant content (GartnerGroup, 1999a).
- Ensuring the sharing of quality knowledge, therefore minimising overload (Ernst & Young, 1999e).
- Quick access to knowledge (Ernst & Young, 1999).
- Combination of knowledge from different areas of expertise (Parlby & Taylor, 2000).

The value and purpose of knowledge management also lie in the value added to the organisation in its day-to-day activities, through:

- Improved quality and speed of decision-making capabilities (Ernst & Young, 1999e).
- Re-use of knowledge and lessons learned in a variety of contexts (Hargaddon & Sutton, 2000; O' Dell & Grayson, 1999; Parlby & Taylor, 2000). This may take various formats, one of which may be "lessons learned", i.e. sharing knowledge on successes and failures and the reasons behind them (Hargaddon & Sutton, 2000; MacMahon & Moore, 2000, p.77). These experiential learnings are also called learning audits (MacMahon & Moore, 2000, p.77).
- Creation of communities of practice through which knowledge can be shared (Hickins, 1999).
- Better exploitation of existing knowledge (Van der Spek & Kingma, 2000, p.22).
- Faster and better creation of new knowledge in support of innovation (Van der Spek & Kingma, 2000, p.22).

The role of knowledge management in eBusiness and customer relationship management

5.1.10. Current knowledge management statistics

KPMG (2000) recently did a comprehensive survey on a wide variety of issues. To provide a better understanding of the nature of knowledge management, a few selections from the statistics in the survey are reported below, together with other valuable statistics from the literature.

According to KPMG (2000) the findings of the survey confirm that knowledge management is an accepted part of the business agenda, i.e. the benefits thereof are acknowledged and organisations with a knowledge management programme are better off than those without. However, the full benefits of knowledge management are not realised and organisations are failing to tackle the real knowledge management issues. In particular, organisations ignore the people issues surrounding knowledge management and still seem to see it as a technology solution. As a result employees complain of overload and no recognition for participating in knowledge management activities. Organisations are failing to recognise the impact of knowledge management on profit, share price and employee retention. Organisations are also failing to understand the culture changes that have to be effected to enable knowledge management to be a part of employees' everyday work. Moving to a culture that values and encourages innovation, openness, teamwork and knowledge sharing requires leadership and, possibly, changes in organisational structures, relationships, and the office environment in general (Parlby & Taylor, 2000). Organic growth in "new ways of working" inspired by knowledge management principles, allows change to happen at realistic speed (Van der Spek & Kingma, 2000, p.22). The appraisal and reward system for knowledge management also do not always get the attention it deserves. Recognition needs to be given freely to those who freely contribute and share expertise that is valued by co-workers. Incorporating knowledge management activities into job descriptions reinforces the importance thereof. This ties back to Davenport's statement that jobs have to be re-engineered to make knowledge management a part of daily work activities (see 5.1.6.1.).

Havens & Knapp (1999) of PricewaterhouseCoopers reported that 60% of CEOs participating in the World Economic Forum and PricewaterhouseCoopers survey responded that knowledge management is absolutely critical to the success of their companies. In Europe, the average of 5.5% revenue spent on knowledge management was set to increase (this is a 1998 figure).

According to KPMG (2000), the status of knowledge management programs in the UK, Europe and US is as follows:

The role of knowledge management in eBusiness and customer relationship management

- US: 34% of US companies have a program in place, 28% are currently setting up such a program, 17% are examining the need for such a program, 19% have no program and are not considering one, and 1% have considered and decided against such a program.
- Europe & UK: 39% of European/UK companies have a program in place, 31% are currently setting up such a program, 12% are examining the need for such a program, 14% have no program and are not considering one, and 1% have considered and decided against such a program.
- UK: 42% of UK companies have a program in place, 27% are currently setting up such a program, 16% are examining the need for such a program, 12% have no program and are not considering one, and none have considered and decided against such a program.

Knowledge management efforts in organisations have thus far focused on different things. KPMG surveyed of a number of organisations with a breakdown of what most implementors of knowledge management have done (KPMG, 2000). The statistics are as follows:

- Create a strategy (76%).
- Knowledge management training / awareness (64%).
- ERP systems (62%).
- Sharing best practices (58%).
- Knowledge policies (57%).
- Benchmark / audit current status (57%).
- Establish formal knowledge management networks (50%).
- Reward knowledge working (49%).
- Develop "communities of practice" (46%).
- Appoint knowledge officers / centres (42%).
- New systems for "communities of practice" (40%).
- Knowledge systems audit (40%).
- Design other key processes (32%).
- Create a knowledge map (30%).
- Measure intellectual capital (23%).

KPMG (2000) identifies some reasons why benefits of knowledge management programs failed to materialise:

- Lack of user uptake due to insufficient communication (20%).
- Everyday use did not integrate into normal work practice (19%).
- Lack of time to learn / system too complicated (18%).
- Lack of training (15%).
- Users could not see personal benefits (13%).
- Senior management was not behind it (7%).

The role of knowledge management in eBusiness and customer relationship management

- Unsuccessful due to technical problems (7%).

The five main knowledge management problems as identified by the survey of KPMG (2000), are:

- Information overload.
- No time to share knowledge.
- Not using technology effectively to share knowledge.
- Reinventing the wheel.
- Difficulty capturing tacit knowledge.

5.1.11. Knowledge management – South African governmental direction

The initial interest in knowledge management has been high. The Department of Communications has kicked off a knowledge management initiative to bring knowledge management awareness to all stakeholders and the public, particularly in rural areas. The programme focuses on targeting innovators and early adopters by reducing uncertainties associated with the nature of knowledge management and the associated benefits are. Knowledge management principles and tools, such as knowledge mapping, are utilised by the Knowledge Management Development team in their work (Gerber, 2001).

The objectives of the programme are:

- Initiating and co-ordinating a national knowledge management debate, increasing knowledge management awareness.
- Promoting knowledge management awareness in all tiers of government and implementing projects to ensure an understanding of knowledge management principles as well as leading practice.
- Building a capacity to increase understanding of the subject and to monitor international trends, developments and opportunities.

"Knowledge management enjoys top-level government support in South Africa. It is ongoing and not a quick fix to the challenges in Africa. Knowledge management is the way of the future and no longer a choice, especially in Africa" (Gerber, 2001).

5.1.12. Relevant quotations from the literature

The nature of knowledge management can be summarised by the following quotes from the literature:

The role of knowledge management in eBusiness and customer relationship management

- "Knowledge management is complex and multi-faceted; it encompasses everything the organisation does to make knowledge available to the business, such as embedding key information in systems and processes, applying incentives to motivate employees and forging alliances to infuse the business with new knowledge. Effective knowledge management requires a combination of many organisational elements – technology, human resource practices, organisational structure and culture – in order to ensure that the right knowledge is brought to bear at the right time" (Donaghue, Harris & Weitzman, 1999).
- "KM takes aim at evolving people's attitudes and work behaviors to effect new heights of collaboration – the intentional sharing of ideas, information, knowledge, and work itself – in support of a business need. It's about changing people's value paradigm from "my information is power" to "sharing is power". It's about large-scale cultural change, new incentive systems and performance metrics, and learning and education. It focuses on (re)shaping the attitudes and behaviours of people so they can ensure the ready availability and resolute application of both personal and institutional knowledge" (Havens & Knapp, 1999).
- "...we might define the spirit of knowledge management as:
 - Knowing individually what we know collectively and applying it
 - Knowing collectively what we know individually and making it (re)usable
 - Knowing what we don't know and learning it "(Havens & Knapp, 1999).

5.2. eBusiness

5.2.1. New business models versus traditional business models

Means & Schneider (2000, pp.6-7) describe the new eBusiness business model compared to the old, traditional business model (see Figure 14). The authors see businesses changing focus in the eBusiness environment. Traditional businesses have a high focus on physical capital and working capital due to the fact that most of these organisations do not outsource, but are responsible for their own core business processes. They therefore have a smaller focus on human capital and brand capital, having a production and sales "push" focus. On the other hand eBusinesses have a low focus on physical and working capital due to outsourcing and direct delivery to the customer (i.e. limiting the roles of intermediaries). These businesses may move to e.g. manufacturing nothing at all and having finished products shipped by their outsourced network to their fulfilment centres or directly to consumers. They have a high focus on human capital and brand capital with a high focus on the customer. A customer "pull" focus is paramount. Clearly, spinning off manufacturing and related operating processes, generally to an outsourced network, frees up large amounts of capital that can be focused on

The role of knowledge management in eBusiness and customer relationship management

brand development, customer ownership, supply network management and other industry leadership processes. It is clear from this that eBusinesses require a completely different business model than traditional businesses.

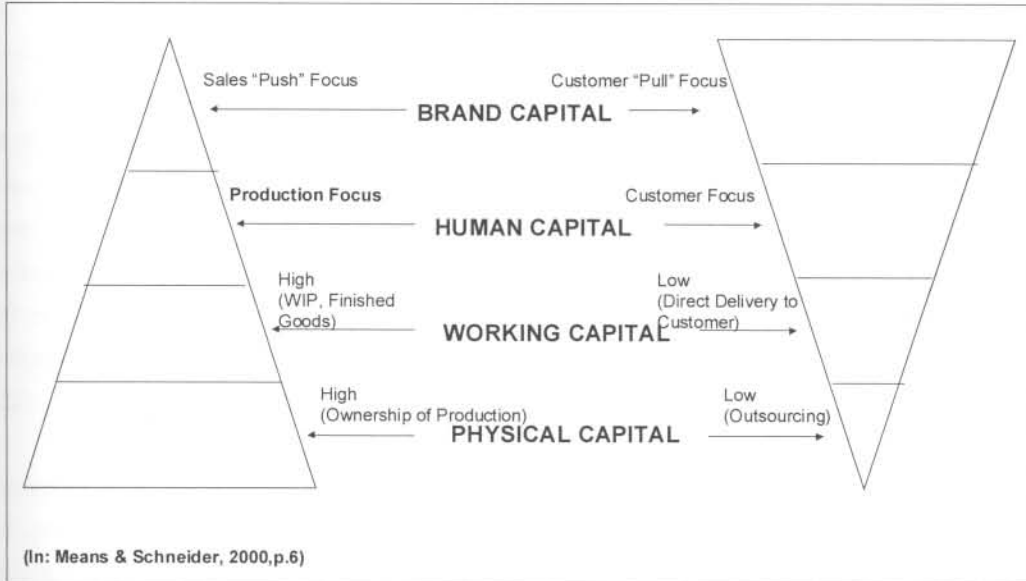


Figure 14. The transformation from old to new business

5.2.2. Electronic marketplaces

Electronic marketplaces are defined by Means & Schneider (2000, p.20) as networks internal to brand-owning companies. They address supply chain issues involved in producing and delivering products. They supply shared services and related backroom outsourced processes. They provide interfaces along the entire length of the supply and demand chains, including the brand owning company and its customers. They also supply industry specific information of all kinds.

Electronic marketplaces are also known in the literature as hubs, e-hubs, metamediaries or value-added communities.

5.2.2.1. Nature of electronic marketplaces

The electronic marketplace is central to the business-to-business eBusiness environment.

A brand-owning company can be considered a member of the electronic marketplace whether it initiates or controls the overall community. Electronic marketplaces may take the initiative in

The role of knowledge management in eBusiness and customer relationship management

selecting specific brand-owning companies as alliance partners. eBusinesses may decide to transfer many of its internal business processes – such as financial accounting, human resources, and maintenance, repair, and operations procurement – into outsourced networks. These networks may have a captive outsourcing arrangement, supplying services directly to the company through the outsourced units. Or they may be a larger “shared services” provider designed to deliver process excellence and economies of scale to more than one branding company (Means & Schneider, 2000, p.21). In any of these scenarios, the Internet creates unprecedented opportunities for companies to participate in, and create powerful online trading communities or electronic marketplaces. By doing this they can achieve cross-company optimisation without direct capital investments. Well-organised electronic marketplaces will offer ongoing optimisation that exceeds performance levels of organisations with wholly owned resources. Lower capital, brand-owning organisations can achieve greater performance than traditional, vertically integrated organisations (Means & Schneider, 2000, p.22).

Electronic marketplaces will become great enablers of eBusiness. Electronic marketplaces will optimise an entire network of businesses. They create value for participating buyers and suppliers in previously unattainable ways. Through the introduction of new efficiencies to the supply chain and new ways of buying and selling products and services, they revolutionise trading relationships and business-to-business eCommerce. They reduce product, process and sales costs by providing a centralised platform for transaction automation, information aggregation, improved market liquidity and extended market reach. Electronic marketplaces use the network effect in the sense that they create selling and buying communities that become more valuable to members as the number of trading partners increases. In future these electronic marketplaces will exhibit some degree of intelligence, becoming complex adaptive systems. Companies that do not join these electronic marketplaces will be limited by their own infrastructure and market power. An example of an electronic marketplace can be seen in Figure 15 (Means & Schneider, 2000, p.23).

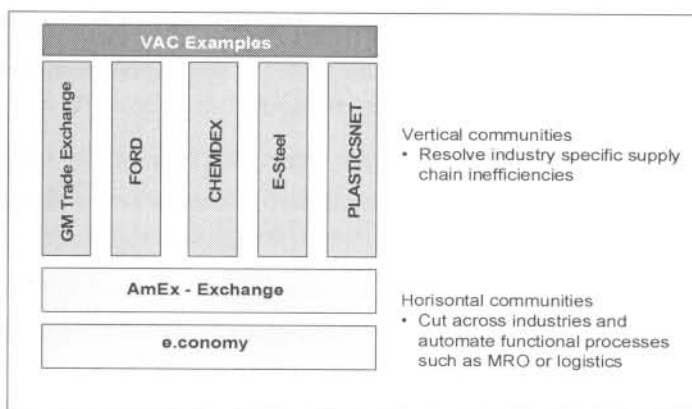


Figure 15. Example of a marketplace/value added community

The role of knowledge management in eBusiness and customer relationship management

The value proposition of electronic marketplaces is (Means & Schneider, 2000, pp.28-29):

- Purchasing power

Electronic marketplaces derive purchasing power from aggregating demand in a buying consortium. This results in benefits such as volume pricing, sophisticated information for supplier negotiations, consolidation of suppliers and spending and control reports.

- Process efficiency and operational excellence

Cost of acquisition of goods, services and customers are reduced by integrated sourcing, purchasing, billing, and payment. Electronic marketplaces that offer process efficiency, build functionality, which reduces workflow and transaction costs. These communities may add additional value by achieving additional operational excellence in the management of procurement and processes, including strategic sourcing and monitoring and control of spending.

- Supply chain integration

The value proposition here may include disintermediation, reintermediation, improved visibility across market supply chains, reduced lead times, reduced inventory levels, and improved logistics management.

- Aggregated content/community

This includes value gained from knowledge shared in the network, through e.g. best practices, knowledge management, benchmarking, etc. Categories include discussion forums, product information and reviews, frequently asked questions and newsletters.

- Market efficiency

Online marketing mechanisms are provided that match buyers and suppliers to improve both market and product liquidity and remove search time from the buying and selling processes. By creating such an electronic marketplace of buyers and sellers, the marketplace provides members with broad access, improved market knowledge, and new sales opportunities for both buyers and sellers.

- Accelerated market growth and customer control

Brand owning electronic marketplace participants can expand market reach and responsiveness to their customers through leveraging of human and financial capital as well as Internet channels to the customer.

- Collaboration

Its members to plan jointly, e.g. production planning and capacity management, can use transparency provided by the electronic marketplace.

According to Kaplan & Sawhney (2000) electronic marketplaces create value by using two fundamentally different mechanisms – aggregation and matching:

- Aggregation

Electronic marketplaces use aggregation to bring together a large number of buyers and sellers under one virtual roof. They reduce transaction costs by providing one-stop shopping.

The role of knowledge management in eBusiness and customer relationship management

PlasticsNet.com, for example allows plastics processors to order hundreds of plastics products from diverse suppliers through one purchase order. The aggregation mechanism is static in nature as prices are prenegotiated. The aggregation mechanism works best where cost of processing purchase orders are high relative to the cost of items procured, where products are specialised, where the number of individual products is extremely large, where the supplier universe is very fragmented, where buyers are not sophisticated enough to understand dynamic pricing models, where purchasing is done through prenegotiated contracts, and where a metacatalog of products carried by a large number of suppliers can be created.

- Matching

The matching mechanism brings buyers and sellers together to negotiate prices on a dynamic and real-time basis. In the matching mechanism, the roles of players are fluid – buyers can be sellers and sellers can be buyers. Adding any new member therefore increases the market's liquidity and benefits both buyers and sellers. Matching is a more powerful business model, but far more complex. It works best where products are commodities or near commodities, where trading volumes are massive relative to transaction costs, where buyers and sellers are sophisticated enough to deal with dynamic pricing, where companies use spot purchasing to smooth the peaks and valleys of supply and demand, where logistics and fulfilment can be handled by third parties, and where demand and prices are volatile.

5.2.2.2. Types of electronic marketplaces

Electronic marketplaces can be categorised by looking at distinctions in business purchasing. There are two distinctions in business purchasing. The first is the distinction between manufacturing inputs vs. operating inputs (Kaplan & Sawhney, 2000). Manufacturing inputs are the raw materials and components that go directly into a product or a process. These goods vary from industry to industry and are therefore bought from industry specific or vertical suppliers. They also often require specialised logistics and fulfilment mechanisms. Operating inputs (MRO) are not part of finished products. Operating inputs are often called maintenance, repair and operating goods, and they include things like supplies, spare parts, and services. Operating inputs are not industry specific, and as a result organisations buy them from horizontal suppliers, and they do not require specialist shipping. The second distinction in business purchasing is how products and services are bought. Organisations can either engage in systematic sourcing or spot sourcing. Systematic sourcing takes place when contracts are negotiated with qualified suppliers. These contracts tend to be long term, often creating and maintaining long lasting relationships. In the case of spot sourcing, the buyer has a need that requires immediate fulfilment at the lowest possible cost. Commodity trading, e.g. oil, steel and energy exemplifies this approach. Spot transactions rarely involve a long-term relationship with the supplier.

The role of knowledge management in eBusiness and customer relationship management

Kaplan & Sawhney (2000) use this two-way classification scheme of manufacturing inputs vs. operational inputs and systematic sourcing vs. spot sourcing, to classify business-to-business electronic marketplaces into four categories:

- MRO marketplaces

MRO marketplaces are horizontal markets that enable systematic sourcing of operating inputs. Operating inputs tend to be low value goods with high transaction costs, so these marketplaces provide efficiencies in the procurement process. Examples: ProcureNet, MRO.com.

- Yield managers

Yield managers are horizontal markets that enable spot sourcing of operating inputs e.g. labour, manufacturing capacity and advertising. These electronic marketplaces add the most value where there is a high degree of price and demand volatility, or where there are huge fixed cost assets that cannot be acquired or liquidated easily. Examples: Youtilities (electricity), eLance (human resources), CapacityWeb.com (manufacturing capacity) and Adauktion.com (advertising).

- Exchanges

Exchanges are vertical markets that enable spot sourcing of manufacturing inputs. The exchange maintains relationships with buyers and sellers to ensuring easier negotiations and signing of contracts. Examples: e-Steel (steel industry), PaperExchange.com (paper industry), Altra Energy (energy industry).

- Catalog electronic marketplaces

Catalog electronic marketplaces are vertical markets that enable systematic sourcing of non-commodity manufacturing inputs. These marketplaces create value by reducing transaction costs. The marketplaces are industry specific and may have a buyer or seller orientation. Examples: PlasticsNet.com (plastics industry), Chemdex (speciality chemicals industry), SciQuest.com (life science industry).

Ticoll & Tapscott (1998) have identified 4 types of eBusiness communities:

- Open market

Like the stock exchange, this is the electronic version of the town market. No one is really in control and integration is relatively low. An example is eBay.

- Aggregation

This is a community in which one company leads in hierarchical fashion, positioning itself as an intermediary between buyers and sellers. Value integration is very low. An example is AOL, who aggregates 19 000 chat sites and more than 325 retailers.

- Value chain

In value chains, the focus is on process effectiveness between a manufacturer and its supply partners. A primary company leads in hierarchical fashion, maximising value integration through operational effectiveness. Unlike aggregators, who typically offer a mix of branded

The role of knowledge management in eBusiness and customer relationship management

products and services, value chains typically focus on integrated and single branded solutions.

- Alliance

An alliance aims to achieve high value integration in the absence of hierarchical control. In the Java Alliance, for example, Sun Microsystems, IBM, Oracle and Netscape are working towards mobilising an entire industry behind a new computing platform as competition to the Microsoft-Intel Alliance.

5.2.2.3. Electronic marketplace orientation: buy-side, sell-side and neutral models

According to Berryman et al. (1998) and Kaplan & Sawhney (2000) there are three types of electronic marketplaces - those controlled by sellers, those controlled by buyers and those controlled by neutral third parties:

- Electronic marketplaces controlled by sellers

A single vendor that seeks business with multiple buyers usually sets up electronic marketplaces controlled by sellers. Its aim is to create or retain value and power in the market in any transaction where sellers act as aggregators that amass supply and operate in a downstream supply chain. Sellers are the most vulnerable participants, because they will have to compete with other vendors in a transparent environment. Members of these electronic markets benefit from less costly products and services, more efficient ordering and fulfilment processing, and value based product information (Deise et al, 2000, p.124). An example is Cisco Systems' website where buyers can configure their own routers, check lead times, prices, order and shipping status and confer with experts in the technical field. By giving customers access to order information and by publishing technical documentation on the website, Cisco has saved approximately \$270 million annually on printing expenses, order and configuration errors and telephonic technical support.

- Electronic marketplaces controlled by buyers

Electronic marketplaces controlled by buyers are set up by one or more buyers with the aim of shifting power and value in the marketplace to the buyer's side. A buyer-controlled electronic marketplace attracts a large number of buyers and then bargain with suppliers on their behalf. The marketplace focuses, not on individual products or services, but on the integration of a wide variety of information, products and services to satisfy the intentions of the community of buyers. The value lies in the entire partnership of products and services, rather than on the individual enterprise level (Friedman & Langlinias, 1999). Many of these marketplaces involve intermediaries, but some strong buyers have developed their own marketplaces. An example of this is Japan Airlines, who posts procurement notices on their website for consumable items such as plastic rubbish bags and disposable cups. Buyers' intermediaries act as agents or aggregators. An example of an agent is FreeMarkets Online, a small company that assists traditional industrial firms to locate a pool of competitive

The role of knowledge management in eBusiness and customer relationship management

suppliers for assembly parts such as iron castings. Being an agent, it offers offline consulting to buyers to refine their specifications and screen potential suppliers. Once contenders have been selected, they host an online bidding session, thereby guaranteeing the best prices for the buyers. Aggregators take a different approach, combining the purchases of various buyers to ensure competitive prices. TPN Register, a joint venture between GE and Thomas Publishing, is an initiative to consolidate purchases in all the divisions of GE. This initiative expanded to include 11 000 other leading organisations, e.g. Coca Cola, Textron and Hewlett Packard, in a buying consortium. The results have been reduction in order processing time and processing costs, and 10-15% lower prices. 60% of procurement staff has been redeployed and the interval between the identification of a need and signing of a contract to meet the need has been halved. Other vendors have saved 10-20% on cost of purchases, the savings coming from cheaper searches that provide access to a larger number of suppliers, from better co-ordination of buyer and seller through electronic requests for quotes, and from lower error rates of wholly electronic purchasing processes (Berryman et al, 1998; Nevens, 1999).

- Neutral electronic marketplaces

Neutral electronic marketplaces are set up by third party intermediaries to match many buyers to many sellers. Neutral electronic marketplaces are equally attractive to both buyers and sellers. To succeed, both suppliers and buyers must be attracted quickly to bring liquidity on both ends of the spectrum. These marketplaces add value through reduction in transaction costs and improving matching. Example: an electronic marketplace that sells nothing but caviar, may have insufficient volumes to achieve scale in its back-office organisation. However, an electronic marketplace that sells all kinds of gourmet food could be much more efficient (Berryman et. al., 1998). These electronic marketplaces are most likely to succeed in an environment where markets are highly fragmented on buyer and seller side. Infomediaries are also more likely to operate in a neutral marketplace, than in a buyer or seller oriented one, where controlling parties have less incentive to pass information on. In a neutral electronic marketplace a neutral third party can accumulate information about buying patterns that can be analysed and sold to sellers to help them improve their marketing. In a neutral marketplace participant's identities are protected, and they will therefore be more willing to share information (Berryman et al, 1998). An example of an intermediary is FastParts, which operates an anonymous spot market for the trading of overstocked electronic components. It receives notices of available stock from sellers, then matches buyers to sellers in an online auction. All parties benefit. Sellers get higher prices than through traditional brokers, buyers get market-driven prices plus guaranteed quality because FastParts inspect all items, and FastParts earns up to 8% commission. Neutral electronic marketplaces do not necessarily eliminate traditional intermediaries. Digital Markets, for example, established itself as an electronic intermediary for trading of electronic components. Its aim is to make buyers and sellers more efficient. It routes buyers' orders to their preferred distributors, checking for order

The role of knowledge management in eBusiness and customer relationship management

entry errors and suggesting substitute products. The intermediary then notifies the buyer of availability and passes on delivery and pricing information from the seller. Digital Markets also enables buyers to confirm and track their orders. For this, it charges a transaction fee to sellers when orders are placed. Buyers pay nothing.

5.2.2.4. MetaMarkets

According to Means & Schneider (2000, p.33) MetaMarkets will join electronic marketplaces together to bring even greater levels of value to online business systems (see Figure 16).

These MetaMarkets will be built on a common technology platform, providing a comprehensive range of products and services, through which buyers and sellers will be attracted. MetaMarket providers will rapidly develop new electronic marketplaces to compliment their offering for existing members. This continuous formation of electronic marketplaces will draw on the established customer base as well as underlying technology platform and back office shared services (Means & Schneider, 2000, p.34). "...strong network effects and economies of scale inherent in MetaMarkets will drive many industries to become true oligopolies, dominated by a few global players. The ultimate winners can be expected to emerge over the next few years. There is tremendous advantage for those who move quickly and decisively now to solidify their market positions through strategic partnerships, acquisitions, and joint ventures – the molecular biology of VACs and MetaMarkets" (Means & Schneider, 2000, p.36).

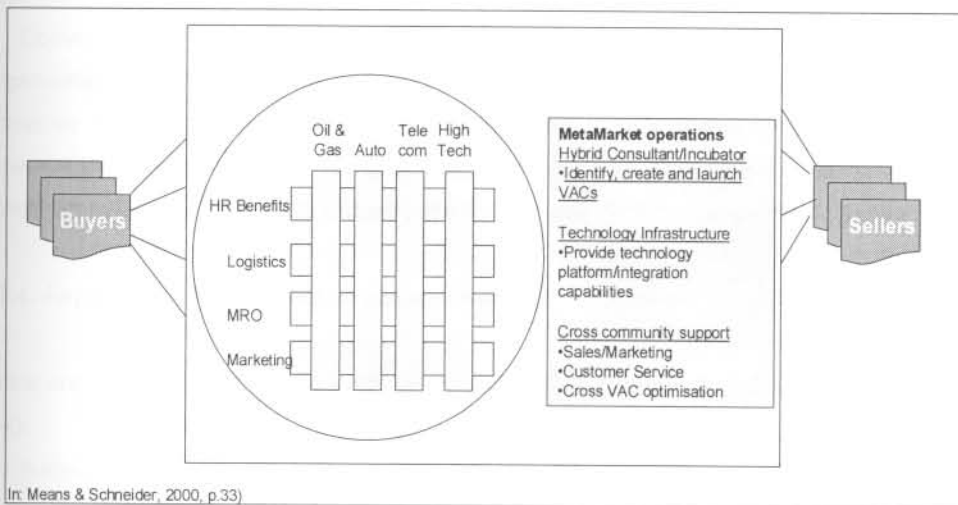


Figure 16. The MetaMarket: a portfolio of value added communities

The role of knowledge management in eBusiness and customer relationship management

5.2.3. Stages in the development of an eBusiness

PricewaterhouseCoopers (2000b, p.152; 2000d) distinguishes four stages in eBusiness development:

- Presence

This stage in business to consumer eBusiness commonly involves creating an electronic presence in the business to consumer environment, usually a website, which presents information about the company's products, and its key differentiators. The corresponding stage in business-to-business development is use of electronic channels such as EDI to service customers and partners. The key is to improve timeliness, cost effectiveness and reach.

- Integration

Closer interaction takes place as customers and suppliers work together online and vendors customise content for their users. Exchange of critical information brings greater understanding for all parties, leading to bigger commitment from everyone. Legal, tax and risk management issues are coming to the fore. Prompt and effective customer service becomes critical.

- Transformation

Organisational transformation takes place as executives distinguish between core and non-core competencies. Operations can be unbundled more easily, and only those critical to the market position are kept. Other issues to consider at this stage are outsourcing non-core operations, making changes in processes and systems, and paying attention to legal and audit considerations.

- Convergence

Organisations can achieve true convergence with other organisations in or outside of their industries. Over time this will lead to cross-industry supply chains that will in turn create networked organisations and markets. Customers gain convenience and choice, and firms benefit from being part of cross-industry value networks.

5.2.4. Approaches in creating an eBusiness

There are three approaches in creating an eBusiness (Means & Schneider, 2000, pp.163-164):

- Bubble in

The parent organisation creates a laboratory-like environment to incubate eBusiness. The new entity is an autonomous skunk works, operating with senior management's support and protection. The bureaucratic constraints of the parent are kept at bay.

The role of knowledge management in eBusiness and customer relationship management

- Bubble out

The parent organisation creates an environment outside of itself in which the new entity can grow and thrive. The organisation can choose to create a new entity connected to the existing structure or form an entity that is entirely different from the parent organisation. The new unit may then consume the traditional business or spin off.

- Transformation

The organisation reinvents itself through web-enabling all customer facing, internal, back-end and enterprise processes. The parent is subsumed in the eBusiness.

5.2.5. Factors to consider in setting up and managing an eBusiness

5.2.5.1. The richness versus reach trade-off and the distinction between the economics of things and the economics of information

Two factors make eBusinesses, and specifically infomediaries, vulnerable: an embedded compromise between the economics of physical things and the economics of information, and secondly a compromise between information richness and reach (Evans & Wurster, 2000, p.69). There are two forms of disintermediation. In the first instance the competitor would attack the intermediary by offering greater reach and less richness. The competitor thus focuses on hard to reach customers who places less value on the richness provided by the intermediary. An example is Sears Roebuck, who in the 19th century displaced many of the local hardware and clothing stores. The catalog provided a less rich interface, but it provided greater reach in terms of a wider selection of products with the ability to deliver to remote locations (Evans & Wurster, 2000, p.71).

In the second instance of the richness / reach trade-off, technology allows the richness / rich curve to be displaced completely, allowing players to offer greater reach and greater richness simultaneously. This happens because technology allows businesses to deliver rich information to customers directly (e.g. Dell computers that sells their computers only through their website). Technology also allows a thorough deconstruction of the old value chain, because new combinations of free-standing players can match the capabilities of old vertically integrated businesses, e.g. independent brokers using information provided by Charles Schwab's website to deliver as good an investment brokerage service as Schwab's own integrated service (Evans & Wurster, 2000, pp.72, 93, 95; Rozwell, Reilly & Lehong, 2001).

"The losers in this new game of disintermediation will be players that may have been competitive in aggregate, but not in one piece of a deconstructing value chain...Any intermediating business could be vulnerable if it has what might be called "department store logic": one stop shopping, cross-selling, cross-subsidiaries, all anchored in a putative

The role of knowledge management in eBusiness and customer relationship management

"relationship" with the customer. Such businesses are especially vulnerable if the business system needs volume to cover high fixed costs, since a small loss of volume could mean a catastrophic decline in profits. The winners in this new game of disintermediation will be the players who are good at one thing, or more precisely, the smaller number of things that define advantage in a deconstructed business definition. Delivery services such as Federal Express, efficient warehouse operators such as Wal-Mart, and even Schwab functioning as a brokerage transaction platform could gain massively from using their specialised, focused capabilities (physical or informational) to support the new intermediating models of others. Their volume potential depends on the pace of disintermediation; their profit potential depends on their ability to achieve physical economies of scale" (Evans & Wurster, 2000, p.96).

New navigators derive much of their advantage – versus the established players and versus each other – by affiliating closely with the interests of the consumer. This tilt toward consumers is a direct and fundamental consequence of the blow-up of the richness / reach trade-off. The greater the reach of navigators across suppliers, and the more intense the competition among navigators for the loyalty and attention of consumers, the weaker is the navigator's bond to any one seller and the greater is the pressure on them to serve as buyers' rather than sellers' agents. This tilt in affiliation shifts the balance of power from sellers towards buyers (Evans & Wurster, 2000, p.125). The test of affiliation is where the consumer gains and the seller loses, e.g. navigators informing consumers of similar products provided by other suppliers, or sharing unflattering information regarding the effectiveness of a product or service (Evans & Wurster, 2000, p.127).

Once the richness / reach trade-off has been broken, navigators cease to be specific to sellers and become very cheap. Navigators then compete for consumers' attention based on two factors, namely reach and consumer affiliation (Evans & Wurster, 2000, p.133). For suppliers and retailers this raises issues to be considered. Struggling for critical mass, navigators push for reach, merge and concentrate. As their reach goes up, their affiliation to sellers loosens, which provides more advantage in competing for buyers. Some navigators gain critical mass and then become a monopoly in their respective search domains, i.e. winner takes all. Armed with superior reach, a high level of consumer affiliation and trust, and equivalent richness, that navigator is advantaged in navigation against retailers and suppliers (Evans & Wurster, 2000, p.134). Suppliers need to understand that these navigators can blunt the effectiveness of their sales forces, their advertising and product literature. Suppliers will have to look at alliances to address this affiliation problem. A group of suppliers may be able to create their own navigator with strong customer affiliation that is more comprehensive and more credible than any of its members (Evans & Wurster, 2000, p.136). Another option is for

The role of knowledge management in eBusiness and customer relationship management

the suppliers to deny the navigators critical mass by not supplying information on which comparisons with other products can be made. This is, however, not always in the interest of the seller as individual business, as denying information individually will not deny critical mass. Only if sellers collectively deny information, can critical mass be denied (Evans & Wurster, 2000, pp.139-140).

The explosion in reach will initially have the biggest impact on the shape of businesses in the future, but affiliation and richness will prove more powerful over the long term in terms of competitive advantage and profitability. Reach will eventually become the focus of competitive struggle and self-cannibalization will be accepted by incumbents as inevitable (Evans & Wurster, 2000, pp.121, 125).

5.2.5.2. Brand

Branding is an important competitive advantage in the eBusiness environment. Whether it is customer or product specific, sellers use rich information to lock in customer relationships and to lubricate the channels and habits of consumer choice in their own favour. Brand is rich in information on a product or service and other attributes in the mind of the consumer. The information stems from advertising, reputation, and prior experience. It may not be comprehensive, but it makes choice easy. Brand knowledge enables the consumer to short-circuit trying to make choices systematically (Evans & Wurster, 2000, p.150). The consumer makes the choice based on information provided by the brand. This choice is often made through use of advertising materials. Website content that is aimed at advertising an organisation's products or services can be categorised into three groups (Cartellieri et al, 1997):

- **Experiential content**

This type of content will allow the consumer to experience the product or service. A good example is where customers are allowed to test a product. Sharp's website allows a personal tour of the Zaurus personal digital assistant, for example. Virtual reality will make these experiences even more real for customers in the near future (e.g. they will be able to feel as if they are test driving a car or walking down the aisles of a grocery store).

- **Transaction-oriented content**

This type of content will invite consumers to buy a product directly from an advertisement. Advertising content will become more transaction oriented. The Internet has already changed customer behaviour in this way. Prospective car buyers, for example, can gain a lot of product information from manufacturers' websites, which means a sale is more likely to take place when they encounter the manufacturer or dealer.

The role of knowledge management in eBusiness and customer relationship management

- Sponsored content

This type of content will blur the line between editorial matter and advertising. A lot of sponsored content already exists on the Internet – it tends to resemble “brought to you by company ABC”. The advances in more hybrid commercial-editorial content will be determined by consumers becoming resistant to banners or standard forms of sponsorship, and by advertisers' desire to influence attitudes in more subtle ways.

5.2.5.3. First mover advantage

First mover advantage is very important in the eBusiness arena. Evans & Wurster (2000, pp.112-113) emphasise this with the following example. Online classifieds are a navigation business where buyers and sellers are looking for each other. Buyers choose where to browse on the number of advertisers, and sellers select where to advertise based on the amount of browsers. Whoever establishes a clear lead will attract both buyers and sellers. Reach then becomes a self-fulfilling prophecy. Whoever has superior share gains share. Once one competitor establishes a strong lead, it is not clear that anybody would be interested in the second choice (Evans & Wurster, 2000, p.120). “The first to organise a virtual community may create a long-term advantage. Once a community has momentum, it may be difficult for a second would-be organiser to persuade members to switch unless the new community offers dramatically greater benefits. Thus there may be a cost advantage in being the first to organise the community and set the rules” (Stewart, 2000).

The gaining of critical mass, however, does not mean that the first entrant always wins. Latecomers can carve out and dominate segments that fit better into the search domains that some group of consumers really wants. These could cut across the terrain dominated by the first entrants, or they could be pockets within that terrain. In the latter case, the latecomers would have to outperform the first entrants on affiliation and richness (Evans & Wurster, 2000, p.120).

Deise et al (2000, p.127) is of the opinion that competition to create dominant electronic marketplaces will be fierce. Size and speed will matter. The largest and fastest electronic marketplaces will have the opportunity to create metamarkets that consist of a portfolio of electronic marketplaces. Operators of metamarkets have the opportunity to extend clout in the eBusiness world. Metamarkets will become the powerhouses of the new economy (Deise et al, 2000, p.127).

5.2.5.4. Aggregation / disaggregation

Ticoll & Tapscott (1998) are of the opinion that in order to develop an online commerce value proposition, companies should rely on a value reaggregation strategy. The strategy process begins with the assessment of current value, followed by redefining the value proposition by disaggregating its key components and envisioning how networked technologies can improve the customer relationship. A new strategy is created, typically supported by eBusiness community value creation. Reaggregation creates a new value proposition for the customer. The researcher is of the opinion that the essence lies in optimising strengths in the eBusiness and eliminating any weaknesses. An example is E*Trade, that disaggregated one feature of financial services, namely stock trading, from the traditional services offered by brokerages. By envisioning how low cost trading could be accomplished via the Internet, E*Trade was able to attract an audience of highly active stock traders who wanted to execute their own trades. Empowering these early adopters assisted E*Trade in building brand momentum in online trading.

5.2.5.5. People issues

eBusiness is all about changing the form of traditional relationships among companies, their customers, their distribution channel partners and their suppliers and vendors. Business technology provides all the players more information about each other. The key to decrease eBusiness risk is to develop the closest, most trusting relationships possible with all of the various players at each step of the value delivery process (Deise et al, 2000, p.174). To enable relationship building, all people issues must be considered.

Online buyers are not a monolithic group. Customers in different sectors differ vastly. While a customer may be comfortable buying one type of product, they may not be comfortable to buy in other sectors. Even those who purchase across multiple product categories do not necessarily shop in the same fashion or use the same criteria to evaluate their experience in each product area (Chu et al., 1999). Customer behaviour and needs must be understood to enable relationship building.

Key characteristics of individuals who will thrive in a business environment include high risk tolerance, flexibility, teaming skills and the ability to appreciate and thrive in ambiguity, build relationships to achieve business goals, admit mistakes, and move forward (Deise et al, 2000, p.65).

"...the Net gives consumers more control, more power. It's a more competitive environment that tends to make good businesses better and weed out less capable ones. To succeed, you

The role of knowledge management in eBusiness and customer relationship management

need a certain lightness of foot, even a sense of humour. You have to be willing to be slightly experimental, even as your stockholders are asking why you're putting all this money into this thing called the Internet. But most of all, you need to have good, creative people, not just technologies or systems. These people need to be trained to represent your company effectively. A successful Web presence is something that needs to be grown. It just can't be constructed " (Andersen Consulting, 1998).

5.2.5.6. Technology and integration

When restructuring for eBusiness, there are technological and integration issues that need to be considered. The customer-oriented approach will necessitate changes to traditional IT processes, which were centred on product lines or management requirements. Businesses risk poor customer service by using their disparate systems for customer support. These systems do not provide one view of the customer due to lack of information sharing between the systems. Different service groups may also be used to manage different customer service channels, e.g. e-mail, face-to-face, telephone, etc. (Dhanji & Jablonski, 2000). Providing one view of the customer is the aim of customer relationship management. This is discussed in more detail later in this chapter.

5.2.6. New business realities in the electronic world

The Internet turns today's best practices paradigm upside down. An eBusiness enables an organisation to have both an internal and external focus, with Internet technology touching on all aspects of the enterprise. Customers, suppliers and employers are all online, they have better information and have the tools to be more efficient by orders of magnitude (E-business transformation, 1999).

The eBusiness environment poses many challenges to the traditional bricks and mortar businesses, which are struggling to evolve their business models and value propositions without losing their existing identities. These difficulties are due to the new realities of business in the online world, as detailed by Chu et al. (1999):

- New financial realities

The ability of eBusinesses to raise large amounts of capital enables them to quickly buy or build key capabilities. For example, Amazon's rising share price enabled it to buy firms such as Jungle, PlanetAll, and Livebid.

- Intensified competition

Due to low entry barriers, competition is increasing. Even previously non-competitive relationships are being tested as manufacturers and distributors begin to sell direct to the customer.

The role of knowledge management in eBusiness and customer relationship management

- Greater customer power

Customer disloyalty is being encouraged as more information on products and services become available on Internet sites. Retailers offer customers new and better services in a quest for market share. The cost to the consumer to switch is very small, creating many headaches for retailers.

- Organisational constraints

Legacy technologies and inflexible organisational structures are preventing retailers to compete effectively with Internet start-ups. Top management talent is also lured to the dot.com world with offers of a greater financial upside and the possibility of near instant success.

Deise et al (2000, p.xxvi) summarise the effects of this new business reality as follows:

- eBusiness employs "disruptive" technology. While it can improve and enhance business, it can also disrupt the value chain by changing the way players with it interact.
- eBusiness success is fundamentally not just about technology, but also about organisational change management and about people working in new ways. It is about using technology to enhance existing relationships and to create new relationships.
- In the eBusiness arena, the organisation that owns the relationship with the customer is king. Companies must determine if they are, or can become, the company in the value chain that owns the customer relationship. Leadership must not only know what it knows, but also what it doesn't know. It must be able to form relationships with organisations that can fill that knowledge gap.
- Companies will continuously be creating new services based on their digital assets (information and processes). Intermediaries will emerge within the value chain, others will be forced out. Old and new intermediaries will fight for position.
- Commoditisation of products and services will move farther up the value chain until ultimately everything upstream of the customer will be a commodity in the eBusiness arena, the organisation that owns the relationship with the customer is king. This means that companies will be fighting to be network or knowledge masters. Companies that fail to do so will face becoming low margin commodity producers.
- While rolling commoditisation will squeeze companies from upstream in the value chain, customers will continually use knowledge technology to squeeze margins from the downstream end. Confronting rolling commoditisation, intermediaries and increasingly knowledge-enabled customers, even network and knowledge masters will be hard pressed to maintain competitive advantage over long periods of time.
- All of this will lead to an environment where business strategy must be very flexible, where companies need to disintegrate over time, forming small nimble knowledge based companies to fight for position close to the customer.

The role of knowledge management in eBusiness and customer relationship management

eBusiness changes the rules of competition, levelling the playing field among large and small organisations and reducing the importance of issues such as physical distance. It leads organisations to re-examine their assumptions governing supplier relationships, time-to-market and the value propositions they present to customers (PricewaterhouseCoopers, 2000d).

5.2.7. Guiding principles for developing a strategy in the eBusiness environment

Evans & Wurster (2000, pp.222-229) suggest a dozen guiding principles that may help with the task of rethinking strategy in the era of deconstruction:

- No business leader today can presume that the business definitions in his or her business will still be valid a few years from now. Deconstruction means that traditional business definitions cannot be taken for granted. Suppliers, customers, industry, value chain, supply chain and relations with employees and owners all become variables – they are reshaped by shifting economics of information and by the strategies pursued by players who exploit those economics. The process of deconstruction is continual. Progressive advances in richness and reach will challenge successive business definitions with the possibilities of further deconstruction.
- Deconstruction is most likely to strike in precisely those parts of the business where incumbents have most to lose and are least willing to recognise it. The new opportunities for value creation lie where the underlying economics are shifting – managers need to focus on these opportunities. The products, segments, or functions where the economics are shifting, are likely to be precisely the areas where disproportionate value is created. Deconstruction has to create new value.
- Waiting for someone else to demonstrate feasibility of deconstruction hands over the biggest advantage a competitor could wish for: time. In Internet time, everything is a sprint. It is dangerous to deny deconstruction due to a history of previous failures by others. When pre-emption matters and new businesses evolve at breakneck speed, the first competitor that gets it right will have significant competitive advantage. By definition the first competitor ignored the evidence of a prior, unbroken series of failures. Fast follower strategies fail.
- Leaders need to wrestle with the full range of possible patterns of deconstruction. Businesses can be deconstructed in four possible ways. Some will break up into discrete components of the value chain, unlinked by the melting of informational glue that bonded them together. Others will deconstruct along their vertical links with suppliers, customers and consumers, when mutual relationships, stable franchises, and intermediary roles are undermined by reach. Others will see the segregation of information flows into businesses in their own right. Still others will deconstruct in their organisational relations, as employees, investors and entrepreneurs renegotiate roles, risks and rewards.

The role of knowledge management in eBusiness and customer relationship management

- Strategy really matters. Strategy creates economic realities. Whether a standard creates or does not create critical mass, who pre-empts whom, and who allies with whom, determine not just the path of competitive jockeying, but the end result itself. The interplay of strategies among competitors has an autonomous impact in shaping the outcome.
- The value of winning will escalate, as will the cost of losing. As a result of unbundling, the economics of businesses after deconstruction will often be simpler and therefore more powerful. Information flows, in particular, will tend to become either valueless or monopolies, and it really matters to understand which. If, within a given business, there is room for only one winner, getting strategy right becomes really important. It is therefore important to do some non-traditional experimenting, pre-empting, and pursuing of contrary strategies simultaneously.
- The reconstructed business definitions will rarely correspond to the old. New businesses will emerge and agglomerate in accordance with their own competitive logic. Successful competitors will have to build or acquire fundamentally new capabilities, build alliances with companies in previously unrelated businesses, and merge aggressively for pre-emptive scale and scope. Underestimating the requirement for acquiring new capabilities and overestimating the value of existing capabilities is a common trap.
- The hardest step for an incumbent organisation is the mental one of seeing the business through a different, deconstructed lens and then acting on this insight. Mentally deconstructing the business sounds easy, until the practical implications become clear. The reaction of every organisation is resistance. That is when the incumbent blinks and steals an unmerited but devastating advantage.
- The subtler pitfall is co-option and passive resistance by a sceptical and self-preserving organisation. Organisations have an uncanny ability to subvert whatever undermines their historical structures of power and reward, even when the new direction is the official strategy.
- Strategy in a deconstructing world has to be generally right, but need not be specifically right, as long as the organisation maintains a capacity to learn from its mistakes. Strategy in the deconstructing world cannot be planned in the same ways as in the past. In conditions of high uncertainty, error is inevitable and people unwilling to make mistakes will get it right too late to claim any reward for their meticulousness. Strategizing has to be continuous, it has to be partially improvisational, and it has to be flexible enough to recognise errors when they have occurred, correct them and move on.
- Incumbents can be insurgents, if they choose. Incumbents do not have to think of themselves as incumbents: that is to presume precisely the static business and industry definitions that deconstruction denies. They can take some capability of theirs into the heart of someone else's businesses and blow it up. It takes clarity of visions and consistency of purpose. It requires organising and rewarding differently, perhaps even owning differently.

5.2.8. eBusiness obstacles and pitfalls

There are a variety of obstacles and pitfalls in the eBusiness environment. PricewaterhouseCoopers (1999b) has identified barriers to the use of eBusiness by small and medium enterprises. They are:

- Low customer eCommerce use.
- Security concerns.
- Legal and liability concerns.
- Low supplier eCommerce use.
- High technology cost.
- Limited knowledge of business models.
- Limited knowledge of technology.
- Not convinced of benefits.
- Concerns about telecoms services.
- Firm computerisation too low.

PricewaterhouseCoopers (1999b) has raised the issue that legal and liability issues are great barriers to eBusiness. Conducting business through electronic networks have raised numerous legal questions, including the legal status and enforceability of electronic contracts, legal jurisdiction of international electronic commerce transactions, intellectual property rights and copyright protection for digital content, privacy of personal data, and the validity of electronic "evidence" in legal disputes.

Deise et al (2000, p.162) have identified 15 eBusiness risks:

- Strategic direction.
- Competitive environment.
- Dependence on others.
- Security.
- Reputation.
- Culture.
- Technology.
- Governance.
- Project management.
- Operations.
- Tax, legal and regulatory.
- Human resources.
- Business process controls.

The role of knowledge management in eBusiness and customer relationship management

- Currency.

Finally Chu et al. (1999) mentions the customer's desire for immediate gratification and the difficulty of returning purchased items as pitfalls (Chu et al., 1999).

5.2.9. Value added by eBusiness

A whole chapter is dedicated to detail the value proposition of eBusiness later in this study. In summary to what has been discussed above, it is clear that eBusiness has gone far beyond a mere means of communication; it is a way to build lasting relationships and increased revenues in the process (PricewaterhouseCoopers, 2000d). Business to business marketplaces make existing processes more efficient by automating transactions and by reducing cost of interaction for both buyers and suppliers. These marketplaces also redesign workflow across business in a specific industry. These workflow redesigners gain additional efficiency through integration with effectiveness gains from redesign of processes (Kaplan & Sawhney, 2000).

The main value proposition is therefore based on efficiency and effectiveness improvements.

5.2.10. Statistics and interesting findings on eBusiness

A PricewaterhouseCoopers study (1999c) provides interesting statistics gained from a survey:

- 89% of organisations participating in the survey have eBusiness strategies, but over half of the respondents said that they didn't know which proportion of their usual customer base was online. It points to a mismatch between strategy and a sound understanding of the customer.
- Sectors that are most aware of eBusiness are banking and securities.
- The biggest barrier to business initiatives is a lack of understanding.

PricewaterhouseCoopers (2000d, p.145) summarised their top five findings of an eBusiness survey. Firstly most executives identified their top challenges as meeting customer demands and managing technology, especially technology change and integration issues. The second finding is that executives primarily aim to gain competitive advantage through premium service, process streamlining, and cost control / efficiency. These executives showed an awareness of eBusiness, but only one in five ranked it as a source of competitive advantage. The third finding shows that executives have taken three stances towards eBusiness. One third of leaders are innovators, another third have decided to enter the field, but didn't know when, and the other third are undecided. The fourth finding shows that nine out of ten companies that participated in the survey are surrounded by eBusiness in the form of e-mail,

The role of knowledge management in eBusiness and customer relationship management

Internet websites, and intranet use. The majority of respondents indicated that they would expand their range of eBusiness tools. The fifth and most important finding is that most executives are measuring eBusiness success through not only improved quality of information, but also increased loyalty of customers.

PricewaterhouseCoopers (2000c) published some interesting findings after doing a study on eBusiness in large corporates in Europe:

- 26% of respondents would like to migrate more than 90% of existing customers to eBusiness, but only 1% of businesses have achieved this to date.
- Only 11% have fully implemented eBusiness solutions and as many as 48% are only at the early web site development stage.
- The aims of existing business strategies are defensive, with only 7% of businesses using eBusiness to strike into a new sector.
- Only 4% of organisations are investing more than 10% of revenues in eBusiness development, though this is expected to grow to 15% in three years time (2003).
- Business to consumer organisations consider increasing customer satisfaction and loyalty through the web and creating an appropriate brand strategy as the most significant challenges in creating eBusiness value. Business to business organisations consider achieving operational and cost efficiency improvement through the web as the greatest challenge.

5.2.11. Relevant quotations from the literature

The essence of the nature of business can be captured by the following quotes from the literature:

- "Business-to-business e-commerce in the US alone is estimated to exceed \$1 trillion in 2003. That's ten times larger than business-to-consumer e-commerce. When companies transform into e-businesses, will have to be online too. Large companies and entire industries will form electronic business communities. If you're not connected, you won't survive and thrive" (E-business transformation, 1999).
- "But a greater vulnerability than legacy assets is a legacy mindset. It may be easy to grasp this point intellectually, but it is profoundly difficult in practice. Managers must put aside the presuppositions of the old competitive world and compete according to totally new rules of engagement. They must make decisions at a different speed, long before the numbers are in place and the plans formalised. They must acquire totally new technical and entrepreneurial skills, quite different from what made their organisation (and them personally) so successful. They must manage for maximum opportunity, not minimum risk. They must devolve decision-making, install different reward structures, and perhaps even devise different ownership structures. They have little choice. If they don't

The role of knowledge management in eBusiness and customer relationship management

deconstruct their own businesses, somebody else will do it to them" (Evans & Wurster, 2000, p.66).

5.3. Customer relationship management

5.3.1. The need for customer relationship management

The need for customer relationship management is clearly illustrated in the literature:

- "The customer economy is characterised by incredible customer expectations for speed, ease and quality of interactions. The fact is, customers today want what they have always wanted: choice, convenience and responsive service with a personal touch. The difference is that the sheer volume and complexity involved in delivering those benefits have changed dramatically. In the past, companies served a limited number of customers through storefronts and over the telephone. In the new customer economy, the contact channels used to interact with customers have multiplied, encompassing both assisted and self-service options. To compete effectively, companies must now be able to deliver the same consistent, personalised, high quality service across all interactions and all communication channels: Web, e-mail, chat, voice over IP, phone and fax. For example, today's customers want to use the Web to help themselves to information, compare prices and buy products and services. But they also want the option to send an e-mail or pick up a phone when they have a question, as well as fax an order or even chat online with a sales or service representative. Above all, they want to effortlessly switch channels at any point without breaking the thread of communication, being penalised for choosing the wrong channel or losing the entire history of their interactions when moving between channels" (Guleri, 2000).
- "Historically speaking, relationship management, as an art practiced by skilled individuals, is probably as old as business itself. Information about each customer was kept in some type of manual filing system...Later information systems became more and more automated and voluminous, until they evolved into giant data warehouses or more specialised data marts. Yet the basic task of managing customer relationships remains unchanged. The most effective personal bankers, stockbrokers, and insurance agents have always been those who achieved a deep understanding of their customers and were able to fulfil and even anticipate their needs" (Ernst & Young, 1999d).

5.3.2. Customer relationship management as integral part of the business strategy

Customer relationship management can only operate effectively within a well-defined marketplace that is determined by the organisation's business strategy. This foundation establishes the organisation's target market, its high level segmentation scheme for attacking the market space, the value propositions that it will offer customers in each of the segments,

The role of knowledge management in eBusiness and customer relationship management

and the operating model that will deliver on its value proposition (Ernst & Young, 2000a).

Customer relationship management is, however, approached differently by different organisations. Some equate it with technologies such as data warehousing and data mining. Others view it from the perspective of creating and maintaining strong relationships with valued customers. Others define it as a tactical approach of segmenting customers and creating a value proposition for each segment (Ernst & Young, 1999d). Ernst & Young is of the opinion that a lot of the confusion surrounding customer relationship management results from a lack of strategic focus. Many companies are going ahead with tactical approaches that are not rooted in a well-developed business case. An example is that of organisations buying data warehouses without understanding the limitations of the technology.

Due to the fact that customer relationship management is closely tied to the business strategy, it will also change dynamically with the business strategy according to changes in the market (Bergeron, 2001).

5.3.2.1. Process approach to customer relationship management

Business processes are closely tied to the business strategy, therefore a process approach is appropriate to tie the customer relationship management strategy to the business strategy.

Customer relationship management requires a process-centred approach. The trend is towards managing all activities related to identification, attraction and retention of customers in an integrated fashion, i.e. managing them as a process that cuts across functional divisions (Patmore & Renner, 1997).

Customer relationship management should have a process orientation in general, according to Patmore & Renner (1997). It must be based on a process for identifying and targeting the customers most profitable to the organisation. Organisations should have processes to shift resources to serve these customers, and focus less on high maintenance, low margin prospects. A characteristic of such a process orientation is a focus on overall outcomes, rather than individual tasks. Such an approach means that customer relationship management is centered on the customer, rather than marketing or sales functions. Measurement and feedback drive the process. The organisation bases their actions on the objective of providing customer service, rather than on functional area.

The role of processes in implementing customer relationship management is of vital importance (Handen, 2000a, p.17). Identifying these processes are not very difficult – the difficulty lies in getting buy-in, developing performance measures to measure the

The role of knowledge management in eBusiness and customer relationship management

effectiveness of the processes and implementing technology to support these processes and to enforce their use. The customer relationship management process is the order in which direct marketing activities are executed. It is not complicated, but emphasises speed to market. Re-engineering therefore mostly concentrate on time saving in marketing activities. However, problems that arise most frequently are attributable to measuring and evaluating the process itself. Most organisations focus on acceptance rates of products and services, leading to a loss of focus on continuous improvement to their own processes. The role of organisational structure is equally important in implementing customer relationship management. A lot of organisations' marketing is media based, so they now have to make a switch to direct marketing, which can prove to be a challenge. Creating cross-segment marketing teams is essential for the purpose of learning and executing new styles of campaigns (Handen, 2000a, p.17).

5.3.3. Customer relationship management strategies

It is fundamental to understand that customer relationship management is not a product, but a strategy (Boulton, Gupta & Benton, 2000, p.295). The researcher agrees with this viewpoint – customer relationship management is not about tools like Siebel (although they have a role to fulfill), but about developing a strategy around the organisation's customers. To realise customer relationship management, organisations must foster behaviour, as well as implement processes and technologies that support co-ordinated customer interactions throughout all customer channels. Customer relationship management consists of five elements, namely strategies, processes, tactics, skill sets and technology (Nelson & Berg, 2000). The researcher is of the opinion that all five of these elements are equally important.

There are six types of strategies that make up a customer relationship management strategy: channel, segmentation, pricing, marketing, branding and advertising (Handen, 2000a, p.15). According to Gulycz (2000, p.330), providing and sustaining quality customer relationship management requires the appropriate mix and level of people and skills, structure, service and product offering, market strategy, process and infrastructure and enabling support. Channel, segmentation and pricing have the biggest impact. Segmentation will determine how clients, and therefore the marketing function, are structured. Pricing is the single greatest differentiator in a commodotised market and will determine more than half of the value of that offer. The channel strategy determines how the offer will be conveyed to the customer. It is important to revisit all of these strategies frequently. Difficulties in implementing and evaluating campaigns may be indicative of the need for changes (Handen, 2000a, p.15).

A customer relationship management strategy implementation requires areas of focus, namely: customer strategy, channel and product management strategy, and infrastructure

The role of knowledge management in eBusiness and customer relationship management

strategy (Brown, 2000a, pp.xxi-xxii):

- Customer strategy

The organisation needs to determine the key customer segments based on current and future customer needs. Unique customer groups with unique requirements have to be identified. Customers that should be offered unique products and services must be identified. The organisation also needs to determine whether any strategies are in place to ensure customer loyalty and retention, as well as for establishing win-win relationships with customers.

- Channel and product management strategy

Organisations need to determine whether their customers prefer to receive products and services through a particular channel of distribution, such as Internet, fax or mail, as well as the organisation's preferred channel to interface with the client. Organisations also need to determine the costs associated with the use of each channel. They also need to look at which channels are the preferred channels to distribute products and services through to customer segments, and they need to be on the lookout for channel conflicts and determine how they will address them when they arise.

- Infrastructure strategy

The organisation needs to determine what common technology infrastructure is required, as well as what technology will be required to create a learning organisation. They also need to understand what new customer relationship management processes, practices and tools are required, as well as what organisational and people competencies are needed to successfully implement their customer relationship management system.

Brown (2000c, pp.71-78) describes the five pillars for strategic customer care, which can be seen as elements of a customer relationship management strategy (also see Figure 17):

- Profiling customers

One of the basic principles of strategic customer care is that some customers are more valuable than others. Organisations looking at strategic customer care have profiled their customers in the most sophisticated way possible to enable them to focus on those customers that show the most promise and to enable them to evolve the relationship with the customer to levels of mutual respect.

- Segmenting customers into natural groupings

Segmentation is a key practice in the evolution of an organisation. Organisations need to see the need for differentiated service, using a robust segmentation strategy and tools that assist in identifying customers that deserves increased attention. Organisations can rank customers according to a list of critical criteria and score clients against the criteria. Criteria can include for example willingness to become a partner, the organisation's current share of the customer's business, current gross profit achieved from the customer, potential to up-sell or cross-sell, potential of customer to represent a significant share of the organisation's business.

The role of knowledge management in eBusiness and customer relationship management

- Researching customers' industries and concerns

Customer loyalty is not enough to ensure growth and success. Organisations should have rich knowledge of their customers' worlds. Technology is used to uncover and respond to customer needs, i.e. customer needs can be anticipated. This means that the customer does not need to look elsewhere for products and services, thereby creating a mutually beneficial relationship.

- Investing in technology to provide solutions to customers

Technology is used to gain information on customer needs. Organisations focus on enterprise applications that share knowledge, react more responsively to their customers and permit the organisation to be more proactive. Customer longevity is a critical success factor. Various technologies are used. Proactive database marketing systems are used to identify those accounts that should be more receptive to specific products and services and that leverage the organisation's information sources. Executive information Systems (EIS) are used to sort data and present it in a simplified manner, allowing the organisation to be more responsive to changes and shifts in market sectors and customer profitability performance. Application tools specifically geared to support the functions of the organisation's sales force are used.

- Managing customers through consistency of treatment

Strategic account management is essential. Individual action plans should be created for each segment, based on information gathered about customers and their unique needs. Gulycz (2000, pp.325-328) is of the opinion that a customer relationship strategy needs to include an assessment of where the organisation is with respect to three areas:

- Understanding the customer

This includes issues like who the customers are and what their needs are; customer purchasing patterns; impact of marketing and/or communication efforts; match between services and products and customer need; current levels of customer satisfaction.

- Understanding the organisation

This includes issues like people and skills available to satisfy customers; organisational alignment; infrastructure required; creating a market strategy; determining the products and services customers want; implementation of required systems and processes to be more customer responsive; performance measures; proper balance of controls.

- Commit to continuous improvement in quality service

This includes establishing customer relationship management champions; embedding customer service beliefs; defining and developing customer expectations and standards, as well as balanced scorecard, customer service surveys, and a complaint management process.

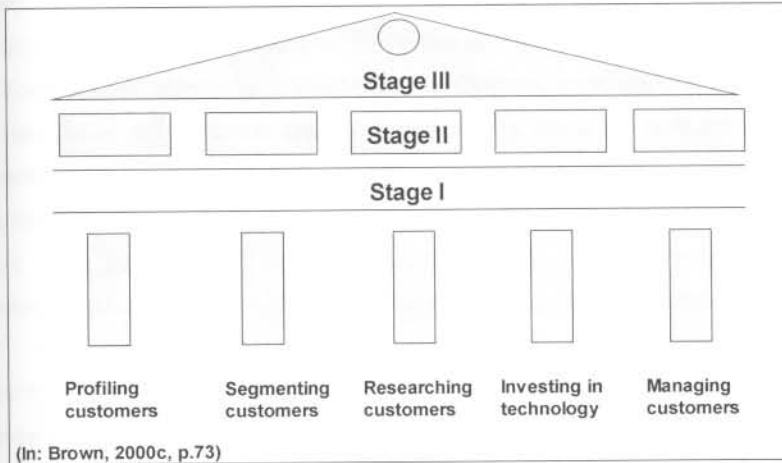


Figure 17. The five pillars of strategic customer care

In general, customer relationship management strategies differ between established and new organisations. The established company may be concerned about retaining customers, deepening existing relationships, and gaining new customers. The new organisation may focus exclusively on building market share by attracting and winning new customers. New companies have a distinct advantage in terms of technology use, as they do not have to consider integration of legacy systems like established organisations have to do (Ernst & Young, 1999d).

Customer relationship management strategies also need to take into account the pros and cons of old versus new customers. "...it is more profitable to keep existing customers than to acquire new ones. During the normal development of a customer relationship, the cost to market and sell to these customers gradually declines, and the potential for gross margin improvement increases" (Anderson & Jacobsen, 2000, p.61). Anderson & Jacobsen (2000, p.62) are of the opinion that in year one of customer acquisition, costs of the acquisition exceed gross profit potential. Over time, depending on the length and benefit of the relationship to both parties, profit exceeds cost. Cost per customer acquired is in fact reduced, as existing customers become advocates and create positive word-of-mouth advertising.

5.3.3.1. Segmentation

Segmentation can be done in a variety of ways, depending on the requirement of the customer.

The role of knowledge management in eBusiness and customer relationship management

Historically segmentation focused on a particular product or market, but recently organisations have used it to consider the value of the customer to the organisation. Today organisations are categorising and marketing to customers according to the customers' needs. Developing an accurate idea of those needs could be difficult. Organisations use segmentation effectively, organisations need to develop the right set of formulas for modelling the behaviour of customers. Organisations are often too nebulous and cannot fit customers to categories. This occurs when the organisation relies too heavily on projected behavioural traits, rather than on historical patterns and demographics (Handen, 2000a, p.16).

There are four basic situations in a customer relationship around which segmentation can be done (Anderson & Jacobsen, 2000, p.65):

- Customer is loyal and profitable

The organisation focuses on deepening the relationship, strengthening loyalty and optimising profitability through cross selling and up selling.

- Customer is loyal but unprofitable

The organisation should maintain the relationship and secure loyalty because the customer may still become profitable through cross selling and up selling. If not, the customer should be dropped.

- Customer is profitable but not loyal

The organisation should focus completely on strengthening the relationship and building loyalty.

- Customer is not loyal – and unprofitable

In this case it is worth considering passing the customer on to the competitor.

According to Assabi (2001), customers can be segmented according to their level of loyalty:

- Partner: someone has the relationship of partner.
- Advocate: someone who actively recommends the company to others.
- Supporter: someone who likes the organisation, but supports it passively.
- Client: someone who has done business with the organisation on a repeat basis but may be negative, or at least neutral towards the organisation.
- Purchaser: someone who has done business just once with the organisation.
- Prospect: someone whom you believe may be persuaded to business with the organisation.

In an Ernst & Young survey (Ernst & Young, 1999d), participants indicated that they segmented their customers as follows:

- By products and services (36%).
- By profitability of customers (25%).
- By total assets / income (21%).

The role of knowledge management in eBusiness and customer relationship management

The rest of the organisations had specialist segmentations for the remaining 18%. The survey also showed that North American firms place significant emphasis on customer profitability and product / service segmentation, while Europe shows a bias towards product / service segmentation over customer profitability.

Many organisations are providing multi-tiered service levels, providing a base level of customer service to core customers and expanding it in proportion to customer value. Differentiating between classes of customers based on their economic profitability may carry the risk of disenfranchising some customers and being branded elitist. Organisations can maintain fairness by publishing service policy openly and promoting customers to higher levels where it is warranted (Gordon & Roth, 2000, p.32).

Segmentation can be automated, which holds certain advantages, but also disadvantages. Automated segmentation is advantageous because it can answer ad hoc questions very quickly, e.g. number of customers of a certain age who has purchased product X. The disadvantage of automated segmentation is the cost of gathering the information, increased complexity and limited return on investment. The cost of gathering data has to be weighed against the possible profitability of the customer (Bergeron, 2001).

5.3.3.2. Channel strategy

Leading edge organisations are building synergy between channels and capitalise on the advantages of each of the channels to form seamless, efficient organisations. Some organisations also offer customers incentives to move to more cost effective channels (Gordon & Roth, 2000, pp.35-36).

The proliferation of old and new channels is allowing unprecedented customer access, but the same proliferation is simultaneously causing new problems. Channels are often not integrated with other initiatives or with existing channels. The lack of integration results in confusion, inefficiencies and duplication of effort, as the channel structure perpetuates the segregation of information in separate silos. Understanding which channels an organisation's customers will use, how frequently they will use it, and which channels they truly value is the core of any channel management strategy. Once the drivers are understood, the organisation can shape an effective program, for example through making available channels that customers really want with nominal discounts, while perhaps charging nominal fees for channels that are out of the norm and that most customers are indifferent about (Ernst & Young, 1999d).

5.3.3.3. Product / service expansion

In response to growing customer expectations, more companies are expanding their services to a 24-hour, 7 days a week service, supported by knowledgeable, trained people. Fed-Ex, for example, empowers their customers by allowing them to track packages on their website, thereby giving them information as and when required (AT Kearney, 2000a, p.5).

Product based expansion is the tool most commonly used to customise the digital customer experience because it is easy to apply and is generally true across numerous customer segments. An example is a sporting site offering a soccer jersey to a customer. They may also offer shorts, socks, and shoes. Group level customer expansion is more complex than product based expansion. It makes assumptions about individual values based on interactions with similar customers. It is more complex because there has to be an understanding of trends and differences across customer segments. Amazon.com, for example, has purchase circles where users can see what other customers are purchasing, who belongs to similar groups. Individual level expansion is about personalisation and is the most powerful tool to expand the digital customer experience. It is based on what a particular customer is buying. Personalisation should be based on what a customer has bought before, and what they are currently buying (AT Kearney, 2000).

5.3.3.4. Branding

Approaches to brand management will increasingly vary, according to customer loyalty. For brands that engender high loyalty levels, the emphasis will be on building customer relationships, cultivating mystique around the brand, tailoring products and services to customers' life stages, and differentiating the product through added service offerings. Brands that engender low levels of loyalty may face strategic decisions to collaborate with category managers (AT Kearney, 2000a, p.21).

5.3.3.5. Customer relationship management marketing and advertising campaigns

Handen (2000a, pp.9-11) comprehensively describes the anatomy of a customer relationship management / marketing campaign. Handen says that customer relationship management kicks off with the development of a marketing strategy based on factors that affect the organisation, e.g. regulatory, societal, market, and technological factors. Part of the strategy is to determine how customer relationship management decisions will affect marketing behaviour. The organisation then starts segmentation within its current and prospective customer base, using the marketing strategy as a foundation. Segmentation is a way of

The role of knowledge management in eBusiness and customer relationship management

characterising groups of customers with common characteristics for the purpose of delivering a targeted marketing message. Once the segmentation has been completed, a campaign will be developed to target one or more of these segments.

In building a customer relationship management strategy, the organisation decides what type of products will be included in the campaign, how it will be priced and promoted, and to whom it will be offered. Marketers also need to consider which sales channels are most appropriate. The campaign is then evaluated in terms of profitability, after which the content of the campaign is created. While the content is being created, the organisation defines which customers will be targeted. The customer database can contain a list of existing customers, customers who have recently defected, prospective customers, customers of affinity partners or a combination of all of these. These customers would have been segmented at this point in time. After selecting the target customers, the campaign is tested on a small number of customers, after which changes are made if required. The final step is roll-out, lead lists are generated and sent to the sales channels, final promotional and advertising material is produced and distributed, etc. The individual channels then execute the campaign and evaluate the responses (positive and negative responses).

There are four categories of customer relationship management campaigns (Handen, 2000a, pp.11-12). The first is win back and save. This is the process of convincing a customer to stay with the organisation at the point they are discontinuing service, or convincing them to rejoin once they have left. A win back campaign is very sensitive to time. Research indicates that a customer is most likely to be won back if contact is made within the first week after defection. Selectivity is also essential for a win back campaign. Leading organisations often filter their win back prospects to exclude customers who have frequently switched or whose usage is low. In recent years, organisations have often ignored customers who have a significant decline in usage or who discontinued some services as long as they remained customers. The organisations assumed that these customers were merely switching products, and there has been no way to disprove the theory. Recent work in this area has shown that many of these consumers are either reducing overall usage or migrating to a competitor's product. Some organisations are now including reduced-usage customers and partial disconnect into their portfolio of win back customers.

The second type of campaign is prospecting (Handen, 2000a, p.12). Prospecting is the effort to win new, first time customers. The three most critical elements of a prospecting campaign are segmentation, selectivity and sources. It is essential to develop an effective needs-based segmentation model that allows the organisation to effectively deliver on target. Selectivity is as important to prospecting as it is to winning back. Needs based segmentation defines what the customer wants from the organisation and profit based segmentation defines how

The role of knowledge management in eBusiness and customer relationship management

valuable the customer is and helps the organisation decide how much it is willing to spend to get that customer.

The third type of campaign is loyalty (Handen, 2000a, p.13). This category is the most difficult to measure. The organisation is trying to prevent customers from leaving and uses three essential elements – value based and needs based segmentation and predictive churn models. Value based segmentation helps the organisation to determine how much it is prepared to invest in retaining a customer’s loyalty. It is possible that the organisation will invest nothing in customers that are marginally profitable and encourage unprofitable customers to leave (see Figure 18). Once the customer has passed the value based screening, needs segmentation can be used to offer a customised loyalty program. Most of these programs are based on the customer’s revenue level and not tailored to their segments, though. As organisations focus more on the needs of individual customers, they find that they are able to achieve the same level of loyalty with less investment.

The fourth type of campaign is cross sell / up sell (Handen, 2000a, p.14). Customer relationship management is, amongst other things, aimed at getting the customer to spend more with an organisation. The organisation would therefore like to identify complimentary offerings that the customer would like. The nature of this complimentary offering would be determined through needs based segmentation, usage patterns, and reactions to previous contacts. Up selling is similar, but instead of offering a complimentary product, the organisation offers an enhanced one. An example is offering ISDN lines instead of normal telephone lines. Cross sell / up sell campaigns are important because the customers targeted already have a relationship with the organisation. When customers accept these offers, they will be more profitable to the organisation.

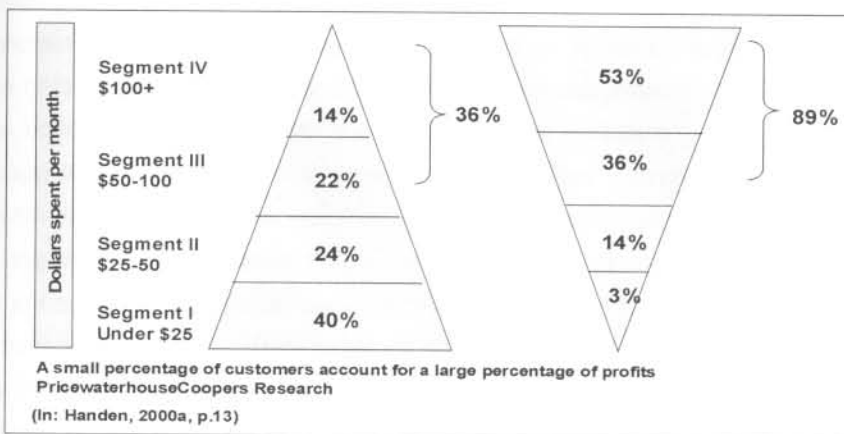


Figure 18. Value-based segmentation

5.3.4. Customer relationship management phases

The customer relationship management process can be divided into three phases:

- Getting to know the customer

Anderson & Jacobsen (2000, p.59) describe this phase as the courtship phase, where the organisation must get to know the customer. In this phase, loyalty is not strong because no relationship exists. The customer deals with products and prices and may easily switch to the competitor if their products and prices are better. A good example is the fierce price war in the mobile phone industry. Brown (2000c, pp.69-70) is of the opinion that in this phase the main focus is on customer acquisition. Attention is given towards building a customer base through the use of technology and initiative specific training to increase the effectiveness of sales people. In this phase companies tend to spend a lot of time on best practice benchmarking, analysing customer care processes and conducting initial customer research.

- Building a relationship with the customer

Anderson & Jacobsen (2000, p.59) describe this phase as the relationship phase. In this phase affection grows and a solid relationship is created. The enterprise engages with customer attitudes before and after the purchase. Loyalty is no longer based on product and price alone – the organisation listens to the customer as he or she gets to know the organisation. Loyalty is no longer seen as fleeting and both parties can see benefit in continuing to grow the relationship. Brown (2000c, pp.69-70) sees this phase as the customer retention phase. The focus now shifts to maximizing the customer relationship. Segmentation starts to serve clients more effectively.

- Maintaining long-standing relationships

Anderson & Jacobsen (2000, p.59) describe this phase as the marriage phase. In this phase a long lasting relationship is mutually agreeable, and both parties become inextricably linked. Loyalty is based on a high degree of satisfaction and the customer will get personally involved in the organisation. The feeling of customer satisfaction increases together with loyalty towards the organisation. This is the beginning of customer dependency. For the relationship to continue both the organisation and the customer must receive a positive benefit, even though disappointments will be experienced by both parties during their journey. Brown (2000c, pp.69-70) is of the opinion that this phase is about strategic customer care. During this stage the organisation realises that it cannot be all things to all people. While most customers are potentially profitable, some hold a more long-term promise than others. The ability to predict who these customers are is a required skill for strategic customer care. During this phase a core level of service is provided for all customers, and a distinctive, optimised level for their best customers. During this phase the organisation is dependent on the business for its success and vice versa.

5.3.5. Types of customer relationships

Ernst & Young (1999d), identifies three types of customer relationships. The first is transaction based relationships, the second is a relationship that includes an ability to provide technical advice in addition to transactions and the third is a full partnership based on extensive knowledge of the customer and an ability to provide transactions, technical advice, and a long term advisory role based on commitment to the customer's life goals. Each of these three types of relationships implies a general class of product offering. The transaction relationship implies a single product, the technical advisory relationship accompanies product and service bundles and partnership involves a theme-based array of products and services that change according to the customer's stage of life. Partnerships are built on a sense of trust. A partnership is highly complex, because it requires the customer to accept the advice given by the advisor. This level of trust is time consuming, intangible and difficult to nurture. An advisory relationship is a two-way street with mutual give and take.

5.3.6. eCRM

Frook (2000) predicts that eCRM systems will be built separately from existing, internal customer relationship systems because organisations cannot afford to come up with the latest Web advance. The author predicts that existing customer relationship management systems and eCRM systems will come together in a single stand-alone platform.

eCRM systems should include the following (Guleri, 2000):

- Multiple functions: sales, service/support and marketing.
- Multiple users: employees, customers, partners and vendors.
- Multiple connection channels: web, e-mail, chat, voice-over IP, phone and fax.
- Enterprise integration.
- Internet-class scalability.
- Actionable business intelligence, a flexible design environment.

The value of eCRM is explained by Guleri (2000): "The next generation of eCRM software is built from the ground up on an Internet-native architecture that provides both dramatic improvements in the speed and ease of deployments and a true blended application for customer care. These eCRM infrastructures can allow organisations to manage all marketing, campaign management, sales and services functions through a single application. All employees, regardless of function, can now work from the same application through tailored interfaces. They have access to the same set of customer information, delivering on the promise of a complete view of the customer. Additionally, because only a Web browser is

The role of knowledge management in eBusiness and customer relationship management

required to access the application, these innovative eCRM solutions empower companies to more easily extend the application out to partners, resellers, vendors and customers".

5.3.7. Front office applications

Customer relationship management front office applications fall into three categories:

- Customer service and support applications

These applications, which allow customer service representatives to track and manage customer requests, are the most mature applications. It includes traditional systems like call centre automation, customer care platforms, billing systems, automated e-mail management systems, customer care workflow applications, and POS support and teller automation tools. The ability to offer customer self-help options are emerging as a critical need. Customers are increasingly demanding direct access to their accounts and account support through the Internet. Therefore organisations are increasingly using a new class of front-office software that allows customers to gain access to their accounts, as well as customer support and marketing 24 hours every day of the week.

- Sales force automation

This type of tool helps salespeople manage their prospects and customers. It also enables managers to develop more accurate sales forecasts, which helps to increase the effectiveness of each customer contact.

- Enterprise marketing automation

This software enables marketing departments to generate leads, run marketing campaigns, and determine the campaign's effectiveness. Enterprise marketing automation is often referred to as a campaign management system, a business process that manages the lifecycle of a marketing campaign.

5.3.8. Customer relationship management outsourcing

Organisations have an option to outsource customer relationship management. Boulton, Gupta and Benton (2000, p.304) have a strong view that there is a downside in doing this. "World class companies have realistic expectations from outsourcing. They know that even though a vendor may be sufficiently capable of handling their day-to-day customer care activities, they cannot and should not abdicate customer relationship management to that vendor. They have to maintain a close watch on their customers' needs and expectations and measure how effective the vendor is in fulfilling those expectations. Moreover, in a dynamic business environment, customer needs are apt to change frequently as new products – and hence, new customer care programs – are introduced in the marketplace. Such changes are best managed by vendor in-house managed staff" (Boulton, Gupta & Benton, 2000, p.304).

The role of knowledge management in eBusiness and customer relationship management

5.3.9. Industry focuses

Customer relationship management has a different impact on different industries. According to Dull (1999) it has the biggest impact on the communications industry, followed by the chemical industry. It has the least impact on the retail industry.

5.3.10. Customer relationship data

The customer relationship management process depends on data. Concentrating on creating a single, logical, integrated database is the most important technical consideration. Other issues to consider are software for the database, data mining and decision support and campaign management tools, as well as call centre hardware and software. The biggest technology problem for many organisations is the set-up of the databases. Organisations often create multiple separate databases to support data mining, campaign management and call centres. This process is time consuming, expensive and difficult to reconcile (Handen, 2000a, p.16).

The customer data can be limited to demographic information, such as name and address, contact details, and product or service purchase history. This level of detail may be sufficient for some purposes, such as contracting customers who have purchased an older model product of a much improved model. However, the ideal profile may include additional information, including birth date, educational level, family and marital status, special interests, occupation, lifestyle and vacation habits. Such information may be industry specific. The profile may also include information on the customer lifecycle, which parallels the product lifecycle. By adequately profiling the customer lifecycle, the company can pro-actively offer appropriate products and services to its existing customers to extend the company-customer relationship. Dell, for example, can use customer information pro-actively e.g. warning customers of potential problems with software and hardware. An example was when Windows 2000 was launched. Many Dell laptops could not use the operating system without upgrading software drivers to the CD-ROM drives and peripheral hardware. Dell proactively called customers with information on websites that could assist them in solving Windows 2000 related problems, saving customers calls to customer support (Bergeron, 2001).

5.3.11. Relevant quotations from the literature

Adopting a customer relationship management strategy and achieving a customer process is a long-term process, not an event. "Success is a matter of degree as the institution moves along the continuum from a product to a customer orientation" (Faulkner & Gray, 1999). The essence of customer relationship management is captured in the following quotations from the literature:

The role of knowledge management in eBusiness and customer relationship management

- "The new electronic age of CRM means putting on the Web all those business functions that have anything to do with customers. These functions include everything from manufacturing to marketing, from sales to payment processing, support and beyond. Savvy business leaders today understand that the Web is the meeting place for customers, business partners, and others who contribute to the enterprise knowledge base" (Lent, 1999).
- "A market-intelligent enterprise...recognises that customer service is the face the company presents to its market. That organisation approaches the function more scientifically, first establishing its belief system, then designing a framework for customer service that reflects the vision the company wants to project. The company designs service so that at each touch point the customer experiences positive and consistent contact. Performance must meet customer expectations. A client who is informed that it may take one or two billing cycles before an address change appears on the bill will more likely accept that time lag graciously than one left guessing how long it will take" (Gordon & Roth, 2000, p.31).
- "The chemical industry is not alone in its enthusiasm for CRM, with analysts predicting explosive growth for CRM applications. AMR Research...forecasts that the total market for CRM will leap from \$3.7 billion in 1999 to \$16.8 in 2003, and investment house US Bancorp Piper Jaffray largely agrees, estimating that the CRM market will grow at a compounded rate of 96% per year to hit \$17 billion in 2003" (Adding value through web-enabled CRM, 2000).

5.4. Conclusion

From the discussion above it is clear that knowledge management is an inherent part of the nature of both eBusiness and customer relationship management (see Figure 19).

5.4.1. The role of knowledge management in eBusiness

Just as knowledge management plays a large role in traditional brick and mortar organisations, it will play a large role in eBusinesses. It will, however, be more important and also requires a different approach and emphasis due to the fact that technology in the eBusiness environment causes the explosion of reach and therefore the explosion of the amount of knowledge available to and owned by an organisation. This makes the complexity of managing knowledge in an eBusiness different to that of a traditional bricks and mortar organisation.

The role of knowledge management in eBusiness and customer relationship management

5.4.1.1. Tacit knowledge versus explicit knowledge

Virtual communities are a prime feature of the eBusiness environment. A lot of tacit knowledge exchange takes place in these communities. It is essential that an organisation provides processes and mechanisms through which tacit knowledge created in virtual communities can be captured into explicit knowledge, independent of the physical location of the originator. Refer to section 5.4.1.6. on the impact of virtual communities on knowledge management.

5.4.1.2. Selling of knowledge

In the eBusiness world, knowledge is a commodity like any other and has a price. It differs from other commodities, however, in the fact that when knowledge is sold, both the seller and the buyer own the knowledge. This adds an interesting dynamic to the trading of knowledge and information, as well as to determining the value thereof. A mindset change is required by eBusiness to see that knowledge is a commodity and that selling of knowledge will become the norm.

The selling of knowledge in the eBusiness environment creates an environment for new roles in the knowledge brokering arena. These roles existed in traditional businesses, but their importance has grown in the eBusiness environment, and the reach of knowledge they broker is much bigger than before. Knowledge management organisations or entities can operate in a variety of formats (Hagel & Rayport, 1997b):

- Audience brokers

Audience brokers capture information about users across multiple websites to help advertisers reach the most appropriate audiences. Audience brokers also exist in the physical world, e.g. as print brokers in newspapers and magazines.

- Lead generators

Lead generators aggregate potential customers according to their profiles, preferences, and other criteria, translate this data into product and service related needs, and then direct customers to vendors whose offerings meet those needs. A prime example on the web is Auto-by-Tel, which provides a national network of 2 200 car dealers with consumer requests in exclusive sales territories in return for a fee per lead. Lead generators also exist in the physical world.

- Filters

Filters are likely to base their services on a flat fee per client. The fee will be limited due to customers' limited willingness to pay third parties to screen vendors on their behalf. An example of a filter is CUC International, a purchasing service that pre-selects vendors offering a range of products and services for a membership fee of \$59 per annum.

The role of knowledge management in eBusiness and customer relationship management

- Agents

Customers will save time and money by using agents that can perform quick and efficient searches for the goods they need and negotiate prices with vendors on their behalf. In return, they will pay vendors a proportion of the savings they make. However, agents may seek to implement a flat fee pricing model initially in an effort to maximise incentives for consumers to purchase through infomediaries.

- Proxies

Proxies take commission on the revenues they generate for their customers by selling customer information to vendors.

- Vendor-oriented infomediaries

Vendor-oriented infomediaries will be paid a commission to help vendors target and reach relevant customers.

5.4.1.2.a. Infomediaries

Infomediaries are knowledge brokers that operate in the eBusiness arena. The role of these infomediaries will become increasingly important as eBusiness is implemented on a wider basis globally.

Infomediaries may offer to screen commercial Internet messages and weed junk e-mail messages. The infomediary may also offer a service based on the use of software agents to search for knowledge on products and services as prespecified by users, or they may use personal agents to provide a personalised knowledge service according to an individual's profile. If a user started to download information on home remodeling, the agent would automatically determine where in the area supplies can be bought, what financing may be required, etc. The infomediary could also assist customers in obtaining more value from vendors, by providing vendors with a customer preference and transaction profile so that the selected vendors can tailor the product and service offering to the client. The infomediary may assist customers in receiving payment from vendors in return for this information. The infomediary would act as intermediary. For example, the infomediary could offer an airline information on frequent fliers across all airlines. The airline would then provide the infomediary with advertising information to be provided to the frequent flyers e.g. through the infomediary's website. The airline would pay a fee according to how the information is delivered to the frequent flyers, e.g. through sending them a message, having them click on an advertisement on the infomediary's website, or getting the frequent flyer to request more information. These fees would eventually be paid to the customer with the infomediary taking a management fee (Hagel & Rayport, 1997b).

The role of knowledge management in eBusiness and customer relationship management

Vendor-oriented infomediaries will predominate initially, because of vendors' need to exploit the information provided by the web. As websites proliferate and an oversupply of information becomes imminent, the need will arise for help aggregate customer information across fragmented sites – an important function for audience brokers. Lead generators will also play an important role by helping vendors exploit scale advantages in marketing and by aggregating sales prospects. Customer-oriented infomediaries are likely to surge ahead by providing the necessary tools to maximise the value of the information captured, and through an aggressive marketing campaign to make customers aware of the value of information they hold. When this happens, vendor-oriented infomediaries will find it harder to survive since customer-oriented infomediaries will pre-emptively capture customer information on which they rely, and deliver the services they used to provide more efficiently (Hagel & Rayport, 1997b). Customer-oriented infomediaries will consolidate in future, prompted by economies of scale and increasing return dynamics. There are two main economies of scale to be reached:

- Infomediaries with large customer bases will enjoy a bigger advantage than those with more limited customer bases due to collaborative agent / filtering technology. This technology can identify clusters of customers who display similar needs or interests. When certain customers within a cluster buy a particular product or service, the collaborative agent / filter suggests to other customers within that cluster that they may also like that product or service (Hagel & Rayport, 1997b).
- Consolidation will be driven by insight derived from building a customer profile that encompasses many product categories. Early customer-based infomediaries are likely to emerge with specific product categories, but they will find out that they can deliver more value by expanding those product categories, e.g. when a couple seeks information about baby food they may soon find them in a position where they would trade in a sports car for a family car. In this way, product-focused infomediaries will give way to broad-based infomediaries serving the full range of their customers' product and service needs (Hagel & Rayport, 1997b).

Hagel & Rayport (1997a) conclude with the following prediction on the role of infomediaries: "We suspect that infomediaries will initially specialise in managing information for general, albeit vertical, product categories. We could see some infomediaries helping customers manage only their financial data and others focussing on addressing their travel information. But we might also expect to see such vertical infomediaries evolve over time into broad-based partners with their customers, managing more integrated and comprehensive profiles. That is likely to occur both because customers will find it inconvenient to deal with multiple infomediaries and because infomediaries will be able to offer even more value to their customers by exploiting cross-category information in their profiles".

The role of knowledge management in eBusiness and customer relationship management

5.4.1.3. Organisational model impact on knowledge management

The level of complexity of knowledge management implemented by eBusinesses will differ according to the business model chosen by the eBusiness. Most eBusinesses will follow the collaboration model, which implies a high degree of complexity and interdependence. This complexity and interdependence arises due to the spread of the business over geographical boundaries, the integration of organisational supply chains, and the development of products and services across organisational boundaries, amongst others. All of these factors as mentioned require highly sophisticated knowledge management systems to enable processes, empower individuals to act, and to distribute and make knowledge available in a usable format, anytime, anywhere.

5.4.1.4. Technology in eBusiness facilitates knowledge management

The eBusiness is fundamentally built on technology. Information technology is an enabler to share knowledge in a variety of formats for transactional or other purposes. It acts in general as an enabler for knowledge management to allow identification of sources of knowledge, exchanging knowledge in virtual communities within or outside the borders of the eBusiness, and making decisions based on transaction or other historical knowledge. It is, however, important to understand that technology is only an enabler in the managing of knowledge, just like knowledge management processes, people and organisational culture.

5.4.1.5. New, innovative work environments

eBusinesses provide new, innovative environments to work and learn in due to an element of uncertainty and chaos in a changing business environment, where traditional brick and mortar businesses' days are numbered, but the new eBusinesses models have not been exactly defined yet. Currently there is no "standard" eBusiness model. This environment of chaos and uncertainty is the ideal environment for the creation of new ideas and knowledge, and it is therefore important to ensure the retention and capturing of this newly created knowledge for future reference and use, therefore knowledge management becomes essential.

5.4.1.6. Virtual communities and knowledge management

Virtual communities will increasingly have a significant role in eBusinesses. Virtual communities will facilitate knowledge sharing and creation across geographical and organisational boundaries. It will lead to an explosion in both tacit and explicit knowledge. A virtual community made up of people in different countries may, for example, participate in creating a new product or service through the sharing and creation of knowledge on a

The role of knowledge management in eBusiness and customer relationship management

technological platform. Such a design or creation can also take place in an industrial marketplace amongst virtual community members in different eBusinesses. Technology allows exchange and sharing of knowledge any time, anywhere in applicable formats. This promotes collaboration in virtual communities. Knowledge will have to be managed in these virtual communities to facilitate the creation, sharing and leveraging thereof.

5.4.1.7. Value proposition of eBusinesses is underpinned by knowledge management

The value proposition of eBusiness is underpinned by knowledge management, as set out below:

- Purchasing power is one of the value propositions of eBusinesses. Purchasing power is created through demand aggregation, which is only possible through an understanding of the market and the demand in the market. For such an understanding, the creation and harvesting of knowledge is essential and therefore knowledge management is required.
- Process efficiency and operational excellence is also achieved through the analysis of knowledge pertaining to processes and operational bottlenecks and understanding how the knowledge can be applied to improve these inefficiencies.
- Supply chain integration requires knowledge on lead times, inventory levels and logistics for integration purposes. This knowledge needs to be integrated and managed on a real-time basis.
- The value proposition of aggregated content is provided through managing knowledge on best practices, benchmarking, etc.
- Market efficiency is achieved through matching of buyers and sellers to improve market and product liquidity. The matching of buyers and sellers is based on an in depth knowledge of a specific market or industry. Knowledge around this market or industry needs to be managed on a continuous basis to enable the matching of buyers and sellers.
- Accelerated market growth can be achieved through the expansion of the customer base through, for example, better branding and utilisation of interactive channels. Both branding and interactive channels have a strong knowledge component to them.
- The last value proposition of eBusinesses is collaboration. Collaboration is based on the creation and sharing of knowledge, therefore knowledge management plays a part in formalising the process of creation and sharing of knowledge, and ensuring the retention of knowledge for future reuse.

The role of knowledge management in eBusiness and customer relationship management

5.4.1.8. Branding

Branding is an important factor in creating competitive advantage in the eBusiness arena, due to the fact that branding knowledge is often all that the customer is exposed to due to geographical separation. Branding is built on knowledge of a specific product or company through experience, reputation and advertising. This needs to be managed to ensure a consistent message to the market. It is closely tied to the concept of intangible asset management.

5.4.1.9. The role of knowledge in building and maintaining customer relationship management

The eBusiness that owns the relationship with the customer, is king in the eBusiness world. Customer relationships are built around knowledge of the customer, and therefore the management of this knowledge is crucial. The role of knowledge management in building and maintaining customer relationships is explained in more detail in section 5.4.2 below.

5.4.1.10. Richness / reach trade-off

Technology displaces the richness / reach trade-off. In the eBusiness world it is possible to provide or to obtain rich information and knowledge from a wider variety of sources than in the traditional business environment. eBusiness is not bound by geographical distance due to the use of technology. This implies that eBusinesses may be confronted with large volumes of knowledge that they may need to manage due to the fact that they now play in larger markets, have more competitors and customers, etc.

Their "operating environments" have grown due to this richness / reach trade-off that has been displaced and companies have to implement sound knowledge management systems and procedures to ensure quick adaptation to this scenario where both richness and reach is possible, thereby enabling e.g. new business strategies, new business models, deconstruction of supply chains, optimal use of technology, etc.

5.4.1.11. Workflow changed by electronic marketplaces

If electronic marketplaces change the workflow within a specific environment, e.g. an industry, it is clear that the knowledge flows in these environments will change as well, as knowledge is always tied to business processes. This means that current knowledge management systems and processes may be inadequate and may need to be adapted or new ones may need to be created within the changing environment. It will indeed be a situation of adapt or die, as

The role of knowledge management in eBusiness and customer relationship management

eBusinesses are largely knowledge-based organisations and if the required systems are not put into place, the organisation will not be able to survive the changes in knowledge flows.

5.4.2. The role of knowledge management in customer relationship management

Knowledge management is essential in customer relationship management. All relationships with customers are built and managed on the basis of knowledge on the customer and his or her behaviour. It is therefore critical to understand the exact interface between knowledge management and customer relationship management as defined below.

5.4.2.1. Tacit knowledge versus explicit knowledge

In the managing of customer relationships, there is a lot of tacit knowledge exchange. This knowledge is usually crucial to the understanding of the customer and the nature of the relationship. This is due to the fact that context provides value to knowledge, and tacit knowledge is especially dependent of its context to provide value. A typical example is the exchange between a customer and a call centre staff member. To make knowledge useful, a call centre member should capture the context of a customer's complaint or requirement, as it may have a significant impact on future dealings with the customer. If a customer specifies, for example that the delivery of a product has to be made between 5am and 7am in the morning because of specific circumstances at his shop or factory, it should be captured so that if the customer calls again, it is clear why this request was made. The challenge of knowledge management is therefore in creating and managing processes, platforms and mechanisms through which tacit knowledge can be captured and translated into explicit knowledge as effectively as possible.

5.4.2.2. Virtual communities and knowledge management

Virtual communities will increasingly have a significant role in customer relationship management. Virtual communities will facilitate knowledge sharing and creation across geographical boundaries. Virtual communities may facilitate knowledge sharing on specific customer accounts and relationship issues. Through such a virtual community, for example, knowledge can be shared on dealings with branches of the same customer in diverse geographical locations, thereby providing one view of the customer irrespective of geographic boundaries. Knowledge created and shared in these virtual communities need to be managed to ensure retention and leveraging thereof.

5.4.2.3. Customer relationship management is a knowledge based strategy

All the components of a customer relationship management strategy are knowledge based, namely segmentation, pricing, advertising, branding, and marketing. To enable segmentation, pricing, advertising, branding and marketing, the organisation needs to have a good understanding of its customer base, based on knowledge of each of these customers individually. The following major knowledge components need to be created, shared, harvested and leveraged to enable customer relationship management:

- Knowledge on the customer's operating environment, e.g. the industry or industry segment the customer operates in.
- Knowledge on the customer's organisation, including its strategy, its products and services, its people and its size in relation to the market.
- Knowledge on the products and services the organisation has to offer this customer given the customer's operating environment and strategy.
- An understanding of how these products and services will satisfy the customer's needs.
- Knowledge on the values and culture of the customer.

There may be many more knowledge elements in addition to those mentioned above that need to and can be managed, but if these fundamental elements are not managed effectively, the customer relationship cannot be managed to its true potential and it will be impossible to build one view of the customer. All contacts with the customer should be knowledge based, preferably from the source that provides one view of the customer, to ensure continuity and consistency no matter where or when the contact takes place. Customer relationship management can therefore be described as a knowledge based strategy.

5.4.2.4. Knowledge management in the phases of customer relationship management

Knowledge of the customer is required throughout the customer relationship management lifecycle, namely getting to know the customer, building the relationship and maintaining the relationship. Firstly knowledge is the critical input in attracting the customer to the organisation's service. To understand the customer's needs and to portray to the customer how the organisation can fulfil his or her need, knowledge is required of the customer's business per se, and the customer's business environment, e.g. the industry space his or her business operates in. If the organisation does not create, share, harvest and leverage knowledge on customers and the environment that customers move in that trigger their needs, it will be difficult to systematically attract the right customers to the business. Knowledge management is thus of fundamental importance in this stage of the relationship. In

The role of knowledge management in eBusiness and customer relationship management

the second stage, once the organisation has the customer and is trying to build the relationship, it is important to build on the knowledge base that the organisation has of customers and their operating environments, thereby creating a single view of the customer. It is crucial to shift the focus from the already identified need to determine as yet unidentified needs to expand the relationship. It is also important to know what makes the customer tick and to ensure that those cues are acted upon in any contact with the customer, and to integrate the knowledge gained from those interactions to enhance a single view of the customer. To enable that, profiles of the customer need to be built, containing knowledge on all contact with the customer. The knowledge base of each customer is thus expanded in this phase. In the last phase, where relationships are maintained, a distinctive customer service must be rendered to the customer. This can be done by fully leveraging the knowledge base built in prior phases and applying it to satisfy the customer's needs and expectations. The knowledge base should act as a "roadmap" for all dealings with the customer. The knowledge base can still grow at this stage as customer expectations grow, but the baseline knowledge should be stable at this point.

5.2.4.5. Obtaining customer knowledge

Obtaining customer knowledge will become increasingly complex, especially in the eBusiness environment. There is an increased tendency towards customers selling knowledge pertaining to their organisations, rather than giving it away for free. This means that knowledge is increasingly being viewed as a commodity.

According to Hagel & Singer (1999), technologies will assist individuals and customers to protect their identities as they move around the Web, thereby preventing organisations from gathering knowledge on them. Examples are:

- Cookie suppressors

Cookie suppressors stop companies from planting information in the computers of people who access their sites, thereby preventing identification and behaviour tracking of these people.

- E-mail filters

E-mail filters prevent users from spam.

- Anonymous payment mechanisms

Anonymous payment mechanisms help people to buy products and services online without revealing the purchaser's identity.

- Reverse cookies

Reverse cookies give online consumers a way to keep track of their own behaviour and to store these related records.

The role of knowledge management in eBusiness and customer relationship management

The technologies mentioned above will enable customers to take control over personal knowledge and information, and to decide whether to keep it private or to share it with third parties. Customers will be able to get a more accurate view of their own commercial activities than companies ever could. Customers will base their decision to sell or not to sell this personal information based on what they receive from companies in return (Hagel & Singer, 1999).

The researcher is of the opinion that it will become increasingly difficult and more expensive to build and manage customer relationships in the future, and organisations will have to take a view on whether the cost of purchasing this kind of knowledge can be carried by the organisation. This may change the strategy of customer relationship management over a period of time, as it may lead to a segmentation of a different kind, namely segmenting the customer base into categories of affordability in terms of obtaining knowledge posed against the potential profitability of the customer. This may in the end lead to organisations to having a much smaller, but highly profitable customer base on which the business focuses, with an additional segment of customers that the organisation does business with, but without having the required, in-depth knowledge to build and maintain strong and sustainable customer relationships.

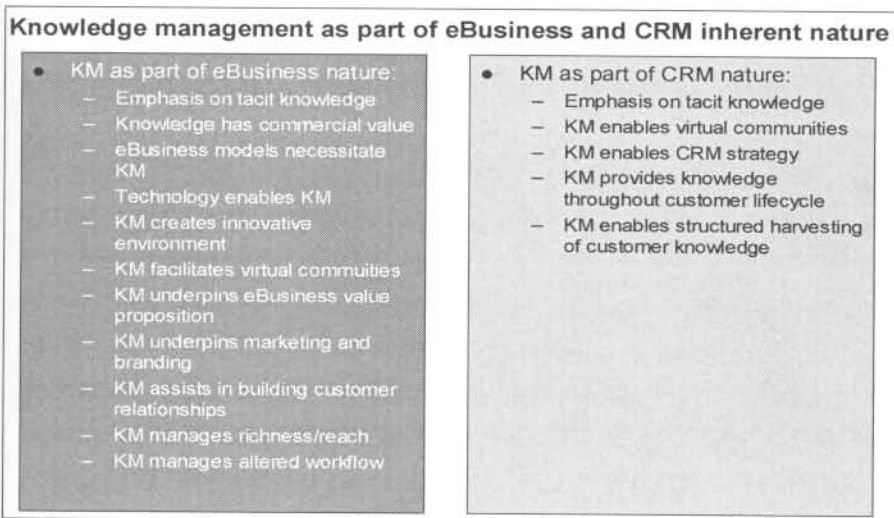


Figure 19. Knowledge management as part of the inherent nature of eBusiness and Customer Relationship Management

The role of knowledge management in eBusiness and customer relationship management

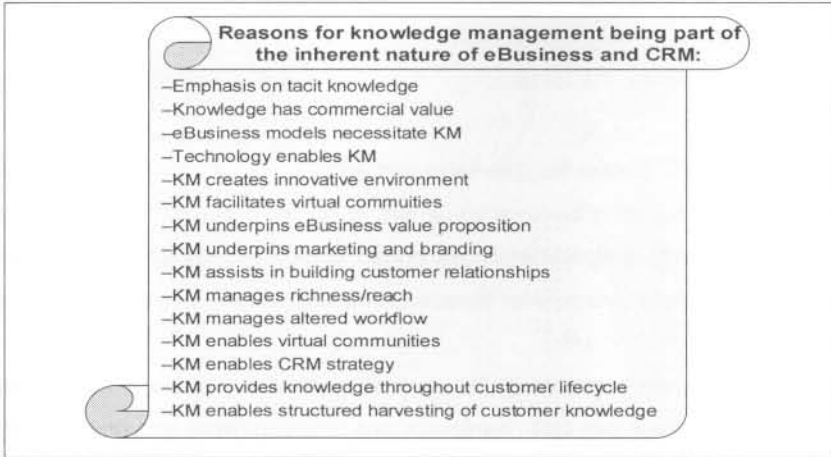


Figure 20. Reasons for knowledge management as part of the inherent nature of eBusiness and Customer Relationship Management

The role of knowledge management in eBusiness and customer relationship management

DIVISION C

OVERVIEW: CHAPTERS 6, 7 & 8

In Chapter 6 the **drivers** for knowledge management, eBusiness and customer relationship is examined in detail. For the purpose of this study a driver is defined as *a catalyst for action*. The chapter is therefore devoted to obtain an understanding of what the catalysts are for knowledge management, eBusiness and customer relationship management in organisations.

In Chapter 7 the **critical success factors** of knowledge management, eBusiness and customer relationship management are examined. For the purpose of this study, critical success factors are defined as *those factors that are essential to the successful implementation and sustained operation of knowledge management /eBusiness / customer relationship management within organisations*. The chapter is therefore devoted to obtain an understanding of what drives the successful implementation and maintenance of knowledge management, eBusiness and customer relationship management in organisations.

In Chapter 8 the **value proposition** of knowledge management, eBusiness and customer relationship management is discussed. For the purpose of this study, a value proposition is defined as *the value that knowledge management, eBusiness or customer relationship management adds to an organisation on strategic and operational level*. The chapter is therefore devoted to obtain an understanding of the advantages, i.e. the value, that these concepts offer organisations.

Chapter 8 forms the hypothesis of the study, which will subsequently be tested with an electronic DMAP survey

The role of knowledge management in eBusiness and customer relationship management

6. DRIVERS OF KNOWLEDGE MANAGEMENT, eBUSINESS AND CUSTOMER RELATIONSHIP MANAGEMENT

The researcher defines drivers as catalysts for the implementation of knowledge management, eBusiness and customer relationship.

6.1. Knowledge management drivers

6.1.1. Knowledge is a commodity in the new economy

Knowledge is recognised as a commodity in the knowledge economy. Managers will increasingly be judged by how they add value to the organisation by retaining and increasing the capital implicit in their customer base, infrastructure and people (Powell, 2000, p.63). "If the market value of a company is dependent on its intellectual capital, then at least as much senior executive attention should be placed on managing intellectual assets, especially the human capital component, as is placed on physical and financial assets" (Caldwell, 2001).

According to the researcher, knowledge is seen as a commodity that can lead to competitive advantage. It therefore necessitates being managed as such to derive the most value from it through adequate leverage. According to Havens & Knapp, 1999), knowledge is many companies' product.

Due to the fact that knowledge is seen as an organisational commodity, protection against external leakage of organisational knowledge is a driver for knowledge management (Earl & Scott, 1999).

6.1.2. Knowledge attrition

Employees change jobs more readily in today's working environment. When they leave, they take their knowledge and experience with them, leading to knowledge attrition for the organisation (Caldwell, 2001; Hargaddon & Sutton, 2000; Mudge, 1999). According to the researcher, organisations are now focusing on managing the knowledge through knowledge management programmes and systems, rather than getting employees to stay with the organisation.

6.1.3. Knowledge management provides competitive advantage

Knowledge is a necessary and sustainable source of competitive advantage. In an era characterised by uncertainty, companies that consistently create new knowledge, disseminate

The role of knowledge management in eBusiness and customer relationship management

it to all in the organisation and build it into products and services, are competitive (Earl & Scott, 1999; Young, 2001).

Knowledge provides the organisation with a competitive advantage as it allows the organisation to solve problems and seize opportunities (Earl & Scott, 1999; Parlbly & Taylor, 2000; Zack, 1999). Organisations that manage knowledge can evaluate core processes, capture insights about what they find, combine their skills and experiences, innovate and apply new ideas quickly (Parlbly & Taylor, 2000).

"Competitive success will be based less on how strategically intellectual capital is managed – from capturing, coding, disseminating information, to acquiring new competencies through training and development, to re-engineering business processes" (Bontis, 1996).

6.1.4. Knowledge management contributes to more effective decision-making

Knowledge is needed for more effective and efficient decision-making (Ernst & Young, 1999e; Yu, 2001). Decisions in today's world are taken under tremendous pressure and in short time frames (Semple, 2000, p.33). "Strategic decision making depends on predicting what the competition will do or on knowing something better than or ahead of them. The ability to predict market developments and assimilate new ideas is one of the bases of innovation" (Parlbly & Taylor, 2000). Decision making performance may be impacted because the best know-how is not available to those making the decisions when and where they need it (Parlbly & Taylor, 2000).

According to the researcher, many organisations are implementing knowledge management to ensure that these decision makers have adequate and accurate knowledge at their fingertips to ensure good quality decision-making.

6.1.5. Internet, improved telecommunications and technology

Customers generate a wealth of information and knowledge as they move around the Internet (Hagel & Rayport, 1997b). According to the researcher, organisations are driven to implement knowledge management in order to harvest, organise, analyse and leverage this knowledge.

Dramatic changes in the way of working and developments in telecommunications and technology have made knowledge management increasingly important (Morello & Caldwell, 2001; Mudge, 1999; Parlbly & Taylor, 2000; PricewaterhouseCoopers, 1999a; Torres, 1999). Most organisations have high-speed networks and telecommunications infrastructure, which enable quick and efficient knowledge sharing. This leads to the requirement of organisations

The role of knowledge management in eBusiness and customer relationship management

to manage the wealth of knowledge that is travelling through these high-speed networks and telecommunications technologies.

6.1.6. Organisational and geographical distribution

Organisations are increasingly working in a distributed environment. Knowledge is often fragmented within the organisation (Zack, 1999). Without knowledge management, knowledge sharing is not effective, mostly taking place in areas that are closest to one another in terms of physical proximity (Hargaddon & Sutton, 2000; Martiny, 1998; PricewaterhouseCoopers, 1999e).

According to the researcher, organisations implement knowledge management to facilitate the creation, sharing, harvesting and leveraging of knowledge across geographical as well as organisational boundaries, as well as to ensure integration between these fiefdoms.

6.1.7. Collaboration

Collaboration is becoming more prevalent due to the Internet and eBusiness, necessitating platforms for collaboration and knowledge sharing across geographical and organisational boundaries (Mudge, 1999).

According to the researcher, organisations are compelled to implement knowledge management to enable the creation of platforms, processes and standards for collaboration and knowledge sharing across geographical and organisational boundaries.

6.1.8. Time and cost savings

Time and selection is a driver for knowledge management. People find it difficult to know what knowledge is available and which sources are the best to use. This means they waste time in finding the right sources (Abramson, 1999; Hargaddon & Sutton, 2000; Martiny, 1998; Zack, 1999). Time saving, and therefore also a cost saving, is achieved in terms of prevention of duplication of work due to the knowledge of what knowledge already exists, or what work has been done before (Greco, 1999; Reiss, 1999; Yu, 2000).

Reusing knowledge in different contexts creates new insights in the organisation. The reuse of the knowledge increases the scope and value of the knowledge (Martiny, 1998; O'Dell & Grayson, 1999).

The role of knowledge management in eBusiness and customer relationship management

6.1.9. Internal inefficiencies

Organisations are concerned with how experience can be transferred more effectively and quickly and how to capture and document valuable insight so that it can be reused. Missed opportunities, wasted time and operational inefficiencies represent competitive disadvantage and contribute to excessive cost, reduced revenue and poor bottom line. This is why organisations implement knowledge management (Parlby & Taylor, 2000).

6.1.10. Knowledge hoarding

According to the researcher, knowledge hoarding takes place due to the "knowledge is power" syndrome in most organisations. Hoarding often also takes place within functional silos in the organisation or where competition exists between various business units (Hargaddon & Sutton, 2000).

Knowledge management can assist in overcoming this barrier through rewarding people for sharing their knowledge (Darling, 2000; Hargaddon & Sutton, 2000). According to the researcher people also often hoard knowledge because no proper platforms exist to enable them to share their knowledge effectively. Knowledge management can provide these knowledge-sharing platforms.

6.2. eBusiness drivers

6.2.1. Alternative channel

The Internet is an alternative channel of offering products and services. Customers may prefer this channel, which means that if the organisation has competitors offering similar products or services online when the organisation doesn't, customers may defect (Chu et al, 1999; PricewaterhouseCoopers, 1999a).

The Internet can also be used as an alternative way of communicating with customers or suppliers, reducing the time spent on routine tasks such as applications processing, updating customer account information and reporting on e.g. status of insurance claims or bank transactions in a specific account (Stewart, 2000). Once again, if the organisation does not provide this channel, customers and / or suppliers may defect.

6.2.2. New products and services

Organisations can create products or services unique to the eBusiness environment. This can change these organisations' competitive strategy (PricewaterhouseCoopers, 1999b).

The role of knowledge management in eBusiness and customer relationship management

Organisations are therefore driven to implement eBusiness in terms of expanding their products and services to a brand new channel.

6.2.3. Global reach

The Internet's global reach means companies can capitalise more efficiently on business opportunities anywhere in the world. The ideal eBusiness can consolidate global operations on a single data centre, establishing new best practices under a shared service centre model of business operations. Companies will eliminate barriers that previously existed. These organisations will have an expanding customer and supplier base, and can operate in markets that have been out of bounds before (Berryman, 2000; E-business transformation, 1999; Nevens, 1999; PricewaterhouseCoopers, 1999a; PricewaterhouseCoopers, 1999b).

6.2.4. Competitive threat

Operating in the eBusiness world is seen as a strategic advantage today (Friedman & Langlinias, 1999). "It may not always be profitable at first to be on the Net, but certainly it is going to be unprofitable if you're not to be on it. Your competition will be there even if you are not. The Net can be a threat to established companies if they don't learn how to work in this new medium" (Andersen Consulting, 1997). According to the researcher, it can therefore be a competitive threat not to enter the eBusiness arena.

According to PricewaterhouseCoopers (1999c), eBusiness changes the dynamics of industries, therefore organisations participate in it or face the option of being left behind (PricewaterhouseCoopers, 1999c). "There are so few options left for those who ignore the growing impact of eBusiness on their industry, their markets and their customers" (Berryman, 2000).

Consumer demands also change due to the availability of new products and services provided through the Internet, so that organisations that are not web enabled will be left behind, as they cannot fulfil the needs of the customer (Friedman & Langlinias, 1999).

All of the above scenarios pose a significant competitive threat to businesses, therefore driving them to enter the eBusiness world.

6.2.5. Cost

Organisations can save cost by transacting through the Internet (PricewaterhouseCoopers, 1999b; Stewart, 2000). According to Stewart (2000), it cost banks 1 cent to process an

The role of knowledge management in eBusiness and customer relationship management

Internet transaction, compared to 27 cents for ATM transactions and more than a dollar for branch transactions.

Cost savings, combined with convenient and customised service, will encourage customers to buy products and services online. Companies that offer online products or services will be able to undercut traditional products and services (Stewart, 2000). This acts as driver for organisations to gain a virtual presence.

6.2.6. Knowledge harvesting abilities

eBusiness allows organisations to accumulate more knowledge on their customers, suppliers and markets than in the traditional business environment (Friedman & Langlinias, 1999; PricewaterhouseCoopers, 1999b). This provides them with a competitive advantage, as they can deliver a more targeted service as a result of the knowledge gained on customers, suppliers and markets.

6.3. Customer relationship management drivers

6.3.1. Changing environment and business rules

"In today's fast paced, technology-driven marketplace, companies are struggling to maintain customer loyalty, generate new revenue and control costs while at the same time racing to beat their competitors to market. Customers are more knowledgeable about what they buy. Better educated, they are willing to pay for perceived value but no longer base allegiance to a single company solely on past results. The old loyalties are gone. Long-standing relationships are no longer relevant if customers do not feel that they are getting the highest quality product or service for their money. Companies are looking for ways to leverage their existing customer relationships to increase revenue. At the same time, mergers and acquisitions, consolidation and deregulation have increased competition to unprecedented levels and have accelerated efforts to increase efficiency and reduce costs" (Takis, Cote & Stanmeyer, 2000, p.133).

6.3.2. More options available to customers

Technology and competitive pressure, as well as global reach, have created more options for customers that were not available before. Customers are now only a mouse click away from competitors and will more easily defect due to a lack of face-to-face contact with sales staff (AT Kearney, 2000a; Poll reveals lack of e-relationships, 1999). It therefore becomes more and more crucial to build customer relationships, instilling loyalty and therefore repeat business.

The role of knowledge management in eBusiness and customer relationship management

6.3.3. One view of the customer

As the market becomes increasingly fragmented and commoditised, organisations are finding it difficult to use traditional mass marketing techniques to capture market share. Broad marketing campaigns simply aren't effective anymore. One message does not fit all. Because of the proliferation of customer services and customer needs, organisations need to market to many kinds of users. Customers' use of different media has also fragmented and the media proliferated. To succeed in future, organisations need to better understand what customers want. Marketing must be more finely tuned, which makes customer relationship management a necessity (Abrams, 2001; Handen, 2000a, p.7).

Customer relationship management can provide one view of the customer through the gathering of customer knowledge and intelligence and sharing this in one central repository available to all staff in the organisation, which can be used to provide a holistic view of the customer.

6.3.4. Cross-selling and up-selling

Customer relationship management provides the organisation with one view of the customer, i.e. it provides a better picture of the totality of his or her needs. This means that the organisation is in a position to do cross selling or up selling of products or services according to the knowledge it has of the customer (Handen, 2000a, p.7; Rigby et al).

6.3.5. Repeat business

In the eBusiness environment repeat business becomes crucial due to cost factors. To recoup cost, organisations have to convince customers to return to their websites again and again. To ensure repeat business, relationships with customers have to be built. Repeat customers spend more and generate larger transactions. Repeat customers also refer more people (AT Kearney, 2000a; AT Kearney, 2000c; Rigby et al, 2000).

"These relationships are key to moving beyond the cost cutting and streamlining of the past to an era of growth" (Patmore & Renner, 1997).

Organisations are thus driven to implement customer relationship management by the potential of ensuring repeat business.

6.3.6. Improved customer service

Customer relationship management provides one view of the customer, i.e. fragmented

The role of knowledge management in eBusiness and customer relationship management

knowledge of the customer is centralised, providing the organisation with the capability to deliver a better service (Ernst & Young, 2000b; Patmore & Renner, 1997; Poll reveals lack of e-relationships, 1999). Improved customer service leads to increased customer loyalty, thus ensuring repeat business (Rigby et al, 2000).

6.4. Conclusion

(Refer Figure 21 for summary)

6.4.1. Drivers of knowledge management in the eBusiness environment

6.4.1.1. Sharing of knowledge across organisational and/or geographical boundaries

Knowledge management ensures that knowledge flow can take place across organisational boundaries or across geographical boundaries. This is extremely important in the eBusiness environment where organisations collaborate with one another or internally across various locations and functional units. Knowledge management will ensure that staff knows what knowledge is available to them and it will provide them with processes and platforms to share it. It will also provide one point of access, with useful navigation tools. Knowledge management will thus make it easier and quicker to access and leverage knowledge, leading to efficiency and productivity improvements. It also increases the organisation's agility, which is critical for any eBusiness, enabling the organisation to act quickly to any changes in the marketplace.

6.4.1.2. Competitive advantage

Knowledge management ensures the availability of and access to relevant, up-to-date strategic knowledge on markets, products and services, competitors, processes and procedures, employee skills, and the regulatory environment, for decision-making and daily work activities. This ensures that the organisation can act quickly to changes in the marketplace and can act ahead of its competitors, i.e. it provides the organisation with a competitive advantage in terms of agility. Efficiency is also increased due to time saving and prevention of duplication of work due to the availability of knowledge. The availability of knowledge through knowledge management also creates a learning environment for staff, thus raising the skills level of the organisation's staff members. All of the above raises the organisation's competitiveness.

The role of knowledge management in eBusiness and customer relationship management

6.4.1.3. Efficiency and cost saving

Efficiency is also increased due to time saving and prevention of duplication of work because of the availability of knowledge. The organisation can therefore be quicker to market and its level of agility increases. This can lead to substantial cost savings.

6.4.1.4. More knowledge available

In the eBusiness environment, due to the expansion of reach, organisations' customer and supplier bases expand. Organisations also share certain knowledge with one another to benefit them in the marketplace. This means that eBusinesses have more knowledge to manage and leverage off than traditional businesses. This is a driver for implementing knowledge management.

In the eBusiness environment, technology can also generate a lot of information that can be turned into knowledge, e.g. customers' search behaviour and information is captured through the use of cookies generated by Internet browsers. This also necessitates knowledge management to ensure value is extracted from this available information and knowledge.

6.4.1.5. Collaboration

In the eBusiness environment collaboration is essential. eBusinesses collaboratively design products across geographical boundaries and sometimes across organisational boundaries. There is also collaboration in the form of virtual communities internal and external to the organisation, e.g. through intranets and extranets. These communities share knowledge on a wide variety of issues.

The technology, processes and platforms to enable the said collaboration can be provided by knowledge management and acts as a catalyst for implementing knowledge management. Knowledge management also ensures the retention and structuring of the knowledge shared in these collaborative forums that can be used as input to further knowledge creation within these and other forums. The organisation's time to market decreases and agility increases due to the leveraging of this knowledge.

The role of knowledge management in eBusiness and customer relationship management

6.4.2. Drivers of knowledge management in the customer relationship management environment

6.4.2.1. Expanded customer base

When implementing customer relationship management, the knowledge management program can assist in managing the increased amount and flow of knowledge related to an expanding customer base, which is caused by the explosion of richness and reach in the virtual world.

Implementation of knowledge management is necessitated due to the structure knowledge management processes and systems can provide to the knowledge base to ensure that all relevant knowledge is retained and made accessible, to add value to the organisation as well as the customer.

6.4.2.2. Sharing of knowledge across organisational and/or geographical boundaries

Due to the explosion of reach in the virtual environment, companies find that their customer base is expanding. With that comes an expanded customer knowledge base that needs to be managed. Organisations often operate in a geographically distributed environment, or large organisations often function in a hierarchical fashion, stemming the flow of knowledge.

Implementation of knowledge management is driven by the need to create one view of the customer across organisational and/or geographical boundaries. This consolidated profile of customers will enable targeted marketing and more efficient service delivery.

6.4.2.3. Consolidated view of the customer

Knowledge management provides the technology, processes and platforms to create, share, harvest and leverage knowledge on customers in one central location, thus providing one view of the customer, irrespective of geographic location or functional area in the business. The knowledge management system can provide real time knowledge and information on the customer spanning the customer relationship lifecycle. This ensures that staff have one updated set of knowledge on the customer irrespective of where they work. This allows a better understanding of customers and their needs, and therefore enables more effective and efficient customer service.

The role of knowledge management in eBusiness and customer relationship management

6.4.2.4. Satisfaction of customer and supplier demand for more knowledge

In the eBusiness era, customers and suppliers demand more information and knowledge at their fingertips about organisations that they buy products or services from. Customers and suppliers will easily defect to another competitor if an organisation does not provide adequate information and knowledge on products and services. Knowledge management is thus necessitated to ensure that this need can be fulfilled. Examples are providing adequate knowledge and information on websites, through call centres, etc.

6.4.2.5. Collaboration

In the customer relationship management environment collaboration is becoming increasingly prevalent due to organisations expanding their reach and working across geographical boundaries, and due to the drive of creating one view of the customer. These organisations use collaboration in the form of virtual customer teams to ensure the harvesting, sharing and leveraging of customer knowledge. Knowledge management provides the technology, processes and platforms to enable the said collaboration. Knowledge management also ensures the retention of the knowledge shared in these collaborative forums. The knowledge harvested and shared in these collaborative forums are used to build customer profiles. These profiles enable staff to deliver more efficient customer service.

6.4.2.6. Targeted marketing

Knowledge management can provide the organisation with one view of the customer. This allows the organisation to do more effective and efficient marketing to customers, due to product and channel segmentation that can be done. This means that products and services are not marketed in general to all clients. Specific products and services relevant to the needs of customers are marketed specifically, cutting cost and increasing staff productivity.

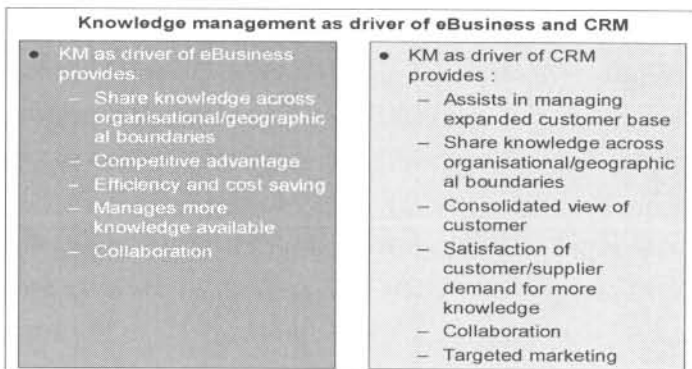


Figure 21. Knowledge management as driver of eBusiness and customer relationship management

The role of knowledge management in eBusiness and customer relationship management

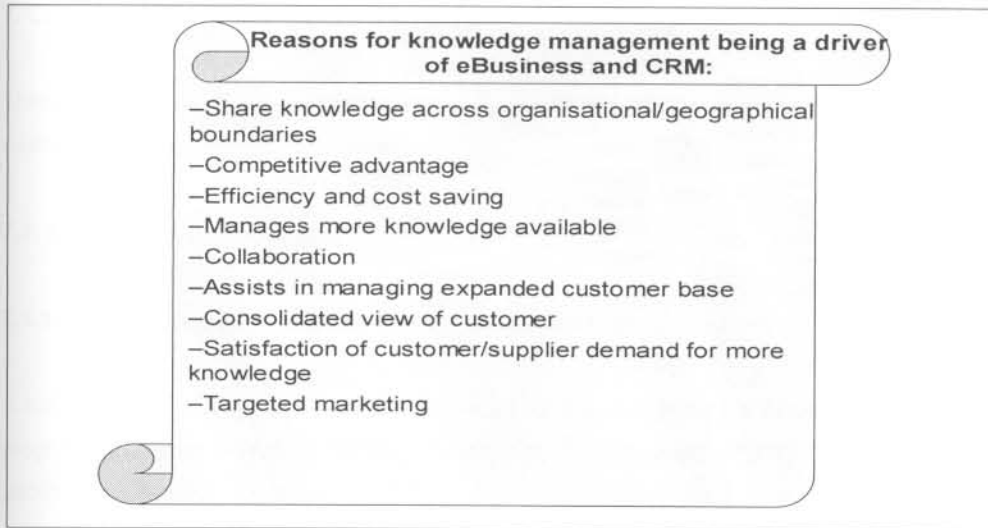


Figure 22. Reasons for knowledge management being a driver of eBusiness and CRM

The role of knowledge management in eBusiness and customer relationship management

7. CRITICAL SUCCESS FACTORS

There are various factors critical to the success of knowledge management, eBusiness and customer relationship management.

7.1. Knowledge management

7.1.1. Formulating a knowledge management strategy

A knowledge management strategy is crucial to the success of a knowledge management programme (Ernst & Young, 1999c; KPMG Consulting, 2000; Parlbay & Taylor, 2000; Yu, 2000).

The literature indicates that the knowledge management strategy should address a variety of issues:

- Firstly, the creation of understanding of the organisation's knowledge resources should be addressed. This will allow the organisation to set up a knowledge management agenda through which knowledge can be leveraged optimally. Assessing knowledge resources leads to shaping of a knowledge agenda to achieve sustainable results in alignment with the business strategy. The agenda determines how the organisation must leverage the knowledge to achieve breakthrough results. Agenda goals may include creating innovative customer experiences, or developing new business models through knowledge exchange with business partners and customers. It is essential to have an integrated view of the organisation's strategy, people, leadership, process, technology and metrics if positive results are to be attained. A knowledge agenda is critical to achieve desired outcomes, mobilising the organisation and establishing critical performance measures (Yu, 2000). Ernst & Young (1999c) agrees that it is essential to create a blueprint of knowledge within the organisation. This is essential in understanding how knowledge can enhance and enable specific processes in the organisation.
- Secondly, the knowledge management strategy needs to articulate the role that knowledge will play in creating value for the organisation. The vision also needs to consider resource availability (people and financing), as this conditions the implementation approach (Havens & Knapp, 1999).
- The strategy should comprise of a number of integrated projects, phased in over time. These initiatives should include quick wins as well as long-term benefits (Parlbay & Taylor, 2000). The knowledge management strategy should clearly link to business objectives and encompass a vision of short term and long-term initiatives and benefits. The authors also state that a knowledge management

The role of knowledge management in eBusiness and customer relationship management

strategy is executed as a process, not a project. The researcher agrees, as knowledge management is not a static activity, but ongoing.

- The knowledge management strategy should also indicate the risks associated with a knowledge management program in a specific organisation (Caldwell, 1999).

The researcher is of the opinion that the knowledge management strategy should contain the vision, mission and objectives of the knowledge management program. It should also contain a value proposition, critical success factors and risks. All of these must be presented within the organisational context and its specific issues, to ensure that the knowledge management strategy is tied to the business strategy.

7.1.2. Linking knowledge management strategy to the business strategy

It is critical that the knowledge management strategy is tied to the business strategy. Knowledge management should never be implemented as an end in itself (Chait, 1999; Donaghue, Harris & Weitzman, 1999; Parlbay & Taylor, 2000; PricewaterhouseCoopers, 1999g, p.7; Stadler, 2001). "KM programs succeed when knowledge capital is employed to accomplish specific business strategies. We know of no successful KM programs not tied to a specific business strategy or goal" (PricewaterhouseCoopers, 1999g, p.7). Chait (1999) indicates the importance of this linkage by indicating that in many ways, managing knowledge is no different from managing other aspects of an organisation: firstly, there must be a vision that links with the organisation's objectives and strategies, second, people must be aligned with that vision, and third, the alignment must be from the top down and all across the organisation.

Donaghue, Harris & Weitzman (1999) and Mullin (1996) feel that it is critical for a knowledge management program to be based on an organisation's processes and activities to ensure that knowledge is optimised to build the critical capabilities of the organisation. The researcher agrees with these authors, as tying the knowledge management program to an organisation's business processes will ensure that the programme is oriented towards achieving efficiency improvements within core and enabling processes through more effective and efficient use of knowledge, thus assisting in achieving the objectives of the business strategy. Business processes are always tied to the organisation's business strategy, making them a logical starting point for a knowledge management strategy and programme and thus ensuring that the knowledge management strategy supports the business strategy and does not exist in isolation.

The role of knowledge management in eBusiness and customer relationship management

7.1.3. Knowledge management is a holistic approach

Knowledge management is a multi-faceted approach, comprising many organisational elements like technology, human resources practices, organisational structure and culture (Donaghue, Harris & Weitzman, 1999; Havens & Knapp, 1999; Parlbly & Taylor, 2000; O'Dell & Grayson, 1999). O'Dell & Grayson (1999) and Parlbly & Taylor (2000) state that it is essential to align culture, technology, infrastructure and measurement.

"It is clear that the solutions have to be a mix of cultural, organisational, process, management and technology initiatives. The challenge is to select and combine the methods and approaches available, and harness them to address the organisation's business needs" (Parlbly & Taylor, 2000).

The researcher agrees that knowledge management consists of a number of elements, namely people, processes, culture and technology, each of which carries importance for the implementation of knowledge management. They are all fundamentals of the concept and one cannot operate optimally without the other, hence the statement that it is critical that knowledge management is a holistic approach.

7.1.4. Business case / value proposition

The knowledge management program has to have a business case and value proposition (KPMG Consulting, 2000; O'Dell & Grayson, 1999; PricewaterhouseCoopers, 1999a; PricewaterhouseCoopers, 1999g, p.8). Users must be able to see what is in it for them to participate in the knowledge management programme (KPMG Consulting, 2000). The researcher strongly agrees with this opinion. Knowledge management has to add value to staff's everyday working environment to encourage participation.

"KM benefits the enterprise when it also benefits users; conversely, if either the enterprise or the KM users fail to receive value, the KM program fails. Successful enterprises emphasise and ensure this duality in the KM value proposition" (PricewaterhouseCoopers, 1999g, p.8).

7.1.5. Top management support

Top management support is essential for successful knowledge management. Leaders have to share a vision on knowledge management and provide such a program with ongoing support. Leaders have to be continually briefed on the knowledge management program and what it entails, and how it is going to achieve the agreed knowledge management vision, and they have to lead by example (Chait, 1999; Greco, 1999; Havens & Knapp, 1999; KPMG

The role of knowledge management in eBusiness and customer relationship management

Consulting, 2000; Martiny, 1998; Mudge, 1999; O'Dell & Grayson, 1999; Parlby & Taylor, 2000; PricewaterhouseCoopers, 1999a; PricewaterhouseCoopers, 1999g, p.8; Torres, 1999).

O'Dell & Grayson (1999), Havens & Knapp (1999) and Martiny (1998) add that in addition to top management support, knowledge management champions or sponsors have to be identified throughout the organisation to be evangelists and role models within the program. PricewaterhouseCoopers (1999g, p.8) is of the opinion that the higher the level of sponsorship, the greater the chances of success for the program.

The researcher is of the opinion that top management is crucial. Top management support of knowledge management will enforce the message that knowledge management is linked to the execution of the business strategy. It is, however, important to ensure that top management understands what knowledge management is about and what benefits it will bring to the organisation. The researcher has been involved in cases where top management initiated a knowledge management programme, without fully realising what they were asking for and what it would entail. It was disastrous for the program, as top management support was lessened throughout the process due to the fact that they were getting a solution totally different from what they expected. This was due to the fact that they could not verbalize their requirements at the outset of the programme. Communication about the deliverables of such a program to top management from the start is very important to ensure that this scenario is avoided.

7.1.6. Incentives and rewards

Rewards and incentives are crucial to the success of knowledge management. It creates a climate of co-operation, learning and innovation (Ernst & Young, 1999c; Greco, 1999; Havens & Knapp, 1999; KPMG Consulting, 2000; O'Dell & Grayson, 1999; Parlby & Taylor, 2000; PricewaterhouseCoopers 1999a; PricewaterhouseCoopers, 1999g, p.8; Reiss, 1999). Ernst & Young (1999c) indicates that incentives and rewards are crucial to knowledge management. They are of the opinion that incentives and rewards create and support positive behaviours. They also point out that in organisations these incentives and rewards have been successfully tied to salaries and bonuses. Greco (1999) as well as Parlby & Taylor (2000) suggest that knowledge creation, sharing, harvesting and leveraging can be encouraged by tying it to job evaluations and performance measurement. In general, recognition for participation is essential. Some organisations are wary of monetary rewards, and rather embed knowledge management activities as a cultural norm that has its own intrinsic value. Whatever the nature and structure of the program, it is imperative that it is visible within the organisation (Ernst & Young, 1999c).

The role of knowledge management in eBusiness and customer relationship management

The researcher is of the opinion that incentives and rewards are crucial to the success of a knowledge management programme. In a knowledge-based society, people see knowledge on a particular subject as a competitive advantage, and it would therefore be contrary to their nature to share this knowledge without some sort of incentive. In most organisations, a culture of knowledge hoarding, or "knowledge is power" prevails. The researcher is also of the opinion that the reward and incentive system for knowledge management should consist of push and pull rewards, e.g. rewarding people as part of their performance appraisals according to participation in the program (push) and incentivising people to use the knowledge base to provide a platform for their innovative ideas, i.e. providing them and their ideas with visibility in the organisation (pull).

7.1.7. Performance measurement

Measurement of the knowledge management program as well as the resulting efficiencies attained in processes and practices need to be measured (Ernst & Young, 1999c; Greco, 1999; Havens & Knapp, 1999; KPMG Consulting, 2000; Lessons learned on the knowledge highways and byways, 1996; O'Dell & Grayson, 1999; Parlbly & Taylor, 2000; PricewaterhouseCoopers, 1999a, Torres, 1999). Ernst & Young (1999c) indicates that the performance of the overall initiative needs to be measured, as well as the management of the knowledge itself. The performance measurement may include reviews of the knowledge repository and giving visible rewards to those who show commitment to the knowledge management program. Hewlett Packard has, for example, set up a micro-economy in which the currency is knowledge. When a report is posted on the intranet, its "success" as a valuable piece of knowledge is measured by the number of people who pay a small fee (which goes back to the department of the sender) to download it (Greco, 1999).

The researcher is of the opinion that knowledge management impact has to be measured to enable tracking of successes and failures. Knowledge management is also not a static activity and grows with the organisation as it changes, and therefore impact should be continuously assessed to ensure that knowledge management is keeping up with current needs in the business. The researcher has been involved with organisations that measure their knowledge management systems' success on the number of entries made into repositories, as well as the number of times a knowledge repository or a specific document was accessed. They also do periodic qualitative reviews through use of surveys and questionnaires.

7.1.8. Creating a knowledge creating and sharing culture

Cultural realities in an organisation need to be taken into account when implementing knowledge management. An example may be an organisation where success is measured

The role of knowledge management in eBusiness and customer relationship management

according to billable hours, which leaves little room for knowledge management. The culture is thus oriented towards billing, and knowledge management is not seen as important to the business. This will need to be taken into account when trying to implement knowledge management. The culture in such a situation dictates that knowledge management takes a back seat. This culture will have to be addressed in the knowledge management implementation plan, or else a tremendous amount of difficulty will be experienced.

Once these cultural realities have been identified, a vision needs to be formulated encompassing the need to succeed despite these realities as well as the fact that managing knowledge will help the organisation to achieve its goals (Chait, 1999). It is imperative to link knowledge management to culture and values (Chait, 1999; Donaghue, Harris & Weitzman, 1999; Greco, 1999; Havens & Knapp, 1999; Martiny, 1998; Mullin, 1996; O'Dell & Grayson, 1999; Parlbly & Taylor, 2000; PricewaterhouseCoopers, 1999g, p.8; Vernon, 1999).

If culture is not understood and managed together with implementation of systems, behaviours will be slow to change. O'Dell & Grayson (1999) explain that people and culture are keys to knowledge transfer for two reasons. The first is that learning and knowledge sharing are social activities taking place amongst people. The second is that these practices are complex, rich and embedded in context. Effective knowledge management requires creating a supportive, collaborative culture and eliminating traditional rivalries. Elements of such a culture include believing people want to share knowledge, preparing to lead by doing, relying on the forces of democracy and capitalism, developing collaborative relationships, instilling personal responsibilities for knowledge creation and sharing, and creating a collective sense of purpose. Knowledge management should focus on reshaping the attitudes and behaviours of people so that they can ensure the ready availability and resolute application of both personal and institutional knowledge (Havens & Knapp, 1999).

Moving to a culture that values and encourages innovation, openness, teamwork and knowledge sharing, requires leadership, as well as changes in relationships, organisational structures and the office environment. Management must consider what needs to be done to effect this change. Sustainable cultural change takes time, but useful initiatives can be kicked off quite quickly (Parlbly & Taylor, 2000).

"KM programs depend on cultural and behavioural change, which occur more slowly than business process change...Enterprises with a viable strategy, adequate funding and KM specific skills can implement KM support with minimal difficulty. However, this only lays a foundation on which culture and behaviours can evolve – the real effort and risk in KM is building participation in and reliance on KM by people (experts, users, and their managers). The initial work to implement KM support may be as short as three to six months, but culture

The role of knowledge management in eBusiness and customer relationship management

and behaviour may take multiple years to reach an optimum state" (PricewaterhouseCoopers, 1999g, p.8).

7.1.9. Change management and communication

Ernst & Young (1999c) and KPMG Consulting (2000) identify effective change management throughout the business as critical to the success of knowledge management.

Employees have to understand that their own knowledge and their working environment will be improved by knowledge management, and that their potential for success as well as the organisation's potential for success will be greatly enhanced by knowledge management. If this message is not communicated adequately, the knowledge management initiative may fail. Communication is a key factor (Ernst & Young, 1999c; KPMG Consulting, 2000; PricewaterhouseCoopers, 1999a; PricewaterhouseCoopers, 1999g, p.8). Advocates must drive awareness campaigns to market the goals of the knowledge management programme to influence cultural change. Change management is essential to effect cultural change, which has been identified as crucial for knowledge management in the section above.

7.1.10. Knowledge management must be seen as a way of working

Davenport (1999), KPMG Consulting (2000), Parly & Taylor (2000) and Martiny (1998) state that knowledge management has to be a part of the fabric of the work to import knowledge when it is needed and export it to the rest of the organisation when it is created or acquired.

"...the only way that knowledge activities will be part of the fabric of the job is to design the job from scratch, putting knowledge in and taking out activities that are no longer seen as critical. The tricky thing, however, is that knowledge workers don't really like other people telling them how to do their jobs. Autonomy is a key objective of many knowledge workers; it's one of the main reasons they work so hard to become one. So redesigning work can't be like re-engineering – top down research doesn't cut it" (Davenport, 1999).

According to Martiny (1998) and Mudge (1999), this new way of working needs to be embedded in the overall business strategy and organisational design to ensure that it supports the overall business goals. KPMG Consulting (2000), Martiny (1998) and Mudge (1999) emphasise that allotting time to create, share, harvest and leverage knowledge is essential in this new way of working. According to the researcher this time should be seen as equally valuable to time spent on selling and / or delivering products and services, as it improves the efficiency and effectiveness of the organisation.

The role of knowledge management in eBusiness and customer relationship management

Knowledge is an integral part of an organisation's business processes. It is therefore crucial to manage the knowledge associated with these processes as and when they are executed. This new way of working requires a mindset change according to the researcher. Staff needs to realise that knowledge management is everyone's responsibility. It can only be done effectively by those working with the knowledge in specific contexts. It can never be managed by administrators alone, as the context of the knowledge will be lost, rendering it much less valuable. It is therefore important for staff members to realise that they have to make time for managing knowledge as they would for managing any other organisational asset.

7.1.11. Appointment of dedicated staff and leadership

Knowledge management should be the responsibility of dedicated staff with a leader. If this does not happen, the program never gets the attention it deserves (KPMG Consulting, 2000; Reiss, 1999; Research Institute of America Inc, 1999). KPMG Consulting (2000) also suggests creating knowledge centres with dedicated staff to ensure consistent management of knowledge. Earl & Scott (1999) suggests the appointment of a Chief Knowledge Officer (CKO).

The researcher is of the opinion that the knowledge management function should be the responsibility of dedicated people. If this does not happen, it always takes a back seat compared to other "more crucial" business matters. Knowledge can also be managed in a more structured fashion if done by people who focus on it everyday. In large to medium sized organisations, the knowledge management leader should have a high standing in the organisation to ensure that he or she has enough power to implement knowledge management successfully. In smaller organisations the level that the person is appointed on will not make such a huge difference, but it is important that the person is visible in the organisation and that he or she is supported by top management.

7.1.12. Managing knowledge throughout its lifecycle

Knowledge repositories have a lifecycle that need to be managed. Once created, knowledge repositories tend to grow, reaching a point where they become ineffective due to their sheer size. They then require reorganisation. This reorganisation requires deleting obsolete content and reorganizing what remains. Topic areas may become fragmented and redundant. Reorganising assumes the elimination of these redundancies by restructuring categories as needed. Successful knowledge management organisations proactively manage and reorganise their repositories on an ongoing basis rather than waiting for decline to start before acting. Content needs to be evaluated in terms of volatility of content as well as context (Chait, 1999; O'Dell & Grayson, 1999; Reiss, 1999).

The role of knowledge management in eBusiness and customer relationship management

Content must be reviewed in terms of its applicability. This means that knowledge in the knowledge management system needs to be revised, updated and purged to align knowledge to the organisational strategy (PricewaterhouseCoopers, 1999k, p.16).

7.1.13. Defining criteria for selected content

Organisations need to set guidelines of what knowledge should be made managed within the organisation to minimise knowledge overload.

Havens & Knapp (1999) state that ensuring the availability of high quality, relevant content is a huge job. It involves understanding the specific content needed, where and how it can be made available, and ensuring it is collected. An integrated view of knowledge assets should be maintained, not one that is fragmented by geography or lines of business. Knowledge elements have to be identified at the outset of a knowledge management implementation. The knowledge elements have to be tied to the contexts that they are used in as well as the individuals using them (Chait, 1999).

Organisations must identify what knowledge they need and what knowledge they have. They must be able to identify the gaps between what they have and what they need (Parlby & Taylor, 2000).

Measures should be set up to identify what is deemed as valuable knowledge that merits knowledge sharing and what isn't valuable knowledge (Greco, 1999; Yu, 2000). Not all knowledge is equally valuable to the business – the focus should be on knowledge that is critical to the business (Greco, 1999; Martiny, 1998; Mullin, 1996).

PricewaterhouseCoopers (1999a), PricewaterhouseCoopers (1999k, p.16), Parlby & Taylor (2000) and Yu (2000) specify that it is important to include knowledge not only pertinent to the organisation itself, but also to its environment, e.g. industry knowledge.

7.1.14. Explicit and tacit knowledge

Knowledge management programs must make tacit and explicit knowledge management possible, as both types of knowledge adds value to the organisation (Hargaddon & Sutton, 2000; KPMG Consulting, 2000). It must allow for discussion groups and links to experts, as well as knowledge embedded in documents (Hargaddon & Sutton, 2000). "The people who designed knowledge management systems for Andersen Consulting and McKinsey originally thought reports, PowerPoint presentations and lists of best practice would be sufficient. They supposed that consultants would be able to solve problems just by reading through

The role of knowledge management in eBusiness and customer relationship management

databases. But consultants have found that those systems are most useful as annotated yellow pages, helping them find out whom to talk to about how the knowledge was really used and might be used again" (Hargaddon & Sutton, 2000).

According to the researcher too much emphasis is currently placed on explicit knowledge.

7.1.15. Structuring of the knowledge base

According to O'Dell & Grayson (1999), structuring of knowledge is critical to the success of a knowledge management program. "For knowledge repositories to be meaningful, their structure must reflect the structure of shared mental models or contextual knowledge tacitly held by the organisation. In most organisations, those structures are neither well defined nor widely shared. Yet their explication is essential for effectively managing explicitly encoded organisational knowledge. This requires that a firm defines what a knowledge unit means and how to meaningfully index and categorise a collection of knowledge units for ease of access, retrieval, exchange, and integration".

Knowledge structures lead to easier navigation, organisation and retrieval of knowledge. The researcher is of the opinion that these structures should be very flexible and must be able to adapt as the business environment changes.

7.1.16. Knowledge management processes, policies and procedures

Knowledge management processes, policies and procedures are crucial for any knowledge management program (Greco, 1999; KPMG Consulting, 2000; Martiny, 1998; Parlbly & Taylor, 2000; Reiss, 1999). Processes can be subdivided into two areas of importance, namely knowledge management processes and knowledge management roles. It is critical to understand how knowledge is captured, evaluated, cleansed, stored, provided and used, and how the organisation can improve these processes in alignment with the knowledge management vision. Roles have to be created to perform the knowledge management processes (Chait, 1999).

According to the researcher, establishing processes relevant to all phases of the knowledge management lifecycle is very important, e.g. processes to create knowledge, processes to share knowledge and processes to harvest knowledge from either people or external sources. As stated before, knowledge management is a holistic solution comprising of processes, technology, culture and organisational structure. If any of these elements are not attended to, the knowledge management program will fail. This is particularly true in the case of knowledge management processes. If an organisation, for example, has a very sophisticated

The role of knowledge management in eBusiness and customer relationship management

technology based system, but there are no processes in place to manage the content in the system, the programme will fail, as the content may become outdated, the quality may not be up to standard, etc. Processes provide structure and standards to the knowledge management program and ensure that roles and responsibilities are clearly defined.

7.1.17. Infrastructure management

Technology is a critical enabler for knowledge management. It ensures quick and efficient accessibility and availability of knowledge, as well as the manipulation thereof. It assists in facilitating the knowledge management lifecycle (Parlby & Taylor, 2000). It is crucial for any knowledge management program to include infrastructure management – this does not only include technology, but also training and support (Chait, 1999; Greco, 1999; KPMG Consulting, 2000; Parlby & Taylor, 2000; Reiss, 1999). It is important that technical problems are sorted out prior to implementation and that adequate support measures are in place (KPMG Consulting, 2000).

In terms of support, the researcher is of the opinion that a knowledge centre with dedicated staff members needs to be set up to assist staff in utilising the knowledge management system and to enable staff to find the knowledge they require. Nearly all of the major management consultancies have knowledge centres. PricewaterhouseCoopers, for example, has a number of these knowledge centres globally. They are interlinked with one another and provide the same services to staff irrespective of location, including solving enquiries, doing secondary research, locating experts, and quality assurance of knowledge bases. The centres operate on a 24-hour basis through the linkage of three major centres in three different time zones. These three centres can be utilised by staff members of any country. The knowledge centres are staffed by generalist knowledge managers, as well as functional or industry specialists sponsored by the business to work in the knowledge centres for a specific period of time, e.g. one year. With their specific expertise, it is easier to manage the knowledge in a more effective way.

7.1.18. Training

Knowledge management training and awareness workshops are essential (KPMG Consulting, 2000). The researcher is of the opinion that it is very important that staff understand the philosophy behind the development of a knowledge management programme. They have to have an in-depth understanding of how the programme works, as well as in-depth training on the technology based system, to enable successful participation in the programme. As knowledge management programmes are not static and keeps evolving over time, training

The role of knowledge management in eBusiness and customer relationship management

updates may be required in addition to the initial training to ensure that people are aware of changes made and understand how these changes impact the system.

7.2. eBusiness

Reilly (1999) gives the following overview of factors critical to the success of an eBusiness: "So what are these successful eBusinesses doing differently? Such eBusinesses no longer evaluate their successes based on what their traditional competitors have already done, and they do not remain committed to business processes that may work well for their traditional channels, but are of little value to an eBusiness. Successful eBusinesses are not wedded to old processes or products and are willing to re-evaluate and reinvent the value chain. Inherent in a competitive advantaged eBusiness is the concept of adding customer perceived value to interenterprise processes through the application of eBusiness tools and techniques. To add customer perceived value to products and services, suppliers must understand their customers' value systems, and customers must have an awareness of what would be possible if they had full access to supplier capabilities. The development of a competitive advantaged eBusiness requires in-depth knowledge of the customer base and the processes that affect it. In short, business partners need to engage in strategy sessions that yield a conceptualisation of possible innovations that can create value as a result of eBusiness. In some cases, suppliers may even find that they need to join forces with competitors to offer compelling products and services to their shared customers".

7.2.1. eBusiness strategy

The success of eBusiness initiatives is directly affected by the company's ability to develop a strategic plan and to work at that plan. Even in the infancy of eBusiness, a company's strategic plan can make or break the company if channel conflicts occur. The strategic plan must identify the major eBusiness growth initiatives for all areas of the company (Deise et al, 2000, p.164; Stewart, 1998; Stewart, 2000). The eBusiness vision and strategy are very important and demand continuous leadership focus (Deise et al, 2000, p.37).

While it is imperative to have a business strategy directing overall activities, a five-year planning horizon typical of traditional strategic plans is no longer feasible. Due to changes in the business environment brought about by the Internet, the pace of business change has reached a point where no more than 24 months is reasonable for a plan. Beyond 24 months, it is reasonable to assume that the business environment will be sufficiently different that a new strategy will be required. In addition, the speed of strategy implementation will increase. A strategy that requires more than 12 months to execute is also unlikely to succeed (Frick & Lill, 2000).

The role of knowledge management in eBusiness and customer relationship management

7.2.2. Linking of eBusiness strategy to general business strategy

eBusiness initiative objectives must be linked to critical business issues and business objectives before starting, to ensure that the eBusiness strategy is not in conflict with the generic business strategy (PricewaterhouseCoopers, 2000d).

Executives are often pushed for the rapid development of an eBusiness strategy. In many cases, it is driven by a desire for speedy reaction to the new economy and rapid introduction of eBusiness. There is an implicit assumption that developing a full business strategy is cumbersome and time consuming, and therefore waiting for a business strategy to be developed would cause the eBusiness strategy to fail. In fact the reverse is true. Business strategies can be developed in short periods of time. An eBusiness strategy developed without considering how it will affect existing distribution channels and the business in general can cause the business strategy to fail (Frick & Lill, 2000).

7.2.3. Define strategic objectives

Websites must be designed with clear strategic and commercial objectives in mind (AT Kearney, 2000a, p.23; AT Kearney, 2000b; Deise et al, 2000; p.164). Strategic objectives must be aimed at addressing operational issues like customer loyalty, customer segmentation, channel management, fulfilment, customer service and pricing in the long run (Chu et al, 1999). These strategic objectives will ensure that the eBusiness and business strategies are adhered to and executed.

7.2.4. Establish the business case

Business objectives have to be defined clearly (AT Kearney, 2000a, p.23; PricewaterhouseCoopers, 1999g, p.14; Stewart, 1998).

"To develop an online commerce value proposition, companies should rely on a strategy that we call value reaggregation. The strategy development process begins with an assessment of current value, follows by redefining the value proposition by disaggregating its key elements, and then envisions how networked technologies can improve the customer experience or relationship. A new strategy is constructed, typically supported by eBusiness community value creation. In the end, reaggregating a competitive set of value components creates a new customer value proposition" (Ticoll & Tapscott, 1998).

The role of knowledge management in eBusiness and customer relationship management

According to the researcher the development of a business case is imperative to ensure that there is a need and justification for entry into the eBusiness marketplace and to ensure alignment with the current business model.

7.2.5. Analyse the competitive environment

The organisation's economics have to be compared relative to the competitor's economics, and industry dynamics in the eBusiness environment have to be understood clearly to ensure a sustainable position in the eBusiness marketplace. According to these analyses, a competitive strategy has to be decided upon (Rigby et al, 2000b; Stewart, 1998).

7.2.6. First mover advantage and entry timing

Timing of entry of the eBusiness into the market is critical. This is necessary to minimise risk and maintaining preparedness (PricewaterhouseCoopers, 2000a, p.157; PricewaterhouseCoopers, 2000d).

First mover advantage is critical for any eBusiness. First mover advantage can be influenced significantly by implementation delays (Deise et al, 2000, p.165).

7.2.7. Holistic approach

From a strategic point of view, eBusiness has to be addressed as an integral part of the organisational philosophy. A holistic approach is important because eBusiness initiatives must become part of the vision, goals, strategies, structure and operations of the organisation in order to enhance relationships with customers, suppliers and business partners (PricewaterhouseCoopers, 2000a, p.155; PricewaterhouseCoopers, 2000d). "eBusiness must be integrated into your organisation so that it meshes with your vision. You must develop an eBusiness strategy that aligns technology with your corporate strategy. Vision, integration, holistic thinking – the old verities fit the new world of eBusiness. If you remember that, you will succeed" (PricewaterhouseCoopers, 2000d).

From an operational and tactical point of view, companies must develop a holistic process for addressing all the components of eBusiness if they are to achieve their goals. They must begin by analysing the real and potential opportunities eBusiness offers, including the ability to open markets, develop new products and services, and provide unique combinations of efficiency and value. Then they must make a commitment to invest the necessary resources to move forcefully into this challenging and rewarding future world successfully (PricewaterhouseCoopers, 2000d).

The role of knowledge management in eBusiness and customer relationship management

To be effective, eBusiness initiatives must be integrated thoroughly into a company's existing strategies, structures, and systems. Their success depends on strategic decisions that ensure alignment with the company's long-term vision and goals, which requires senior management commitment. Companies that view eBusiness as a technology solution or a marketing initiative cannot hope to realise its full potential. Unless sufficient attention is paid to critical strategic, regulatory, tax, risk management and human resources implications of eBusiness, companies may hinder their eBusiness or undermine the core strengths of the business (PricewaterhouseCoopers, 2000a, p.155; PricewaterhouseCoopers, 2000d).

7.2.8. Identify and prioritise eBusiness initiatives

It is important to utilise a phased approach in the implementation of an eBusiness initiative to minimise risk through addressing issues as and when they arise and adapting implementation plans accordingly. eBusiness implementations are in most cases "uncharted" territory and a phased approach is therefore more appropriate in order to enable impact assessments as the process unfolds. "The temptation to completely redesign enterprise business practices to become an eBusiness is great; however, greater success will be achieved by choosing tactical projects and implementing them successfully. Large, end-to-end supply chain reengineering projects are seductive, but are seldom a "silver bullet" ensuring success..." (PricewaterhouseCoopers, 1999h, p.9). The proposed action is to develop an eBusiness roadmap for the enterprise, but implement it in stages and to find ways to build innovation into select processes and use learning from these stepwise initiatives to constantly re-evaluate and adjust goals (PricewaterhouseCoopers, 1999g, p.14).

Once strategic objectives have been identified, attention must be shifted to customer support. Customer support is essential for any eBusiness initiative. The business should also define initiatives to integrate the online and physical distribution channels. Each initiative should be prioritised and phased in with the final goal of developing a working eBusiness blueprint (AT Kearney, 2000a, p.23).

7.2.9. Customer segmentation

Customer segmentation is essential. Currently many eBusinesses have a "land grab" mentality, focusing on overall market share. As competitive intensity rises, online retailers will have to target the most profitable customer segments, rather than the greatest number of customers (Chu et al, 1999).

The role of knowledge management in eBusiness and customer relationship management

Market segmentation should take industry, geography and culture into account (Frick & Lill, 2000).

Market segmentation is essential to ensure focus of the eBusiness. Greater focus will ensure more appropriate product design and development, marketing, sales, and customer service.

7.2.10. Customer loyalty

Creating customer loyalty is also imperative to ensure repeat business, as well as cross selling and up selling of products (PricewaterhouseCoopers, 2000a, p.154; Rigby et al, 2000).

It is critical for an eBusiness to get repeat business from customers, as only repeat customers are profitable (Chu et al, 1999; Rigby et al, 2000). Repeat customers refer more people and bring in more business (Chu et al, 1999). "Because customer acquisition costs in e-commerce are high, to recoup your investment you need to convince customers to visit your site time and time again" (Rigby et al, 2000).

7.2.11. Map core business processes across domains

There are three domains of business: physical, virtual and distributed. An understanding of the core business processes of each domain is crucial to ensure seamless integration of initiatives across the domains, creating a seamless customer experience (AT Kearney, 2000a, p.23). Processes in these three domains need to be reengineered drastically (Stewart, 2000). The eBusiness has to determine how it can utilise the Internet to streamline business processes, reduce cycle time and become more cost competitive (Stewart, 1998).

According to the researcher, process redesign will be imperative in the eBusiness environment. Core processes have to be identified and mapped, with roles and responsibilities indicated for process tasks, in order for staff to understand their roles within the new business model.

7.2.12. Top management involvement

The organisation's top managers must be involved in eBusiness initiatives to ensure buy-in from all relevant parties within the organisation and in the organisations of business partners (Andersen Consulting, 1998; Deise et al, 2000, p.171; Dhanji & Jablonski, 2000; PricewaterhouseCoopers, 2000a, p.151; PricewaterhouseCoopers, 2000d; Stewart, 1998; Stewart, 2000). Initiatives must be business driven and have senior level business champions

The role of knowledge management in eBusiness and customer relationship management

(PricewaterhouseCoopers, 1999g, p.14; PricewaterhouseCoopers, 2000d). Stewart (2000) states that companies that do not understand the strategic nature of eBusiness tend to delegate their eBusiness / Internet initiatives to mid or low level IT or marketing managers. Senior management in such organisations is often resistant to change, with the result that eBusiness initiatives do not get the support or funding they need. The outcome is frequently disappointing, further convincing senior management that eBusiness doesn't work.

"Direct access to top executives is needed in order to educate them about the Net and what needs to be done within the organisation to develop its potential. Increasingly, areas such as finance and operations need to get involved as a web initiative matures into more complex services such as online ordering and fulfilment. Without senior management endorsement, organisational change cannot take place quickly or effectively" (Dhanji & Jablonski, 2000).

Other key stakeholders also have to be identified for the physical, distributed and virtual domains within the business (AT Kearney, 2000a, p.23; PricewaterhouseCoopers, 1999g, p.14).

7.2.13. eBusiness team compilation

An eBusiness needs good, creative people that need to be trained effectively to represent the organisation. Human customer contacts are also essential, as real customer service is not about systems, but about people (Andersen Consulting, 1998).

PricewaterhouseCoopers (2000d) indicates that an eBusiness implementation is best done by a dedicated, full time and skilled project team. Management must choose leaders who can work together to formulate sound strategic scenarios and identify the scope and size of the investment and personnel needed to guide the move to eBusiness (PricewaterhouseCoopers, 2000a, p.151).

PricewaterhouseCoopers (2000h, p.9) indicates the following skills as required for an eBusiness initiative:

- Strategy planning skills – understanding of business models and how to develop business cases for projects and convey their importance to the CEO.
- Technology design skills – understanding of integration issues and tools required to meet specific business model needs.
- Implementation skills – ability to install required components of systems and involving trading partners.
- Programme management skills – ability to direct project related activities to a successful conclusion in a timely, cost-effective manner.

The role of knowledge management in eBusiness and customer relationship management

Dhanji & Jablonski (2000) as well as Deise et al (2000, p.171), however, indicate that putting the right eBusiness team together is proving to be a challenge. The researcher is of the opinion that this is due to the fact that the right skills mix isn't always available.

7.2.14. Change management

Managing change in the eBusiness environment is essential, as there are always elements of rapid and radical change (Kehoe, 2000). The organisation needs to understand the breadth and depth of the changes that the organisation must undergo to achieve success (PricewaterhouseCoopers, 2000d). By establishing the foundation for change in the initial stages of its eBusiness activities, a company can more rapidly move up the eBusiness curve (Deise et al, 2000, p.37).

"Understanding that eBusiness is an evolving area that will require future investment and constant attention to developments. In other words, you must transform your organisation into a change embracing entity, one with a culture that accepts that every tomorrow is different and all developments are worth examining for the benefits they may bring" (PricewaterhouseCoopers, 2000d).

7.2.15. Measurement

Measuring the effectiveness of an eBusiness involves using new metrics. The metric used must be integrated with other metrics and must measure strategic business objectives. They must also capture the interaction between eBusiness and traditional distribution channels (Frick & Lill, 2000).

7.2.16. Fulfilment

Fulfilment capabilities are imperative to the success of an eBusiness (Cook et al, 2000). Fulfilment has directly linked to customer satisfaction. "What is clear is that flawless fulfilment is a key driver of customer retention and long term profitability..." (Cook et al, 2000). The fulfilment network must be supported by appropriate information technology to enable to allow customers to know which products are available and which ones are out of stock (Cook et al, 2000).

Timely delivery, as part of fulfilment, is crucial to the success of an eBusiness – this is where the battle for customer's loyalty is won or lost (Chu et al, 1999; Forger, 2000; Rigby et al, 2000b).

The role of knowledge management in eBusiness and customer relationship management

Returns policies must also be in place to enable customers to return items that they are not satisfied with (Brash, Crawford & Grosso, 2000; Chu et al, 1999; Rigby et al, 2000b).

7.2.17. Risk management

It is important for any eBusiness to understand what competitors are doing and what risks they present to the business, and how the organisation can reduce these risks (Stewart, 1998). According to the researcher risks need to be identified in the planning phase of the eBusiness and managed throughout the implementation, as well as subsequent to the establishment of the eBusiness to ensure that problems and risks are anticipated and dealt with as soon as possible.

Risk management throughout a value network requires controls that meet the mutually agreed upon requirements of dependent partners, and which are executed across partners without the barriers common to relationships in typical supply chains today (Deise et al, 2000, p.166). Managing dependency risks will require changes to corporate architectures to agree that decision rights, performance measurements and rewards are aligned properly (Deise et al, 2000, p.167).

7.2.18. Security

Security, privacy and customer support are essential elements for an eBusiness website (AT Kearney, 2000a, p.5; Chu et al, 1999; Deise et al, 2000, pp.168, 170; Howe et al, 1999; Manchester, 1999; Online purchasing frees buyers for strategic work, 1999; Stewart, 1998; Stewart, 2000). Legal and security requirements have to be determined at the outset of an eBusiness initiative (PricewaterhouseCoopers, 2000d; Stewart, 2000). Security is important not only to protect information and systems but also in building customer trust (Stewart, 2000). "In eBusiness, trust cannot be established in the absence of effective security. Security is attained by creating an appropriate technical architecture and surrounding processes to provide identification and authentication, authorisation, nonrepudiation, privacy and accountability" (Deise et al, 2000, p.168). According to the researcher customer support is essential as part of customer service delivery aimed at creating customer delight.

7.2.19. Speed and flexibility

The ability and capacity to speedily implement changes in a heavy and complex company evolving in an unstable environment will be a critical success factor in the future (Ernst & Young, 1999a). According to the researcher this flexibility will provide the eBusiness with competitive advantage to either be a first mover or quick follower.

The role of knowledge management in eBusiness and customer relationship management

The need to adjust quickly to new and constantly changing market situations requires special skills and structures. Companies will need to manage both speed and flexibility (Deise et al, 2000, p.xviii; Friedman & Langlinias, 1999; PricewaterhouseCoopers, 2000e; Shevlin, 1999).

"eBusiness places greater speed and efficiency demands on enterprise infrastructure than anything previously encountered. Because the business environment and the competitive landscape can change so quickly, it is imperative that eBusiness initiatives be implemented quickly. Red tape must be cut. Bureaucracy that impedes the progress of eBusiness initiatives must be bypassed or crushed. The manager responsible for the eBusiness initiative must have wide latitude and authority to bring the project to fruition quickly. In "Internet time" a delayed project is a failed project" (PricewaterhouseCoopers, 2000e).

7.2.20. Understanding legal requirements

Organisations entering the eBusiness arena must understand tax and legal issues e.g. tax regulations, ensuring the validity and enforcements of contracts, intellectual property protection including copyright and trademark protection, and legal recourse mechanisms in disputes (PricewaterhouseCoopers, 1999b; Stewart, 1998).

7.2.21. Integration

When eBusiness initiatives are created and implemented all interdependencies must be understood to ensure full integration between initiatives (PricewaterhouseCoopers, 2000d). According to the researcher this will minimise bottlenecks in the focus areas of strategy, business processes, technology and people management.

New eBusiness initiatives have to be integrated with current business processes (Andersen Consulting, 1998). Technology integration can also be a hurdle. Legacy systems often cannot be mapped forward in their entirety, resulting in hours of manual rekeying or elaborate data translation scripts that promote inaccuracy before the new system is ever utilised. Utilising data standards will help in reducing this risk, as does employing of middleware (Deise et al, 2000, p.171; Stewart, 1998).

7.2.22. Knowledge management

Employees have to be empowered through knowledge and their own knowledge and experience have to be used to the fullest (Deise et al, 2000, p.36; Ernst & Young, 1999a; Evans & Wurster, 200, p.89). Means & Schneider (2000) indicate that knowledge and

The role of knowledge management in eBusiness and customer relationship management

information sharing is crucial to the success of an eBusiness. According to the researcher knowledge management is crucial for eBusiness due to the sharing of expertise required during such an initiative. Knowledge management can provide the platforms for sharing knowledge across virtual boundaries and assist staff in leveraging their collective knowledge and experience.

To enable knowledge management in the eBusiness and customer relationship management environments, the organisation managing knowledge will need to possess the following assets (Hagel & Rayport, 1999):

- Brand breadth

Brand breadth allows marketing of diverse products and services. Brand breadth ensures quality of knowledge. Only brands that enjoy broad, cross-category relationships with customers will provide a context in which horizontal patterns of customer behaviour can be observed and interpreted effectively. Narrow brands cannot compete because the relationships they engender are too tightly focused on insight gained from seeing how customers behave across a range of product and service sectors.

- Emotional bond

Emotional bonding provides trust that in turn provides access to knowledge. While trust has always been important in business, it will become increasingly so in the online world with its expanding choices and declining switching barriers. In the past, knowledge on customers was taken for granted. In the future it will have to be purchased and if a relationship is not based on trust, the knowledge may not be available at any price.

- Transactional intensity

It allows data richness that comes from intensive economic activity across a range of products and services (without which consumer profiles will generate insufficient data to support powerful insights).

"Nexgenix stated that the key for e-tailers is to take steps to learn their customer's preferences, but cautioned that the information must be knowingly given by customers, not taken surreptitiously" (Poll reveals lack of e-relationships, 1999).

7.2.23. Creating awareness

The critical first step of the digital customer experience is bringing people to the site for the first time. Building awareness under the target market is important, as well as communicating value to them (AT Kearney, 2000a, p.6).

The role of knowledge management in eBusiness and customer relationship management

7.2.24. Adequate resources

eBusiness initiatives should be properly funded. Organisations must be aware of the funding that will be required and has to commit to making such an investment (Deise et al, 2000, p.165; Shevlin, 1999; Stewart, 1998; Stewart, 2000).

According to the research adequate resources with reference to people are also imperative. People with adequate knowledge, skills and experience have to be recruited and utilised as far as possible.

7.2.25. Ease of use

Sites must be easy to use, fast and easy to navigate, and it must allow for quick transaction making (AT Kearney, 2000a, p.6; Chu et al, 1999; Deise et al, 2000; p.168; Rigby et al, 2000). Website should contain high quality, relevant, working links to other sites (AT Kearney, 2000a, p.6).

7.3. Customer relationship management

7.3.1. Customer relationship management strategy

Customer relationship management is a long-term strategy (Assabi, 2001; Faulkner & Gray, 1999; Forman, 2000. p.105). According to the researcher a formalised customer relationship management strategy is essential to ensure a shared vision of managing customer relationships and to ensure that this shared vision fits into the overall business strategy.

The customer relationship management strategy is a strategy that must be tailored to each market segment. To be effective in strategically managing the customer relationship, the organisation must do the following (Brown, 2000a, p.xx; Ferron, 2000, p.189):

- Define its customer strategy

To do this there must be an understanding of customer segments and their needs. This is a mandatory requirement if the organisation is to understand which products and services to offer and if that offering will be identical for each segment.

- Create a channel and product strategy

This defines how the organisation will deliver its products and services efficiently and effectively, ensuring sales productivity and effective channel management.

The role of knowledge management in eBusiness and customer relationship management

- Understand the importance of a robust and integrated infrastructure strategy

This entails creating an environment to enable a relationship with the customer that satisfies the customer's needs. It requires an ability to achieve proactive customer management and reactive customer care.

All the components of the customer relationship management strategy must be focused in the same direction and must work together to achieve the customer relationship management vision. All components and divisions of the organisation must move in the same direction so that every individual knows where they are going and how they fit in (Gulycz, 2000, p.323).

According to Anderson & Jacobsen (2000b, p.270), it is important that the customer relationship management strategy is a business strategy and solution. This means that the solution should reflect the way the business will work in future. To do this, it is necessary to start with the organisation's customer relationship management strategy and to ensure that, once implemented, the system will support the customer, channel and product strategies. The customer relationship management strategy should be supplemented with concrete goals that can be used as reference points during the implementation process and can also function as critical success factors for the completed customer relationship management solution.

"What is lacking in many instances is a single clearly articulated vision for a company's customer relationship management strategy and leaders who own and steer the company in a clear direction. If all the customer relationship management initiatives reflect that single vision, they are bound to be less confusing and therefore more effective. A unified vision will probably result in a smaller number of customer relationship management initiatives within the company" (Ernst & Young, 1999).

7.3.2. Strategic segmentation

Most companies fail in strategic segmentation, because they try and give everything to every customer, without understanding the customer's tradeoffs or cost to business (Dull, 1999). In order to prevent this, strategic segmentation has to be done. An organisation has varied relationships with its customers. Grouping customers according to the nature of these relationships allows the organisation to isolate those customers who present the greatest future potential. These are the ones from which the organisation can derive the most value. In order to do this segmentation effectively, the organisation has to collect and analyse a full range of information on those customers with the most potential, as well as the markets in which they do business (Brown, 2000c, pp.81-82). The key to enhancing revenue opportunities is linking particular products and services to particular customer segments (Brown, 2000a, p.xxi; Dull, 1999, Gordon & Roth, 2000, p.38).

The role of knowledge management in eBusiness and customer relationship management

According to the researcher segmentation is required to ensure that each customer segment is serviced according to their unique needs and requirements in terms of products and services.

7.3.3. Well-defined marketplace

Customer relationship management can only be effective operating in a well-defined market space that is determined by the company's business strategy. This foundation establishes the company's target markets, its high level segmentation scheme for attacking the market space, the value proposition that it will offer customers in each of its segments, and the operating model that will effectively deliver on its value proposition (Ernst & Young, 2000a).

According to the researcher this is also one of the reasons to link the customer relationship management strategy to the overall business strategy, where markets should be defined.

7.3.4. Defining the value proposition

The value proposition of the organisation has to be communicated to customers to ensure customer attraction and retention. The value proposition requires organisations to develop a solid understanding of who their customers are, what they value and how the products and services could be optimised or configured to deliver this value (AT Kearney, 2000c; Ernst & Young, 2000a).

7.3.5. Holistic approach

A successful customer relationship management initiative requires a concerted effort that combines the right strategy with the processes, technology and human performance programmes needed to implement the vision (Raaen, 2000). These elements are the basis of a customer relationship, and one without the other weakens the relationship, thus affecting the business and its performance.

7.3.6. Executive sponsorship

Lack of buy-in and understanding of customer relationship management initiatives can create pockets of resistance, resulting in a fragmented and ineffective application of the strategy (Ernst & Young, 1999d).

The role of knowledge management in eBusiness and customer relationship management

The leadership talent to accomplish customer relationship management change must be provided by an executive sponsor. It is necessary to have a sponsor who has the authority to push new ways of doing business, which requires co-ordination of activities across previously uncrossed boundaries. Customer relationship management is a long-term strategy requiring the visibility, credibility and stability of a senior executive to maintain leadership and provide communications over the long haul (Anderson & Jacobsen, 2000b, p.274; Brown, 2000c, p.81; Dunster, 2001; Faulkner & Gray, 1999; Gordon & Roth, 2000, p.39).

Sponsors are required whose personal goals are directly linked to the success of the implementation of customer relationship management. The sponsor can help identify the resources and reduce the resistance of employees and can ensure that the system will survive once the consultants have left the enterprise. The best sponsors are often found in top management. Because of their positions, they have enough influence to find the required resources and accelerate the decision making process. At the same time, they are able to coordinate the process with other change initiatives and make important decisions. Sponsors are especially effective when changes are to be communicated to employees. By participating actively in the process, they appear as project ambassadors, and when the changes are to be sold internally, these ambassadors can help employees understand the project vision, thus positively influencing employee perception of the project (Andersen & Jacobsen, 2000, p.274; Dunster, 2001).

It is the responsibility of management to create a sense of urgency and decisiveness to give the project the impetus necessary to ensure ongoing progress based on the project vision and guidelines. Management's direct involvement in the project and ongoing communication about the significance of the customer relationship management initiative are decisive for the success of a customer relationship management programme (Ernst & Young, 1999d).

7.3.7. Staff involvement

No matter how well the vision for customer relationship management is laid out, employees ultimately must buy in to the strategic objectives and goals. Any large-scale customer relationship management initiative will fail unless individuals from the executive level to the line worker are committed to the goal and the road that needs to be taken to get there (Dunster, 2001; Ernst & Young, 1999d; Hopkins, Lusher & Manasco, 1999; Raaen, 2000).

In large customer relationship management projects, the changes will require the full involvement of certain employees at various times. To create an effective work climate and to make it attractive to participate, employees involved in the process have to understand what their positions will be in the new organisation after changes have been affected. They should

The role of knowledge management in eBusiness and customer relationship management

know that they are not at risk by participating – rather that their value to the organisation will increase. A customer relationship management project should be an opportunity for the best employees of the organisation to shine (Anderson & Jacobsen, 2000b, p.275).

It is best to involve employees who best understand the business in the customer relationship management process. These business experts, in the role of process owners, must help define the business processes in conjunction with the customer relationship management technicians. In other words, they must help define the customer relationship management system's functionality. The advantage of involving employees as process owners is that the solution will almost certainly live up to the daily requirements of company users in terms of functionality – what will be tracked, what response time is required, what screen views will be needed, what reports must be produced. In addition, these process owners in conjunction with departmental heads can act as front figures and help sell the change process to the organisation (Anderson & Jacobsen, 2000b, p.271).

At an early stage of the project, it is necessary to involve a greater part of the organisation than just the process owners. This is because it requires time to adjust to the changes brought about by customer relationship management. Best practice shows the best results if about a third of employees are involved somehow. This causes a great degree of buy-in and future positive word-of-mouth. Employees can participate in the development work, in meetings, or in testing. In this way they are able to learn about the system and hear how it will affect their daily work. If employees are not involved, it is often difficult to ensure the necessary commitment to using the customer relationship management software system. In the long term, this will affect the survival of the system. Questions such as ownership of basic data, updating and so on may also cause many problems if employees do not understand the changes right from the start (Anderson & Jacobsen, 2000b, pp.273-274).

7.3.8. Change management

The organisation has to be ready for change when implementing customer relationship management (Assabi, 2001; Brown, 2000c, p.81). Change causes fear, unrest and uncertainty for most people, so change management must address and neutralise these issues (Anderson & Jacobsen, 2000b, p.274). This is clearly substantiated by others in the literature:

- "The technology is one piece...but making the cultural or organisational shift to use it in the right frame of reference is the more difficult part" (Groenfeldt, 2000).
- "Customer relationship management will require substantial enterprise-wide transformation of people, processes and technology" (Ernst & Young, 1999d).

The role of knowledge management in eBusiness and customer relationship management

- "Analysts estimate up to 70% of CRM programmes will fail. The biggest reason is cultural" (Kritzinger, 2001).

Change management is a central element in project management. Customer relationship management systems today build on new ways of thinking, which many organisations do not currently practice. Team based selling is a good example because in this type of selling the sales representatives no longer act as individual hunters but as a team supported by the rest of the organisation. Naturally this places new demands on how the sales team co-ordinates sales activities and shares information that was previously the individual sales representative's responsibility and security. If during the change process, this change in operating practice is not taken into consideration, implementation may meet resistance from employees and the business value of the implementation may be significantly reduced (Anderson & Jacobsen, 2000d, p.271).

7.3.9. Communication

Communication is one of the most important elements in creating an understanding towards a customer relationship management strategy and solution. Good communication is essential both internally in the organisation as well as externally with customers.

Internally change should be presented as aimed towards the business and not IT. Employees must understand that the enterprise is initiating the project to achieve business benefits in the form of loyalty, cross-sales, improved customer service and that all activities aim at maintaining the competitive advantage of the enterprise, and its ability to retain competent employees. During the project, participants will come into contact with large parts of the organisation and therefore are an important group when it comes to communication. All of these people should have a good understanding of the project and they must be able to answer questions on the project (Anderson & Jacobsen, 2000b, p.275).

The following tips can help make an internal communication program a success (Anderson & Jacobsen, 2000b, p.275):

- When choosing communicators, the enterprise should be selective. These people should be well respected and perceived as reliable sources of information.
- Employee understanding of the project must be kept up to date.
- There should be a steady stream of communication – management should not be afraid to repeat key messages.
- Middle managers are good communicators and at the same time important supporters of the project.

The role of knowledge management in eBusiness and customer relationship management

From an external point of view, communication is critical in building and maintaining customer relationships (Anderson & Jacobsen, 2000b, p.274; Brown, 2000d, p.132; Patmore & Renner, 1997). Some companies give their call centre operators training in communication and interaction skills, and equip them with computer systems and skills to enable them to answer customers' questions relating to products and services, or any other enquiry, immediately (Brown, 2000d, p.132; Patmore & Renner, 1997).

7.3.10. Getting the right skills and providing adequate training

The importance of a thorough and detailed training programme to the end users is often overlooked. In many cases, staff has not been sufficiently trained in the customer relationship management system and typically use less than 50% of the application's functionality. Organisations are in such a rush to implement the systems that proper training is cut short (Anderson & Jacobsen, 2000b, pp.268, 274).

Training both project participants and users is a prerequisite for a successful project. Through training the enterprise can ensure that all involved parties know what to expect in terms of the solution of their particular tasks. All too often, the enterprise overlooks the fact that not all employees have the necessary general IT skills and that only a few understand the customer relationship management technical or infrastructure concept (Anderson & Jacobsen, 2000b, p.278). Simply buying technology accomplishes nothing without ensuring that the skills sets needed to use the system are present on both customer and employee side. Everyone touching the technology has to understand how to use it, what it can and cannot do, and what is expected of them. In addition, the technology has to have real value to the user. It is thus important to ensure that all stakeholders in customer relationship management have the right skills sets to use technology effectively (Nelson & Berg, 2000).

Training is not just about skills relating to technical systems. Education on the merits of teamwork, the products of the organisation and its customers, and communication skills are key ingredients for strategic customer care. Each of these skills can be improved with training (Brown, 2000c, p.84).

7.3.11. Horizontal organisational structure

Most traditional organisations are organised around geography and / or products. Such a vertical operating structure makes it extremely difficult to execute customer relationship management, because customer relationship management requires a horizontal, customer based structure. Even if a company has the best intentions, a vertical, product based operating structure severely limits any effort to manage customer relationships. CEOs are

The role of knowledge management in eBusiness and customer relationship management

coming to realise that their customer relationship management strategy is misaligned with their operational structure. Successful customer relationship management will require substantial enterprise-wide transformation of people, processes and technology. There has to be a strong customer advocacy (Assabi, 2001; Ernst & Young, 1999d).

7.3.12. Integration between technology and business processes

Customer relationship management is not just about technology. The key to minimise the risk of failure is to integrate customer relationship management technology with strategy, processes, tactics and skills sets (Dunster, 2001; Nelson & Berg, 2000). Customer relationship management needs effective processes. If customer service takes too long, the customer will be frustrated and the processes will also cost more than they should (Dunster, 2001).

"Ultimately the technology infrastructure and its integration with business processes are the keys to the success or failure of a data-driven customer relationship strategy – whether the relationship strategy is based on a single transaction or a deep and complex partnership with customers. Regardless of the type of relationship strategy, all firms need a minimum level of channels, technology and connected architecture, including basic data warehouse and simple call centres" (Ernst & Young, 1999d).

According to the researcher it is imperative that the core processes on the business process value chain, from product development through sales and customer service, has to be mapped before implementing customer relationship management to ensure that the processes are ensuring optimal efficiency. Technology then has to be adapted to enable these changes where applicable.

Integration in the technology environment is, however, also of vital importance. Linkage between front-office products and back-office systems such as ERP and financials, are essential. This linkage provides customers access to the same data and services via phone, Internet, e-mail, call centres or personal contact with a sales representative (Anderson & Jacobsen, 2000b, p.273; Mullin, 1999; Patmore & Renner, 1997).

7.3.13. Process design

Processes need to be designed in organisations for all areas that affect the customer. Customer relationship management must be based on an excellent process for identifying and targeting customers. Companies must also have processes that facilitate shifting of

The role of knowledge management in eBusiness and customer relationship management

resources to serve the most profitable customers and to disengage high maintenance, low margin prospects (Patmore & Renner, 1997).

As stated above, the researcher is of the opinion that all core business processes have to be redesigned to ensure optimal customer focus.

7.3.14. Measurement

If the customer relationship management initiative is to succeed, it is critical to create performance measurement systems and processes that promote alignment with the initiative (Assabi, 2001; Ernst & Young, 1999). According to the researcher these measures should track successes and failures relating to the initiative.

In the planning process, it is critical that metrics are defined which clearly demonstrate that the project meets and aligns with the original business objectives that inspired the project. These metrics should be objective and measurable. A project plan detailing objectives, approach, strategy, ownership, timeframe and responsibilities is essential. Resources such as service providers should also be identified. A communication plan is also critical to disseminate details of the project to all stakeholders (Ernst & Young, 1999d).

Measures of success must shift from product-volume orientation to customer-oriented measures such as customer retention or breadth of the relationship (Brown, 2000c, p.84; Faulkner & Gray, 1999).

7.3.15. Re-attracting customers

Successful businesses develop sustainable value by developing loyal customers. Online businesses should focus on more than purely acquiring customers and driving initial satisfactory purchases. Customers must be enticed to revisit, thereby building customer loyalty. Enticing customers to revisit requires organisations to further improve customer interaction through enhanced offerings and targeted, content-rich communications (AT Kearney, 2000a, p.16).

There is a strong correlation between customer satisfaction and customer retention. For example, a recent study determined that 95 percent of customers who rate service as "excellent" will repurchase from an organisation and are unlikely to switch to another product or service provider. For those customers who rate service as "good", the number drops significantly – to 60 percent (Brown, 2000a, pxxi).

The role of knowledge management in eBusiness and customer relationship management

Engaging customers on an ongoing basis will result in increased product purchase opportunities, and hence improved customer retention potential. Convenience and content are crucial to attract repeat business from customers – a site that is difficult to use will fail to retain customers, and a site lacking content will lose people's interest. Customisation features that allow customers to interact and receive information as they please is a critical success factor in ensuring customer retention (AT Kearney, 2000a, p.16). One of the best ways to improve customer retention is to talk to people who have used the organisation's site and then defected. Through targeted e-mails insight can be gained into why people leave and where they are going, be it online or offline (Rigby et al, 2000b).

Online communities offer a compelling way to entice customers back to an organisation's site. Communities emphasise and enable the shared experience of members in a real-time manner. Online communities also enhance the speed and value of information sharing, allowing customers to deepen their experience with a site and build a more personal connection that is based on underlying content (AT Kearney, 2000c). Another way of bringing customers back to a site is by making connectivity easy. Online attraction is enhanced by linking to other popular sites that target the customer segment (AT Kearney, 2000c).

7.3.16. Ensuring an excellent digital customer experience

The following quotations from the literature details the critical success factors related to the digital customer experience as part of an organisation's customer relationship management strategy:

- "Expanding the digital customer experience moves beyond attracting and retaining customers to providing additional value based upon who customers are, how and why they shop online, and what products or services they are interested in. Effective methods for expanding the digital customer experience leverage multidimensional data culled from ongoing interactions with a particular customer or group of customers to deliver a personalised online experience. Personalised experiences create a customer base that spends more time and money with each site they visit. An online business can make this reality through proper management of tightly integrated product and customer information databases" (AT Kearney, 2000a, p.16).
- "Customer relationship management means anticipating customers' needs, viewing customer information as a strategic asset for both parties, and treating each customer as a unique entity with unique needs and desires. It also means providing a single corporate face to the customer, wherever the customer may touch it, through different business units, regional offices, or operational organisations within the company. Customers expect integrated, seamless, multi-channel customer service. Such service should be

The role of knowledge management in eBusiness and customer relationship management

transparent to the customer whether the service is being provided by the network master or by a third party provider" (Deise et al, 2000, p.80).

According to the researcher, each digital experience of the customer should create customer delight and thus ensure loyalty.

7.3.17. Providing customer care options

Customers like to be managed, but not too much. A variety of payment, delivery and return options, in addition to features such as gift-wrapping and personalised gift cards, have become expected standards in eBusiness. Customer care is also about customer support at all stages of the customer relationship. Consumers should be offered multiple opportunities and avenues – e-mail, toll-free numbers, frequently asked questions pages and live chat sessions to get their questions answered. They should also receive immediate recognition of their request along with status reports of the resolution (AT Kearney, 2000a, pp.4-5; Rigby et al, 2000b).

7.3.18. Utilisation of customer knowledge

Customer knowledge should be utilised to ensure one consistent view of the customer from the organisation's point of view, irrespective of where the point of contact is.

Underlying good customer service is a culture of service and the information infrastructure to support it. The issue of consistent information at each customer contact is an implementation tactic that supports the objective of retaining and extending customer relationships (Ernst & Young, 1999d).

A comprehensive 360 degree view of the customer includes information that is collected at all of the customer contact points. Processing this information can be very complex. Data from all customers must be collected, verified, and formally analysed before it is useful for decision-making. The goal of collecting the information is to determine the profitability of customers (Bergeron, 2001; Dunster, 2001).

Customer-centric information management drives planning and operations and provides comprehensive information to sales marketing and service staff (Formant, 2000, p.105; Gordon & Roth, 2000, p.38; Mullin, 1999). "Effective methods for expanding the digital customer experience leverage multidimensional data culled from ongoing interactions with a particular customer or group of customers to deliver a personalised online experience. Personalised experiences create a customer base that spends more time and money with

The role of knowledge management in eBusiness and customer relationship management

each site they visit. An online business can make this reality through proper management of tightly integrated product and customer information databases" (AT Kearney, 2000a, p.16).

It may become increasingly difficult to obtain customer information in future, however. Hagel & Singer (1999) say that for many consumers the privacy backlash may have less to do with the desire to conceal information about themselves and more to do with their pragmatic assessment that the return for the information they divulge is not satisfactory. Most consumers have shown that they will release personal information if they can profit by doing so. In doctors' offices, for example, consumers share intimate details of their health in exchange for appropriate medical care. They share intimate details about their money and holdings with financial consultants in exchange for appropriate advice. In all of these exchanges, the key is that consumers receive sufficient value for their data (Hagel & Singer, 1999).

"Few companies unfortunately derive any real additional benefits and intelligence from the vast data and information they gather from CRM...Without the ability to process data and information into intelligence, and ultimately using this to create competitive advantage, companies will fail. Business and competitive intelligence capabilities in companies are no longer "nice-to-haves" but crucial for survival" (Havenga, 2001).

7.3.19. Marketing

Marketing is extremely important in any customer relationship management initiative to create awareness with potential customers and loyalty with current customers. According to AT Kearney (2000a, pp.4-5) follow-up marketing is extremely important to ensure cross selling and up selling.

Follow-up marketing can be done in a variety of ways. "...the value proposition can be reinforced by increasing contact with targeted customers through e-mail and other forms of communication. At many sites, consumers can sign up for emails that offer customised content. Given the tremendous amount of such messages, it becomes even more critical for marketers to ensure continued loyalty by focusing on providing customers with high quality, well targeted content" (AT Kearney, 2000c).

7.3.20. Adequate resources

The internal and external resources required to customise and implement the software solution for customer relationship management are usually underestimated. This applies to both the number and type of resources needed. Acceptance of the status quo, lack of will to

The role of knowledge management in eBusiness and customer relationship management

change and an over-focus on the present situation rather than the desired future outcome result in huge extra costs, or in the worst case scenario failure to achieve the planned business improvement (Anderson & Jacobsen, 2000b, p.268). Adequate resources are therefore imperative.

7.3.21. Phased implementation approach

Using a phased implementation approach when implementing customer relationship management sets manageable objectives and allows bugs to be identified and fixed without crippling the whole enterprise. Each implemented phase gives the organisation the chance to reassess how much was actually accomplished and to modify the approach accordingly (Ernst & Young, 1999d).

7.3.22. Scalability

A customer relationship management system should be scalable to ensure growth in the future can take place and will be manageable. Scalability refers to the ability of a system to increase in capacity as users demand more, the volume of data grows, more users are added to the system, and more applications are developed that need to interconnect with the platform (Ernst & Young, 1999d).

7.3.23. Valuing employees

Freemantle (2001), Bergeron (2001) and Cooper (2001) emphasises the fact that employees must be valued and made to feel good about their work, in order for them to build good customer relationships. Freemantle states that these feelings come from the heart and radiate from the CEO through the whole company. These companies are driven by a deep-rooted sense of positive emotional value. He is of the opinion that that is where the success of people like Sir Richard Branson lies – he values his people and realises that the success of Virgin relies on the people he employs.

"To sustain a high level of positive feelings and thus exceptional customer relationship is hard work. It requires an immense amount of emotional energy – emotional energy which many front-line employees would prefer to avoid if they could relapse into the automatic mode of routine and "unthinking processing of customers" (Freemantle, 2001).

One of the most neglected areas of customer relationship management is psychology. Too many companies rely on computer systems to build relationships and the eBusiness world is exacerbating this. Most customers are social human beings and interactions with people

The role of knowledge management in eBusiness and customer relationship management

rather than systems provide immense emotional value in establishing and building relationships with them. Many organisations are task-driven and do not give attention to psychological issues. Successful organisations are effective in making both their employees and their customers feel good (Freemantle, 2001).

7.4. Conclusion

(Refer Figure 25 for summary)

7.4.1. The role of knowledge management as critical success factor in eBusiness

Knowledge management contributes to the value proposition of an eBusiness. Knowledge management is a critical factor in providing eBusinesses with timely access to accurate knowledge and intelligence on the organisation's markets, products and services, competitors, processes and methodologies, employee skills and regulatory environment, as well as other strategic areas of concern. Knowledge management will thus provide the eBusiness with the ability to react swiftly in terms of decision-making and adaptation to market conditions – one of the critical success factors for eBusinesses. Knowledge management also allows the organisation to build its intelligence through retention of knowledge within the organisation, as well as through the facilitation of knowledge flow across organisational borders in the supply chain or virtual marketplace.

Knowledge management assists in achieving, *inter alia*, the following goals in the eBusiness environment, thereby adding value (these are not discussed in detail – refer to Chapter 8 for more detail):

- Knowledge management facilitates precise, reliable knowledge across all processes and all stakeholders.
- Knowledge management facilitates the provision of access to the right knowledge at the right time to the right people.
- Knowledge management can ensure that an organisation captures, shares and acts on its knowledge.
- Knowledge management builds trust and collaboration amongst business partners.
- Knowledge management provides navigation abilities through the use of applicable technology.
- Knowledge management provides a single point of entry to the internal knowledge base, ensuring easy navigation.
- Knowledge management provides one interface between interactive eBusiness partners.
- Knowledge management allows structured access to disparate knowledge sources.

The role of knowledge management in eBusiness and customer relationship management

- Knowledge management provides processes and platforms through which knowledge can be internalised in the eBusiness.

7.4.1.1. Knowledge management strategy tied to the business strategy

Knowledge management is a critical success factor for eBusiness. The eBusiness strategy therefore needs to address knowledge as key organisational resource. The business strategy should address how knowledge as resource will be managed and leveraged to extract value for the organisation, in both physical and virtual environments. The business strategy should indicate which business objectives can be achieved through the leveraging of knowledge, as well as the benefits associated with the achievement of these objectives through the use of knowledge management (refer Figure 23).

Knowledge is an integral part of an organisation's business processes, which in turn are tied to the business strategy. It is therefore assumed that knowledge underlies the business and its operations, but it is key for any eBusiness to specify explicitly how it will leverage the value that knowledge can provide in the virtual world, seeing that processes differ in the virtual and physical world. The way that knowledge will be leveraged and benefited in the virtual world will thus differ and needs to be highlighted in the business strategy. In short, the business strategy should address the knowledge management value proposition for the eBusiness (refer Figure 23).

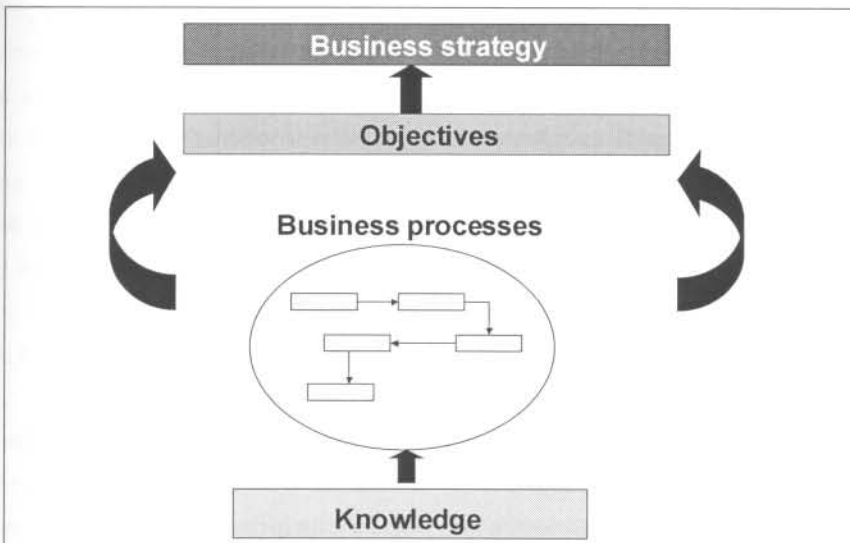


Figure 23. Knowledge management strategy tied to the business strategy

The role of knowledge management in eBusiness and customer relationship management

7.4.1.2. Knowledge management assists in creating a knowledge sharing culture

In the eBusiness environment, virtual communities within organisations are becoming more and more prevalent. In such an environment knowledge sharing is of the essence. Knowledge management can assist in creating processes, platforms and structures through which knowledge can be shared effectively. Knowledge management will also ensure the retention of and access to the knowledge shared in these virtual communities.

In the virtual environment knowledge sharing across organisational boundaries is also taking place. Knowledge management can ensure that the knowledge sharing takes place in a manner conducive to the eBusiness environment by providing the required knowledge sharing forums, tools and processes through which knowledge can be shared and retained across organisational as well as geographical boundaries.

7.4.1.3. Knowledge management as change agent in the eBusiness environment

Change management in any organisation is largely based on knowledge sharing, to effect a change in behaviour in the organisation. Knowledge management can assist in facilitating the sharing of knowledge around new programs or new business processes in the organisation by providing mechanisms for the publishing of knowledge around these changes affecting employees. It can also retain knowledge on the progress of the change management itself.

Knowledge management can also act as agent towards creating change in the virtual environment in terms of all staff becoming knowledge workers. Knowledge management can provide all staff members with the technological (and other) tools and processes to enable them to create, share, harvest and leverage knowledge as integral part of their day-to-day activities. Because eBusinesses are driven by redesigned processes, the way that people work will be changed, creating an opportunity to empower staff to become knowledge workers as they adapt to their redesigned positions within the eBusiness.

7.4.1.4. Knowledge management critical for virtual communities

In the eBusiness environment, virtual communities are common. These virtual communities share knowledge on work related issues and experiences. Knowledge management provides these virtual communities with platforms and processes whereby knowledge can be created, shared, harvested and leveraged, e.g. discussion databases. It allows staff that is geographically dispersed to have access to knowledge and expertise in other locations anytime, anywhere. It thus allows time saving through the elimination of duplication of work,

The role of knowledge management in eBusiness and customer relationship management

and quicker access to high quality knowledge and expertise, and therefore quicker and more accurate decision-making.

7.4.1.5. Knowledge management is critical for the positioning of an eBusiness

Knowledge management plays a critical role in the analysis of the competitive environment and the entry timing of an eBusiness. Knowledge management provides processes through which competitive intelligence can be harvested and analysed to benefit the organisation in terms of its market positioning and its entry into the market. Knowledge management is also critical in assisting leaders to establish the priority of eBusiness initiatives based on the market and competitive environment. Knowledge on the customer base also allows the organisation to do segmentation of its customers in order to target their marketing efforts of products and services, and to deliver quality service.

7.4.1.6. Knowledge management ensures agility

Speed and flexibility are critical success factors for an eBusiness. To ensure speed and flexibility, decision-making needs to be swift. That can only happen if the high quality, accurate knowledge on a variety of issues is available for decision-making at the right time and in the right format. Knowledge management has as its aim the provision of quality knowledge to decision-makers to ensure that decisive action can be taken quickly if required, thus ensuring corporate agility.

7.4.1.7. Knowledge management ensures knowledge retention

Due to the fact that the virtual environment expands the amount and / or span of knowledge available to the organisation, it becomes increasingly important to retain relevant knowledge so that it is available to staff at any point in time. This is particularly true of employee knowledge and experience – this knowledge needs to be captured through a knowledge management program to ensure retention and availability of it in the correct format at the right time, even when the employee is unavailable or leaves the organisation.

7.4.1.8. Structuring of website content

Structuring of content of the website as function or subset of knowledge management is critical to the success of the website, especially in terms of ease of use. Knowledge management specialists should be used to determine the structuring of the content of the website to ensure quick and accurate retrieval of information by customers. Knowledge management specialists should also ensure quality of the information.

The role of knowledge management in eBusiness and customer relationship management

7.4.2. The role of knowledge management as critical success factor in customer relationship management

7.4.2.1. Knowledge management strategy tied to the customer relationship management strategy

The customer relationship management strategy must indicate how knowledge should be used as organisational asset to build and maintain customer relationships. The customer relationship management strategy should indicate which customer relationship management objectives can be achieved through the leveraging of knowledge, as well as the benefits associated with the achievement of these objectives due to the leveraging of knowledge.

Knowledge should be used as input to enable the three main objectives and related activities in the customer relationship management strategy, namely defining a customer strategy, creating a product and channel strategy, and defining a marketplace. The knowledge management strategy can ensure that the required knowledge to enable decision-making with regards to these customer relationship management objectives are created, shared, harvested and leveraged. It thus ensures that knowledge as a resource for strategic decision-making is available at the right time and in the right format, to ensure that customer relationship management objectives as stated in the customer relationship management strategy are achieved.

7.4.2.2. Knowledge management creates a knowledge sharing culture within the customer relationship management environment

Customer relationship management is based on knowledge on customers and the organisation's relationship with these customers. Knowledge management can assist in creating a knowledge sharing culture within the organisation, including knowledge sharing on customers, through the provision of processes, structures, platforms and incentives for sharing and retention of knowledge, whether related to customers or otherwise.

7.4.2.3. Knowledge management as change agent in customer relationship management

Knowledge management can also act as change agent in the building and maintaining of customer relationships. The knowledge management system and knowledge contained in it can provide staff with knowledge on the customer at any time. This can assist in changing behaviour of staff to make sure they understand the customer's preferences and behaviour before and at the time of interacting with the customer. Previously not all knowledge on the

The role of knowledge management in eBusiness and customer relationship management

customer was centralised, i.e. there wasn't one view of the customer, leading to ineffective assistance and service to the customer. Customer knowledge is the key to building effective customer relationships, and it is therefore critical to manage it effectively by creating a comprehensive profile of each customer.

7.4.2.4. Virtual customer relationship management teams

Due to the advent of eBusiness, virtual teams are becoming more prevalent. This is also true for teams handling multi-national customer accounts. These virtual teams need to share knowledge on customer preferences or other details relating to the customer relationship across geographical locations. Knowledge management plays an important role in this knowledge exchange within virtual communities by providing the processes, structures and platforms for knowledge sharing and retention with regards to customers (refer Figure 24).

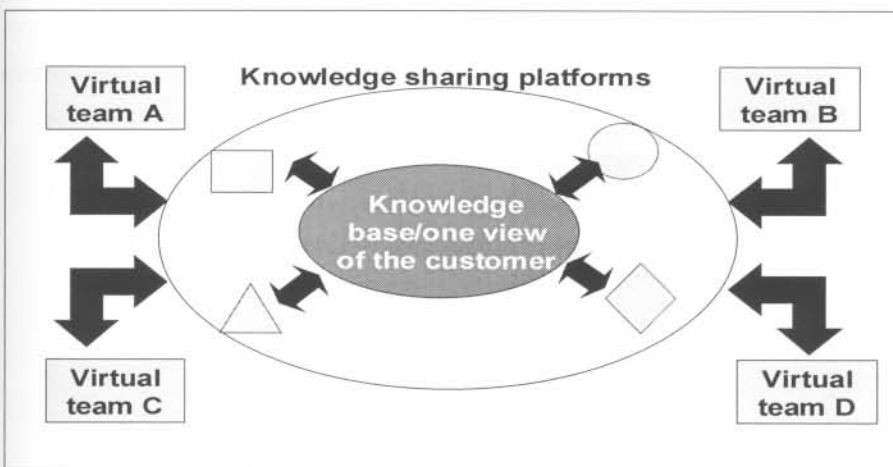


Figure 24. Virtual customer relationship management teams

7.4.2.5. Knowledge management as input for marketing activities

Knowledge management efforts combined with the customer relationship management programme should provide the organisation with one view of the customer. This one view of the customer provides the basis of marketing activities and ensures that the right products and / or services are marketed to the right customers. It will also retain all knowledge relating to marketing activities pertaining to a customer, i.e. building a customer marketing profile. This will add value to the marketing process by providing accurate targeting of customers.

The role of knowledge management in eBusiness and customer relationship management

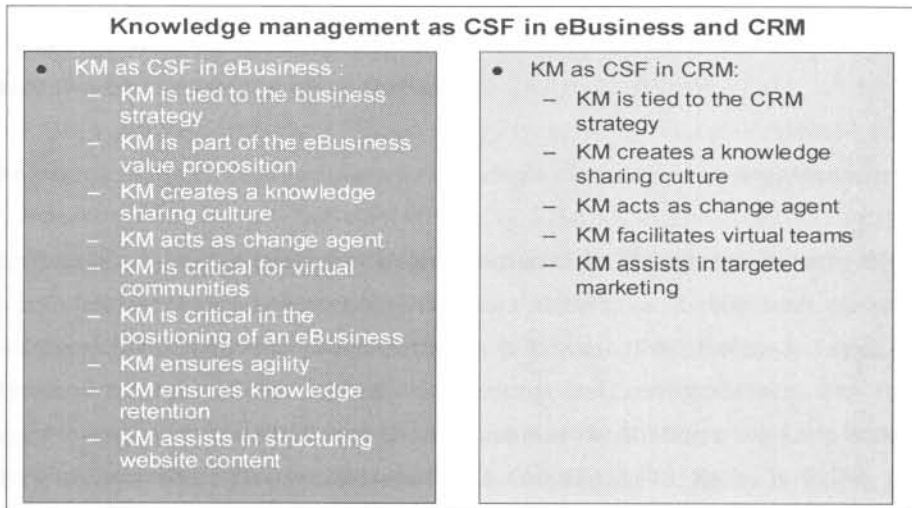


Figure 25. Knowledge management as critical success factor in eBusiness and customer relationship management

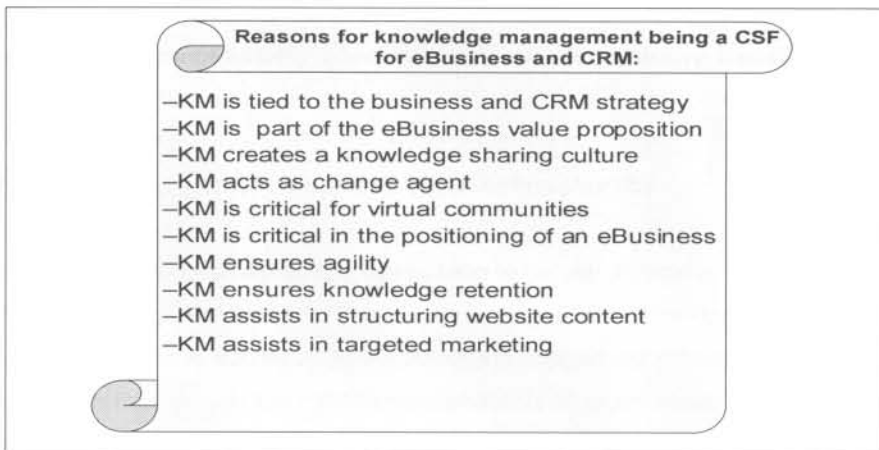


Figure 26. Reasons for knowledge management being a CSF for eBusiness and customer relationship management

8. VALUE PROPOSITION

8.1. Knowledge management value proposition

8.1.1. Knowledge management supports the strategic direction of an organisation

Knowledge management supports the strategic direction of an organisation in terms of future strategic products, processes, services and business models, i.e. it contributes to its long-term development (GartnerGroup, 2000a; Havens & Knapp, 1999; Parlbly & Taylor, 2000 PricewaterhouseCoopers, 1999d, pp.1-2). Respecting and institutionalising the role of knowledge and learning may be the most effective approach to building a solid and enduring foundation for organisations (KPMG, 2000; O'Dell & Grayson, 1999; Parlbly & Taylor, 2000). "Firms can derive significant benefits from consciously, proactively, and aggressively managing their explicit and explicable knowledge" (O'Dell & Grayson, 1999).

According to the researcher, it supports the strategic direction of the organisation through provision of critical knowledge and information on customers, markets (of the organisation as well as its customers), competitors, products and services, processes and methods, employee skills and the regulatory environment, to enable executive decision-making and action on a strategic level.

8.1.2. Knowledge management increases organisational agility

Knowledge management can assist an organisation to reduce its time to market by creating a more efficient working environment, thereby designing and commercialising products and services more quickly and successfully. Knowledge management provides knowledge in the right format at the right time to the right person, enabling an organisation to identify and seize new business opportunities. The knowledge assists in the decision-making process relating to new business opportunities. This leads to increased revenue, market leadership and growing of profit margins (Havens & Knapp, 1999; Kennedy, 1996; KPMG, 2000; O' Dell & Grayson, 1999).

8.1.3. Knowledge management allows quicker adaptation to the eBusiness model

Knowledge management allows an organisation to transform to an eBusiness model more easily. "eBusiness is primarily externally focused (between an enterprise and external parties); KM is initially an internal focus (between business units and employees). However, eBusiness processes rely on leveraging intellectual assets of individual enterprises as

The role of knowledge management in eBusiness and customer relationship management

contributors to the value chains; thus, KM is crucial to enabling the transformation implied by eBusiness" (GartnerGroup, 2000a).

8.1.4. Knowledge management provides the basis for improved decision-making

Knowledge management provides quality knowledge on a timely basis to aid decision-making (GartnerGroup, 2000a; KPMG, 2000; Parlby & Taylor, 2000; Turner & Hudig, 2000, p.5). According to the researcher this knowledge will be mainly focused on markets, customers, competitors, processes, products and services, employee skills and the regulatory environment.

"Decision quality can often be improved by ensuring that the right knowledge is available when and where it is required in the process and by sharing best practices and insights of experts" (Parlby & Taylor, 2000).

8.1.5. Knowledge management reduces organisational complexity

Organisational complexity can be reduced as organisations' knowledge management solutions assist in identifying and tracking knowledge experts or owners, and as these employees are provided with processes to locate and connect to these expert resources (GartnerGroup, 2000a). According to the researcher it thus makes it easier to navigate the knowledge base of the organisation, whether the knowledge is in tacit or explicit format.

8.1.6. Knowledge management facilitates integration

Knowledge and knowledge management is used to build common denominators across functional groups in organisations, thereby streamlining internal integration (Kennedy, 1996; Temkin, 2001). According to the researcher knowledge management facilitates transparency and therefore assists in organisational integration.

8.1.7. Knowledge management increases collaboration

Good organisation and access to all knowledge assets will stimulate more collaboration in more communities, and the quality of the collaboration will be improved as well (GartnerGroup, 2000a; Van der Kamp, 2001). According to the researcher knowledge management increases collaboration through the provision of appropriate technology, as well as forums, e.g. virtual communities or centres of excellence.

The role of knowledge management in eBusiness and customer relationship management

The insight and knowledge shared in a collaborative effort will also improve as employees are given the ability to identify experts to resolve issues (GartnerGroup, 2000a).

8.1.8. Knowledge management prevents duplication

Knowledge management leads to less reinvention of the wheel, i.e. duplication of work, through the use of knowledge in different contexts (GartnerGroup, 2000a; Hickins, 1999; KPMG, 2000; O'Dell & Grayson, 1999). "How many times has the same presentation or proposal been recreated by the sales force? Identifying what works best requires effort and discipline, but you can then replicate these practices throughout the organisation. The better you do that the more competitive you are" (Mudge, 1999).

Reusing knowledge stimulates staff to improve on past solutions or to create new knowledge, thereby creating a culture of innovation (GartnerGroup, 2000a).

8.1.9. Knowledge management improves innovation

Knowledge management allows faster innovation and getting these innovations to the market quicker (Havens & Knap, 1999).

Integration and application of knowledge across different contexts opens an organisation to new insights. An organisation's exposure to how its knowledge can be applied in other contexts increases the scope and value of the knowledge (GartnerGroup, 2000a; Gerber, 2001; KPMG, 2000; O'Dell & Grayson, 1999; Parlbly & Taylor, 2000; Turner & Hudig, 2000, p.5). GartnerGroup (2000a) is of the opinion that the highest benefits from mature knowledge management will come from innovations that support strategic direction.

"Ask any CEO in the world to write a top-five wish list, and we guarantee that "more ideas-better ideas" will show up in some form. CEOs know that ideas and innovation are the most precious currency in the new economy – and increasingly in the old economy as well. Without a constant flow of ideas, a business is condemned to obsolescence" (Hargaddon & Sutton, 2000).

8.1.10. Accelerated learning and skills development

Knowledge management can assist in acceleration of learning and skills development of staff (Gerber, 2001; Havens & Knapp, 1999; KPMG, 2000; Temkin, 2001). It can also ensure that skills are not duplicated in different divisions unnecessarily (Parlbly & Taylor, 2000).

The role of knowledge management in eBusiness and customer relationship management

"...the enterprise can raise the level of individual learning when employees have access to insight and experience of others and when they interact with expanded communities (outside their own work teams)" (GartnerGroup, 2000a).

According to the researcher, knowledge management also creates an innovation culture, which in turn fosters learning and skills development.

8.1.11. Knowledge management provides easy access to knowledge resources

Knowledge management provides easy access to knowledge, through a single point of entry, which enhances staff productivity (GartnerGroup, 200a; Temkin, 2001; Van der Kamp, 2001; Van Niekerk, 2001). Individuals are able to find needed and relevant knowledge, processes and people more quickly and efficiently. Knowledge management brings order to the knowledge base, thus enabling employees to find and focus on business and task relevant knowledge. This results in quicker and more effective decision-making. Ease of access to knowledge will compress waiting time and work delays spent trying to find sources of knowledge (GartnerGroup, 2000a). According to the researcher it therefore improves the agility of the organisation.

8.1.12. Knowledge management leads to improved communication

Knowledge management will lead to better communication through simplification of communication paths (GartnerGroup, 2000a; Mudge, 1999; Temkin, 2001). According to the researcher, communication of knowledge can also be clearer due to the provision of platforms for communication, whether in tacit or explicit format.

8.1.13. Knowledge management provides inputs towards building customer relationships

Knowledge management can provide knowledge on current and potential customers to enable staff to build better relationships with the customers and to become more responsive to their needs (Havens & Knapp, 1999; KPMG, 2000; PricewaterhouseCoopers, 1999d, pp.1-2). According to the researcher this will in turn lead to cost savings due to efficiency and the expansion of markets and customers.

The role of knowledge management in eBusiness and customer relationship management

8.1.14. Knowledge management ensures the leveraging of intellectual assets

Knowledge management allows the leveraging of intellectual capital, both internal and external to the organisation (Havens & Knapp, 1999; KPMG, 2000). According to the researcher knowledge management ensures that an organisation leverages its intellectual capital as an organisational resource, by continually expanding its knowledge base and building on its capacity to innovate.

8.1.15. Cost saving

Knowledge management brings about cost saving in terms of productivity improvements and re-use of knowledge (Havens & Knapp, 1999; KPMG, 2000). According to the researcher it also leads to cost efficiency due to more efficient product design and the introduction of new products and services.

8.1.16. Increased productivity

Knowledge management can make employees more productive by increasing their efficiency, thereby collectively increasing organisational efficiency and productivity (GartnerGroup, 2000a; Havens & Knapp, 1999; KPMG, 2000; PricewaterhouseCoopers, 1999d, pp.1-2). According to the researcher efficiency and productivity increase due to more efficient decision-making, reuse of knowledge in various contexts and prevention of duplication, and quicker access to knowledge through increased navigation abilities.

8.1.17. Improved quality of work life

According to PricewaterhouseCoopers (1999g, p.8), users of knowledge management systems individually and collectively improved their job performance, experienced career enhancement as well as direct incentives and rewards, and richer job experiences.

Knowledge management can help to create a learning environment and make employees more efficient, thus creating an improved quality of work life (Havens & Knapp, 1999; PricewaterhouseCoopers, 1999g, p.8). "...the effective implementation of KM should make an organisation more attractive to staff by making their jobs easier" (KPMG, 2000).

GartnerGroup (2000a) is of the opinion that work enrichment is a secondary benefit of increased collaboration, of access to a broader range of ideas, and of enhanced learning opportunities. Individuals can see their own learning and growth expanded within a knowledge management environment (GartnerGroup, 2000a).

The role of knowledge management in eBusiness and customer relationship management

8.1.18. Knowledge management manages knowledge as resource in business process design

Knowledge is used to optimise processes thus creating efficiency. The focus is specifically on the contribution of knowledge towards business performance measurement (Kennedy, 1996).

8.1.19. Examples of the value proposition of knowledge management

- Chevron has reduced its operating cost structure by more than \$2 billion in the last seven years due in no small part to sharing best practices. In energy usage alone, its best practice team has saved \$650 million (O'Dell & Grayson, 1999).
- Texas instruments generated \$1.5 billion in annual increased fabrication capacity by comparing and transferring best practices among its 13 fabrication plants (O'Dell & Grayson, 1999).
- Skandia has leveraged internal know-how to dramatically reduce start-up time for new ventures to seven months, compared with an industry average of seven years (O'Dell & Grayson, 1999).
- Arthur Andersen's Global Best Practice Knowledge Space has improved the quality of services, helped lower research costs and shortened delivery time in business consulting (O'Dell & Grayson, 1999).
- HP Consulting is of the opinion that their success is highly dependent on their ability to manage and leverage organisational knowledge, and that this knowledge, if appropriately leveraged, is as valuable as financial assets (Martiny, 1998).

8.1.20. The knowledge management value proposition in South Africa

South Africa is not considered to be one of the world's competitive countries. If international economic battle is seen as a driver for knowledge management, competitiveness as the objective and technology as the tool, the question is through which process are these elements tied together. The answer is innovation. Once the link between competitiveness, innovation and industry has been established, the challenge is to improve the capacity of South African industries to innovate (Havenga, 2001). According to the researcher, knowledge is the key to innovation, therefore knowledge management will be of critical importance.

8.1.21. Conclusion

From the discussion above, it is clear that the value proposition of knowledge management lies in efficiency improvements for organisations. According to the researcher, these

The role of knowledge management in eBusiness and customer relationship management

effectiveness and efficiency improvements are mainly process based, i.e. knowledge management provides processes to facilitate other business processes and to improve their efficiency.

8.2. eBusiness value proposition

"The Internet has set in motion a series of changes that will have a profound impact on business and society in the new millennium. Individuals can now plug in to an unbelievably rich and rewarding, if sometimes confusing and overwhelming, world of information. Enterprises can interact with their customers, suppliers and communities in ways not previously possible. Industries will transform and redefine themselves. At the geographical level, eBusiness will be a major catalyst for change in society, and will in turn be affected by those changes" (Stewart, 2000).

8.2.1. Global reach

A company's reach is its ability to connect to potential customers in new markets (see Figure 27). The Internet's global reach means organisations can capitalise on business opportunities anywhere in the world more efficiently, without increasing IT costs or creating more fragmented business information. An eBusiness can use a virtual sales force to reach global markets with product information while targeting new demographics within current markets. It can also leverage its brand across several dissimilar industries (AT Kearney, 2000b; Deise et al, 2000, pp.196, 198; E-business Transformation, 1999; Means & Schneider, 2000, p.141; Plummer, 1999; PricewaterhouseCoopers, 1999b; PricewaterhouseCoopers, 2000a, p.148; Reilly, 1999; Subramanian, 2000). Due to the fact that businesses have more global opportunities, greater choice is created for the customer (Timmers, 1998, p.5).

Greater reach provides a company with the opportunity to recognise competitive threats in the market earlier, and provides opportunities to respond appropriately, thus increasing its agility (see Figure 27) (Deise et al, 2000, p.201).

The role of knowledge management in eBusiness and customer relationship management

Perceived benefits of electronic commerce: mapping of priorities

	Firms with lower capabilities	Firms with higher capabilities
Higher GNP economies	<ul style="list-style-type: none"> • Improve customer service • Enhance company image • Competitive position • Better info exchange with customers • Enhance customer loyalty 	<ul style="list-style-type: none"> • Improve customer service • Enhance company image • Better info exchange with customers • Competitive position • Access international markets
Lower GNP economies	<ul style="list-style-type: none"> • Improve customer service • Better info exchange with customers • Competitive position • Enhance company image • Enhance customer loyalty 	<ul style="list-style-type: none"> • Better info exchange with customers • Improve customer service • Competitive position • Enhance company image • Access international markets

In: PricewaterhouseCoopers, 1999b

Figure 27. Perceived benefits of electronic commerce: mapping of priorities

8.2.2. Increased agility

Agility is the ease with which a company is able to change strategic direction quickly and smoothly, and to provide customers with what they want, even if that is not a standard product or configuration. A well-crafted eBusiness infrastructure promotes scalability, that is, the ability to add volume quickly without overwhelming the system. This in turn leads to flexibility in mergers and acquisitions and quick reconfiguration of the virtual value chain. Better marketing information supports real time resource allocation, thus increasing agility (Deise et al, 2000, pp.196, 198, 199).

eBusinesses are more agile due to changes in the supply chain. The Internet provides flexibility not previously available. It allows eBusinesses to respond to evolving trends and to enter new markets quickly (Deise et al, 2000, 63; Means & Schneider, 2000, p.143; Subramanian, 2000). Business models can be rapidly reconfigured as market conditions change (Means & Schneider, 2000, p.143).

According to the literature, agility is becoming increasingly important. "The bottom line: eBusiness is about speed, flexibility, and relationships" (Deise et al, 2000, p.195).

8.2.3. Decreased time to market

Time to market is a product cycle beginning with design and concluding with revenue recognition. eBusinesses participate in collaborative product design, often over great distances. In addition, as companies link tightly with their supply chain partners, they engage

The role of knowledge management in eBusiness and customer relationship management

in collaborative research and development, concurrent engineering, and other methods to reduce time to market (Deise et al, 2000, p.196).

8.2.4. Improved customer service and improved customer relationships

eBusinesses can deliver improved customer service and stronger customer relationships (see Figure 28) (Means & Schneider, 2000, p.141; Online purchasing frees buyers for strategic work, 1999; Plummer, 1999; PricewaterhouseCoopers, 1999b; PricewaterhouseCoopers, 2000a, pp.144, 153; PricewaterhouseCoopers, 2000d; PricewaterhouseCoopers, 2000e; Subramanian, 2000).

eBusiness provides organisations with the opportunity to expand their customer bases (Kaplan & Sawhney, 2000). eBusiness is revolutionising the way business can reach new customers while more adequately fulfilling the needs of pre-existing ones (Subramanian, 2000). "Electronic commerce enables firms to be more responsive to customer needs and more efficient in interacting with and servicing business and consumer needs" (PricewaterhouseCoopers, 1999b).

Examples of how improved customer service and relationships can be achieved, include:

- eBusiness can sometimes reduce the price they pay for products and services through such devices as aggregation, auctions, decoupling of product offerings and pay-per-use payment models which increases the transparency of company pricing. In all cases the "market of one" where products are priced individually for each customer, keeps eBusiness pricing flexible. eBusinesses can price more effectively because of their better understanding of their customers' buying behaviours and of the level of real-time local demand. Also eBusinesses are also able to customise offerings by rebundling related products and services into attractive "baskets" (Deise et al, 2000, p.195).
- Web technology reduces the cost of serving customers. Online information is available 24 hours a day. Customers can use self-service features 24 hours a day, seven days a week. The company and its value-adding partners can share information with customers on a real-time basis (Deise et al, 2000, p.199).
- eBusiness saves time due to less time spent looking for the right product at the right price with efficient service (Timmers, 1998, p.5).
- Reduced order fulfilment and customer buying time with reference to searching, selection and purchasing increases overall customer value (Deise et al, 2000, p.198).

The role of knowledge management in eBusiness and customer relationship management

8.2.5. Cost saving and revenue increase

eBusiness creates efficiencies and cost savings, as well as revenue growth, that were not possible before, thereby increasing shareholder value (see Figure 28) (Deise et al, 2000, p.198; E-business Transformation, 1999; p.xvii; Plummer, 1999, PricewaterhouseCoopers, 1999b; PricewaterhouseCoopers, 2000a, p.153; PricewaterhouseCoopers, 2000d; PricewaterhouseCoopers, 2000e; Reilly, 1999).

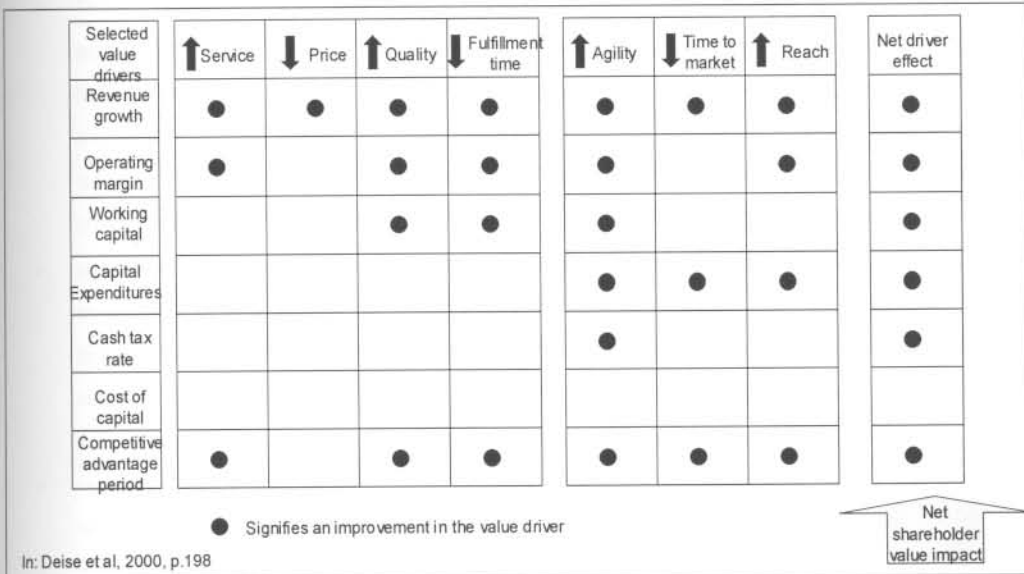


Figure 28. Driving shareholder value

Cost saving and increased efficiency is a way to gain competitive advantage (Deise et al, 2000, p.196; PricewaterhouseCoopers, 2000d).

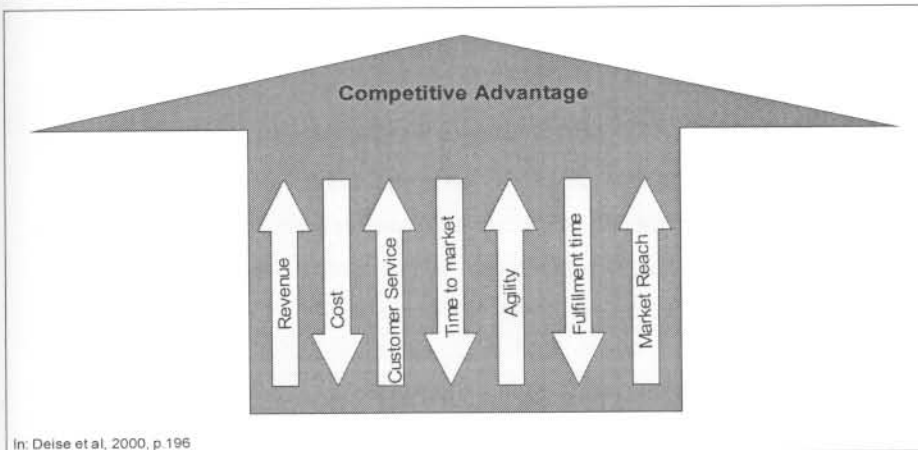


Figure 29. Aligning value drivers to achieve competitive advantage

Cost saving and revenue increase can take the following forms:

The role of knowledge management in eBusiness and customer relationship management

- The disintermediation of non-value-added processes reduces overall costs and also allows a closer interface between the customer and the supply chain, thus driving additional revenue (Means & Schneider, 2000, pl.143).
- Cost saving can take the form of cheaper products and services, as well as lower transaction costs (Nevens, 1999; Ovans, 2000). Eliminating manual steps and reducing the cost of inventory also offers significant advantages (Deise et al, 2000, p.75).
- "The Internet's single most significant effect is to cut the cost of interaction – the searching, co-ordinating, and monitoring that people and companies must do when they exchange goods, services and ideas. The cost of searching for a mortgage, executing a bank transaction and obtaining customer support, for example, drops by as much as 80 percent or more when these activities are handled electronically" (Nevens, 1999).
- eBusiness slashes transaction costs for both non-production and production related materials. Lower purchasing costs, shorter cycle times, tighter manufacturing cycle times, pre-negotiated agreements and minimised inventory levels help companies to reduce cost. Service and logistics costs are also dropping, as are overhead costs, which can be reduced and ultimately eliminated (Deise et al, 2000, p.193).
- According to Deise et al (2000, p. 1999) working capital is reduced in the following ways:
 - Improving quality through minimising errors in order processing and demand planning reduces safety stock requirements.
 - Order fulfilment time decreases the amount of inventory held across supply chains.
 - Sourcing from a large base of potential suppliers results in reduced working capital needs and better credit terms.
- Capital expenditures can be curbed through the agility of the eBusiness. Redeploying assets in response to changing market conditions creates greater fixed asset efficiencies. Sourcing inputs, finished products and complimentary products and services from the marketplace, rather than producing them internally in the organisation, reduces overall capital expenditure needs. Decreased time to market and increased reach drives more and better asset utilisation (Deise et al, 2000, p.200).
- An eBusiness can also save cost through diversifying its value chain, which reduces the organisation's overall global tax burden. Shared service, typically back office functions, can be easily distributed to low tax regimes (Deise et al, 2000, p.200).

The role of knowledge management in eBusiness and customer relationship management

- eBusiness only has an impact on cost of capital in the sense that its "e-enabled" status increases its share price and decreases cost of equity. However, this effect may be transient (Deise et al, 2000, p.200).

Cost reduction will be the largest eBusiness opportunity for current and future companies (Deise et al, 2000, p.193).

8.2.6. Access to knowledge and information

eBusinesses, their customers and suppliers have access to strategic knowledge and information 24 hours a day (Deise et al, 2000, p.xvii; Online purchasing frees buyers for strategic work, 1999; PricewaterhouseCoopers, 1999b; Stewart, 2000).

Customers' growing computer literacy is redefining the market. By using the Internet to obtain more and better knowledge and information on products and services, they are putting new pressure on companies to increase the level of their service (Deise et al, 2000, p.193).

eBusiness increases the level of service by providing personalised and accurate customer information (Deise et al, 2000, p.195). "An e-enabled sell channel allows for much more efficient collection and aggregation of customer information. Companies are increasingly realising that customer information is a valuable asset. Knowing what customers buy, why they buy it, and what they buy in conjunction with it, can assist an organisation in developing new product configurations and effective pricing models for markets of one, where prices are tailored per customer" (Deise et al, 2000, p.8).

eBusinesses allows organisations to standardise customer information and update it efficiently and at lower cost (PricewaterhouseCoopers, 1999b). Small and medium enterprises believe that eBusiness will enable them to gather and compile better market intelligence on customers, suppliers and competitors through Internet research and better develop and update databases, including online databases and customer databases. By providing a higher quality of service and better information exchange with customers, small and medium enterprises believe that eBusiness will offer important benefits in improving longer term customer loyalty and retention. Many small and medium sized enterprises suggest that the Internet and other electronic networks are creating more sophisticated and demanding customers with higher expectations, in terms of 24-hour access to company and product information and quicker response times to information requests (PricewaterhouseCoopers, 1999d).

Access to knowledge and information provides the following results:

The role of knowledge management in eBusiness and customer relationship management

- eBusiness provides organisations with the opportunity to lower cost and time required for obtaining and distributing information and transaction processing (Subramanian, 2000).
- Sharing timely and accurate knowledge and information reduces the possibility of inaccurate and/or incomplete services, e.g. deliveries (Deise et al, 2000, p.74).
- Promotes better customer relationships, according to the researcher (refer Figure 29).

8.2.7. Automation and streamlining of custom business processes

Custom business processes are automated in the eBusiness. eBusinesses see process streamlining and automation as key operational concerns (Deise et al, 2000, p.22; Online purchasing frees buyers for strategic work, 1999; PricewaterhouseCoopers, 1999b; PricewaterhouseCoopers, 2000d; Subramanian, 2000).

Many non-core business processes are outsourced, e.g. human resources, finance, and procurement. Electronic business process outsourcing can create dramatic new sources of shareholder value and competitive advantage by creating new products and services, reaching new markets, building customer loyalty, achieving market leadership, optimising business processes, enhancing human capital, harnessing technology and managing risk and compliance (see Figure 29) (Vales & Eng, 1999).

8.2.8. Increased efficiency

eBusiness creates efficiencies and cost savings that were not possible before (E-business Transformation, 1999; PricewaterhouseCoopers, 2000a, p.153; Timmers, 1998, p.5).

eBusiness provides organisations with the opportunity to lower cost and time required for obtaining and distributing information and transaction processing (Subramanian, 2000). It reduces the time people take in doing their jobs (Ovans, 2000).

"eBusiness helps companies improve their internal business processes, thereby reducing fulfilment time. E-enabled companies use automated order-to-payment and streamlined purchase initiation processes. Delaying product differentiation to a point as close to the customer as possible produces production/configuration time. So does just-in-time production. Networked and outsourced shipping enables well-timed product departures and optimises time en route" (Deise et al, 2000, p.196).

The role of knowledge management in eBusiness and customer relationship management

8.2.9. Greater choice of suppliers and products/services

Organisations now have a wider choice of suppliers due to a lack of geographical boundaries. This in turn leads to lower cost, better quality, improved delivery, reduced cost of procurement (Deise et al, 2000, p.22; Kaplan & Sawhney, 2000; Timmers, 1998, p.5). In turn, suppliers will have more tendering opportunities due to the lack of geographical boundaries (Timmers, 1998, p.5).

eBusinesses also expand the choices available to buyers in terms of products and services (Kaplan & Sawhney, 2000).

8.2.10. More effective communication

Communication with suppliers and business partners is a critical component of any company's ability to develop, produce, and deliver products or services. The e-enabled company communicates more effectively, and in real time, with its suppliers and business partners. The first way this helps an organisation is by taking cost and time out of its purchasing activities. Effective communication can also allow an organisation and its suppliers to jointly design products, collaborate on forecasts and transmit production schedule changes in real time. eBusiness communication with suppliers also lowers costs by coordinating and simplifying procedures to determine product specifications, develop designs, and execute design changes (Deise et al, 2000, pp.71 –74, 195).

"Because communication in the eBusiness world is faster and more flexible, companies have the opportunity to sit down with their business partners and redesign business processes across companies to realise joint gains" (Deise et al, 2000, p.87).

8.2.11. Better connectivity

eBusiness technology is improving business performance through connectivity. Among other benefits, it connects the value chains between and across businesses and their customers and suppliers in ways that improve service, reduces costs and opens new channels for new markets (Vales & Eng, 1999).

8.2.12. Increased quality

Integrated supply chains made possible by technology increase quality at every point in the value chain. Organisations also lower the cost of delivering high quality products or services by minimising inaccurate order processing information and by electronically linking order processing, production, suppliers, order fulfilment and logistics (Deise et al, 2000, p.199).

The role of knowledge management in eBusiness and customer relationship management

In eBusiness, quality refers to more than just goods and services – it refers to the customers' buying experience. eBusiness improves this experience through customisation and provision of better information on products and services, as well as by enabling customers to form communities. As transactions become standardised, it leaves the organisation free to focus on those activities adding more value to the customer relationship, e.g. notifications of related or new products (Deise et al, 2000, p.195).

8.2.13. Increased convenience

Convenience in the digital world is higher due to the ease of selection, buying and delivery, which includes 24-hour availability (Timmers, 1998, p.5).

8.2.14. Examples of value propositions in the eBusiness environment

- Sun saved 30% on accounting transactions, 75% on travel and expense processing costs, \$50 million through Internet procurement, 30% on global invoice processing costs, and 30% on payroll transactions (E-business Transformation, 1999).
- Thompson Corporation saved the following through ordering office supplies online: \$425 000 in administrative costs, 1.5% in cost-plus pricing, 30% annual increase in volume in 1999 versus 1998. Other benefits include reduced time (5 minutes in stead of 25 minutes) to order office supplies (Online purchasing frees buyers for strategic work, 1999).

8.3. Customer relationship management value proposition

8.3.1. More effective customer targeting and retention

Customer relationship management leads to customer retention by cementing customer relationships (Conlon, 1999; Ernst & Young, 2000b; Patmore & Renner, 1997).

More focused customer segmentation can take place due to customer relationship management (Ernst & Young, 1999a). Customer relationship management allows organisations to prevent overspending on low-value clients or under spending on high value ones (Handen, 2000a, p.8).

Customer relationship management improves the use of the customer channel, thus making the most of each contact with the customer (Ernst & Young, 2000b; Handen, 2000a, p.8).

The role of knowledge management in eBusiness and customer relationship management

8.3.2. Reduced marketing cost and improved effectiveness

Customer relationship management leads to reduced marketing cost through improved targeting (Dunster, 2001; Ernst & Young, 2000b; Maoz, 2001; Patmore & Renner, 1997). Customer relationship management has an advantage over mass advertising, because it reduces advertising cost and it makes it easier to target specific customers by focusing on their needs (Handen, 2000a, p.17). Through customer relationship management, effectiveness of marketing campaigns can be tracked more readily. It also speeds up the marketing cycle (Handen, 2000a, p.8).

The efficiencies of automation will enable more investment in the content of marketing, segmentation, messages and offerings. Increased response rates, effective demand generation and greater efficiencies are the results that the new marketing paradigm will deliver (Harris, 1999).

8.3.3. Development of strategic partnerships

Strategic customer care allows the forming of strategic customer partnerships. These customers depend on the organisation to provide solutions as a business partner and, in return, both the organisation's and the customer's profit will increase (Brown, 2000c, p.85).

8.3.4. Access to knowledge and information

Through creation of one view of the customer, organisations are becoming invaluable to customers (Frook, 2000). The process of gathering information and intelligence during transactions or customer contact is crucial to the success of a business due to the fact that it improves efficiencies (Gordon & Roth, 2000, p.28).

Examples of the impact of access to knowledge and information in customer relationship management:

- Better information flow, facilitated by breaking down interdepartmental silos, leads to better communication (Conlon, 1999).
- "Armed with rich and precise knowledge about its customers, a financial institution can potentially reap numerous rewards. It can boost profits by understanding the needs of different types of customers more thoroughly and targeting its marketing and product development efforts more effectively. It can measure the profitability of various customer segments and direct its sales and customer services efforts accordingly. It can deepen relationships with desired customers, attract new customers, and discourage unprofitable customers. These are just a few of the promises of customer relationship management" (Ernst & Young, 1999d).

The role of knowledge management in eBusiness and customer relationship management

- Access to real-time sales reports, collateral, pricing and product updates, customer information and competitive intelligence saves organisations lots of time and cost. In April 1998 McGraw Hill saved \$75 000 by not having to print sales reports, and \$125 000 by not having to print and distribute sales collateral. The organisation is of the opinion that the time saving benefits are the most important (Conlon, 1999).

8.3.5. Cost saving and increased revenues

Customer relationship management leads to increased cost saving and increased revenues due to increased productivity (Conlon, 1999).

8.3.6. Streamlined processes

Customer relationship management allows organisations to streamline customer related processes (Conlon, 1999).

8.3.7. Improved communication

Customer relationship management improves communication with customers and suppliers due to the more effective and faster tracking of leads, and through getting information to distribution and manufacturing entities faster (Conlon, 1999).

8.3.8. Better utilisation of resources

Due to customer relationship management, organisations will be able to better focus its resources. Using principles such as strategic outsourcing and the implementation of invaluable research in the development of customer care processes, organisations will effectively realign the organisation and focus their limited resources on key market areas" (Brown, 2000c, p.85).

8.3.9. Increased stability

Building and strengthening customer relationships provides stability in an increasingly dynamic market. Customer churn will be less (Dunster, 2001; Patmore & Renner, 1997).

The role of knowledge management in eBusiness and customer relationship management

8.3.10. Competitive advantage

Systematically building and maintaining customer relationships is a competitive necessity. It enables an organisation to differentiate itself in the marketplace in terms of price and service (Assabi, 2001; Conlon, 1999; Dunster, 2001; Handen, 2000a, p.18; Patmore & Renner, 1997).

8.4. Conclusion

(Refer Figure 30 for summary)

8.4.1. The value proposition of knowledge management in the eBusiness environment

8.4.1.1. Knowledge management as change agent in the adoption of the eBusiness model

Knowledge management acts as change agent in the eBusiness environment.

Knowledge management allows staff members to adjust to their new roles and responsibilities in the eBusiness environment quickly and easily, through the provision of knowledge that facilitates the transition, e.g. knowledge on new organisational structures and new business processes.

Knowledge management also facilitates the transition so that all staff become knowledge workers in their own right, integrating knowledge management activities into their day to day work. Some may have additional knowledge management responsibilities, e.g. acting as internal infomediaries.

Knowledge management also assists in institutionalising the knowledge as a corporate asset, managed like any other asset, e.g. capital and labour. This is becoming more prevalent in the eBusiness environment as organisations realise that they operate in the knowledge economy and are dependent on knowledge as a resource in order to be competitive.

Knowledge management also assists staff in getting the necessary skills and competencies within the new environment, and it facilitates integration of new business units (see 8.4.1.6. and 8.4.1.11).

The role of knowledge management in eBusiness and customer relationship management

8.4.1.2. Knowledge management assists in determining the strategic direction of the eBusiness

Knowledge management ensures the availability and accessibility of knowledge on the issues strategic to the business, including markets, customers, suppliers, products and services, competitors, employee skills, processes and procedures and the regulatory environment.

Due to the fact that knowledge management focuses on knowledge strategic to the business, it will inevitably tie into the business strategy of the organisation and will therefore support the execution of the business strategy. It also provides the business with a better understanding of the market it plays in, enabling the eBusiness to match buyers and sellers in new value added markets and thereby positioning itself in the market.

Knowledge and knowledge management improves the quality and speed of strategic as well as operational decision making, and also improves the agility of the eBusiness by decreasing time to market.

8.4.1.3. Knowledge management assists in overcoming increased organisational complexity in the eBusiness model

eBusinesses are by nature more complex than traditional bricks and mortar businesses. Knowledge management can assist in overcoming this complexity through managing the knowledge base, therefore making the adoption of the new business model easier and allowing knowledge to flow across boundaries, including interorganisational, intra-organisational and geographical boundaries. It also assists in overcoming complexity as by identifying experts within the organisation, thereby ensuring everyone in the organisation knows the sources of both tacit and explicit knowledge.

8.4.1.4. Knowledge management increases organisational agility

Knowledge management increases organisational agility. It allows for flexible and more accurate decision making due to the availability and accessibility of relevant knowledge at the right time to the right person. Knowledge management also provides the knowledge to enable quick adaptation of the business to suit new market conditions through the availability of real time knowledge and information. It also improves agility by decreasing the eBusiness' time to market.

The role of knowledge management in eBusiness and customer relationship management

8.4.1.5. Knowledge management increases general organisational efficiency

Knowledge management increases eBusinesses' efficiency by providing 24-hour access to knowledge through a single point of entry, which prevents duplication and increases productivity. Staff can find knowledge they need faster and easier through adequate structuring of the knowledge base, which allows easier access and retrieval. This increases staff productivity. Duplication is also prevented, because staff now have access to work has been done before or what knowledge is available, which allows them to reuse the available knowledge in different contexts.

Knowledge management can also provide knowledge on business process inefficiencies, thus assisting an organisation to redesign its processes to make it more efficient and effective. When redesigning the organisational processes, the related knowledge flow is also changed and can be managed explicitly due to a better understanding of how the processes work and which knowledge is created, shared, harvested and leveraged in the various phases of processes.

8.4.1.6. Knowledge management makes integration more effective

Knowledge management facilitates integration between disparate groups or departments within an eBusiness. These disparate groups may be in different business units, or in different geographical locations, or in different organisations where supply chain integration is taking place. Knowledge management facilitates the flow of knowledge between the groups, thereby facilitating quicker and more effective integration. Knowledge management also facilitates transparency, which assists in the integration process.

8.4.1.7. Knowledge management assists in managing an expanded knowledge base

eBusinesses invariably wind up with a widening customer and supplier base, which inevitably leads to more knowledge to be managed. Knowledge management provides processes and systems to address these expanding knowledge management requirements in view of the knowledge management lifecycle, i.e. creation, sharing, harvesting and leveraging of knowledge.

Knowledge management increases the organisational agility in these expanding markets due to more efficient decision making and response to market changes. Knowledge management also allows an organisation to adapt its business model in reaction to market changes by facilitating communication and knowledge sharing within the new or changed business processes.

The role of knowledge management in eBusiness and customer relationship management

Knowledge management can also assist in the branding and marketing of the organisation in these expanding markets by providing branding and marketing knowledge on the market and customer base the organisation serves, and the need for the organisation's products and services. Marketing and branding can therefore be done more accurately and effectively.

8.4.1.8. Knowledge management enables the management of knowledge across organisational and geographical boundaries

Knowledge management facilitates transparency in terms of the availability of knowledge. It does this by providing an "inventory" of knowledge assets available in the eBusiness. Access is provided through a single point of entry to the knowledge base, irrespective of location or business unit. This saves a lot of time as staff has only one port of call to find the knowledge they need. Knowledge management also provides navigation tools, e.g. taxonomies, to enable staff to retrieve the knowledge they require quickly and efficiently. This transparency ensures that staff in different organisational units or geographical locations will know what knowledge is available to them, and will be able to retrieve it easily, thus eliminating duplication and increasing productivity. This means that the eBusiness can decrease its time to market and increase its agility.

8.4.1.9. Knowledge management facilitates collaboration

In the eBusiness environment collaboration is becoming increasingly prevalent. eBusinesses collaboratively design products across geographical boundaries and sometimes across organisational boundaries. There is also collaboration in the form of virtual communities internal and external to the organisation, e.g. through intranets and extranets. These communities share knowledge on a wide variety of issues. Knowledge management provides the technology, processes and platforms to enable the said collaboration. Knowledge management also ensures the retention and structuring of the knowledge shared in these collaborative forums that can be used as input to further knowledge creation within these and other forums.

Knowledge management also ensures that processes and platforms exist to convert tacit knowledge to explicit knowledge within knowledge exchanges in virtual communities or collaborative forums. Value can thus be extracted from tacit knowledge, and knowledge attrition can be minimised.

Due to collaborative design taking place across geographical and organisational boundaries through provision of collaboration forums and related knowledge management tools and processes, the organisation's time to market decreases and agility increases.

The role of knowledge management in eBusiness and customer relationship management

8.4.1.10. Knowledge management supports innovation

Knowledge management fosters a culture of innovation and creativity. Knowledge management plays a part in the creation of a culture of innovation through the availability and accessibility of knowledge that can serve as an input to the innovation process, and through recognition and rewarding of innovative ideas in the organisation. Innovation is a key element in ensuring agility for an eBusiness by keeping it one step ahead in the marketplace.

8.4.1.11. Knowledge management creates a learning environment

A new skills profile will be required to conduct business in the virtual world. Knowledge management can assist in expanding staff skills and knowledge by creating a learning environment, through the provision of knowledge on specific areas of expertise strategic to the business. Knowledge management therefore creates a self learning environment where staff has access to knowledge that enables them to acquire certain skills and competencies.

Working in a learning environment increases the quality of work life for staff members, making them more productive. The learning environment created through knowledge management is usually suited to the individual, team and organisation, i.e. learning and knowledge transfer takes place on all three levels. Quality of work life is thus improved on all three levels.

The learning environment leads to the institutionalising of knowledge created, shared and harvested. The organisation therefore continues to use its knowledge base to create more knowledge, i.e. a spiral effect of knowledge creation and leverage is achieved.

8.4.1.12. Knowledge management improves the communication process

Knowledge management plays a role in facilitating communication through the provision of technology, processes and platforms that enable communication. These technologies, processes and platforms are especially useful in eBusinesses with diverse geographical locations and associated timezones, or where organisational silos are present that inhibit communication and knowledge sharing. Knowledge management also ensures the retention of knowledge shared in these communication forums for future use.

8.4.1.13. Knowledge management provides one interface for interaction with business partners

Knowledge management provides the structure, tools and processes to provide one single interface with multiple business partners. This interface may take the shape of an Internet

The role of knowledge management in eBusiness and customer relationship management

webpage. The organisation's knowledge management function should be responsible for the structuring of the website content, to ensure that knowledge and information is structured effectively to ensure easy and logical organisation and retrieval of knowledge.

Knowledge management processes will also ensure that the knowledge on the interface is accurate and up to date and that knowledge is retained during any interactive knowledge sharing taking place through the interface, whether with customers, suppliers or visitors.

8.4.1.14. Knowledge management enables customer relationship management

Knowledge management enables customer relationship management through the creation, sharing, harvesting and leveraging of knowledge on an organisation's customers. Knowledge management ensures the creation of one view of the customer that can be shared across geographical and divisional boundaries in the organisation, thus ensuring that staff work with one updated set of knowledge on the customer irrespective of where they work.

This allows a better understanding of customers and their needs, and therefore enables more effective and more accurate development of product, channel and marketing strategies.

8.4.1.15. Knowledge management leads to standardisation of knowledge

Knowledge management provides standards for the creation, sharing, harvesting and leveraging of knowledge within the eBusiness environment. This leads to greater efficiency and lower cost for the organisation in terms of updating and managing the knowledge base, but also in terms of increased productivity of staff members. This is due to quicker and easier access and leverage of the available knowledge.

Standardisation also makes customer and supplier access and retrieval of knowledge more efficient, thus increasing customer and supplier satisfaction rates.

8.4.2. The value proposition of knowledge management in the customer relationship management environment

8.4.2.1. Knowledge management provides one view of the customer

Knowledge management provides the technology, processes and platforms to create, share, harvest and leverage knowledge on customers in one central location, thus providing one view of the customer, irrespective of geographic location or functional area in the business. The knowledge management system can provide real time knowledge and information on the

The role of knowledge management in eBusiness and customer relationship management

customer spanning the customer relationship lifecycle. The knowledge management system provides tools, processes and forums to enable the creation, sharing, harvesting and leveraging of knowledge throughout the customer relationship lifecycle, thus providing adequate knowledge gained during all stages of the customer's contact with the organisation.

This ensures that staff work with one updated set of knowledge on the customer irrespective of where they work, allowing a better understanding of customers and their needs, and therefore enables more effective and more accurate development of product, channel and marketing strategies.

8.4.2.2. Knowledge management leads to delivery of superior customer service and customer retention

Knowledge management ensures one view of the customer. This allows for a better understanding of their operating environment, their needs, demands and behavior and therefore for creating a "market of one", i.e. customising products and/or services to client needs and pricing it accordingly. It can also lead to new product or service development according to identified customer needs, as well as customer values. Service to the customer can be quicker, more effective and more efficient.

Knowledge management can also provide customers with 24-hour access to the knowledge they require on the organisation. This reduces the customer buying time and complexity of the customer buying process, including searching, monitoring and co-ordinating, thus increasing customer satisfaction and customer retention.

8.4.2.3. Knowledge management facilitates integration

Knowledge management facilitates integration of knowledge between disparate groups or departments within a customer relationship management environment. These disparate groups may be in different business units, or in different geographical locations. Knowledge management facilitates the flow of knowledge around customer issues between the groups, thereby facilitating quicker and more effective integration of customer related knowledge. It provides one view of the customer, irrespective of what context the knowledge is used in or where it originates or is utilised. Knowledge management also facilitates transparency, which assists in the integration process.

The role of knowledge management in eBusiness and customer relationship management

8.4.2.4. Knowledge management assists in managing a greater customer base

When implementing customer relationship management, the knowledge management program can assist in managing the increased amount and flow of knowledge related to an expanding customer base, which is caused by to the explosion of richness and reach in the virtual world. Knowledge management programmes can structure knowledge management processes and systems to ensure that all relevant knowledge is retained and made accessible, to add value to the organisation as well as the customer.

8.4.2.5. Knowledge management acts as change agent in institutionalising customer relationship management

Knowledge management provides the tools, processes and platforms for staff to share knowledge on customers. It enables them to see the value of pooling customer knowledge, through which superior customer service can be delivered. Staff are therefore more willing to share customer knowledge as they can see the value that is derived from it. Knowledge management therefore creates the vehicle through which customer relationship management can be institutionalised.

8.4.2.6. Knowledge management enables knowledge flow across geographical boundaries

Knowledge management facilitates transparency in geographically dispersed organisations in terms of the availability of knowledge. This ensures that staff in different geographical locations will know what knowledge is available to them, thus eliminating duplication and increasing productivity. Customer knowledge can therefore be captured in and shared from one central point, enabling one view of the customer. Quality and speed of decision-making and customer service can increase dramatically due to the pooling of customer knowledge and creation of customer profiles.

8.4.2.7. Knowledge management facilitates collaboration

In the customer relationship management environment collaboration is becoming increasingly prevalent due to organisations expanding their reach and working across geographical boundaries. These organisations use collaboration in the form of virtual communities (sometimes called virtual customer teams) internal and external to the organisation to ensure the harvesting, sharing and leveraging of customer knowledge (e.g. through use of intranets and extranets). Knowledge management provides the technology, processes and platforms to enable the said collaboration. Knowledge management also ensures the retention of the

The role of knowledge management in eBusiness and customer relationship management

knowledge shared in these collaborative forums. The knowledge harvested and shared in these collaborative forums are used to build customer profiles, and is used as business intelligence to do market, customer, as well as product and service segmentation and marketing.

8.4.2.8. Knowledge management improves the communication process

Knowledge management plays a role in facilitating communication through the provision of technology, processes and platforms that enables communication. These technologies, processes and platforms are especially useful in organisations with diverse geographical locations and associated timezones, as well as in cases where there are functional silos in the organisation that hamper communication and knowledge flow. Knowledge management also ensures the retention of customer knowledge shared in these communication forums for future use.

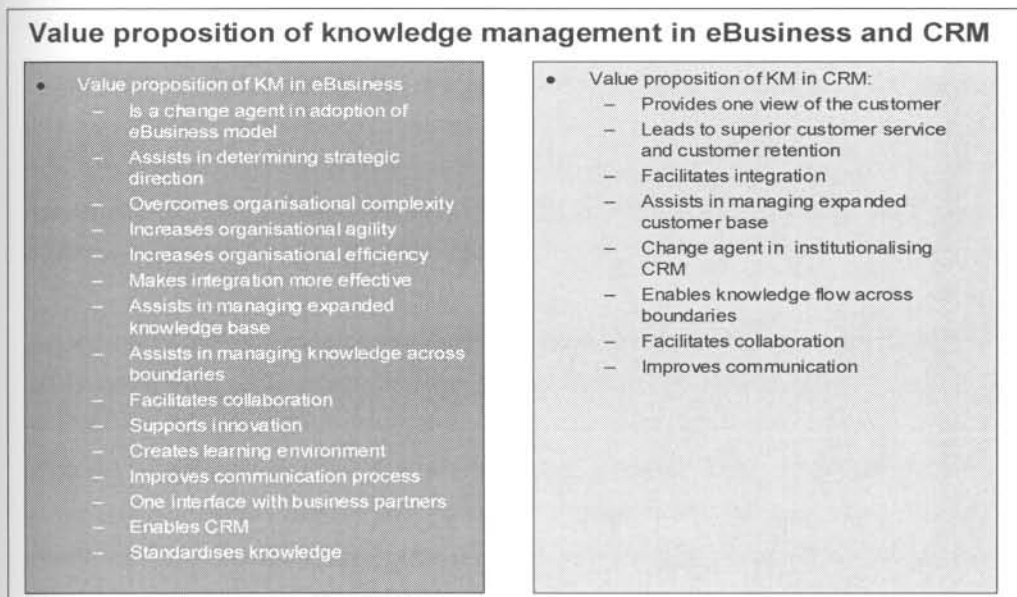


Figure 30. The value proposition of knowledge management in eBusiness and CRM

The role of knowledge management in eBusiness and customer relationship management

Reasons for knowledge management being a value proposition for eBusiness and CRM:

- Is a change agent in adoption of eBusiness model
- Assists in determining strategic direction
- Overcomes organisational complexity
- Increases organisational agility
- Increases organisational efficiency
- Assists in managing expanded knowledge base
- Assists in managing knowledge across boundaries
- Facilitates collaboration
- Supports innovation
- Creates learning environment
- Improves communication process
- One interface with business partners
- Enables CRM
- Standardises knowledge
- Provides one view of the customer
- Leads to superior customer service and customer retention
- Facilitates integration
- Assists in managing expanded customer base
- Change agent in institutionalising CRM
- Enables knowledge flow across boundaries

Figure 31. Summary: the value proposition of knowledge management in eBusiness and CRM

The role of knowledge management in eBusiness and customer relationship management

9. DMAP: QUESTIONNAIRE METHODOLOGY

9.1. DMAP introduction

Drs. Harry Swart and Henk Greeff of Bentley West Management Consultants developed the DMAP technology utilised for this questionnaire. The DMAP (Diagnostic Management Application Profile) tool was designed to obtain a strategic view of an organisation, analysing the operating environment in an organisation as defined by management processes, styles, practices and systems associated with managing the organisational purpose, strategy, technology, human capital, business processes, financial systems as well as culture, climate and diversity, and profitable market growth in the workplace. The approach it utilises can, however, be adapted and customised to address problems not within its original scope. Examples of areas where the tool has been customised are as follows:

- The mining industry, where a strong emphasis is placed on the balance between operational and strategic issues.
- The IT industry, with reference to issues regarding competence profiles and governance.
- The retail industry, the focus being the balance between management and leadership and operational successes.
- ***The services industry, where strong emphasis is placed on knowledge management, intellectual capital and organisational culture (relevant to this study).***
- The financial services sector, with reference to capability studies.
- Technology transfer in the mining industry.

The DMAP questionnaire contains a standard set of closed questions, which test the dimensions of management processes, styles, practices and systems associated with managing the organisational purpose, strategy, technology, human capital, business processes, financial systems as well as culture, climate and diversity, and profitable market growth in the workplace, or alternatively, customised dimensions as required per individual DMAP. There are also a number of open-ended questions, which allows the respondent to give his or her views outside the frame of reference of the closed questions.

The power of the DMAP lies in its extremely powerful engine, which allows for the categorisation of results into a series of strategic themes. One of the many advantages of the technology is the fact that more than fifty applications of the technology have been made in South Africa and the United States of America, which allows for rapid customisation and benchmarking against other surveys.

The role of knowledge management in eBusiness and customer relationship management

9.2. DMAP purpose

The *generic* purpose of the DMAP in the business environment includes the following:

- Provides a diagnostic template that simplifies the business planning process.
- Allows for repeated organisational dipsticks.
- Tests market perceptions.
- Allows qualitative assessment of intellectual balance sheet.
- Provides an evaluation of management processes, approaches, practices and philosophies.
- Rapid evaluation of strategic situation and operational environment.

9.3. DMAP process description

The DMAP process can be depicted as follows:

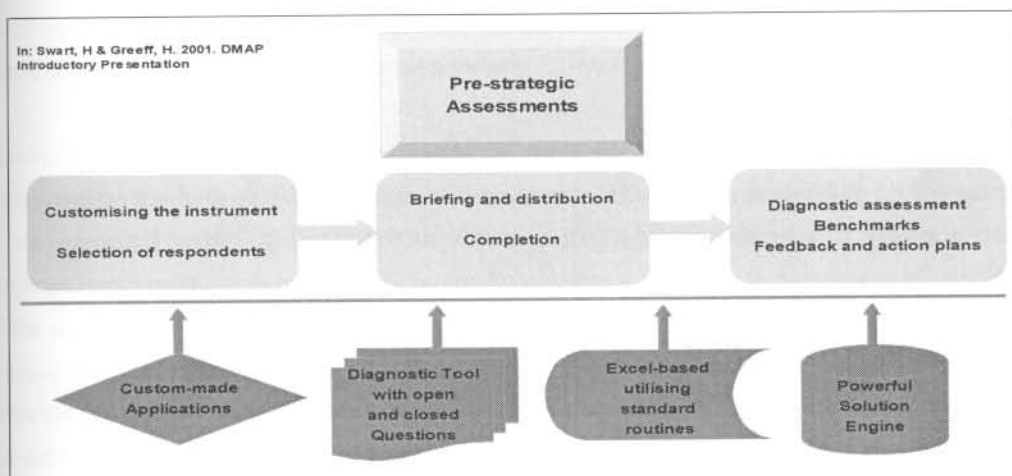


Figure 32: DMAP process description

Firstly, a pre-strategic assessment is performed to determine the potential strategic drivers in the targeted organisation(s). The strategic drivers and the main themes that characterise them are defined in detail to customise the strategic themes in the DMAP. These drivers are described in the questionnaire to respondents. This may seem to lead respondents, but the purpose is rather to ensure respondent understanding of the strategic drivers being tested. The descriptions of the dimensions or drivers can also seem fairly complex at first glance, as it is a one or two sentence description of an issue very strategic to the business. In this study, the basic strategic drivers of the DMAP tool, namely organisational purpose, strategy, technology, human capital, business processes, financial systems as well as culture, climate

The role of knowledge management in eBusiness and customer relationship management

and diversity, and profitable market growth in the workplace, was not used. The DMAP was customised completely to adapt to the purpose of this study.

Respondents are carefully selected according to criteria relevant to the organisation. These criteria are selected to ensure the highest quality output from the questionnaires. In the case of this study, the organisations were selected due to the fact that they are all knowledge rich organisations, and the respondents themselves were selected according to their level of knowledge and understanding of the topic of knowledge management. The DMAP is therefore not a scientific sample, but aimed at providing case studies to prove or disprove the hypothesis. The respondents requested to remain anonymous, therefore the organisations participating in the DMAP are not mentioned anywhere in the study.

Secondly, all potential respondents are briefed as to the background of the questionnaire, its aim and the purpose of the application of the data obtained from it. This can be done in presentation format, e-mail or normal mail format. Respondents are then provided with the electronic or hard copies of the questionnaires and required to fill them. An applicable time frame with clear cut-off date is set for respondents to return questionnaires.

Thirdly, a diagnostic assessment is made of the data obtained via the questionnaires, depending on the data selections made by the analyst. This is highly dependent on the needs of the particular organisation. The data can also be benchmarked against previous data obtained and stored within the DMAP diagnostic memory if required, to further test the validity of the data and to enable more in-depth analysis. The purpose of the DMAP is to enable the analyst to provide feedback and solutions to the organisation in question based on the data obtained through the questionnaires, together with an objective analysis and interpretation of the data in relation to the strategic themes identified.

These three main steps are executed and supported by a custom made Excel application utilising standard routines, which acts as a powerful solution engine to enable diagnostic assessments of data.

9.4. Framework for analysis

The interpretation of the questionnaire is based on the following statistical data and principles of analysis (Swart, 2001, p.12) (see over page):

The role of knowledge management in eBusiness and customer relationship management

The Mean (average scores) = Level of Satisfaction
Standard Deviation (variation among scores) = Level of Agreement
The 95 % confidence level is used to determine meaningful differences between samples. At a 95 % confidence level, significant differences occur between two means for this data set when the difference between values exceeds 10% of the sample standard deviation. This value is a compromise between total accuracy of statistical representation and the comparing of different "subsets" of the same population, of widely differing sizes. In this study this measure is used as a wide-band approximation of the 95% confidence level. The results of the survey were expressed as numbers between 0 and 5 (with 0 being poor and 5 excellent.) For the purpose of the report these results are expressed as percentages (where 0% equates to the previous 0 and 100% to the previous 5.) This conversion can be made without affecting the statistical integrity of the data and /or statistical comparisons of the data.
Mean scores above 75% denote exceptional agreement or satisfaction with the situation under review. Mean scores between 65% and 75% normally denote that the respondents are satisfied with conditions. A mean score of 65% is the 'cut off' between low and acceptable scores. A score between 65% and 60% show that the respondents are not entirely satisfied with how the area is being managed. A mean score of less that 60% is usually indicative of severe problems. A value below 40% usually indicates a problem of extreme severity and urgency, which can mostly only be solved by a change of management.
When more than 50% of the respondents rate an item as 3.00. It is usually indicative of confusion or uncertainty about a particular item.
When the standard deviation exceeds 24% it means that the respondents differ significantly in as far as their ratings are considered. Standard deviations between 20% and 24% show a reasonable degree of agreement, whilst values of the standard deviation less than 20% signify good correspondence.
If less that 35% of the respondents choose a 3 or less as their score, it is assumed that the situation is reasonably under control as far as agreement between respondents is concerned. It is not yet necessary to take serious, urgent action. For values of 35% to 45%, the matter requires careful management but if more than 45% of respondents chose a 3 or less, the matter is considered serious and urgent action is required.
The open questions allow respondents the opportunity to verbalise their feelings. Sentences with comments are gathered in the survey. These are classified into themes pertaining to the study.
The number of responses per dimension is taken as indicative of the top-of-mind issues.

Figure 33: DMAP framework for analysis

The role of knowledge management in eBusiness and customer relationship management

10. DMAP INTERPRETATION TESTED AGAINST HYPOTHESIS

10.1. Approach

As stated previously, the aim of the questionnaire is to test the validity of the hypothesis of the value proposition of knowledge management in eBusiness and customer relationship management, as set out in Chapter 8, *within the South African context*. To enable this, the researcher followed a specific approach in achieving the expected results (see Figure 34). *This chapter focuses on Phase 2 in the figure.*

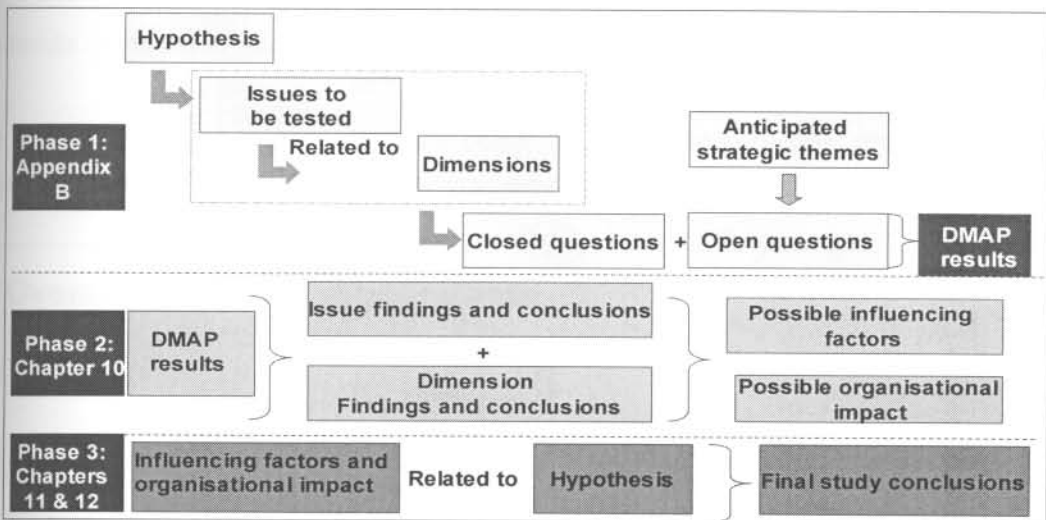


Figure 34. Approach of testing hypothesis and formulating conclusions and recommendations

Prior to drawing up the DMAP questionnaire, the issues to be tested in the hypothesis (Chapter 8) were identified and mapped to ten strategic dimensions for the *closed question* section of the questionnaire (refer Appendix B.2). In this chapter, the researcher aims to test each of these issues within each of the dimensions as identified in the hypothesis, against the results of the questionnaire. The researcher will also indicate where these strategic dimensions impact a generic organisational value chain. The researcher will analyse the dimension results and issue results with reference to possible influencing factors that could have led to the results as well as the impact that the results could have on organisations. The researcher is aiming at addressing the "why?" and "so what?" perspectives on the analysed findings.

The open-ended strategic themes and related questions were aimed at addressing those questions posed in the hypothesis that were not covered by the closed questions, but are relevant to the testing of the hypothesis. Potential strategic themes were identified for the

The role of knowledge management in eBusiness and customer relationship management

open questions prior to drawing up the questionnaire. In this chapter, the researcher aims to analyse the open questions with reference to the strategic themes identified by respondents. The researcher will also analyse the results with reference to possible influencing factors that could have led to the results as well as the impact that the results could have on organisations. The researcher is aiming at addressing the “why?” and “so what?” perspectives on the analysed findings. The researcher also aims to compare the anticipated strategic themes identified prior to the study and based on the hypothesis, with the strategic themes that were identified in the questionnaire responses in order to understand the differences together with the potential causes and the potential impact on organisations.

The results of the DMAP questionnaire are included as Appendix B.

The findings and conclusions in 10.2 are based on the following graphs, reproduced from Appendix B. These figures have been reproduced here to enable easier reading.

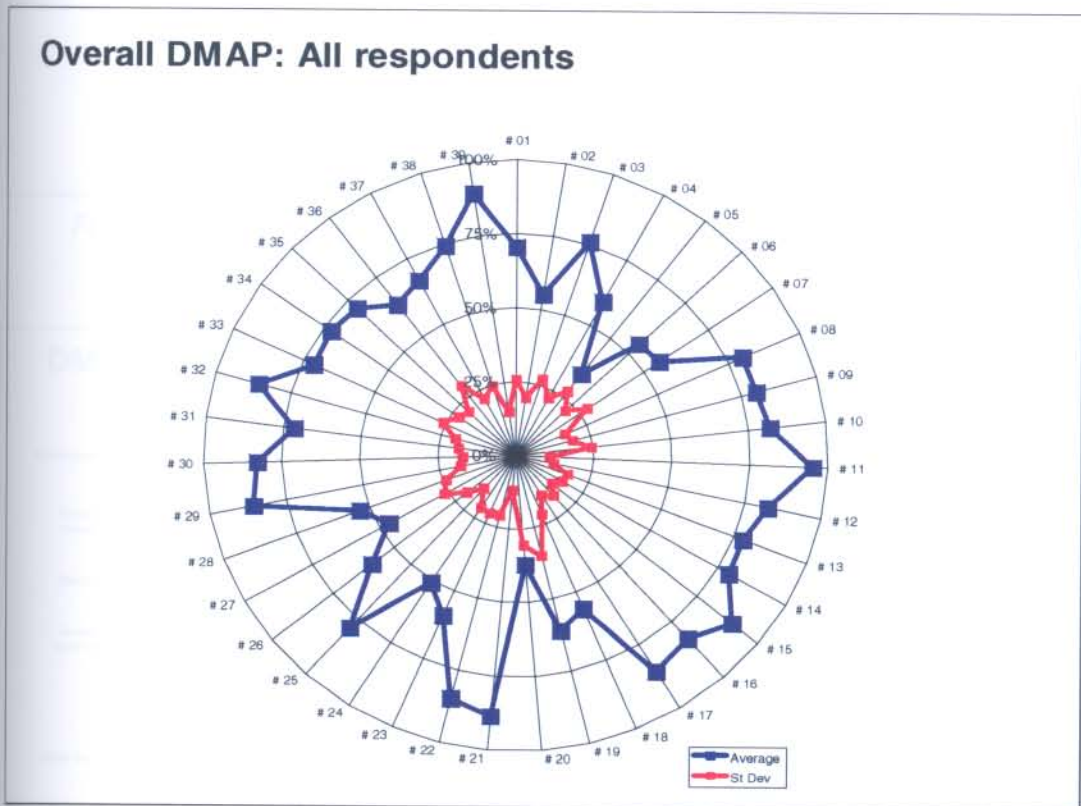


Figure B1. Overall DMAP: all respondents

DMAP by company: Companies with only 1 respondent excluded

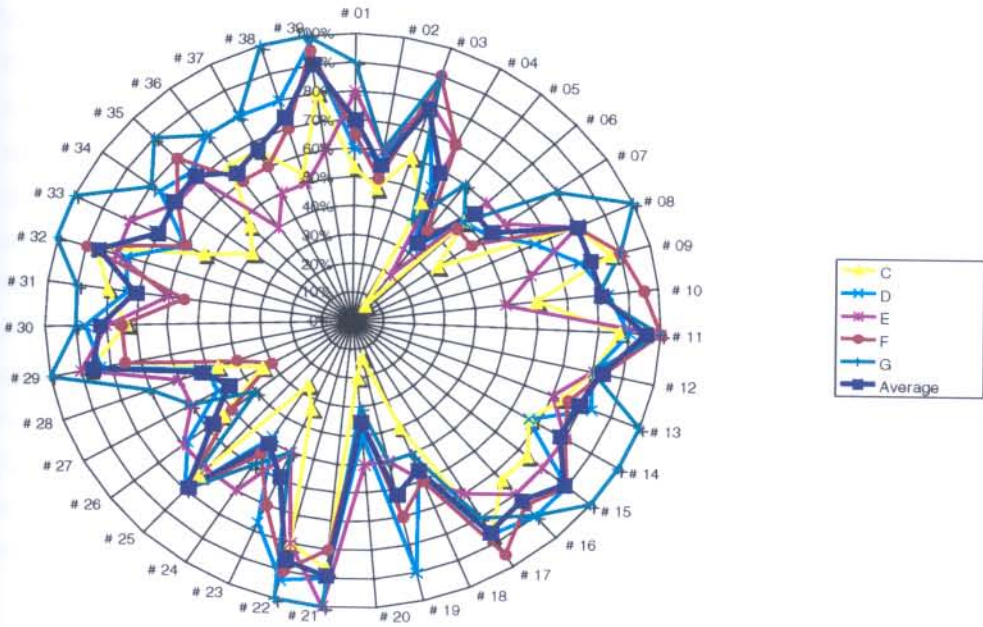


Figure B3. DMAP by company: companies with only one respondent excluded

DMAP dimensions by sector

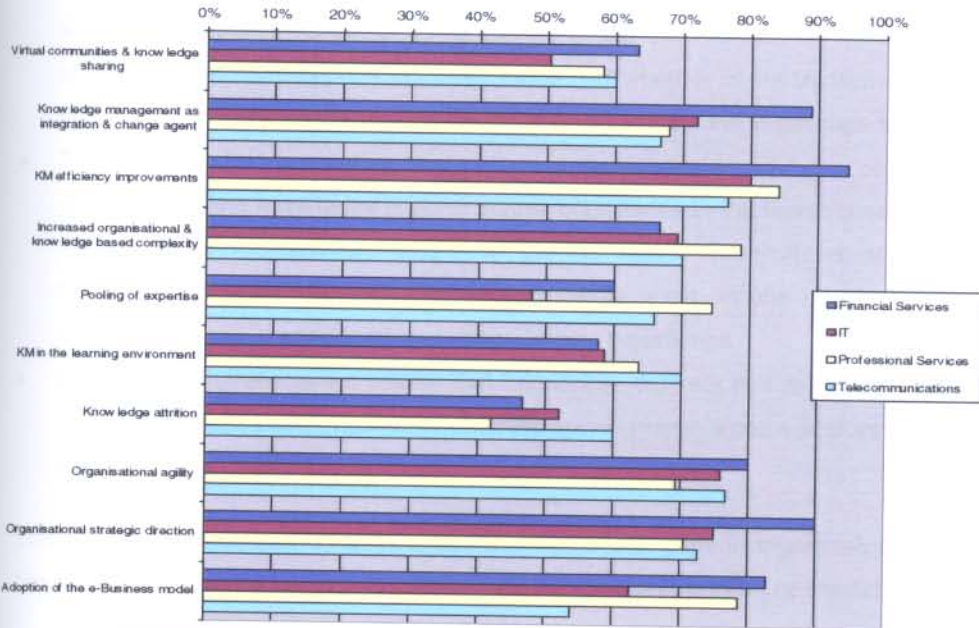


Figure B6. DMAP dimensions by sector

The role of knowledge management in eBusiness and customer relationship management

10.2. Findings and conclusions relating to the DMAP closed questions

The ten strategic dimensions identified prior to the design of the questionnaire, based on the hypothesis as described in Chapter 8, are:

- Virtual communities and sharing of knowledge across boundaries.
- Knowledge management as integration and change agent.
- Knowledge management efficiency improvements due to knowledge management standards.
- Knowledge management as factor that overcomes growing organisational and knowledge base complexity.
- Pooling of expertise in one central interface with internal and external parties.
- Knowledge management as creator of environment of innovation, learning and improved communication.
- Knowledge management as measure to prevent knowledge attrition.
- Knowledge management as factor that increases organisational agility.
- Knowledge management as input in determining the organisation's strategic direction.
- Knowledge management as factor in quicker adoption of the eBusiness model.

10.2.1. Virtual communities and knowledge sharing

10.2.1.1. Overview

- The average profile for questions 1-6 testing the role of virtual communities and knowledge sharing is below average. Although the respondent organisations have adopted eBusiness models to some extent, virtual communities do not currently play a large role. The conclusion is therefore made that whether in the traditional or eBusiness environment, performance relating to virtual communities and knowledge sharing is poor.
- From an industry perspective, there is some dissatisfaction on the application of virtual communities and knowledge sharing across boundaries in the financial services industry, and room for improvement exists. In the IT, Telecommunications and Professional Services industries, however, severe problems exist in the application of virtual communities and in sharing of knowledge across boundaries.
- From a staff perspective it seems that knowledge workers see the application of virtual communities and knowledge sharing across boundaries in a more positive light than other staff members.

This dimension will have an impact on all areas of the generic organisational value chain (impact indicated by all value chain areas that are shaded in grey). The impact of virtual

The role of knowledge management in eBusiness and customer relationship management

communities and knowledge sharing will thus be high on organisations as a whole (see Figure 35).

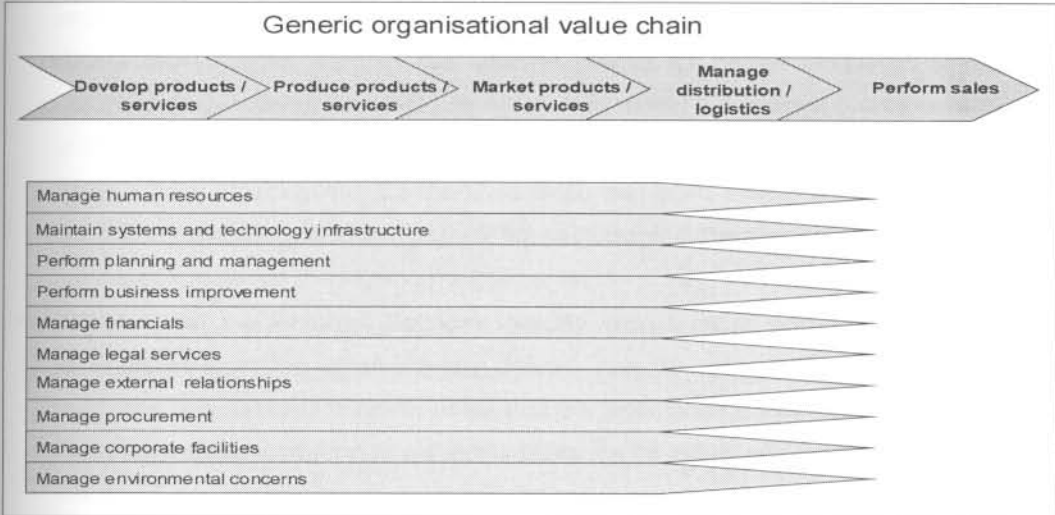


Figure 35. Areas of impact of virtual communities and knowledge sharing on generic organisational value chain

10.2.1.2. Conclusion

10.2.1.2.a. Possible influencing factors

There are a number of possible factors influencing the use of virtual communities:

- eBusiness did not explode as anticipated in the years 1998-2000. This impacted virtual communities, as not as many platforms and technologies as were anticipated to be available, are currently available and / or applied to implement the value added by virtual communities to its fullest extent. It seems, however, that extranets as virtual community or knowledge sharing platform has been received well in the South African market, indicating that knowledge management plays some role in eBusiness in South Africa.
- South Africa is not a leading country in the international scenario with reference to knowledge management. This is most probably due to the fact that there are a small number of large corporates where knowledge management can and have been fully implemented, but most organisations do not have the capacity to implement knowledge management on a large scale. This may explain why virtual communities as a platform for knowledge management ranks low in importance and current performance in the South African scenario. South African organisations also differ with reference to geographic spread. There are once again a small number of corporates that operate internationally,

The role of knowledge management in eBusiness and customer relationship management

compared with a large number of organisations, e.g. in the US or UK, that operate internationally. Most organisations therefore have a local focus, which means that the need for virtual communities may not be as great as in other countries. In South Africa another factor that could potentially influence the existence of virtual communities is the variety of languages used in the country. Having 11 official languages and some European languages spoken in South Africa, may render it a concept that is more difficult to implement compared to countries like the UK where English is the dominant language. South African organisations are therefore faced with many unique challenges relating to the country specific conditions and will not necessarily follow the American or European models of knowledge management implementations.

- The fact that the Financial Services industry scored better with reference to virtual communities than the other industry groups, may be attributed to the banking and insurance organisations in South Africa that are technologically advanced, thus enabling these organisations to provide electronic platforms for virtual communities. In contrast to this the IT industry had the lowest score, indicating severe problems. The researcher is of the opinion that the culture of IT organisations may not be oriented towards knowledge management. The fact that virtual communities and knowledge sharing ranks low in the IT industry may be due to the fact that the IT industry is not a very formal industry and due to the innovative nature of the industry and continuous change taking place in the industry, does not focus on formal ways of sharing knowledge. Knowledge may be shared mostly in on-the-job situations and in tacit format. It is therefore clear that in the South African situation, certain industries are more inclined or suited to the utilisation of virtual communities and knowledge sharing on a large scale.
- In organisations where knowledge management has been implemented, the fact that knowledge workers perceive the importance and performance of virtual communities and knowledge sharing in a better light than other staff members may be due to the fact that knowledge workers may have a better perception of the value that virtual communities and knowledge sharing may add to the business and therefore see them in a more favourable light. Knowledge workers may also have a perception that knowledge is shared to some extent, but may not have the same perception as other staff on the extent on what knowledge is *not* being shared. Knowledge workers therefore may think that a lot of knowledge is being shared, whilst it is not actually true considering all the knowledge available in the organisation that can potentially be shared. This may be dangerous with reference to the momentum required for future developments regarding virtual communities and knowledge sharing in organisations, as stagnation may develop if knowledge workers perceive effective knowledge sharing and utilisation of virtual communities, whilst in actual fact some inefficiencies still exist that are in need of improvement.

The role of knowledge management in eBusiness and customer relationship management

From the analysis and influencing factors a deduction can be made that organisations and industries that are technologically enhanced and have adapted the eBusiness model are more prone to sharing knowledge effectively and to utilise virtual communities as a knowledge sharing platform, due to the availability of enabling technologies in these organisations and industries.

In the light of influencing factors in the South African context, it is clear that most South African organisations do not have the need for implementing virtual communities mainly due to their limited size and limited geographical spread, but also due to other complexities such as language differences and availability of suitable knowledge management technology.

10.2.1.2.b. Impact on organisations

The impact of virtual communities and knowledge sharing is organisation wide, on all core processes and enabling processes (see Figure 35). This therefore implies that the impact of poor performance with reference to virtual communities and knowledge sharing will be huge in any organisation.

When knowledge sharing is poor within core processes in a business, the very heart of the business is affected. Those core processes without which the business would have no reason for existence, is negatively impacted due to the fact that knowledge sharing around tasks and decision-making within each core process, is ineffective or does not take place at all. This leads to inefficiency and ineffectiveness in the organisation's core processes.

Firstly it affects the organisation on a strategic level in terms of the ability to execute the business strategy, as core processes are intended to execute the business strategy. It also affects the organisation's agility in the market, i.e. the ability to react swiftly to changes in the marketplace due to the fact that decisions on core activities in the business are being made without all the knowledge being available to make an informed decision. Strategy execution and adapting to the marketplace is therefore slowed down due to lack of knowledge sharing, and the effectiveness and efficiency of both are negatively impacted. Secondly it affects the organisation on an operational level due to the fact that productivity in producing products and services is negatively impacted due to inefficient and ineffective task execution. Due to a lack of knowledge sharing on the "shop floor", there may also be a lack of knowledge to innovate, stagnating the processes of the organisation on an operational level and negatively affecting the competitiveness of the organisation in the marketplace.

When knowledge sharing is poor within enabling processes the scenario above with reference to core processes is exacerbated, as enabling processes are meant to provide support in order to enable core processes to take place effectively and efficiently. For example, when

The role of knowledge management in eBusiness and customer relationship management

knowledge is not shared on managing human resources, the organisation will not be able to effectively manage its workforce. Creating and managing an efficient and effective workforce through creation of a productive and stimulating working environment and a culture of openness and innovation, is essential for the sharing of knowledge within both core and enabling processes, tasks and decisions, and the organisation would thus be impacted negatively on both a strategic and operational level if the workforce is not managed effectively through the use of available knowledge in the organisation. The same principle would apply to all other enabling processes.

It is therefore clear that a lack of knowledge sharing and implementation of virtual communities will heavily impact both core and enabling processes in the business, thereby negatively impacting the organisation on both a strategic and operational level.

10.2.1.3. Issues: virtual communities and knowledge sharing

- *Issue 1: Knowledge management has a vital role in the retention and structuring of knowledge shared in virtual communities / collaborative forums (Q2 & Q3)*
 - The average profile for question 2 that addresses this issue is low (<60%), indicating severe problems in the general respondent profile. There is not a significant differentiation amongst respondent organisations, indicating that this problem is generic to the market sample as tested in this questionnaire. The perceptions of knowledge workers and other workers on this issue do not differ significantly.
- *Issue 2: Knowledge management can ensure the transfer of tacit knowledge to explicit knowledge within collaborative forums / virtual communities (Q27)*
 - The average profile for question 27 that addresses the conversion of tacit knowledge to explicit knowledge in general, i.e. in any forum (including collaborative forums / virtual communities), is low (<50%), indicating severe problems in the general respondent profile.
 - In question 27, responses are spread evenly, but with a rather large spread, from 30% to 60%, with Respondent Organisation E (Telecommunications) and Respondent Organisation G (Insurance) ranking the highest and Respondent Organisation F (Professional Services) ranking the lowest. This signifies that the perception of the extent to which tacit knowledge is converted to explicit knowledge, differs quite extensively.
 - The perceptions of knowledge workers and other workers on this issue do not differ significantly.

The role of knowledge management in eBusiness and customer relationship management

- *Issue 3: Knowledge management provides tools and platforms for virtual communities / knowledge sharing (Q4)*
 - The generic respondent profile indicates that respondents are not entirely satisfied with the tools and platforms provided by knowledge management for virtual communities and knowledge sharing. The generic profile score was below 65%.
 - There is a major difference in perception on the extent to which knowledge management provides virtual communities / knowledge sharing platforms and / or tools amongst knowledge workers and other staff. Knowledge workers are of the opinion that knowledge management plays a larger role in providing these platforms, in contrast with the perceptions of other staff that scored much lower.
- *Issue 4: Knowledge management ensures management of website content (Q5)*
 - The generic respondent profile indicates severe problems with reference to the knowledge management function's role in management of organisational website content with an average score of 30%.
 - The high standard deviation, however, shows some disagreement amongst respondents. Respondent Organisation C (IT) does not involve knowledge management at all in the structuring of its company website. The other respondents involve the knowledge management function to some extent, but not sufficiently.
 - Differences in perception also exist on the role of knowledge management in structuring the organisations' website content - knowledge workers perceive themselves to be involved more than other staff perceives them to be.
- *Issue 5: Virtual communities / collaboration leads to efficiency and productivity improvements due to sharing of knowledge (Q6)*
 - The average of the respondent profile is low (<60%), indicating severe problems in respondent organisations in obtaining efficiency and productivity improvements through virtual communities and / or collaboration.
 - The perceptions of knowledge workers and other workers on this issue do not differ significantly, although knowledge workers perceive the efficiency and productivity improvements to be slightly higher than other staff members.
- *Issue 6: Virtual communities, with specific reference to extranets, play a larger role in the eBusiness arena in terms of sharing knowledge with customers / suppliers (Q1)*
 - Utilisation of extranets in view of sharing knowledge with customers / suppliers received a high score on the average respondent profile (70%), indicating general satisfaction amongst respondents.
 - Responses were spread evenly, but with a rather large spread, from 50% to 90%, with Respondent Organisation C (IT) ranking the lowest and Respondent Organisation G (Insurance) ranking the highest. This signifies that the perception

The role of knowledge management in eBusiness and customer relationship management

- of importance to all organisations to share knowledge with customers and suppliers via extranets, differs vastly.
- The perceptions of knowledge workers and other workers on this issue do not differ significantly.

10.2.1.4. Conclusions

10.2.1.4.a. Possible influencing factors

- *Issue 1: Knowledge management has a vital role in the retention and structuring of knowledge shared in virtual communities / collaborative forums (Q2 & Q3).*
 - The researcher believes that due to the fact that the application of virtual communities and knowledge sharing currently scores below average, firstly not a lot of knowledge is generated in this environment, and therefore the retention and structuring of the knowledge generated in this environment does not receive priority importance from management. Therefore the deduction can be made that no or limited responsibility has been given to retention and structuring of knowledge shared in virtual communities in these organisations. This may all be attributed to the lack of perceived importance of the knowledge generated in virtual communities and due to the lack of utilisation thereof. Knowledge may also not be perceived as a corporate asset and managed as such to ensure maximum value extraction.
- *Issue 2: Knowledge management can ensure the transfer of tacit knowledge to explicit knowledge within collaborative forums / virtual communities (Q27)*
 - The low average score on this issue may be attributed to the fact that, as stated in the previous issue, knowledge in virtual communities are not currently structured to a large extent, indicating that the role of knowledge management is low. It may also be attributed to the fact that virtual communities are not widely used as a means of knowledge sharing, therefore conversion is not a big issue. It may also be due to the fact that knowledge management in these organisations are focused on managing knowledge that is currently already in explicit format, and are therefore not focusing on tacit knowledge or on conversion of this tacit knowledge into explicit.
- *Issue 3: Knowledge management provides tools and platforms for virtual communities / knowledge sharing (Q4)*
 - The dissatisfaction with the extent to which knowledge management provides tools and platforms for knowledge sharing may be attributed to the fact that a lot of knowledge sharing is currently taking place in tacit format and is not shared via formalised tools and platforms. It may also be attributed to a lack of funding

The role of knowledge management in eBusiness and customer relationship management

obtained by the knowledge management function to provide adequate tools or platforms for users. Lastly it may be attributed to a lack of knowledge management skills, knowledge and leadership to enable successful selection and implementation of such tools.

- The difference in perception of knowledge workers and other staff on this issue may be attributed to a lack of knowledge of other staff on the functionality of the tools and platforms provided, and/or lack of understanding of how these tools support knowledge sharing (this indirectly implies a lack of training on tools and platforms, as well as the philosophy of knowledge management and how these tools assist in implementing that philosophy). It may also be attributed to the fact that knowledge workers do not fully understand the needs of other staff with reference to knowledge sharing behaviour and the relevant tools and platforms they require in supporting that behaviour.

- *Issue 4: Knowledge management ensures management of website content (Q5)*

- The indication from respondents that knowledge management plays virtually no role in structuring website content may be attributed to the fact that website structuring, building and maintenance is usually seen as an IT and Marketing function. It is not deemed as an area where knowledge management could provide useful inputs. This may be due to the fact that knowledge management is being defined in a very limited way by the respondent organisations, and they have yet to realise that knowledge management is integrated with the whole of the business.
- The difference of the perceptions between knowledge workers and other staff may be attributed to the fact that other staff are not fully aware of all the activities that knowledge workers are involved in, i.e. the roles of knowledge workers are not clearly communicated to other staff. It may also be attributed to the fact that other staff involved in managing website content may not deem knowledge workers' roles as significant.

- *Issue 5: Virtual communities / collaboration leads to efficiency and productivity improvements due to sharing of knowledge (Q6)*

- The very low score on this dimension may be attributed to the fact that knowledge management does not play a part in structuring of the knowledge shared within virtual communities, and tacit knowledge in these forums are also not converted to explicit knowledge. The subsequent utilisation and application of knowledge shared in these forums are therefore quite difficult as the knowledge is not structured and often in tacit format, thus inhibiting efficiency and productivity improvements. It may also be attributed to the fact that virtual communities are not widely used.

The role of knowledge management in eBusiness and customer relationship management

- The fact that knowledge workers perceive the efficiency and productivity improvements achieved through sharing knowledge in virtual communities to be higher than other staff, may be attributed to the fact that other staff members may not link the role of knowledge to their productivity or efficiency improvements, but may link it to "working smarter".
- *Issue 6: Virtual communities, with specific reference to extranets, play a larger role in the eBusiness arena in terms of sharing knowledge with customers / suppliers (Q1)*
 - The fact that using extranets as a virtual community platform for sharing knowledge with customers and / or suppliers, was ranked high by respondents may be attributed to the fact that the respondent organisations are large corporates with critical mass to enable them to implement such a platform successfully. It may also be attributed to the fact that these organisations are technologically advanced and due to their geographical dispersion and relatively large size, have decided to implement some eBusiness principles, of which extranets are an example. These organisations are seeking to ensure supply chain efficiency with customers and suppliers through the sharing of knowledge.

10.2.1.4.b. Impact on organisations

- *Issue 1: Knowledge management has a vital role in the retention and structuring of knowledge shared in virtual communities / collaborative forums (Q2 & Q3).*
 - The low average score for this issue can impact the organisation negatively. Knowledge shared in virtual communities that are not retained and/or structured in some form may not be available for reuse in other contexts at other points in time. This means that the knowledge shared may only be retrievable and of value in a specific context for a specific purpose. This limits the potential value of knowledge and knowledge management for the organisation, as the value of knowledge is that it can be reused infinitely and the value changes dependent on the context.
- *Issue 2: Knowledge management can ensure the transfer of tacit knowledge to explicit knowledge within collaborative forums / virtual communities (Q27)*
 - The low average profile for this issue means that the organisations may never have a clear understanding of what knowledge is available as most knowledge will be in tacit format. They also run the risk of knowledge attrition when staff leaves the organisation and their knowledge and experience haven't been made explicit in some format.

The role of knowledge management in eBusiness and customer relationship management

- *Issue 3: Knowledge management provides tools and platforms for virtual communities / knowledge sharing (Q4)*
 - The fact that tools and platforms for knowledge sharing as provided by knowledge management is inadequate negatively impacts knowledge sharing and explicit knowledge management efficiency and effectiveness in respondent organisations. It also lowers the profile and therefore the perceived importance of knowledge management in the organisation.
- *Issue 4: Knowledge management ensures management of website content (Q5)*
 - The severe problems with reference to the role of knowledge management in structuring website content means that the potential exists for organisations' websites not being as effectively structured and defined as it could be with the input of knowledge workers, who are experts in the structuring of content. This is important for any organisation to realise, as a website is the image and knowledge that it portrays to the market and should be structured as effectively as possible.
- *Issue 5: Virtual communities / collaboration leads to efficiency and productivity improvements due to sharing of knowledge (Q6)*
 - The limited efficiency and productivity improvements due to knowledge sharing in virtual communities means that organisations are not going to get the full potential value of knowledge as an organisational asset, together with the value of knowledge applied to processes and tasks yielding customer facing products and/or services. The implication is also that knowledge is not being managed as a corporate asset at this point in time.
- *Issue 6: Virtual communities, with specific reference to extranets, play a larger role in the eBusiness arena in terms of sharing knowledge with customers / suppliers (Q1)*
 - The prevalent use of extranets has a potentially high impact on knowledge sharing in the eBusiness and customer relationship management environments. The responses indicate that organisations understand the value of knowledge sharing with customers and suppliers in achieving organisational agility, effectiveness and efficiency and are exploiting this value within the context of their eBusiness and customer relationship management models. Knowledge sharing through utilisation of technologically integrated platforms is a fundamental principle of eBusiness, and to a certain extent of customer relationship management and it is clear that these organisations have grasped this principle and have put great impetus in implementing it successfully.

The role of knowledge management in eBusiness and customer relationship management

10.2.2. Knowledge management as integration and change agent

10.2.2.1. Overview

There are a number of possible factors influencing the use of knowledge management as change and integration agent:

- The score for this dimension is high. 2 Out of 5 Respondent Organisations scored above 75%, indicating that they are exceptionally satisfied with the performance relating to knowledge management as integration and change agent. 3 Of the Respondent Organisation scores were well above 65%, indicating satisfaction with the performance relating to knowledge management as integration and change agent. Respondent Organisation D (Professional Services) had the lowest score, whilst Respondent Organisation G (Insurance) had the highest score.
- The average profile for questions 7-9 testing the role of knowledge management as integration and change agent is above average. Question 7 had a low score indicating severe problems with reference to knowledge management facilitating an easier transition when organisational changes are made, but questions 8 and 9 relating to the role of knowledge management in facilitating integration with eBusiness partners and facilitating transparency in the organisation ranked above 75%, indicating a high level of satisfaction.
- From an industry perspective, there is a high level of satisfaction on the application of knowledge management as integration and change agent in the Financial Services industry. In the IT, Telecommunications and Professional Services industries, however, some dissatisfaction exists in the application of knowledge management as integration and change agent.
- From a staff perspective it seems that knowledge workers and other staff members do not see eye to eye on the role of knowledge management as integration and change agent.
 - The role of knowledge management in facilitating easier transition when organisational changes are made is perceived to be greater by other staff than knowledge workers themselves (Q7).
 - Knowledge workers perceive the role of knowledge management in facilitating integration between eBusiness partners through knowledge management practices to be greater than other staff do (Q8).
 - Other staff perceives the role of knowledge management in facilitating transparency in the organisation to be greater than knowledge workers do (Q9).

The role of knowledge management in eBusiness and customer relationship management

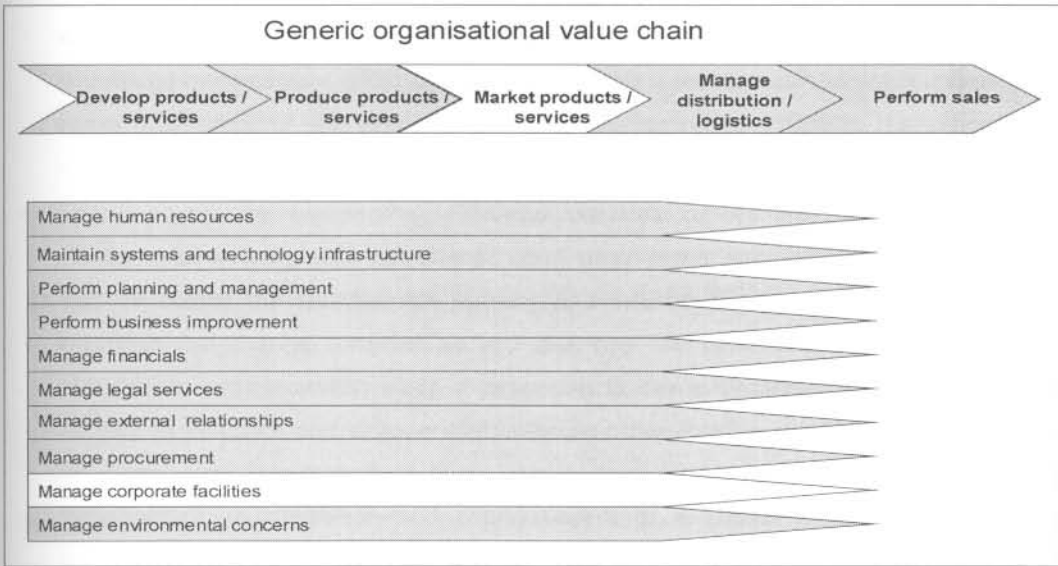


Figure 36. Areas of impact of knowledge management as integration and change agent on organisational value chain

10.2.2.2. Conclusions

10.2.2.2.a. Possible influencing factors

There are a number of possible factors influencing the use of knowledge management as integration and change agent:

- The fact that the overall rating on knowledge management as integration and change agent is high, read in conjunction with the above dimension on knowledge sharing having received a low score, means that when knowledge is shared, it has a high impact with specific reference to change and business integration. This may be due to the fact that the knowledge sharing that does take place, is focused on sharing critical knowledge that has a potentially high impact on the business and may assist in integrating the process flow within the organisation and between organisations, and in changing strategic and operational inefficiencies. The implication is that knowledge that has a potential high impact for the business is currently being shared by the respondent organisations. This is a strength that organisations should build on, and the size of this pool of knowledge perceived as having potential for high impact should be increased, together with improvement of the knowledge sharing processes, to ensure higher value extraction and efficiency from the organisational knowledge base as a whole.
- Question 7 had a low score indicating severe problems with reference to knowledge management facilitating an easier transition when organisational changes are made. This may indicate a perception that knowledge management is playing a role in provision of the knowledge and conveying the message of the potential changes, but that knowledge management per se does not have an effect in the actual implementation of the changes

The role of knowledge management in eBusiness and customer relationship management

with reference to facilitating easier change implementation. The implication is that knowledge management could also be promoted as a tool that can assist in ensuring an easier facilitation of the implementation of the proposed changes, i.e. knowledge management should not be seen only as a communication tool.

- From an industry perspective, Financial Services ranked the role of knowledge management as integration and change agent much higher than the other industries. This may be due to the fact that the banking and insurance industries are very dynamic industries that change continuously and at a very fast pace, and due to the fact that competition and innovation plays a large role in this environment. The need for this industry to integrate and change effectively may therefore be greater than in the other industries, and therefore they have already optimised the utilisation of knowledge management as integration and change agent to a greater extent than the other industries. The fact that Telecommunications ranked the lowest on this dimension may be attributed to the fact that cellular phone companies are relative newcomers to the marketplace and therefore haven't necessarily gone through a lot of change and integration efforts. The implication of this is that some industries are, due to the nature of their business, more oriented to using knowledge management as a change and integration tool. It does not, however, discount the fact that organisations or industries that by nature are not inclined to use knowledge management as integration and change agent, can follow the example of those industries and organisations that have implemented it effectively.
- From a staff perspective it seems that knowledge workers and other staff members do not see eye to eye on the role of knowledge management as integration and change agent. The role of knowledge management in facilitating an easier transition when organisational changes are made and the role of knowledge management in facilitating transparency in the organisation are perceived to be greater by other staff than knowledge workers themselves. This may be due to the fact that knowledge workers' involvement in core and enabling processes are limited, thus limiting their view on the impact that knowledge management has as integration and change agent on the organisation as a whole. Knowledge workers perceive the role of knowledge management in facilitating integration between eBusiness partners through knowledge management practices to be greater than other staff does. This may be due to the fact that knowledge workers may be more directly involved with the use of knowledge as integration tool on operational level between eBusiness partners and therefore have a clearer understanding of the impact thereof on the organisations than other staff, which may not have such a direct operational involvement in this area. The implication is therefore that knowledge managers should become more involved in the details of day-to-day business to ensure that they can accurately evaluate the impact that knowledge management can have as integration and change agent. The same applies for other staff. They should be more

The role of knowledge management in eBusiness and customer relationship management

aware of the role of knowledge management in acting as integration and change agent between eBusiness partners to ensure that knowledge management can be utilised to its maximum potential in this regard.

10.2.2.2.b. Impact on organisations

The impact of knowledge management as integration and change agent is high, impacting the majority of the core processes and the majority of the enabling processes in the value chain (refer Figure 36).

On a strategic level, the impact of the high score of knowledge management as integration and change agent indicates that these organisations can maintain a high level of agility through quick and effective integration of changes to the business as reaction to changes in the marketplace. It also shows that these organisations can effectively change strategic direction through facilitation of reasonably quick acceptance of changes by staff and other stakeholders and implementing these changes quickly, thus achieving effective integration and ensuring competitive advantage. All change management processes in these organisations are greatly enhanced through knowledge sharing and knowledge management.

On an operational level, the impact of the organisations' high score on the utilisation of knowledge management as integration and change agent is visible in swift and effective operational changes (necessitated by changes in the marketplace, innovation, inefficient operations, etc.) that can be made to ensure efficiency and effectiveness of both the core and enabling processes of the organisation.

Organisations that have a good capability with reference to utilising knowledge management as integration and change agent, will therefore be positively impacted on both strategic and operational level through achieving efficiency and effectiveness in both core and enabling processes through implementation of change and integration of, amongst others, business process, technology and people practices.

10.2.2.3. Issues: Knowledge management as integration and change agent

- *Issue 1: Knowledge management facilitates integration inter- and intra-organisation (Q7, Q8, Q9)*
 - The average profile for questions 7-9 testing the role of knowledge management as integration and change agent is above average. Question 7 had a low score indicating severe problems with reference to knowledge management facilitating an easier transition when organisational changes are made, but questions 8 and

The role of knowledge management in eBusiness and customer relationship management

9 relating to the role of knowledge management in facilitating integration with eBusiness partners and facilitating transparency in the organisation ranked above 75%, indicating a high level of satisfaction.

- *Issue 2: Knowledge management provides transparency in the organisation (Q9)*
 - Most organisations show a high level of satisfaction on the role of knowledge management in providing transparency in the organisation.
 - Respondent Organisation E (Telecommunications organisation) attaches a much lower importance rating (60%) to the facilitation of transparency in the organisation through knowledge management than the other respondent organisations. The other respondent organisations have a high level of satisfaction on the facilitation of transparency provided through knowledge management.
 - Other staff perceives the role of knowledge management in facilitating transparency in the organisation to be greater than knowledge workers do.
- *Issue 3: Knowledge management is embedded in day to day work (Q18)*
 - All respondent organisations showed severe problems in embedding knowledge management into the day-to-day work of their staff members. The problem is particularly severe in Respondent Organisation C (IT).
 - The perceptions of knowledge workers and other workers on this issue do not differ significantly.
- *Issue 4: Knowledge management institutionalises customer relationship management (Q1, Q14, 15, 21)*
 - The average total score for these four questions is above 65%, indicating satisfaction on the role of knowledge in the institutionalising of customer relationship management (with reference to facilitating integration through the use of extranets to share knowledge with customers / suppliers, knowledge management leading to improved service delivery, the availability of knowledge leading to improved customer relationships, and the importance of having one view of the customer).
 - The only scores showing dissatisfaction are found in Question 1 relating to the use of extranets to facilitate integration with customers and suppliers, where Respondent Organisations C (IT) and D (Professional Services) scored below 60%.
 - Respondent Organisation perceptions differed in some questions:
 - ~ In the first question, responses are spread evenly, but with a rather large spread, from 50% to 90%, with Respondent Organisation C (IT) ranking the lowest and Respondent Organisation G (Insurance) ranking the highest. This signifies that the perception of importance to all

The role of knowledge management in eBusiness and customer relationship management

organisations to share knowledge with customers and suppliers via extranets, differs vastly (Q1).

~ Respondent Organisation G (Insurance) ranks higher compared to the other respondents in the extent to which knowledge availability leads to better customer relationships (Q14).

~ Respondent Organisation G (Insurance) ranks higher compared to the other respondents in the extent to which knowledge management contributes to better service delivery (Q15).

- The perceptions of knowledge workers and other workers on this issue do not differ significantly.

10.2.2.4. Conclusions

10.2.2.4.a. Possible influencing factors

- *Issue 1: Knowledge management facilitates integration inter-and intra-organisation (Q7, Q8, Q9)*
 - The high score for the role of knowledge management in facilitating integration with eBusiness partners and facilitating greater transparency may be attributed to the fact that most of the respondent organisations are knowledge intensive organisations that may find a lot of value in implementing eBusiness as business model. These organisations would have a better understanding of the potential value of knowledge and knowledge management than organisations that are not knowledge intensive, and they would therefore also have a better understanding of the potential impact of knowledge sharing between eBusiness partners and the integration it may bring about due to knowledge sharing. This is supported by the fact that these organisations had a highly satisfactory response with reference to the utilisation of extranets for sharing knowledge with customers / suppliers.
 - The low score with reference to knowledge management facilitating an easier transition when organisational changes are made may be attributed to the perception that knowledge management is playing a role in provision of the knowledge and conveying the message of the potential changes, but that knowledge management per se does not have an effect in the actual implementation of the changes with reference to facilitating easier change implementation.
- *Issue 2: Knowledge management provides transparency in the organisation (Q9)*
 - The high score for the role of knowledge management in the facilitation of transparency in the organisation may be attributed to the respondent organisations using knowledge sharing platforms such as intranets as

The role of knowledge management in eBusiness and customer relationship management

communication platforms to enable transparency through explicit presentation of organisational processes and practices.

- The fact that the role of knowledge management in facilitating transparency in the organisation is perceived to be greater by other staff than knowledge workers themselves, may be due to the fact that knowledge workers' involvement in core and enabling processes are limited, thus limiting their view on the impact that knowledge management has as integration and change agent on the organisation as a whole.
- *Issue 3: Knowledge management is embedded into day-to-day work (Q18)*
 - The fact that knowledge management is not embedded in to the day-to-day work of staff may be attributed to the fact that knowledge management is not perceived as being integrated with the business, but rather as an administrative or support function. Organisations do not yet perceive knowledge as adding value to day-to-day activities. It may also be due to the lack of formal tools and platforms provided to enable integrating knowledge management with staff's day-to-day activities, and due to a lack of explicit guidelines of how to apply knowledge management as a business philosophy.
- *Issue 4: Knowledge management institutionalizes customer relationship management (Q1, Q14, Q15, Q21)*
 - The high average score for the role of knowledge management in institutionalizing customer relationship management may be attributed to the fact that these organisations have to some extent adapted an eBusiness model where customer relationship management is essential. It is also clear from the high score relating to utilisation of extranets to share knowledge with customers / suppliers, that creation of knowledge sharing platforms relating to customer knowledge is important in these organisations. As stated previously, the respondent organisations seem to be knowledge intensive organisations and may therefore have a propensity towards utilizing knowledge to improve their organisational efficiency and effectiveness in general, but also specifically to improve customer relationships.

10.2.2.4.b. Impact on organisations

- *Issue 1: Knowledge management facilitates integration inter-and intra-organisation (Q7, Q8, Q9)*
 - The average score on this issue indicates that the respondent organisations are achieving some integration within their organisations and with customers and suppliers through knowledge management. Integration through knowledge management may have a significant impact through more focused business

The role of knowledge management in eBusiness and customer relationship management

operations internally and externally. It will impact customer and supplier facing processes within the value chain (core and enabling processes) through the management of knowledge within these processes.

- *Issue 2: Knowledge management provides transparency in the organisation (Q9)*
 - The respondent organisations have identified knowledge management as a communication, knowledge sharing and change management tool in their organisations. This will have a positive impact as these organisations will have a greater ability to adapt to changes in a positive and efficient way.
- *Issue 3: Knowledge management is embedded into day-to-day work (Q18)*
 - The impact of not embedding knowledge management in staff's day-to-day activities for the respondent organisations is huge. The implication is that these organisations have yet to grasp that knowledge pervades the whole business process value chain of an organisation and processes cannot be implemented without associated knowledge. It implies that these organisations are attempting to manage knowledge separately and not as an integral part of processes. Knowledge management will never be implemented successfully without an integrated approach and will never receive buy-in on top management level for this reason.
- *Issue 4: Knowledge management institutionalizes customer relationship management (Q1, Q14, Q15, Q21)*
 - The fact that the respondent organisations are satisfied with the role that knowledge management currently plays in institutionalizing customer relationship management indicates that knowledge management is recognized as a critical component of customer relationship management. These organisations are proactively building on their knowledge base and extracting value from knowledge as a corporate asset and utilising it in order to improve customer relationships and product and service delivery. This impacts the organisations positively as it puts them ahead of those competitors that have not yet realized the value of knowledge in building customer relationships and thus improving product and service delivery.

10.2.3. Knowledge management efficiency improvements due to knowledge management standards

10.2.3.1. Overview

- The score for this dimension is very high. 4 Out of 5 Respondent Organisations scored above 75%, indicating that they are exceptionally satisfied with knowledge management

The role of knowledge management in eBusiness and customer relationship management

efficiency improvements. 1 Respondent Organisation scored between 65% and 75%, indicating some satisfaction with knowledge management efficiency improvements.

- Financial Services had the highest score in this dimension, followed by Professional Services, IT and Telecommunications. All of the industries indicated a high level of satisfaction with efficiency improvements achieved through knowledge management.
- The perceptions of knowledge workers and other workers do not differ significantly, except on the issue of 24-hour access to knowledge. Knowledge workers perceive 24-hour access to knowledge as more important than other staff does.

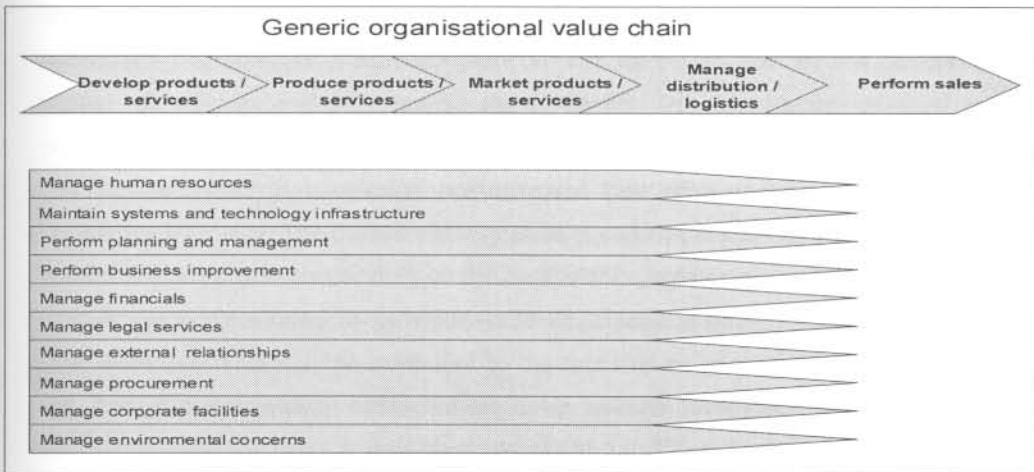


Figure 37. Areas of impact of knowledge management efficiency improvements on generic organisational value chain

10.2.3.2. Conclusion

10.2.3.2.a Possible influencing factors

There are a number of possible factors influencing the efficiency improvements obtained through knowledge management:

- The fact that the average score for achieving efficiency improvements through knowledge management is high, may be indicative of the fact that advances in technology in the last couple of years provides easier, quicker and more effective access to higher quality knowledge than before. The fact that knowledge is more readily available, makes it easier for people to utilise knowledge to improve their efficiency, effectiveness and therefore productivity in day-to-day activities. Collective improvement in efficiency, effectiveness and productivity therefore has a positive impact on these organisations. Knowledge management efficiency improvements are also measurable to some extent and, once implemented, are easy to monitor and track, hence the successful implementation to date. The successful implementation may also be attributed to the fact that efficiency

The role of knowledge management in eBusiness and customer relationship management

improvements can be achieved by implementing knowledge management in phases without a “big bang” approach, thus enabling the organisations to stagger the cost and making the cost factor for organisations more acceptable.

- The Financial Services industry ranked efficiency improvements higher than other industries by a great margin. This may be due to the fact that Financial Services organisations are usually knowledge intensive organisations, more so than e.g. organisations in the IT industry, and therefore knowledge management efficiency improvements would have a larger day-to-day impact. The Telecommunication industry ranked lowest on this dimension. This may be due to the fact that cellular phone companies are relative newcomers to the market and were more efficient in terms of knowledge management practices right from the start, thus making the possibility and impact of efficiency improvements much lower. The implication of this is that organisations in knowledge intensive industries may achieve greater efficiency improvements due to knowledge management than other industries that are not so knowledge intensive. The duration of existence of an organisation may also determine the impact of efficiency improvements on the particular organisation.
- Knowledge workers rated 24-hour access to knowledge of greater importance than other staff members. This may be attributed to the fact that other staff members' perceptions are based on individual cases where they utilised knowledge after hours, whilst knowledge workers have a collective perception of all individual cases where 24-hour access to knowledge had a high impact on the business, i.e. the knowledge workers' perceptions of the value added in cases where access to knowledge on a 24-hours or after hours basis, is more collective than those of other staff members. The implication is that knowledge workers' perceptions on the value of 24-hour access have to be utilised by organisations to maximize value added by knowledge management to the organisation. The value that 24-hour access to knowledge can add has to be communicated to other staff members to ensure maximum value extraction from this service.

10.2.3.2.b. Impact on organisations

Efficiency improvements resulting from knowledge management has a high impact on the organisation as a whole, as it affects all of the core as well as enabling processes (see Figure 37). On a strategic level the organisation is impacted twofold.

Firstly, efficiency improvements through knowledge management standards lead to organisations having a more consolidated view of the customer throughout all core and selected enabling processes by providing standardised knowledge on customers. This can be strategically beneficial to the organisation, as it provides a better understanding of the needs

The role of knowledge management in eBusiness and customer relationship management

of the current market that the organisation serves, and may allow some insight into customer segmentation. It may also lead to more efficient customer facing processes and improved customer relationship management, in conjunction with improved strategy formulation according to market and customer needs. Secondly, without efficient core processes, the execution of the business strategy will be negatively affected. The efficiency improvements through knowledge management in the core processes therefore support the execution of the business strategy in an indirect way.

The impact of efficiency improvements is more clearly seen on an operational level, where efficiency is achieved through knowledge management via the prevention of duplication of work, time saving that leads to increased productivity, as well as quick, easy and direct access to knowledge. Efficiency improvements are also achieved through a greater understanding of staff on the flow of knowledge in the organisation, the role of knowledge and knowledge management in business processes, and the impact the flow of knowledge has on the efficiency of the value chain of the organisation.

10.2.3.3. Issues: Knowledge management efficiency improvements due to knowledge management standards

- *Issue 1: Knowledge management provides a single point of entry to the knowledge base (Q19)*
 - 2 Of the Respondent Organisations scored above 65% indicating satisfaction relating to the role of knowledge management in achieving efficiency improvements. 3 Of the Respondent Organisations scored below 60%, indicating severe problems in this area. Respondent Organisation C (IT) scored 12%, indicating extremely severe problems in this area that may only be solved through change management interventions.
 - Respondents differ vastly on the extent to which their organisations provide a single point of entry to the organisational knowledge base, with scores ranging from 12% (Respondent C – IT) to 90% (Respondent D – Professional Services). There is a huge (30%) perception difference on the provision of one single point of entry to knowledge in the organisation. Knowledge workers perceive the provision thereof much higher than other staff does.
- *Issue 2: Knowledge management provides 24-hour access to knowledge (Q10)*
 - The average score relating to 24-hour access to knowledge is above average (>75%) with satisfaction amongst respondent organisations.
 - Responses are spread evenly, but with a rather large spread, from 50% to 96%, with Respondent Organisation E (Telecommunications) ranking the lowest and Respondent Organisation F (Professional Services) ranking the highest. This

The role of knowledge management in eBusiness and customer relationship management

signifies that the perception relating to 24-hour access to knowledge differs vastly amongst respondents.

- Knowledge workers perceive 24-hour access to knowledge as more important than other staff does.
- *Issue 3: Knowledge management prevents duplication and encourages reuse of knowledge in different contexts (Q11, Q12)*
 - The average score relating to knowledge management preventing duplication of work and enabling the reuse of knowledge in different contexts is above average, indicating a high level of satisfaction amongst respondents (>75%). The standard deviations of the respondents relating to these two questions are low, indicating consensus.
 - The perceptions of knowledge workers and other workers on this issue do not differ significantly on the importance of knowledge management in preventing duplication of work, or on the extent to which knowledge management enables the reuse of knowledge in various contexts.
- *Issue 4: Knowledge management provides navigation ability, making searches easier (Q13)*
 - The average score relating to knowledge management and related activities minimises time searching for knowledge, is above average (>75%).
 - Respondent Organisation G (Insurance) ranks higher compared to the other respondents in the extent to which knowledge management and related activities minimises time spent for knowledge.
 - The perceptions of knowledge workers and other workers on this issue do not differ significantly.
- *Issue 5: Standardised customer knowledge leads to better customer service through having one view of the customer (Q21)*
 - An extremely high level of agreement exists amongst respondents on the importance of having one view of the customer (>75%).
 - Respondent Organisation G (Insurance) ranks higher compared to the other respondents in the importance of having one view of the customer.
 - The perceptions of knowledge workers and other workers on this issue do not differ significantly.
- *Issue 6: Knowledge management provides an understanding of the flow of knowledge (Q17)*
 - A high level of consensus exists amongst respondents on the importance of knowledge management in enabling cross-divisional flow of knowledge (>75%).
 - Respondents differ to a large extent on the extent to which knowledge management enables cross-divisional knowledge flow, with scores ranging from

The role of knowledge management in eBusiness and customer relationship management

70% (Respondent E – Telecommunications) to 96% (Respondent F – Professional Services).

- The perceptions of knowledge workers and other workers on this issue do not differ significantly.

10.2.3.4. Conclusions

10.2.3.4.a. Possible influencing factors

- *Issue 1: Knowledge management provides a single point of entry to the knowledge base (Q19)*
 - The low average score for the role of knowledge management in providing a single point of entry may be attributed to the fact that knowledge management may be fragmented in the respondent organisations, i.e. it may not have been implemented across the organisation. It may also be attributed to the fact that the knowledge management system does not provide comprehensive coverage of all knowledge sources, but only those deemed to be of critical importance to users, or those that are used a lot. It may also be attributed to the fact that a lot of knowledge is still in tacit format, i.e. when staff retrieves knowledge they have to use both tacit and explicit sources of knowledge.
 - The fact that knowledge workers perceive the provision of a single point of entry as higher than other staff may be attributed to the fact that knowledge workers may not be aware of all knowledge sources in the organisation. This is true of explicit sources, but especially of tacit knowledge sources.
- *Issue 2: Knowledge management provides 24-hour access to knowledge (Q10)*
 - The above average score for the knowledge management providing 24-hour access to knowledge may be attributed to the fact that the largest part of the organisations' knowledge bases are focused on technology based systems, which are linked to telephone lines and can therefore be accessed via the Internet, intranets and other dial-up functionalities.
- *Issue 3: Knowledge management prevents duplication and encourages reuse of knowledge in different contexts (Q11, Q12)*
 - The above average score for knowledge management preventing duplication and encouraging reuse of knowledge in different contexts may be attributed to the fact that most organisations introducing knowledge management focus on making knowledge available that can be reused in order to create efficiency and productivity increases. They then proceed to more sophisticated means of knowledge sharing, e.g. virtual communities, communities of practice, etc. This above average score may therefore be attributed to the fact that this is potentially

The role of knowledge management in eBusiness and customer relationship management

the focus of the knowledge management programmes of the respondent organisations.

- *Issue 4: Knowledge management provides navigation ability, making searches easier (Q13)*
 - The above average score for this issue may be attributed to technology based knowledge management systems in the respondent organisations that allow sophisticated searches for knowledge by using keywords, Boolean operators, fuzzy logic, taxonomies and other tools and techniques to retrieve knowledge. It is therefore possible to search and navigate the knowledge base in other ways than via the traditional hierarchical searching.
- *Issue 5: Standardised customer knowledge leads to better customer service through having one view of the customer (Q21)*
 - The importance of having one view of the customer through provision and sharing of standardized knowledge may be attributed to the fact that the respondent organisations are all large corporates with many different divisions internally, and these organisations are all geographically spread, some locally and some internationally as well. This means that they interface with customers in a variety of organisational departments and geographical locations and therefore have a need to consolidate the knowledge gained at different points of the customer interaction to enable a profile of the customer, and possibly to segment their customer base, to enable them to provide a more targeted service and to manage the relationship with the customer optimally.
- *Issue 6: Knowledge management provides an understanding of the flow of knowledge (Q17)*
 - The above average score with reference to the role of knowledge management in providing an understanding of the flow of knowledge may be attributed to the fact that, through the explicit linkage of systems with customers and / or suppliers e.g. using extranets, staff can more visibly see and interpret the flow of knowledge between the organisation and its business partners. The same applies for making knowledge sharing and knowledge management explicit through the use of technology based knowledge management systems – the usage and flow of knowledge is more explicitly visible to staff and they have a better understanding of how knowledge integrates in the organisation, e.g. amongst divisions or through processes in the business process value chain.

The role of knowledge management in eBusiness and customer relationship management

10.2.3.4.b. Impact on organisations

- *Issue 1: Knowledge management provides a single point of entry to the knowledge base (Q19)*
 - The potential impact of the low average score of the respondent organisations with regards to this issue may be that knowledge organisation and retrieval is inefficient and ineffective, as users will have to access a variety of knowledge bases before finding all knowledge relevant to their particular enquiry. It may also indicate that various knowledge workers are managing sections of the knowledge base that may be more efficient if pooled together. The fact that users have to retrieve knowledge from different points of entry leads to time delays and loss of productivity. It may also be an indication of duplication of knowledge in the organisation, because if there isn't one consolidated view of what is available, duplication of knowledge will be very difficult to manage.
- *Issue 2: Knowledge management provides 24-hour access to knowledge (Q10)*
 - The above average score for 24-hour access to knowledge indicates that knowledge as a corporate asset is available any time it is required, on demand. The value of knowledge as organisational asset can therefore be utilised as and when the business requires it and the value extraction is therefore not limited by time restrictions, i.e. availability restrictions. This may increase the organisations' agility, specifically with reference to quick decision-making that is sometimes required. It is particularly relevant in organisations that deliver services 24 hours a day.
- *Issue 3: Knowledge management prevents duplication and encourages reuse of knowledge in different contexts (Q11, Q12)*
 - The average high score implies that knowledge management leads to efficient work practices through the easy retrieval and application of knowledge in a variety of contexts. This will apply across the total value chain of the organisation, i.e. core and enabling processes.
- *Issue 4: Knowledge management provides navigation ability, making searches easier (Q13)*
 - The above average score for this issue impacts the respondent organisations due to the fact that they will retrieve knowledge more effectively and efficiently and therefore save time and increase productivity. This will apply across the total value chain of the organisation, i.e. core and enabling processes.
- *Issue 5: Standardised customer knowledge leads to better customer service through having one view of the customer (Q21)*
 - The above average score for this issue impacts the respondent organisations due to the fact that standardized and consolidated knowledge of the customer

The role of knowledge management in eBusiness and customer relationship management

provides them with an understanding of the customer profile, detailing the total picture of the customer's needs and behaviour. It allows them to segment their market to allow their marketing strategies and therefore their business strategies to be more focused. They can build, maintain and strengthen their customer base continuously.

- *Issue 6: Knowledge management provides an understanding of the flow of knowledge (Q17)*
 - The above average score for this issue impacts the organisations positively as it creates an understanding of where in the organisation specific knowledge is of importance. It indicates that these organisations have some understanding of the integrated nature of knowledge flows and process flows. This must, however, be applied with reference to the management of knowledge to ensure optimal utilisation of knowledge in the business.

10.2.4. Knowledge management as factor that overcomes growing organisational and knowledge base complexity

10.2.4.1. Overview

- The average respondent profile for this dimension is high (Q16, Q17, Q18). The scores relating to importance of identifying tacit knowledge sources and the importance of knowledge management in enabling cross-divisional flow of knowledge were very high (>75%), whilst the profile was low with reference to the extent to which the respondent organisations embed knowledge management in day-to-day activities of staff (<60%).
- The score for this dimension from an industry perspective is high. 2 Out of 5 Respondent Organisations scored above 75%, indicating that they are exceptionally satisfied with reference to the role of knowledge management in alleviating organisational and knowledge base complexity. 3 Of the Respondent Organisation scores were well above 65%, indicating satisfaction with reference to the role of knowledge management in alleviating organisational and knowledge base complexity.
- From an industry perspective, the Professional Services industry had the highest score showing a high level of satisfaction, followed by Telecommunications, IT and Financial Services, all showing some dissatisfaction with the status quo.
- The perceptions of knowledge workers and other workers on this issue do not differ significantly.

The role of knowledge management in eBusiness and customer relationship management

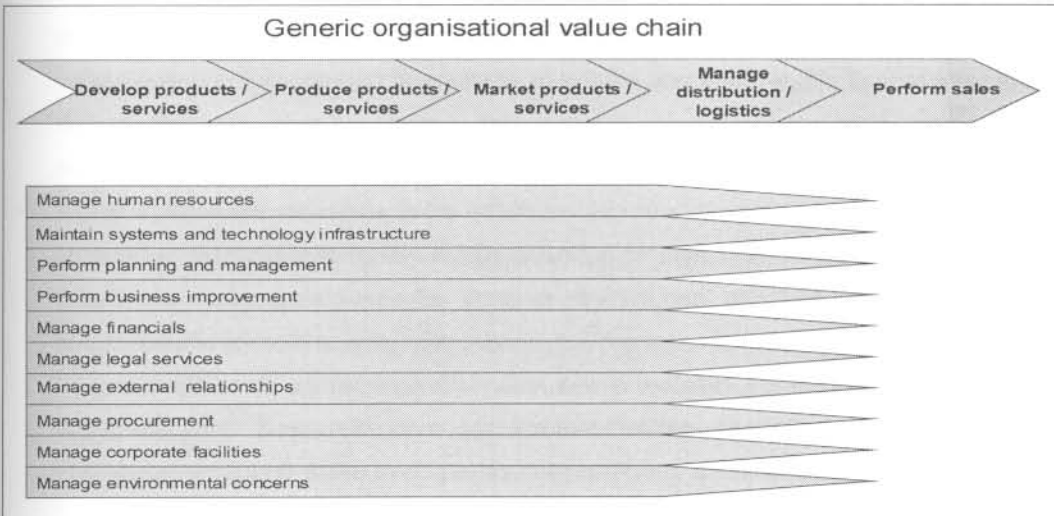


Figure 38. Areas of impact of knowledge management as factor that overcomes growing organisational and knowledge base complexity

10.2.4.2. Conclusion

10.2.4.2.a. Possible influencing factors

There are a number of possible factors influencing knowledge management as factor that overcomes increased organisational and knowledge base complexity:

- The relatively high score relating to the importance of identifying tacit knowledge sources may be due to the fact that organisations' knowledge management has not been completely formalised to focus on explicit knowledge in formal knowledge management systems. A large component of these organisations' knowledge management programmes may still focus on utilising knowledge through specialist individuals in the organisation who have a lot of useful tacit knowledge that has never been captured to make it explicit. The impact of this for organisations is that knowledge attrition, through either reduction of positions or through people that voluntarily leave the organisation, is a very big reality, rendering them exposed to losing extremely valuable knowledge that could affect the organisation on both strategic and operational level, depending on the knowledge of the specific individuals leaving the organisation. The fact that a lot of knowledge is in tacit format may also make the identification and retrieval thereof complex and therefore the value provided by the knowledge may not be optimised.
- The importance of knowledge management in enabling cross-divisional flow of knowledge may be due to the fact that these organisations are all national organisations with a number of divisions and geographical locations. This means that the potential for ineffective knowledge flow between divisions is very high, hence the importance attached to enabling of cross-divisional knowledge flow. The organisations' high ranking of the

The role of knowledge management in eBusiness and customer relationship management

importance of enabling knowledge flow across divisional boundaries, indicates that these organisations are in future more likely to focus on implementing more formalised technologies, processes and procedures to enable and improve the flow of knowledge across divisions, thus promoting the success of their knowledge management programmes.

- The low profile with reference to the extent to which the respondent organisations embed knowledge management in day-to-day activities of staff may be due to the fact that knowledge management may be done on an ad hoc, informal basis using a less structured and formalised approach. Knowledge management may also be viewed by the organisations as an administrative function, and is therefore not embedded into staff's day-to-day work. It may also be due to the fact that the value proposition of knowledge management may not have been clearly communicated and / or absorbed and accepted by staff. If staff understood the value proposition of knowledge management, embedding it into day-to-day work activities should be a natural response. The impact of the aforementioned for these organisations is that knowledge management has not yet been formalised adequately in these organisations, i.e. the potential value gained from their knowledge management activities has not been fully maximised and sufficient change management is essential to ensure that staff understand the value proposition of knowledge management on an individual, team and organisational level.
- The fact that the Professional Services industry scored high in this dimension may be due to the fact that organisations in this industry have a relatively complex knowledge base and organisational structure due to the fact that these organisations are usually more geographically dispersed than e.g. large South African IT corporates, with offices or branches in many smaller centres around the country and also internationally. This renders the need to use knowledge management to decrease the knowledge base and organisational complexity quite high. The Professional Services industry organisations' also may have greater knowledge base complexity due to the fact that they are knowledge intensive businesses, more so than e.g. organisations in the IT industry as they sell knowledge as a product / service. The Financial Services industry scored lowest on this dimension compared to other industries. These organisations are also usually geographically dispersed, so the same reasoning should apply as does for Professional Services, although it clearly does not apply to the same extent, as they are not internationally spread in terms of geographical location. The only deduction that the researcher can make is that the Financial Services industry may have other tools, structures and mechanisms in place to address organisational and knowledge base complexity, e.g. more intensive training of employees. The aforementioned implies that specific industries may have a greater need for knowledge management to overcome both organisational and knowledge base complexity due to the nature of the industry and

The role of knowledge management in eBusiness and customer relationship management

the associated organisations, and it has been implemented in varying degrees, providing opportunity for improvement in future.

10.2.4.2.b. Impact on organisations

Knowledge management as factor that overcomes organisational and knowledge base complexity, impacts the whole of the organisation as it plays a role in all core and enabling processes (refer Figure 38).

Knowledge management as factor that overcomes knowledge base and organisational complexity has an impact on both strategic and operational level. On the strategic level it allows for organisational agility, as the organisation can access strategic knowledge, mainly, but not exclusively, relating to core processes, through knowledge management tools and techniques, despite organisational and knowledge base complexity. This not only speeds up the decision-making process and allows the organisation to adapt to changes in the marketplace quickly, but also provides higher quality knowledge upon which decisions can be based. It also allows a better understanding of the complexities in the business, making strategy formulation more effective.

On an operational level, knowledge management as factor that overcomes organisational and knowledge base complexity, allows the organisation to understand what the knowledge base consists of and what knowledge can be accessed through knowledge management tools and techniques provided. Knowledge management also provides knowledge on the organisation itself to enable staff to comprehend the strategy and structure of the organisation, the products and services provided by the organisation, etc. Staff can therefore access knowledge pertaining to all core and enabling processes of the organisation. Staff understanding of and ability to access knowledge relating to the organisational value chain, in turn improves the efficiency of the value chain, thus positively impacting the execution of the business strategy.

10.2.4.3. Issues: Knowledge management as factor that overcomes growing organisational and knowledge base complexity

- *Issue 1: Knowledge management provides a single point of entry to the knowledge base (Q19)*
 - 2 Of the Respondent Organisations scored above 65% indicating satisfaction relating to the role of knowledge management in achieving efficiency improvements. 3 Of the Respondent Organisations scored below 60%, indicating severe problems in this area. Respondent Organisation C scored 12%, indicating

The role of knowledge management in eBusiness and customer relationship management

extremely severe problems in this area that may only be solved through change management interventions.

- Respondents differ vastly on the extent to which their organisations provide a single point of entry to the organisational knowledge base, with scores ranging from 12% (Respondent C – IT) to 90% (Respondent D – Professional Services)
- There is a huge (30%) perception difference on the provision of one single point of entry to knowledge in the organisation. Knowledge workers perceive the provision thereof much higher than other staff.
- *Issue 2: Knowledge management allows flow of knowledge across divisions and between organisations and geographical locations (Q17)*
 - A high level of consensus exists amongst respondents on the importance of knowledge management in enabling cross-divisional flow of knowledge (>75%)
 - Respondents differ to a large extent on the extent to which knowledge management enables cross-divisional knowledge flow, with scores ranging from 70% (Respondent E – Telecommunications) to 96% (Respondent F – Professional Services).
 - The perceptions of knowledge workers and other workers on this issue do not differ significantly.
- *Issue 3: Knowledge management is embedded into day to day work (Q18)*
 - A high level of consensus exists amongst respondents on the extent of knowledge management being embedded into day-to-day activities of staff (>75%).
 - The perceptions of knowledge workers and other workers on this issue do not differ significantly.
- *Issue 4: Knowledge management provides navigation ability, making searches easier (Q22)*
 - Agreement exists amongst respondents that it is important to facilitate easier access to knowledge (>75%).
 - The perceptions of knowledge workers and other workers on this issue do not differ significantly.
- *Issue 5: Importance of identification of tacit knowledge sources in overcoming increased organisational and knowledge base complexity (Q16)*
 - Agreement exists amongst respondents that it is important to identify tacit knowledge sources (>75%).
 - The perceptions of knowledge workers and other workers on this issue do not differ significantly.

The role of knowledge management in eBusiness and customer relationship management

10.2.4.4. Issue conclusions

10.2.4.4.a. Possible influencing factors

- *Issue 1: Knowledge management provides a single point of entry to the knowledge base (Q19)*
 - The low average score for the role of knowledge management in providing a single point of entry may be attributed to the fact that knowledge management may be fragmented in the respondent organisations, i.e. it may not have been implemented across the organisation. It may also be attributed to the fact that the knowledge management system does not provide comprehensive coverage of all knowledge sources, but only those deemed to be of critical importance to users, or those that are used a lot. It may also be attributed to the fact that a lot of knowledge is still in tacit format, i.e. when staff retrieves knowledge they have to use both tacit and explicit sources of knowledge.
 - The fact that knowledge workers perceive the provision of a single point of entry as higher than other staff may be attributed to the fact that knowledge workers may not be aware of all knowledge sources in the organisation. This is true of explicit sources, but especially of tacit knowledge sources.
- *Issue 2: Knowledge management allows flow of knowledge across divisions and between organisations and geographical locations (Q17)*
 - The high average score with reference to this issue may be attributed to the fact that the respondent organisations are large corporates with many divisions and they are all geographically spread, some locally and some internationally. They are fairly knowledge intensive organisations. Knowledge is fragmented in these organisations and therefore the flow of knowledge to ensure integration will be a top of mind knowledge management issue for these organisations. The high score for utilisation of knowledge of extranets for sharing knowledge with customers / suppliers indicate that sharing knowledge and integration with business partners are also top of mind due to participation of these organisations in eBusiness activities.
- *Issue 3: Knowledge management is embedded into day to day work (Q18)*
 - The fact that knowledge management is not embedded into the day-to-day work of staff may be attributed to the fact that knowledge management is not perceived as being integrated with the business, but rather as an administrative or support function. Organisations do not yet perceive knowledge as adding value to day-to-day activities. It may also be due to the lack of formal tools and platforms provided to enable integrating knowledge management with staff's day-to-day

The role of knowledge management in eBusiness and customer relationship management

activities, and due to a lack of explicit guidelines of how to apply knowledge management as a business philosophy.

- *Issue 4: Knowledge management provides navigation ability, making searches easier (Q22)*
 - The above average score for this issue may be attributed to technology based knowledge management systems in the respondent organisations that allow sophisticated searches for knowledge by using keywords, Boolean operators, fuzzy logic, taxonomies and other tools and techniques to retrieve knowledge. It is therefore possible to search and navigate the knowledge base in other ways than via traditional hierarchical searching.
- *Issue 5: Importance of identification of tacit knowledge sources in overcoming increased organisational and knowledge base complexity (Q16)*
 - The above average score for this issue may be attributed to the fact that respondent organisations have a lot of tacit knowledge in the organisation and therefore have a need to identify these sources.

10.2.4.4.b. Impact on organisations

- *Issue 1: Knowledge management provides a single point of entry to the knowledge base (Q19)*
 - The potential impact of the low average score of the respondent organisations with regards to this issue may be that knowledge organisation and retrieval is inefficient and ineffective, as users will have to access a variety of knowledge bases before finding all knowledge relevant to their particular enquiry. It may also indicate that various knowledge workers are managing sections of the knowledge base that may be more efficient if pooled together. The fact that users have to retrieve knowledge from different points of entry leads to time delays and loss of productivity. It may also be an indication of duplication of knowledge in the organisation, because if there isn't one consolidated view of what is available, duplication of knowledge will be very difficult to manage.
- *Issue 2: Knowledge management allows flow of knowledge across divisions and between organisations and geographical locations (Q17)*
 - The above average score impacts the organisations due to the fact that these organisations will most probably have excellent processes and platforms to facilitate flow of knowledge across boundaries. This makes knowledge readily available and accessible to those in need of it. It will also ensure integration of the knowledge base and prevention of duplication and the ability to reuse knowledge in a variety of contexts.

The role of knowledge management in eBusiness and customer relationship management

- *Issue 3: Knowledge management is embedded into day to day work (Q18)*
 - The impact of not embedding knowledge management in staff's day-to-day activities for the respondent organisations is huge. The implication is that these organisations have yet to grasp that knowledge pervades the whole business process value chain of an organisation and processes cannot be implemented without associated knowledge. It implies that these organisations are attempting to manage knowledge separately and not as an integral part of processes. Knowledge management will never be implemented successfully without an integrated approach and will never receive buy-in on top management level for this reason.
- *Issue 4: Knowledge management provides navigation ability, making searches easier (Q22)*
 - The above average score for this issue impacts the respondent organisations due to the fact that they will retrieve knowledge more effectively and efficiently and therefore save time and increase their productivity. This will apply across the total value chain of the organisation, i.e. core and enabling processes.
- *Issue 5: Importance of identification of tacit knowledge sources in overcoming increased organisational and knowledge base complexity (Q16)*
 - The above average score for this issue indicates that if tacit knowledge sources are difficult to identify it will negatively impact these organisations by making knowledge difficult to access, and by making timeous access access to knowledge difficult. It also makes it difficult for the organisation to have a complete picture of the knowledge that is available and retrievable.

10.2.5. Pooling of expertise in one central interface with internal and external parties

10.2.5.1. Overview

- The score for this dimension is average. 3 out of 5 Respondent Organisations scored between 65% and 75%, indicating that they are satisfied with reference to the role of knowledge management in the pooling of expertise. 2 Of the Respondent Organisation scores were well below 50%, indicating severe problems with reference to the role of knowledge management in the pooling of expertise.
- From an industry perspective, Professional Services had the highest score indicating a relatively high level of satisfaction, followed respectively by Telecommunications, Financial Services and IT, where severe problems have been indicated.
- The perceptions of knowledge workers and other workers on this issue do not differ significantly, except for question 19, where there is a huge (30%) perception difference on

The role of knowledge management in eBusiness and customer relationship management

the provision of one single point of entry to knowledge in the organisation. Knowledge workers perceive the provision thereof much higher than other staff does.

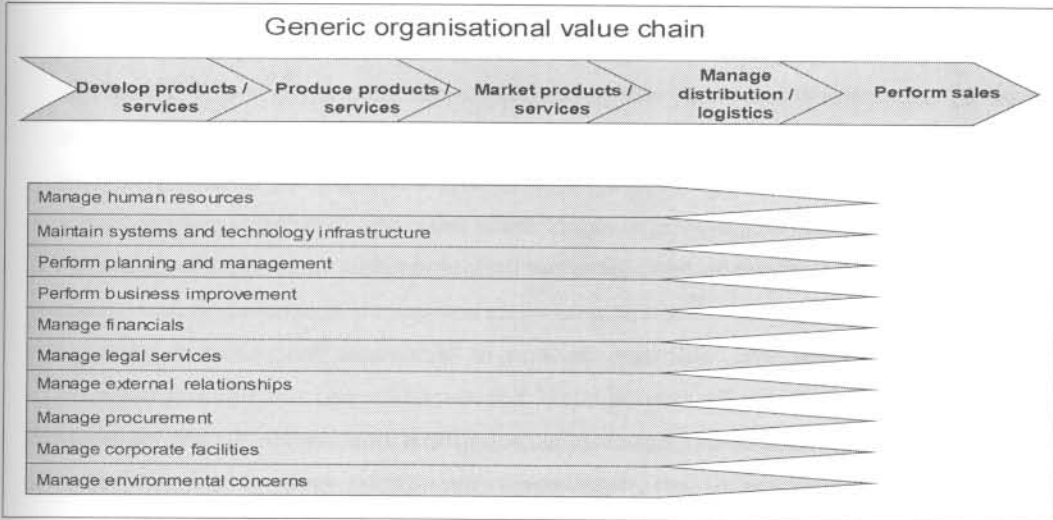


Figure 39. Areas of impact of knowledge management in the pooling of expertise

10.2.5.2. Conclusion

10.2.5.2.a. Possible influencing factors

There are a number of possible factors influencing for knowledge management as factor that assists in pooling organisational expertise:

- The role of knowledge management in the pooling of expertise received an average score from respondents, with the majority indicating that they are satisfied with the level of pooling of expertise, whilst two respondent organisations had severe problems with the pooling of expertise using knowledge management. The average score with some respondents indicating severe problems may be due to the fact that these organisations may have different focus areas for their knowledge management programmes rather than pooling of expertise, e.g. making knowledge accessible, distribution of knowledge, enabling knowledge flows, etc. Although all of the mentioned focus areas contribute to pooling of expertise, the objective of pooling of expertise is not realised to its full potential due to a lack of specific focus. It may also be attributed to the fact that many of the respondents placed a high value on tacit knowledge, i.e. there may not be that much explicit knowledge to be pooled, hence the perception that pooling of expertise is inadequate. This implies that the respondent organisations will have to place a larger focus on processes and tools for pooling of expertise and on conversion of tacit knowledge to explicit knowledge, but also on communicating the value proposition for the pooling of expertise via a knowledge management system. The lack of focus on pooling of expertise may also be due to an oversupply of labour in the South African labour

The role of knowledge management in eBusiness and customer relationship management

market. This may result in people not sharing their knowledge as “knowledge is power” and it gives them a competitive edge in retaining their positions in organisations. The labour situation in the country is therefore promoting a culture of non-sharing.

- From an industry perspective, Professional Services had the highest score, whilst IT had the lowest score. This may be attributed to the fact that Professional Services organisations sell expertise as a product / service, and would therefore have a natural tendency towards pooling that expertise in an explicit way to ensure maximum value extraction. The fact that IT had a low score in this regard may be due to the fact that with the speed of technology advancements, the practicality of pooling of expertise may be questioned. Knowledge and expertise could be outdated so quickly that an argument can be made that it is not worthwhile to pool all expertise. This implies that pooling of expertise through the use of knowledge management will be more relevant in some industries than in others and this needs to be taken into account when developing a knowledge management programme. Once again, the IT industry's lack of focus on pooling of expertise may also be due to an oversupply of IT skilled labour in the South African labour market. This may result in people not sharing their knowledge as “knowledge is power” and it gives them a competitive edge in retaining their positions in organisations. The labour situation in the country is therefore promoting a culture of non-sharing.
- The fact that knowledge workers have a much stronger perception that the knowledge management function provides a single point of access to knowledge in the organisation may be attributed to the fact that communication on the existence of one point of entry to other staff was inadequate. It may, on the other hand, also be attributed to the fact that knowledge workers may not be aware of additional knowledge sources that have not been covered by the proposed single point of access. The implication is that communication and awareness of a single point of entry needs to be measured for effectiveness, and knowledge workers should ensure that they are aware of all possible knowledge sources in the organisation to be covered by a single point of entry. This may be achieved through ensuring that the knowledge management function is a core part of the business, and not an administrative function.

10.2.5.2.b. Impact on organisations

The impact that knowledge management has in the pooling of expertise is high across the organisational value chain, on both core and enabling processes (see Figure 37). It will have a significant impact on the core processes, as these are the heart of the business. Ensuring that expertise in these processes is utilised to its full potential is crucial to the execution of the business strategy.

The role of knowledge management in eBusiness and customer relationship management

Pooling of expertise through knowledge management has an impact on both strategic and operational level. Pooling of expertise on core processes has a significant strategic impact. It provides access to a substantial amount of expertise for quick and accurate decision-making and therefore provides the organisation with agility in order to quickly adapt to market changes. It also plays a role in identifying market opportunities for organisations through the sharing of ideas and accessibility of knowledge that may spark and improve innovation. Pooling of expertise may also contribute to swifter implementation of the business strategy, and may enhance efficiency with reference to the day-to-day execution of business strategy. On a strategic level, pooling of expertise may also allow the organisation to see the gaps in the organisational knowledge base, and to put programmes in place to fill those gaps, thus strengthening the delivery capability of the organisation.

Pooling of expertise through knowledge management will also have an operational impact. It may create more efficient and effective work processes in both core and enabling processes, thereby improving standard of output and increased productivity. It may provide a platform for innovation in the day-to-day activities for all employees in the organisation, irrespective of level or location, through the availability of thought provoking knowledge. Pooling of expertise may also create a learning environment where employees can further their knowledge levels in an informal way. It may also broaden employees' knowledge base as they may be exposed to knowledge of areas in the business that does not pertain to their everyday work environment. The pooling of expertise through knowledge management creates a culture and environment for learning.

10.2.5.3. Issues: Knowledge management as factor that overcomes growing organisational and knowledge base complexity

- *Issue 1: Knowledge management provides a single point of entry to the knowledge base inter-and intra organisational (Q19; Q20; Q21)*
 - There is some dissatisfaction amongst respondent organisations (average score between 60—65%) on the extent to which knowledge management provides a useful structure to the knowledge base inter- and intra the organisation. It seems that consensus exists on one interface for customer knowledge (>75%), but that some dissatisfaction exists on a single point of entry to the knowledge base of the organisation (internally) (<65%), and severe problems exist regarding the extent to which an interface is provided with business partners (<40%).
 - Respondent responses are similar for questions 20 and 21, but respondents differ vastly on the extent to which their organisations provide a single point of entry to the organisational knowledge base, with scores ranging from 12% (Respondent C – IT) to 90% (Respondent D – Professional Services).

The role of knowledge management in eBusiness and customer relationship management

- The perceptions of knowledge workers and other workers on this issue do not differ significantly, except for question 19 where there is a huge (30%) perception difference on the provision of one single point of entry to knowledge in the organisation. Knowledge workers perceive the provision thereof to be much better than other staff does.
- *Issue 2: Knowledge management facilitate easier and quicker access to knowledge due to structure (Q22)*
 - Agreement exists amongst respondents that it is important for respondent organisations to facilitate easier access to knowledge (>75%).
 - The perceptions of knowledge workers and other workers on this issue do not differ significantly.
- *Issue 3: Knowledge management provides useful structure to the knowledge base (Q23)*
 - There is some dissatisfaction amongst respondent organisations (score between 60—65%) on the extent to which knowledge management provides a useful structure to the knowledge base.
 - Respondent C (IT) ranked slightly lower compared to the rest of the respondents on the extent to which the organisation currently provides a useful structure to the knowledge base.
 - The perceptions of knowledge workers and other workers on this issue do not differ significantly.

10.2.5.4. Conclusions

10.2.5.4.a. Possible influencing factors

- *Issue 1: Knowledge management provides a single point of entry to the knowledge base inter-and intra organisational (Q19; Q20; Q21)*
 - The low average score for the role of knowledge management in providing a single point of entry may be attributed to the fact that knowledge management may be fragmented in the respondent organisations, i.e. it may not have been implemented across the organisation. It may also be attributed to the fact that the knowledge management system does not provide comprehensive coverage of all knowledge sources, but only those deemed to be of critical importance to users, or those that are used a lot. It may also be attributed to the fact that a lot of knowledge is still in tacit format, i.e. when staff retrieve knowledge they have to use both tacit and explicit sources of knowledge.
 - The fact that knowledge workers perceive the provision of a single point of entry as higher than other staff may be attributed to the fact that knowledge workers

The role of knowledge management in eBusiness and customer relationship management

may not be aware of all knowledge sources in the organisation. This is true of explicit sources, but especially of tacit knowledge sources.

- *Issue 2: Knowledge management facilitate easier and quicker access to knowledge due to structure (Q22)*
 - The above average score for this issue may be attributed to the fact that structure allows easier and more efficient searching and retrieval due to the provision of context within which knowledge exists.
- *Issue 3: Knowledge management provides useful structure to the knowledge base (Q23)*
 - The dissatisfaction of respondents with reference to this issue may be attributed to the fact that knowledge workers that are responsible for structuring the knowledge base may not understand the processes of the business within which knowledge flows, and therefore the structure may not be aligned with the process tasks and activities for which users need the knowledge they retrieve. It may also be attributed to the fact that the knowledge management programme only covers certain areas of the business, i.e. the knowledge management systems are not comprehensive in their coverage. The structure would therefore e.g. not reflect certain processes or divisions and the associated knowledge.

10.2.5.4.b. Impact on organisations

- *Issue 1: Knowledge management provides a single point of entry to the knowledge base inter-and intra organisational (Q19; Q20; Q21)*
 - The potential impact of the low average score of the respondent organisations with regards to this issue may be that knowledge organisation and retrieval is inefficient and ineffective, as users will have to access a variety of knowledge bases before finding all knowledge relevant to their particular enquiry. It may also indicate that various knowledge workers are managing sections of the knowledge base that may be more efficient if pooled together. The fact that users have to retrieve knowledge from different points of entry leads to time delays and loss of productivity. It may also be an indication of duplication of knowledge in the organisation, because if there isn't one consolidated view of what is available, duplication of knowledge will be very difficult to manage.
- *Issue 2: Knowledge management facilitate easier and quicker access to knowledge due to structure (Q22)*
 - The above average score on this issue indicates that these organisations find structure to the knowledge base useful and efficient with reference to the retrieval of knowledge. Structure therefore seems to have a big impact on the respondent organisations.

The role of knowledge management in eBusiness and customer relationship management

- *Issue 3: Knowledge management provides useful structure to the knowledge base (Q23)*
 - The respondent organisations' dissatisfaction with the structure provided by knowledge management may impact negatively on these organisations because users are struggling to find and retrieve the knowledge they need. This may lead to a lack of buy-in from users with reference to the value of knowledge management and they will therefore not utilise the systems and processes at their disposal. This may have disastrous consequences for the respondent organisations, as they may get no return on investment from their knowledge management programme.

10.2.6. Knowledge management in the learning environment

10.2.6.1. Overview

- The score for this dimension is below average. 2 out of 5 Respondent Organisations scored between 65% and 75%, indicating that they are satisfied with reference to the role of knowledge management in the learning environment. 2 Of the Respondent Organisation scores were between 60% and 65%, indicating some dissatisfaction with reference to the role of knowledge management in the learning environment. 1 Respondent Organisation had a score below 60% indicating severe problems with reference to the role of knowledge management in the learning environment.
- From an industry perspective, Telecommunications had the highest score, followed respectively by Professional Services with some dissatisfaction, IT and Financial Services with severe problems in this dimension.
- The perceptions of knowledge workers and other workers on this issue do not differ significantly, except for question 24, where knowledge workers believe that knowledge management has a larger role in innovation than other staff does.

The role of knowledge management in eBusiness and customer relationship management

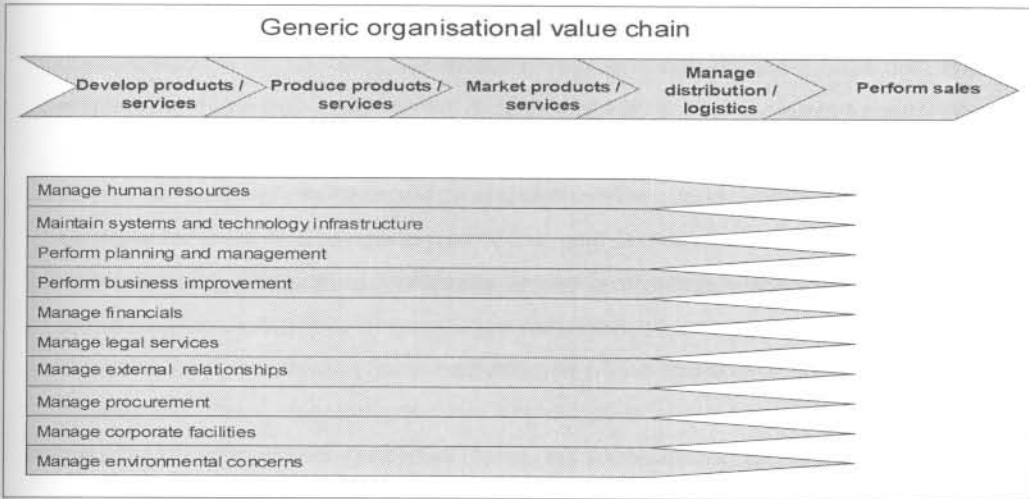


Figure 40. Areas of impact of knowledge management in the learning environment

10.2.6.2. Conclusion

10.2.6.2.a Possible influencing factors

There are a number of possible factors influencing for knowledge management in the learning environment:

- The below average score for the role of knowledge management in the learning environment, shows that knowledge management is not perceived as being a great contributor to learning in South African organisations. The work environment of many large, as well as small and medium, organisations is not geared towards facilitation of self-education. A possible reason may be that South Africa is still a third world country, where, in many cases, adequate technology is lacking and a learning culture does not exist. South Africa also has a problem with illiteracy or limited literacy, which makes the need for a learning environment greater, but disables traditional knowledge management to some extent, which assumes some level of traditional literacy, as a primary tool for self-education. This is especially true for organisations in specific environments, e.g. manufacturing, where a large part of the organisation's workforce has very little formal education. The fact that knowledge management is currently not seen as a great factor in the learning environment, shows that there are great opportunities for the application of knowledge management as a tool in the learning environment, especially in light of the emphasis being placed by government and organisations of skilling people and increasing their levels of knowledge.
- The Telecommunications industry rated the highest score with reference to the role of knowledge management in the learning environment. This may be due to the fact that these organisations are very technology driven and thus have the platforms to create a

The role of knowledge management in eBusiness and customer relationship management

learning environment through knowledge management. Most telecommunication organisations in South Africa are relatively new and may therefore have built knowledge management into the design of the organisations to enable a learning environment. The telecommunications industry in South Africa is also a highly competitive industry since the advent of mobile phone technology and the market opening up for the second national operator for fixed line telecommunications, and is therefore a very innovative industry where learning and putting knowledge to use is of extreme importance. The low rating that was given to the role of knowledge management in the learning environment in the Financial Services industry may be indicative of the fact that it is such a fast changing industry that these organisations have a tendency to share knowledge through on the job training, or alternatively they may focus on more formal techniques such as formal training rather than through knowledge management. Some organisations, by their very nature, will thus be more inclined to use knowledge management as tool to encourage learning than others.

- The fact that knowledge workers rated the role of knowledge management in innovation higher than other staff, may be due to the fact that other staff may have a lack of or limited understanding of the value of knowledge itself and the value of accessibility and availability of knowledge for innovation. Staff may have the perception that innovation happens intuitively, forgetting the role that their current knowledge and experience, together with supporting knowledge, plays in the innovation process.

10.2.6.2.b Impact on organisations

As can be seen from Figure 40, knowledge management in the learning environment plays a significant role across the organisation, affecting all core and enabling processes.

Knowledge management in the learning environment has an effect on both the strategic and operational level. On the strategic level, if limited or no learning takes place, no or limited innovation will take place. Staff and management may also have inadequate knowledge at hand for decision-making and inefficient interpretations of the marketplace may take place, negatively impacting not only the execution of the current business strategy, but also future strategic planning. This in turn would lead to a lack the competitiveness of the organisation, and it would negatively impact the agility of the organisation. An organisation that is perceived to have lost its competitive edge and agility may be faced with a loss of image and brand in the marketplace. These organisations also risk the chance of not being perceived by the marketplace as employers of choice, and may thus not attract human capital and therefore knowledge and experience of the highest potential.

The role of knowledge management in eBusiness and customer relationship management

On the operational level, knowledge management in the learning environment can have an impact on the effectiveness and efficiency of the organisation, as learning can make workers complete tasks more effectively and efficiently if they have more knowledge on the tasks and more knowledge on the context within which these tasks are performed. These organisations may also have a limited culture of innovation and may find that their skills base and knowledge levels in the organisation may become stagnant. This may have a negative impact on the growth of the organisation. Organisations that have a low performance with reference to the role of knowledge management in the learning environment, may lack continuous improvement due to a limited and stagnant knowledge of the workforce. These organisations will also be unable to explore the full potential of its workforce and exploit a learning culture to the advantage of the organisation.

10.2.6.3. Issues: Knowledge management in the learning environment

- *Issue 1: Knowledge management increases the quality and speed of innovation (Q24)*
 - A high level of agreement exists that knowledge management does not lead to innovation to a great extent (<60%).
 - Respondent C (IT) ranked slightly lower compared to the rest of the respondents on the extent to which the organisation currently leads to increased innovation.
 - The perceptions of knowledge workers and other workers on this issue do not differ significantly.
- *Issue 2: Knowledge management leads to accelerated learning and skills development on individual, team and organisational level (Q25)*
 - A high level of consensus exists on the importance of knowledge management in providing the respondent organisations with knowledge strategic to the business.
 - The perceptions of knowledge workers and other workers on this issue do not differ significantly.
- *Issue 3: Knowledge management increases efficiency and productivity (Q26)*
 - Not all respondents are entirely satisfied with the extent to which knowledge management increases employee productivity (score between 60 and 65%).
 - Responses are spread evenly, but with a rather large spread, from 40% to 70%, with Respondent Organisation D (Professional Services) and Organisation E (Telecommunications) ranking the highest and Respondent Organisation G (Insurance) ranking the lowest. This signifies that the perception of the extent to which knowledge management currently leads to increased employee productivity, differs vastly.
 - The perceptions of knowledge workers and other workers on this issue do not differ significantly.

10.2.6.4. Conclusions**10.2.6.4.a. Possible influencing factors**

- *Issue 1: Knowledge management increases the quality and speed of innovation (Q24)*
 - The below average score of respondents on this issue may be attributed to the fact that the focus of their knowledge management programmes may be on efficiency improvements and not necessarily aimed at innovation. It may also be attributed to the fact that the value of knowledge management is not perceived as being a direct contributor to the innovation process, but rather as an indirect contributor through innovators' experience and thinking processes.
- *Issue 2: Knowledge management leads to accelerated learning and skills development on individual, team and organisational level (Q25)*
 - The above average score for this issue may be attributed to the availability of knowledge leading to a greater exposure to numerous concepts that the users have not been exposed to before. Knowledge management provides platforms for making the knowledge available and accessible. The fact that the respondent organisations are nearly all in fairly innovative industries may also contribute to the need for users to develop their skills and knowledge continuously.
- *Issue 3: Knowledge management increases efficiency and productivity (Q26)*
 - The sense of dissatisfaction with the increase in efficiency and productivity through knowledge management may be attributed to the fact that users feel the programmes are not as optimized as it could be and therefore have a negative perception of the extent of the increase in productivity and efficiency. It may also be due to the fact that users do not perceive knowledge as being a contributor to their efficiency and productivity increases, i.e. they cannot distinctly identify the impact knowledge and knowledge management has on their day-to-day work.

10.2.6.4.b. Impact on organisations

- *Issue 1: Knowledge management increases the quality and speed of innovation (Q24)*
 - The below average score on this issue may impact the respondent organisations due to the fact that the value of knowledge as resource in innovation is not maximized. The necessary focus for providing knowledge and the required processes for making it available and accessible for innovation is lacking due to a lack of understanding of the explicit, distinguishable role of knowledge in the innovation process.

The role of knowledge management in eBusiness and customer relationship management

- *Issue 2: Knowledge management leads to accelerated learning and skills development on individual, team and organisational level (Q25)*
 - The above average score of the respondent organisations indicates a positive impact on the organisations as the learning environment is fostered in these organisations. This will lead to improved skills and knowledge bases in the organisations, increasing efficiency, effectiveness and productivity of staff and therefore improved operations.
- *Issue 3: Knowledge management increases efficiency and productivity (Q26)*
 - The below average score indicates that the full value of knowledge as organisational asset is not being leveraged, and therefore the respondent organisations are not as effective, efficient and productive as they could be.

10.2.7. Knowledge management as measure to prevent knowledge attrition

10.2.7.1. Overview

- The score for this dimension is low. All Respondent Organisations scored 60% or below indicating severe problems relating to the role of knowledge management in preventing knowledge attrition.
- From an industry perspective, Telecommunications had the highest score, although the industry indicates some dissatisfaction with the status quo, followed respectively by IT, Financial Services and Professional Services, where there are severe problems in this regard.
- The perceptions of knowledge workers and other workers on this issue do not differ significantly.

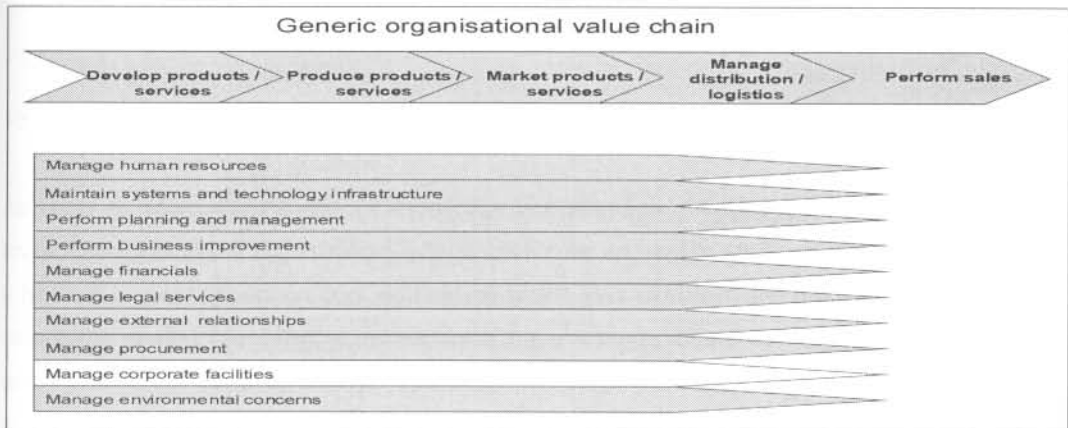


Figure 41. Areas of impact of knowledge management in the prevention of knowledge attrition

The role of knowledge management in eBusiness and customer relationship management

10.2.7.2. Conclusion

10.2.7.2.a. Possible influencing factors

There are a number of possible factors influencing knowledge management's role in preventing knowledge attrition:

- The low score relating to knowledge attrition prevention may be attributed to the fact that in the current South African economic environment, there is an oversupply of highly skilled and qualified staff in the job market. Skilled or specialist labour can therefore be easily replaced, making it largely irrelevant for organisations to retain staff's knowledge when they leave the organisation. The low score on prevention of knowledge attrition may also be due to the fact that knowledge management systems in South Africa may not be sophisticated enough to ensure the capturing of tacit knowledge to explicit and retaining knowledge in that way. The implication is that knowledge management programmes in South Africa may not have a strong knowledge attrition prevention focus, as is the case in many other countries in the world.
- Telecommunications had the highest score from an industry perspective, which may be attributed to the fact that the industry is a fast changing, innovative industry, where it is important to keep track of innovations and changes to be made. It would therefore have a higher impact if people left these organisations than in other industries and tacit knowledge has not been captured into explicit. Professional Services ranked the lowest in this dimension. This may be due to the fact that these organisations are international organisations, enabling them to utilise or substitute local human resources with resources from other countries, e.g. through exchange programs. It may also be attributed to the fact that there is an over supply in the Professional Services job market, making replacement of knowledge and skills easy. The implication is that, due to the nature of the organisations, their focus on prevention on knowledge attrition may differ.

10.2.7.2.b. Impact on organisations

As seen in Figure 41, the role of knowledge in prevention of knowledge attrition has a high impact throughout the organisation, affecting all core and the majority of enabling processes. It has the biggest impact on core processes, where loss of knowledge relating to product and or service related client-facing issues could have a major impact on the core effectiveness and efficiency of the business, as well as on its image portrayed to the market. Knowledge management as agent in preventing knowledge attrition also has an impact in enabling processes through ensuring continuity in knowledge and processes. If knowledge is lost, continuity in processes may suffer and there may be a lack of continuity in the tacit knowledge base of the organisation.

The role of knowledge management in eBusiness and customer relationship management

Knowledge as factor in preventing knowledge attrition has an impact on both strategic and operational level. On the strategic level, knowledge strategic to the business may be lost when key staff members leave the organisation, thus affecting business performance. There are also cost and time factors to consider when replacing key staff members and their associated knowledge. On the operational level, loss of knowledge may lead to loss of efficiency and effectiveness, resulting in reduced productivity. It may also lead to additional cost due to time and materials relating to training of newly recruited staff and building their knowledge and skills base, to replace staff that left the organisation. Knowledge attrition may also lead to lack of continuity in processes, tasks and activities on the operational level.

10.2.7.3. Issues: Knowledge management as measure to prevent knowledge attrition

- *Issue 1: Tacit knowledge must be converted into explicit knowledge in stead of trying to retain employees (Q27)*
 - Severe problems exist in translating tacit knowledge into explicit knowledge in the average profile of respondents (<50%).
 - Responses are spread evenly, but with a rather large spread, from 30% to 60%, with Respondent Organisation E (Telecommunications) and Respondent Organisation G (Insurance) ranking the highest and Respondent Organisation F (Professional Services) ranking the lowest. This signifies that the perception of the extent to which tacit knowledge is converted to explicit knowledge, differs vastly.
 - The perceptions of knowledge workers and other workers on this issue do not differ significantly.

10.2.7.4. Conclusions

10.2.7.4.a. Possible influencing factors

- *Issue 1: Tacit knowledge must be converted into explicit knowledge in stead of trying to retain employees (Q27)*
 - The below average score of the respondent organisations may be attributed to the fact that there is an over supply of workers in the labour market and organisations know that they can easily replace workers and their knowledge. They therefore do not go to the trouble of trying to retain employees.

The role of knowledge management in eBusiness and customer relationship management

10.2.7.4.b. Impact on organisations

- *Issue 1: Tacit knowledge must be converted into explicit knowledge in stead of trying to retain employees (Q27)*
 - The below average score of the respondent organisations indicates that there are severe problems in retaining knowledge through conversion of tacit knowledge to explicit knowledge. The impact on these organisations is twofold. Firstly it means that if staff leaves the organisation, their knowledge may be easily replaced and the knowledge and experience of staff members may be lost to the organisation for good. The second impact is that if the organisations are aware of this, they may be paying a high premium in terms of salaries to try and retain individuals with specialist knowledge that is not easily replaceable in the absence of conversion of tacit knowledge to explicit knowledge.

10.2.8. Knowledge management as factor that increases organisational agility

10.2.8.1. Overview

- The average respondent profile shows an above average score for questions 28, 29, 30 and 31. Importance of providing the right knowledge speedily to adapt to changes in the marketplace, and the importance of knowledge management in reducing time to market of products and services scored above 75%, whilst the extent to which knowledge management increased the efficiency of decision-making indicated severe problems in the respondent organisations with a score below 60%.
- The score for this dimension is above average. 2 out of 5 Respondent Organisations scored higher than 75%, indicating exceptional satisfaction with reference to the role of knowledge management in achieving organisational agility. 2 Of the Respondent Organisation scores were between 65% and 75%, indicating satisfaction with reference to the role of knowledge management in achieving organisational agility. 1 Respondent Organisation had a score between 60% and 65%, indicating some dissatisfaction satisfaction with reference to the role of knowledge management in achieving organisational agility.
- From an industry perspective, Financial Services had the highest score, followed by Telecommunications, IT and Professional Services. All industries indicated satisfaction with the status quo.
- The perceptions of knowledge workers and other workers on this issue do not differ significantly.

The role of knowledge management in eBusiness and customer relationship management

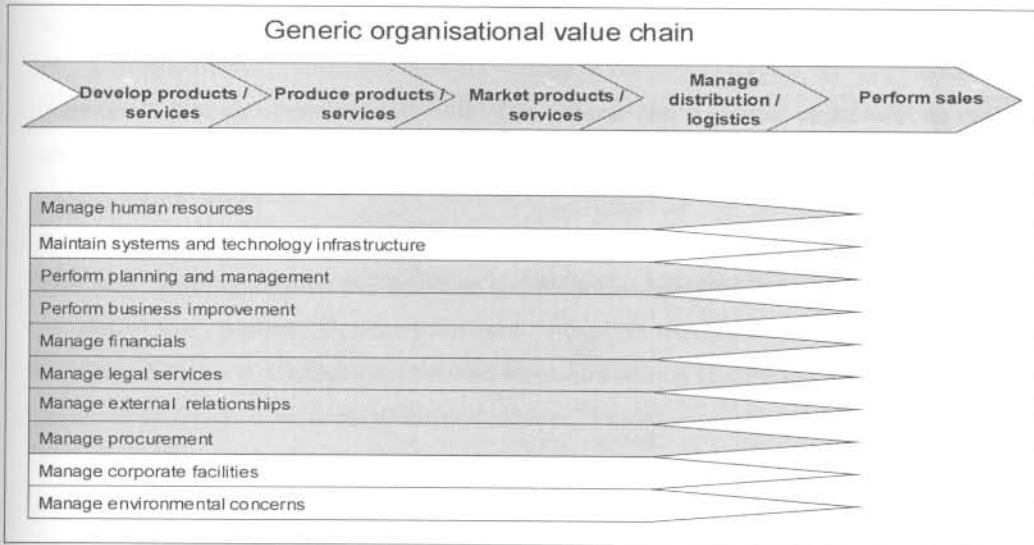


Figure 42. Areas of impact of knowledge management in increased organisational agility

10.2.8.2. Conclusions

10.2.8.2.a. Possible influencing factors

There are a number of possible factors influencing knowledge management's role in increasing organisational agility:

- The importance of providing the right knowledge speedily to adapt to changes in the marketplace, and the importance of knowledge management in reducing time to market of products and services obtained a high average score from respondents. This may be attributed to the fact that organisations attach importance to strategic knowledge, rather than operational knowledge, very well to ensure competitiveness and innovation in the marketplace. It is, however, interesting to note that the extent to which knowledge management increased the efficiency of decision-making indicates severe problems in the respondent organisations. It seems that knowledge and knowledge management is used to innovate in order to design new products and services and to build or assemble these new products and services, and to *implement or execute* these new strategies, but it does not play a significant part in the decision-making process. This may be attributed to the fact that strategic knowledge is managed outside of the formal knowledge management realm, e.g. in decision-makers heads, i.e. in tacit format, therefore a knowledge management system is not used to provide the knowledge on which decisions are based in tacit format. This aligns with the earlier finding that there is a lack of conversion of tacit knowledge to explicit knowledge in the respondent organisations. The implication is that organisations need to understand the value that it can add to make strategic tacit knowledge explicit. Management teams of organisations, though having

The role of knowledge management in eBusiness and customer relationship management

tacit strategic knowledge available, can never have a complete picture of the potential of all the tacit knowledge or of the tacit knowledge in combined format, as they do not have a complete picture of what is available. This means that currently, organisations are not unlocking the potential value of the knowledge available to them in order to improve organisational agility.

- From an industry perspective, Financial Services had the highest score in this dimension. This may be attributed to the fact that the Financial Services industry is a highly agile industry due to the fierce competition and innovation within the industry. The Financial Services industry is a knowledge intensive industry, which utilises the knowledge to build on its strengths and to ensure competitiveness. Professional Services ranked lowest in this dimension. This may be attributed to the fact that, of the four industries, this industry is the one with the least radical change in terms of innovation, though change and adaptation to the market needs still remain extremely vital. The conclusion is therefore that some industries or organisations will focus more on utilising knowledge to ensure organisational agility, as competition and the need for innovation is more relevant or has a higher impact in some industries than in others.

10.2.8.2.b Impact on organisations

Knowledge management has a large role in ensuring organisational agility, as can be seen in Figure 42. It has an impact on all the core processes and the majority of the enabling processes.

On a strategic level knowledge management can impact organisational agility through the provision of knowledge relating to the core business processes, based on which strategic decisions can be made relating to the organisation's products and services, its delivery channels and mechanisms, its competitive position in the market, market segmentation, future potential growth, etc. Knowledge management can also impact on a strategic level by providing knowledge as base for innovation to ensure competitive advantage.

On an operational level, knowledge management can ensure organisational agility through facilitation of speedy implementation of the business strategy by providing knowledge applicable to the implementation. Knowledge management can also stimulate innovation on an operational level through the provision of knowledge as base for innovation. These innovations may lead to competitive advantage or even lead to a change in strategy. Knowledge management can also, through the provision of knowledge, assist staff in identifying opportunities for the organisation during its day-to-day operations leading to improved efficiency and effectiveness, which may possibly lead to a strategic impact as well, thus linking the strategic and operational impact.

The role of knowledge management in eBusiness and customer relationship management

10.2.8.3. Issues: Knowledge management as factor that increases organisational agility

- *Issue 1: Knowledge management increases the quality and speed of decision-making (Q28)*
 - Respondents showed some dissatisfaction with the extent to which knowledge management increased the efficiency of decision-making.
 - In question 28, responses are spread evenly, but with a rather large spread, from 40% to 70%, with Respondent Organisation G (Insurance) ranking the highest and Respondent Organisation F (Professional Services) ranking the lowest. This signifies that the perception of the extent to which tacit knowledge is converted to explicit knowledge, differs vastly.
 - The perceptions of knowledge workers and other workers on this issue do not differ significantly.
- *Issue 2: Knowledge management increases organisational agility through faster decision making and quicker adaption to market changes (Q29, Q30)*
 - There is a high level of agreement amongst respondents on the importance of providing the right knowledge timeously to speedily adapt to changes in the marketplace and a high level of agreement exists that knowledge management is important in reducing time to market of products and services.
 - Respondent Organisation G (Insurance) deems provision of the right knowledge speedily to adapt to changes in the marketplace more important than the other respondent organisations (Q29).
 - The perceptions of knowledge workers and other workers on this issue do not differ significantly.
- *Issue 3: Availability of knowledge leads to increased organisational agility (Q31)*
 - There is a high level of agreement amongst respondents on the role of knowledge availability in organisational agility.
 - Responses for this question are spread evenly, but with a rather large spread from 55% to 90%, with Respondent Organisation G (Insurance) ranking the highest and Respondent Organisation F (Professional Services) ranking the lowest. This signifies that the perception of the extent to which availability of knowledge currently increases organisational agility differs quite vastly.
 - The perceptions of knowledge workers and other workers on this issue do not differ significantly.

10.2.8.4. Conclusions

10.2.8.4.a. Possible influencing factors

- *Issue 1: Knowledge management increases the quality and speed of decision-making (Q28)*
 - The below average score for this issue may be attributed to the fact that knowledge is used in decision-making implicitly, and therefore knowledge management as means of provision of the knowledge upon which decisions are based is not perceived as making a direct contribution to the speed and quality of decision-making. It may also be attributed to the fact that knowledge management programmes in the respondent organisations have an operational rather than a strategic focus, and therefore the impact on the speed and quality of decision-making is not so apparent.
- *Issue 2: Knowledge management increases organisational agility through faster decision making and quicker adaption to market changes (Q29, Q30)*
 - The above average score with reference to the role of knowledge in increasing organisational agility through faster decision-making and quicker adaption to market changes may be attributed to the fact that most of the respondent organisations are in highly innovative and fast changing industries and it is therefore critical for them to be agile. Most of these organisations are also highly knowledge intensive, which probably increases the understanding of the value that knowledge and knowledge management can add in trying to remain competitive and even to be the market leader in their particular industries. They would therefore be more prone to maximize the value they get from knowledge and knowledge management to increase their competitive advantage.
- *Issue 3: Availability of knowledge leads to increased organisational agility*
 - The above average score for this issue may be due to the fact that knowledge management programmes has made knowledge more available and accessible to those who need it, especially on a strategic level to ensure organisational agility. The availability of knowledge leads to increased organisational agility due to the fact that informed decisions can be made at the right time.

10.2.8.4.b. Impact on organisations

- *Issue 1: Knowledge management increases the quality and speed of decision-making (Q28)*
 - The below average score for this issue will have a negative impact on organisations. Decision-makers will not be able to make accurate, informed

The role of knowledge management in eBusiness and customer relationship management

decisions due to the lack of availability and accessibility to knowledge that assist in this process.

- *Issue 2: Knowledge management increases organisational agility through faster decision making and quicker adaption to market changes (Q29, Q30)*
 - The above average score for this issue indicates that the respondent organisations will be able to make swift decisions to enable them to adapt to market changes quickly.
- *Issue 3: Availability of knowledge leads to increased organisational agility*
 - The above average score indicates that for the respondent organisations, availability of knowledge leads to increased organisational agility due to the fact that informed decisions can be made at the right time.

10.2.9. Knowledge management as input in determining the organisation's strategic direction

10.2.9.1. Overview

- The score for this dimension is high on the average respondent profile, with three questions' scores ranking in the range 65%-75%, indicating some satisfaction with reference to the availability of knowledge leading to increased organisational agility, the importance of knowledge management in identifying new business opportunities and the extent to which knowledge is seen as a corporate asset. One question was rated very high on the satisfaction scale, with specific reference to the role of knowledge management in providing knowledge strategic to the business (>75%).
- The score for this dimension is high. 1 Respondent Organisation scored higher than 75%, indicating exceptional satisfaction with the role of knowledge management in organisational strategic direction. 4 out of 5 Respondent Organisations scored between 65% and 75%, indicating satisfaction with the role of knowledge management in organisational strategic direction.
- From an industry perspective, Financial Services had the highest score by far, followed by IT, Telecommunications and Professional Services. All industries indicated satisfaction with the status quo.
- The perceptions of knowledge workers and other workers on this issue do not differ significantly. However, other staff members perceive knowledge management as being more important in identifying new business opportunities than knowledge workers do.

The role of knowledge management in eBusiness and customer relationship management

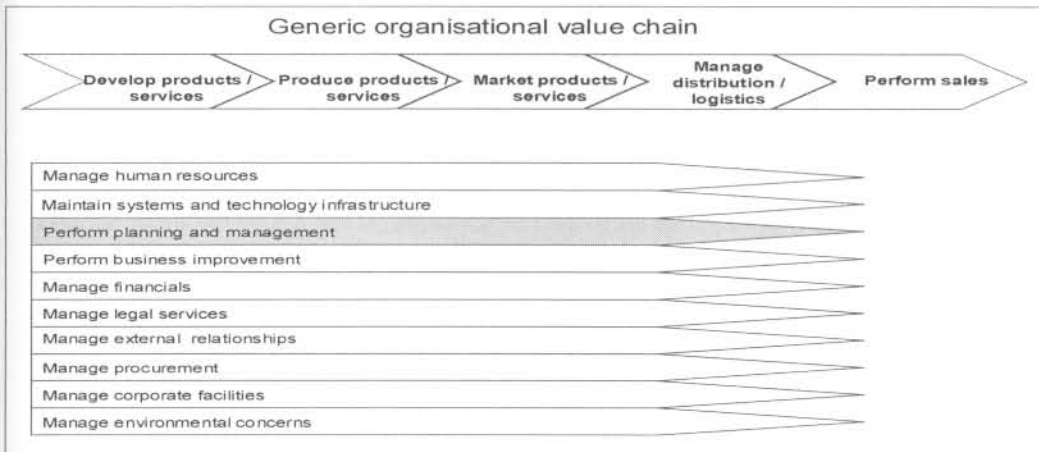


Figure 43. Areas of impact of knowledge management in determining the organisation's strategic direction

10.2.9.2. Conclusion

10.2.9.2.a. Possible influencing factors

There are a number of possible factors influencing knowledge management's role in determining the organisation's strategic direction:

- The high score in this dimension, indicating some satisfaction with reference to the availability of knowledge leading to increased organisational agility, the importance of knowledge management in identifying new business opportunities and the extent to which knowledge is seen as a corporate asset, may be attributed to the fact that South African organisations have become aware that they are operating in the knowledge economy and that knowledge is an asset as important as labour, capital or land. Due to this increased awareness, these organisations are extracting value from knowledge available to them, more than before. This may also be due to the fact that, with the advent of technology and knowledge management systems, more knowledge is available to them on a global basis to extract value from. The impact is that South African companies are waking up to the fact that knowledge can provide them with a competitive edge in terms of determining strategic direction, and are therefore standing on the brink of a new era where knowledge and the access to and management thereof will become the main differentiating factor for businesses. The realisation of the value of knowledge and knowledge management has, however, only been implemented or realised on a limited scale, and therefore a lot of potential for future exploitation exists.
- The Financial Services industry had the highest rating with reference to the role of knowledge management in determining organisational strategic direction. Once again the deduction can be made that due to the knowledge intensive nature of the industry, knowledge management is a more important factor compared to other industries. The

The role of knowledge management in eBusiness and customer relationship management

competitive nature of the Financial Services industry also makes it more inclined to use knowledge in determining strategic direction, specifically with reference to innovation. Professional Services scored the lowest, which can be attributed to the fact that the industry is not as innovative as the other industries in the study, or due to the fact that change does not take place as rapidly in Professional Services as in IT. This implies that there is potential for improvement in some industries with reference to using knowledge management in assisting in determining organisational strategic direction.

- The fact that other staff perceive knowledge management as being more important in identifying new business opportunities than knowledge workers do, may be due to the fact that staff have a better understanding of the value of the application knowledge within a given business context and with specific reference to the identification of new business opportunities than knowledge workers do. This implies that knowledge workers should work closer to the day-to-day operations within the core business processes to ensure better alignment between the knowledge requirements of the business and the systems, services and processes relating to knowledge management.

10.2.9.2.b Impact on organisations

Knowledge management has an impact on the value chain mainly on the enabling process of planning and management (see Figure 43). It can be argued that some strategic direction may also originate in the core processes of the value chain, but the researcher is of the opinion that the main impact of knowledge management on the strategic direction of the business will be in the planning and management process. Knowledge management can enable the planning and management process through the provision of knowledge strategic to the business and its operating environment, enabling it to make decisions regarding its current and future situation with reference to its competitive position in the marketplace, the needs for its products and services within the market, drivers for the business, together with critical success factors and the value proposition of the business within the market. It will also allow management to determine whether new markets and possible new products and services need to be investigated.

10.2.9.3. Issues: Knowledge management as input in determining the organisation's strategic direction

- *Issue 1: Knowledge management increases the quality and speed of decision-making (Q28)*
 - Respondents showed some dissatisfaction with the extent to which knowledge management increased the efficiency of decision-making.

The role of knowledge management in eBusiness and customer relationship management

- In question 28, responses are spread evenly, but with a rather large spread, from 40% to 70%, with Respondent Organisation G (Insurance) ranking the highest and Respondent Organisation F (Professional Services) ranking the lowest. This signifies that the perception of the extent to which tacit knowledge is converted to explicit knowledge, differs vastly.
- The perceptions of knowledge workers and other workers on this issue do not differ significantly.
- *Issue 2: Availability of knowledge at the right time to the right people increases an organisation's agility (Q29)*
 - There is a high level of agreement amongst respondents on the importance of providing the right knowledge timeously to speedily adapt to changes in the marketplace.
 - Respondent Organisation G (Insurance) deems provision of the right knowledge speedily to adapt to changes in the marketplace more important than the other respondent organisations.
 - The perceptions of knowledge workers and other workers on this issue do not differ significantly.
- *Issue 3: Knowledge management provides the organisation with knowledge strategic to the business (Q32)*
 - In the average respondent profile, a high level of consensus exists on the importance of knowledge management in providing the respondent organisations with knowledge strategic to the business.
 - Respondent Organisation G (Insurance) deems the provision of knowledge strategic to the business as more important than the other respondent organisations.
 - The perceptions of knowledge workers and other workers on this issue do not differ significantly.
- *Issue 4: Knowledge is a corporate asset (Q34)*
 - In the average respondent profile, there is some agreement with reference to the perception that knowledge is a corporate asset (65%-75%).
 - Respondent Organisation C (IT) perceives knowledge much less of a corporate asset than the other respondent organisations.
 - The perceptions of knowledge workers and other workers on this issue do not differ significantly.
- *Issue 5: Knowledge management is tied to the business strategy (Q32, Q33)*
 - A high level of consensus exists on the importance of knowledge management in providing the respondent organisations with knowledge strategic to the business (Q32), and some satisfaction exists on the importance that knowledge management plays in identifying new business opportunities (Q33).

The role of knowledge management in eBusiness and customer relationship management

- Respondent Organisation G (Insurance) deems the provision of knowledge strategic to the business as more important than the other respondent organisations (Q32).
- In question 33, responses are spread evenly, but with a rather large spread, from 54% to 100%, with Respondent Organisation G (Insurance) ranking the highest and Respondent Organisation C (IT) ranking the lowest. This signifies that the perception of the importance of knowledge management in identifying new business opportunities related to business strategy, differs vastly (Q33).
- The perceptions of knowledge workers and other workers on question 32 do not differ significantly; with reference to question 33 other staff perceives knowledge management as being more important in identifying new business opportunities than knowledge workers do.

10.2.9.4. Conclusions

10.2.9.4.a. Possible influencing factors

- *Issue 1: Knowledge management increases the quality and speed of decision-making (Q28)*
 - The below average score for this issue may be attributed to the fact that knowledge is used in decision-making implicitly, and therefore knowledge management as means of provision of the knowledge upon which decisions are based is not perceived as making a direct contribution to the speed and quality of decision-making. It may also be attributed to the fact that knowledge management programmes in the respondent organisations have an operational rather than a strategic focus, and therefore the impact on the speed and quality of decision-making is not so apparent.
- *Issue 2: Availability of knowledge at the right time to the right people increases organisation's agility (Q29)*
 - The above average score for this issue may be due to the fact that knowledge management programmes have made knowledge more available and accessible to those who need it, especially on a strategic level to ensure organisational agility. The availability of knowledge leads to increased organisational agility due to the fact that informed decisions can be made at the right time.
- *Issue 3: Knowledge management provides the organisation with knowledge strategic to the business (Q32)*
 - The high score attributed to the provision of knowledge strategic to the business may be attributed to the fact that it is extremely important to have knowledge strategic to the business to enable accurate and timely decision-making. This in

The role of knowledge management in eBusiness and customer relationship management

turn will lead to organisational agility. Most of the respondent organisations are in innovative industries that change at a tremendous pace, and therefore they need to be able to make business decisions continuously to ensure organisational agility and a competitive edge in the marketplace.

- *Issue 4: Knowledge is a corporate asset (Q34)*
 - The fact that there was some agreement amongst respondent organisations that knowledge is a corporate asset may be attributed to the fact that most of these organisations are knowledge intensive organisations and therefore extract a lot of value from knowledge. They are therefore in a position to understand the strategic value of knowledge. These organisations also operate in innovative industries where the utilisation of knowledge to innovate is prevalent. They are therefore more likely to see knowledge as a corporate asset that adds value.
- *Issue 5: Knowledge management is tied to the business strategy (Q32, Q33)*
 - The agreement of respondents that knowledge management is tied to the business strategy through the provision of knowledge strategic to the business and the role of knowledge management in identifying new business opportunities may be attributed to the fact that these organisations are operating in highly innovative, knowledge intensive and fast changing industries and therefore utilise knowledge as a corporate asset in decision-making and adaption to the marketplace.
 - Knowledge workers' perceptions differ from other staff on the role of knowledge management in identifying new business opportunities – they see it as more significant than other staff members. This may be attributed to the fact that knowledge workers are not aware of all opportunities identified by the business and therefore have a skewed perception. It may also be due to the fact that knowledge workers have a skewed perception of the proportion of their contribution to the opportunity identification due to a lack of understanding of the business.

10.2.9.4.b. Impact on organisations

- *Issue 1: Knowledge management increases the quality and speed of decision-making (Q28)*
 - The below average score for this issue will have a negative impact on organisations. Decision-makers will not be able to make accurate, informed decisions due to the lack of availability and accessibility to knowledge that assist in this process.

The role of knowledge management in eBusiness and customer relationship management

- *Issue 2: Availability of knowledge at the right time to the right people increases organisation's agility (Q29)*
 - The above average score indicates that for the respondent organisations, availability of knowledge leads to increased organisational agility due to the fact that informed decisions can be made at the right time.
- *Issue 3: Knowledge management provide the organisation with knowledge strategic to the business (Q32)*
 - Attaching importance to the provision of knowledge strategic to the business by knowledge management will impact these organisations positively. This will ensure that adequate processes as well as platforms and tools are put in place to ensure the flow of strategic knowledge to decision makers to ensure quicker time to market and adaption to market changes. It will also heighten the awareness of the importance of knowledge as corporate asset and knowledge management as critical management tool within respondent organisations.
- *Issue 4: Knowledge is a corporate asset (Q34)*
 - The impact of the agreement amongst respondents on knowledge being a corporate asset is that significant importance should be attached to knowledge and knowledge management on a senior management level. This may position knowledge management at the correct levels in these organisations, ensuring easier and more successful implementation and better utilisation of knowledge due to this positioning. It will also be easier to obtain sufficient funding and general buy-in for their knowledge management programmes.
- *Issue 5: Knowledge management is tied to the business strategy (Q32, Q33)*
 - The agreement amongst respondent organisations indicates that knowledge management is tied to the business strategy indicates that respondents view knowledge management as a strategic issue. This will once again impact the organisations as this will allow the positioning of knowledge management on the correct levels in the organisations and will ensure buy-in. This in turn will lead to easier funding and implementation of knowledge management programmes. The impact is also that knowledge management will be more closely tied to the organisations' customer relationship management and eBusiness initiatives, which are all part of business strategies.
 - The fact that knowledge workers have a perception that knowledge management has a larger role in business opportunity identification will impact the knowledge management programmes negatively as they may not develop to their full potential due to the perception of knowledge workers that they are delivering an adequate service.

The role of knowledge management in eBusiness and customer relationship management

10.2.10. Knowledge management as factor in quicker adoption of the eBusiness model

10.2.10.1. Overview

- In the average respondent profile, there is some satisfaction on the adoption of the eBusiness model.
- The score for this dimension is above average. 2 Respondent Organisations scored higher than 75%, indicating exceptional satisfaction with the role of knowledge management in the adoption of the eBusiness model. 2 out of 5 Respondent Organisations scored between 65% and 75%, indicating satisfaction with the role of knowledge management in the adoption of the eBusiness model. 1 Respondent Organisation scored below 60%, indicating severe problems with the role of knowledge management in the adoption of the eBusiness model.
- From an industry perspective, the Financial Services industry had the highest score with a high level of satisfaction with the status quo. Financial Services was followed by Professional Services and IT, who showed some dissatisfaction with the current status, and Telecommunications, where severe problems exist.
- The perceptions of knowledge workers and other workers on this issue do not differ significantly, except for questions 35 and 37. Knowledge workers perceive knowledge management to play a larger role in allowing staff to adapt to their changing roles in the eBusiness environment rather than other staff does (Q35), and other staff perceives knowledge management as playing a larger role in facilitating the flow of knowledge within organisational and geographical boundaries (Q37).

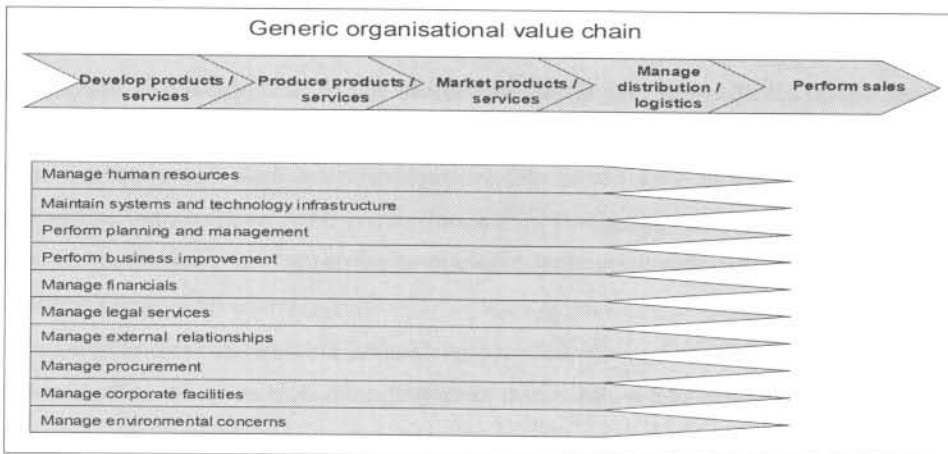


Figure 44. Areas of impact of knowledge management in adopting the eBusiness model

The role of knowledge management in eBusiness and customer relationship management

10.2.10.2. Conclusions

10.2.10.2.a. Possible influencing factors

There are a number of possible factors influencing knowledge management's role in the adoption of the eBusiness model:

- The above average score for this dimension indicates that knowledge management has contributed to the adoption of the eBusiness model. The researcher is of the opinion that this perception may be attributed to the fact that a lot of electronic knowledge sharing platforms have been made available over the last couple of years, within the boundaries of organisations, but also between different organisations. Examples are the use of extranets, which received a relatively high rating from respondents, as well as organisational websites. A lot of business transactions are also taking place electronically, e.g. account payments on the Internet. The researcher believes that the full potential of knowledge management as tool in adopting the eBusiness model has not reached its full potential, but agrees with the respondents that a lot of improvements have been made over the past few years. The implication is that there is still a lot of value to be extracted by organisations in utilising knowledge management in order to speed up the adoption of the eBusiness model in organisations.
- From an industry perspective, the Financial Services industry had the highest score with reference to the role of knowledge management in the adoption of the eBusiness model. This may be due to the fact that Financial Services organisations are knowledge intensive, i.e. would be more inclined to adopt the eBusiness model quicker than other industries. It may also be due to the fact that it is a very competitive industry that focuses on innovation. Telecommunications may have been slower to utilise knowledge management in the adoption of the eBusiness model due to the fact that the focus of cellular organisations were getting the basics of their businesses running smoothly, prior to focusing on areas such as eBusiness models which may at that point have been perceived as "nice to have". The implication is thus that some industries would, due to the nature of the industry, and also due to market conditions be more inclined to adopt the eBusiness model than others.
- The fact that knowledge workers perceive knowledge management to play a larger role in allowing staff to adapt to their changing roles in the eBusiness environment rather than other staff, may be attributed to the fact that knowledge workers most probably have a better idea of what knowledge is available that can assist in the transition than other staff. The implication is that the change management role of knowledge management and the value thereof, as well as the availability of knowledge in this regard, need to be highlighted extensively in organisations adopting both knowledge management and eBusiness as business model.

The role of knowledge management in eBusiness and customer relationship management

- The fact that other staff perceive knowledge management as playing a larger role in facilitating the flow of knowledge within organisational and geographical boundaries than knowledge workers may be attributed to the fact that other staff may have a better understanding of the intricacies of day-to-day operations and the impact knowledge and knowledge management may have on it, than knowledge workers do. The implication is once again that knowledge workers should not be far removed from the day-to-day operations of the business, but should have as clear an understanding of it as other staff does and their work should be integrated into the business.

10.2.10.2b Impact on organisations

The impact of knowledge management in adopting the eBusiness model has a large impact on the whole of the organisational value chain, including core and enabling processes (see Figure 44).

On a strategic level knowledge management can deliver a role in providing and sharing knowledge electronically internally as well as externally, with customers and suppliers relating to core processes of the business, e.g. knowledge on product or service delivery, and customer knowledge. The organisation can therefore portray a knowledgeable image to the market, showing that it understands its customers' and suppliers' needs. Internally knowledge on market segments, as well as knowledge on products and services and associated processes can be shared successfully on an electronic basis, therefore allowing strategic decisions and adaptations to be made quickly and effectively. Employees are also enabled to handle the transition to the eBusiness model more effectively.

On an operational level, knowledge management can play a role in adopting the eBusiness model, by assisting in managing operational knowledge flows internal and external to the organisation, and to ensure access to applicable operational knowledge to staff, customers and suppliers as and when required. On an operational level, knowledge management can also assist in the adoption of the eBusiness model, by enabling the sharing of knowledge relevant to enabling processes, e.g. human resources and information technology management. An example would be to enable technology support staff to access knowledge on how to execute IT support tasks via technology in remote sites or other countries.

The role of knowledge management in eBusiness and customer relationship management

10.2.10.3. Issues: Knowledge management as factor in quicker adoption of the eBusiness model

- *Issue 1: Knowledge management assists the organisation in adapting its value chain to the eBusiness model (Q38)*
 - Some agreement exists on the importance of knowledge management in supporting the different knowledge flows due to changed business processes in the eBusiness model versus the traditional business model.
 - Responses are spread evenly, but with a rather large spread, from 50% to 100%, with Respondent Organisation G (Insurance) ranking the highest and Respondent Organisation C (IT) ranking the lowest. This signifies that the perception of the importance of knowledge management in supporting the different knowledge flows due to changed business processes in the eBusiness model versus the traditional business model, differs vastly.
 - The perceptions of knowledge workers and other workers on this issue do not differ significantly.
- *Issue 2: Knowledge management allows staff to adjust to their new roles through knowledge that enables the transition (Q35)*
 - There is some satisfaction amongst respondents that knowledge management allows staff to adjust to their new roles through knowledge that enables the transition.
 - Respondent Organisation C (IT) perceives knowledge management of much less importance than other respondent organisations in allowing staff to adapt to their changing roles in the eBusiness environment.
 - Knowledge workers perceive knowledge management as playing a larger role in allowing staff to adapt to their changing roles in the eBusiness environment than other staff does.
- *Issue 3: Knowledge management facilitates the implementation of the eBusiness model (Q36, Q37)*
 - There is some satisfaction amongst respondents on the role of knowledge management on the flow of knowledge across as well as within organisational and geographical boundaries.
 - In question 36, responses are spread evenly, but with a rather large spread, from 40% to 80%, with Respondent Organisation D (Professional Services) and Respondent Organisation G (Insurance) ranking the highest and Respondent Organisation E (Telecommunications) ranking the lowest. This signifies that the perception of the importance of knowledge management in facilitating the implementation of the eBusiness model by facilitating knowledge flow across

The role of knowledge management in eBusiness and customer relationship management

organisational and geographical boundaries, differs vastly amongst respondent organisations.

- In question 37, responses are spread evenly, but with a rather large spread, from 50% to 80%, with Respondent Organisation D (Professional Services) and Respondent Organisation G (Insurance) ranking the highest and Respondent Organisation E (Telecommunications) ranking the lowest. This signifies that the perception of the importance of knowledge management in facilitating the implementation of the eBusiness model by facilitating knowledge flow within organisational and geographical boundaries, differs vastly amongst respondent organisations.
- The perceptions of knowledge workers and other workers on this issue do not differ significantly on the extent to which knowledge management facilitates flow of knowledge across geographical and organisational boundaries (Q36), but other staff perceive knowledge management as playing a larger role in facilitating the flow of knowledge within organisational and geographical boundaries (Q37).
- *Issue 4: Knowledge management manages tacit knowledge in the eBusiness model where it is prevalent (Q27)*
 - Severe problems exist in translating tacit knowledge into explicit knowledge in the average profile of respondents (<50%).
 - Responses are spread evenly, but with a rather large spread, from 30% to 60%, with Respondent Organisation E (Telecommunications) and Respondent Organisation G (Insurance) ranking the highest and Respondent Organisation F (Professional Services) ranking the lowest. This signifies that the perception of the extent to which tacit knowledge is converted to explicit knowledge, differs vastly amongst respondent organisations.
 - The perceptions of knowledge workers and other workers on this issue do not differ significantly.
- *Issue 5: Knowledge management supports the different knowledge flows due to changed business processes (Q38)*
 - Some agreement exists on the importance of knowledge management in supporting the different knowledge flows due to changed business processes in the eBusiness model versus the traditional business model.
 - Responses are spread evenly, but with a rather large spread, from 50% to 100%, with Respondent Organisation G (Insurance) ranking the highest and Respondent Organisation C (IT) ranking the lowest. This signifies that the perception of the importance of knowledge management in supporting the different knowledge flows due to changed business processes in the eBusiness model versus the traditional business model, differs vastly.

The role of knowledge management in eBusiness and customer relationship management

- The perceptions of knowledge workers and other workers on this issue do not differ significantly.
- *Issue 6: Knowledge management helps the organisation to cope with more knowledge due to explosion of richness and reach (Q39)*
 - A high level of agreement exists amongst respondents on the importance of knowledge management in assisting the respondent organisations to cope with more knowledge due to an explosion in richness and reach of knowledge in the eBusiness environment.
 - The perceptions of knowledge workers and other workers on this issue do not differ significantly.

10.2.10.4. Conclusions

10.2.10.4.a. Possible influencing factors

- *Issue 1: Knowledge management assists the organisation in adapting its value chain to the eBusiness model (Q38)*
 - The fact that there is some agreement on this issue may be attributed to the fact that the respondent organisations implicitly understand that knowledge flow will change in a changed business model because a changed business model implies some new business processes. The responsible organisations have probably experienced these changes in their eBusiness and customer relationship management endeavours in the recent past. They therefore understand that knowledge management can support the changing processes by enabling the flow of knowledge within these processes in the value chain.
- *Issue 2: Knowledge management allows staff to adjust to their new roles through knowledge that enables the transition (Q35)*
 - The satisfaction amongst respondent organisations on this issue may be attributed to the fact that respondents indicated that knowledge management facilitates transparency in the organisation and has a smaller role in allowing change to take place. Staff may be adjusting to their new positions easier due to the fact that more knowledge is available through knowledge management programmes to assist them in understanding their new responsibilities and where they fit into the bigger picture of the organisation.
 - Other staff view knowledge management's contribution as less than knowledge workers do. This may be attributed to the fact that they have a better understanding of what is available and how it can be applied to other staff. It may also be attributed to the fact that knowledge workers may not have an adequate understanding of what these staff members need to adapt to their changing roles.

The role of knowledge management in eBusiness and customer relationship management

- *Issue 3: Knowledge management facilitates the implementation of the eBusiness model (Q36, Q37)*
 - The satisfaction expressed by respondent organisations may be attributed to the fact that the respondent organisations have implemented knowledge management platforms e.g. extranets, and they have thus experienced first hand that knowledge management assists in implementing the eBusiness model. They may also have experienced the change in knowledge requirements and knowledge flows due to the implementation of eBusiness concepts and can therefore draw a direct correlation between eBusiness and knowledge management. Most of these organisations are also knowledge intensive and may therefore have utilised knowledge as a corporate asset in all endeavours, including eBusiness.
 - The fact that other staff perceive the role of knowledge management in facilitating knowledge flow within organisational and geographic boundaries to be larger than knowledge workers perceive it to be, may be attributed to the fact that they have a better understanding of the value chains of the businesses and the flow of knowledge within these processes and therefore have a better understanding of the impact of the knowledge flow.
- *Issue 4: Knowledge management manages tacit knowledge in the eBusiness model where it is prevalent (Q27)*
 - The below average score of the respondent organisations may be attributed to the fact that there is an over supply of workers in the labour market and organisations know that they can easily replace workers and their knowledge. They therefore do not go to the trouble of trying to retain employees.
- *Issue 5: Knowledge management supports the different knowledge flows due to changed business processes (Q38)*
 - The fact that there is some agreement on this issue may be attributed to the fact that the respondent organisations implicitly understand that knowledge flow will change in a changed business model because a changed business model implies new business processes. The respondent organisations have probably experienced these changes in their eBusiness and customer relationship management endeavours attempted in the recent past. They therefore understand that knowledge management can support the changing processes by enabling the flow of knowledge within these processes in the value chain.
- *Issue 6: Knowledge management helps the organisation to cope with more knowledge due to explosion of richness and reach (Q39)*
 - The high level of agreement amongst respondents on this issue may be attributed to the fact that these organisations may feel more empowered to share,

The role of knowledge management in eBusiness and customer relationship management

harvest and leverage knowledge through the provision of tools, platforms, processes, performance measures and responsibility allocation relating to knowledge management.

10.2.10.4.b. Impact on organisations

- *Issue 1: Knowledge management assists the organisation in adapting its value chain to the eBusiness model (Q38)*
 - The fact that there is some agreement on this issue implies that these organisations understand that knowledge management can support the changing processes by enabling the flow of knowledge within these processes in the value chain. It could impact the organisations in the way they structure their knowledge bases, i.e. by structuring it in a way that supports the organisational value chain and its supporting processes, thereby supporting the execution of the business strategy. It also impacts the organisations as utilising their knowledge bases may assist in making the transition from traditional business to eBusiness quicker, smoother and less cumbersome.
- *Issue 2: Knowledge management allows staff to adjust to their new roles through knowledge that enables the transition (Q35)*
 - The fact that knowledge management assists staff in adjusting to their new roles through provision of knowledge impacts the speed, efficiency and effectiveness to the eBusiness model.
 - The fact that knowledge workers deem knowledge management's role to be larger than other staff does, means that knowledge management may not be utilised to its full potential impact at this point in time.
- *Issue 3: Knowledge management facilitates the implementation of the eBusiness model (Q36, Q37)*
 - The fact that knowledge management is perceived as playing a large role in implementation of the eBusiness model renders it of great importance to these businesses operating in the knowledge economy. The respondent organisations have clearly identified knowledge management as being of critical and strategic importance in the new economy and will therefore be more focused on ensuring maximum value is extracted from knowledge as a corporate asset.
 - The fact that other staff have a better understanding of the value chains of the businesses and the flow of knowledge within these processes and therefore have a better understanding of the impact of the knowledge flow will have a positive impact in the organisations as it will create a heightened awareness on the role and value in these organisations, and also on the way knowledge integrates with business processes in the organisational value chain.

The role of knowledge management in eBusiness and customer relationship management

- *Issue 4: Knowledge management manages tacit knowledge in the eBusiness model where it is prevalent (Q27)*
 - The below average score of the respondent organisations indicate that there are severe problems in retaining knowledge through conversion of tacit knowledge to explicit knowledge. The impact on these organisations is twofold. Firstly it means that if staff leaves the organisation, their knowledge may not easily be replaced and the knowledge and experience of the staff members may be lost to the organisation for good. The second impact is that if the organisations are aware of this, they may be paying a high premium in terms of salaries to try and retain individuals with specialist knowledge that is not easily replaceable.
- *Issue 5: Knowledge management supports the different knowledge flows due to changed business processes (Q38)*
 - The fact that there is some agreement on this issue means that these organisations understand that knowledge management can support the changing business processes by enabling flow of knowledge within these processes in the value chain. It could impact the organisations in the way that they structure their knowledge bases, i.e. by structuring it in a way that supports the organisational value chain and its supporting processes, thereby supporting the execution of the business strategy. It also impacts the organisations as utilising their knowledge bases may assist in making the transition from traditional business to eBusiness quicker, smoother and less cumbersome.
- *Issue 6: Knowledge management helps the organisation to cope with more knowledge due to explosion of richness and reach (Q39)*
 - The impact of this understanding is that the organisation is aware of the potential strategic value that knowledge can add to the business, but also the operational value in terms of more efficient search and retrieval of knowledge both internal and external to the organisation. It implies that knowledge management can prevent the organisations from drowning in a sea of knowledge by extracting those nuggets that are really relevant to their particular organisations.

10.3. Interpretation of and conclusions relating to the performance-importance matrix

For ease of reading, the appropriate figures in Appendix B relating to the performance importance matrix are reproduced here.

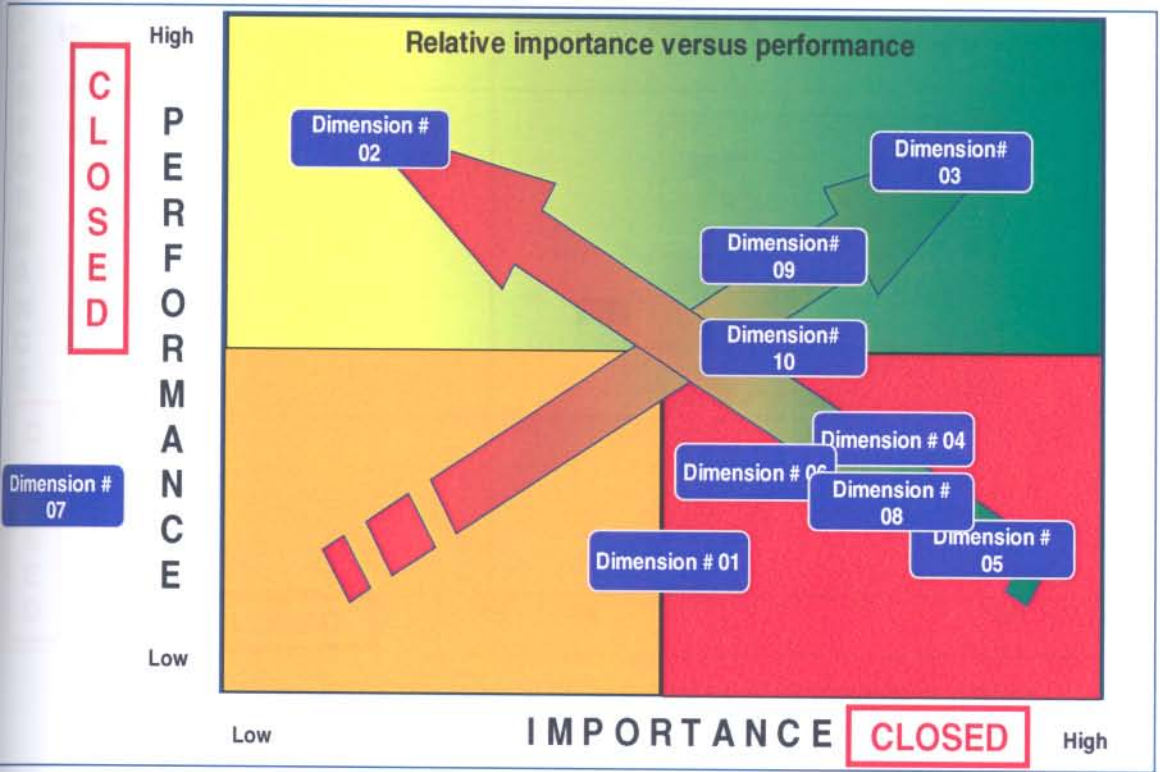


Figure B8. Relative importance versus performance of 10 dimensions

Performance-importance matrix

		Relative Importance	Relative Performance
1	Virtual communities and knowledge sharing	51%	22%
2	Knowledge management as integration and change agent	20%	80%
3	Knowledge management efficiency improvements	80%	80%
4	Increased organisational and knowledge base complexity	71%	32%
5	Pooling of expertise	76%	25%
6	Knowledge management in the learning environment	62%	30%
8	Organisational agility	71%	27%
9	Organisational strategic direction	61%	64%
10	Adoption of the eBusiness model	60%	50%

Figure B9. Performance – importance matrix

The role of knowledge management in eBusiness and customer relationship management



Figure B10. Relative importance versus performance of 10 dimensions in context

In Appendix B, the researcher notes that the performance-importance matrix results indicate that most dimensions that are important to the respondent organisations (Dimensions 1, 4, 5, 6, 8), are not performed well at all. Dimensions that were identified as important but not performing adequately are virtual communities and knowledge sharing, the role of knowledge management in overcoming increased organisational and knowledge base complexity, pooling of expertise, knowledge management in the learning environment and the role of knowledge management in organisational agility. Some dimensions that are important, are, however, being performed well (Dimensions 3, 9 and 10). Dimensions that were identified as performing well and are perceived as being important, are knowledge management efficiency improvements, the role of knowledge management in organisational strategic direction setting, and the role of knowledge management in adoption of the eBusiness model (see Figures B8 & B9). Knowledge management as change and integration agent (Dimension 2) has little importance, though performance is very high. Knowledge management's role in prevention of knowledge attrition ranked off the "relative chart" indicating no importance and no performance *in relative terms* (see Figure B10).

The respondent organisations' knowledge management programmes are not performing well with regards to important knowledge management issues. This may be due to the fact that these organisations have never really prioritised which objectives or dimensions in their knowledge management programmes are the most or the least important, making focus virtually impossible. These dimensions can be difficult to implement, are very organisation and environment specific and haven't been widely implemented in South Africa, i.e. these

The role of knowledge management in eBusiness and customer relationship management

would be greenfields efforts to some extent that the organisations would have to undertake to implement these dimensions fully. This will have enormous time and cost factors associated with it, hence the fact that the organisations are focussing on those areas that are easy to implement and where return on investment is quantifiable and justifiable.

When looking at dimensions that are important and are performed well, the researcher is of the opinion that the focus on efficiency improvements through knowledge management is due to the fact that it is tangible and easily identifiable as being beneficial to the organisation. Well established and tested mechanisms, tools, platforms and processes exist in the market that enable relatively easy implementation for organisations. With reference to the role of knowledge management in setting the strategic direction of the organisation, it may be easy for the respondent organisations to understand the impact of knowledge and knowledge management on strategic planning and decision-making in the organisation, making it easier to design and implement knowledge feeds to the relevant parties requiring the knowledge for strategic planning. The mechanisms required to do this are not complex. As for the adoption of the eBusiness model, the respondents are all knowledge based organisations and most probably understand that the eBusiness environment will be more knowledge based than the traditional business environment. They have therefore made a more conscious effort to focus on knowledge management in their eBusiness endeavours.

Knowledge management as integration and change agent ranked low with reference to importance, and high with reference to performance. The high performance may be due to the fact that generic knowledge sharing as part of other daily change management activities such as management communications, may be seen as a knowledge management activity. An example may be that an organisation communicates a change related message through e-mail vs. posing this message on a discussion forum on a knowledge management system. It is thus not knowledge management in the true sense of the word at play here, but knowledge used as basis for other change management activities. The low importance can be attributed to these organisations not yet understanding the value of knowledge and knowledge management as integration and change agent in the organisation and that knowledge management relates to culture, which enables or disables change and integration. More attention should be given to create an awareness of knowledge management as integration and change agent.

The fact that knowledge management as factor preventing knowledge attrition wasn't seen *relatively* as either performing well or important, is indicative to the researcher that, due to the over supply of labour in South Africa, knowledge and skills are readily available in the market and can be easily replaced, therefore rendering the prevention of knowledge attrition an unimportant objective or knowledge management dimension.

However, it must be understood that the analysis as discussed with reference to closed questions have been analysed in relative terms. When looking at the results in actual terms (refer Figure B10), it is clear that all of the dimensions tested above average in terms of importance as well as performance.

10.4. Interpretation and conclusions relating to the DMAP open questions

In this section, Figures from Appendix B, applicable to each open question, have been reproduced to facilitate easier reading.

10.4.1. Critical requirements for knowledge flow across divisional, organisational and geographical boundaries

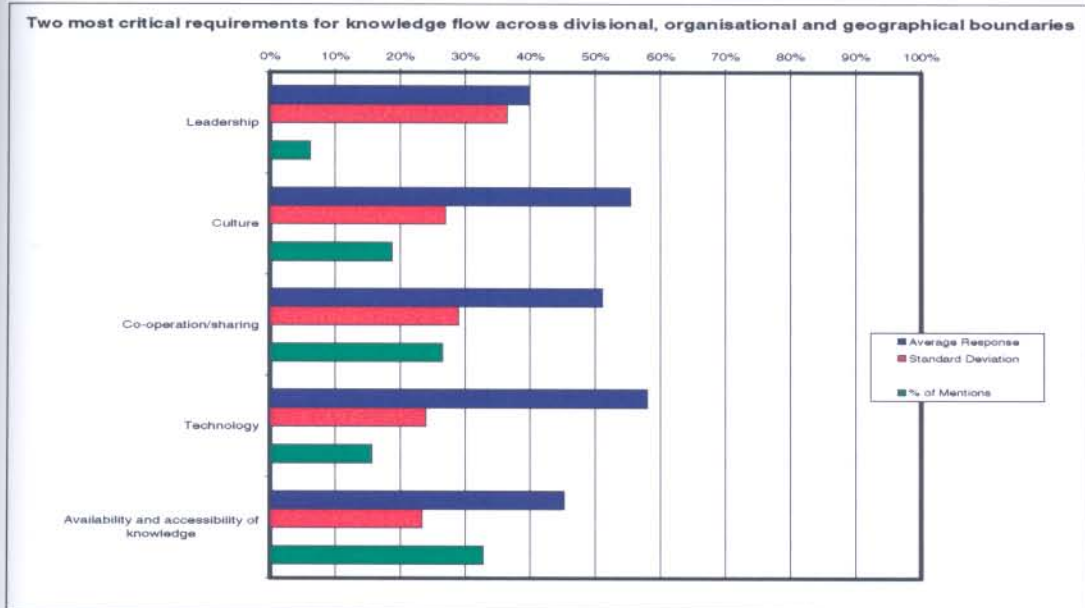


Figure B11. Two most critical requirements for knowledge flow across divisional, organisational and geographical boundaries

The relatively high number of mentions received with reference to the availability and accessibility of knowledge, together with a standard deviation of below 24% shows that this is a factor deemed as important and that is currently performed to some extent across the board, and should be built upon in future. There is also some consensus that technology is critical and is currently utilised to enable knowledge flow across boundaries. These two strategic themes correlate with the dimension of efficiency improvements obtained through knowledge management, where the access and availability of knowledge is the key factor. The results of this question may be indicative of the fact that advances in technology in the last couple of years provides easier and quicker access to higher quality knowledge than

The role of knowledge management in eBusiness and customer relationship management

before. The fact that knowledge is more readily available, e.g. through a single point of access, makes it easier for people to utilise knowledge to improve their efficiency, effectiveness and therefore productivity. Collective improvement in efficiency, effectiveness and productivity therefore has a positive impact on organisations.

The results of this question indicate the following:

- Leadership is not deemed important and is not widely prevalent in the organisations of the majority of respondents. A small percentage of the respondents rated it as having some importance and currently implemented to some extent, with the majority rating it of low importance with limited implementation. The fact that leadership received such a low score may be attributed to the fact that knowledge management is not a top of mind issue on the corporate agenda in South African agendas. It is not seen as a strategic issue and therefore does not receive management attention. The result of this is that knowledge management is currently being implemented on an operational level, rather than a strategic level with limited leadership contribution. The impact of this is that it is not necessarily seen as a priority issue in organisations and will therefore not receive adequate resources to ensure the utilisation and implementation of it to its full potential.
- Culture scored a relatively low percentage for current performance with reference to knowledge flow across boundaries - culture is seen as somewhat important and has been implemented to some degree by selected respondents. Management does not view this as a critical issue. A culture of knowledge management is, however, critical to enable knowledge sharing. The results of this question relate to the low score received in the closed question dimension on virtual communities and knowledge sharing. Due to a lack of knowledge sharing culture, knowledge sharing and the implementation of virtual communities are not successfully impacting the flow of knowledge. The impact of this finding is that organisations do not have an understanding of the importance of having a knowledge sharing culture in the organisation in enabling knowledge flows. Knowledge flow across boundaries will fail if there isn't a culture of knowledge sharing in the organisation and between organisations.
- Knowledge sharing and co-operation has been implemented and is seen as important to some extent. However, it is somewhat more important and has been implemented to a greater extent in some organisations than in others. These results may also be attributed to the fact that some of the respondent organisations are more knowledge intensive than others, as indicated in the previous section. Some are also more geographically spread than others, necessitating effective knowledge flow. The implication is that levels of knowledge sharing will differ in organisations depending on their level of knowledge management maturity with reference to issues such as leadership and culture, but also depending on the nature of the business that may range from extremely knowledge intensive to not extremely knowledge intensive.

The role of knowledge management in eBusiness and customer relationship management

Potential strategic themes were also identified for the open questions prior to drawing up the questionnaire. The open ended strategic themes were aimed at addressing those questions not covered by the closed questions, but relevant to the testing of the hypothesis. For this question, the anticipated strategic themes were:

- Leadership
- Communication
- Co-operation / sharing
- Channels / platforms
- Technology

Communication and the use of channels / platforms were not mentioned by respondents as being critical in the flow of knowledge across boundaries. This perception is confirmed in Question 43, where it is clear that communication is not seen as a primary tool for knowledge sharing or knowledge flow. The fact that channels / platforms were not mentioned explicitly may be due to the fact that channels / platforms were seen as part of technology and the efficiency that technology creates, or it can be tied back to the closed question dimension on the use of virtual communities and knowledge sharing, which received a relatively low score by respondents with reference to performance and importance. It is therefore clear that the anticipated strategic dimensions as defined by the researcher according to the value proposition of knowledge management in eBusiness and customer relationship management in Chapter 8, differed only slightly in the perception of the respondents.

10.4.2. Most prevalent performance measurements relating to knowledge management in your organization

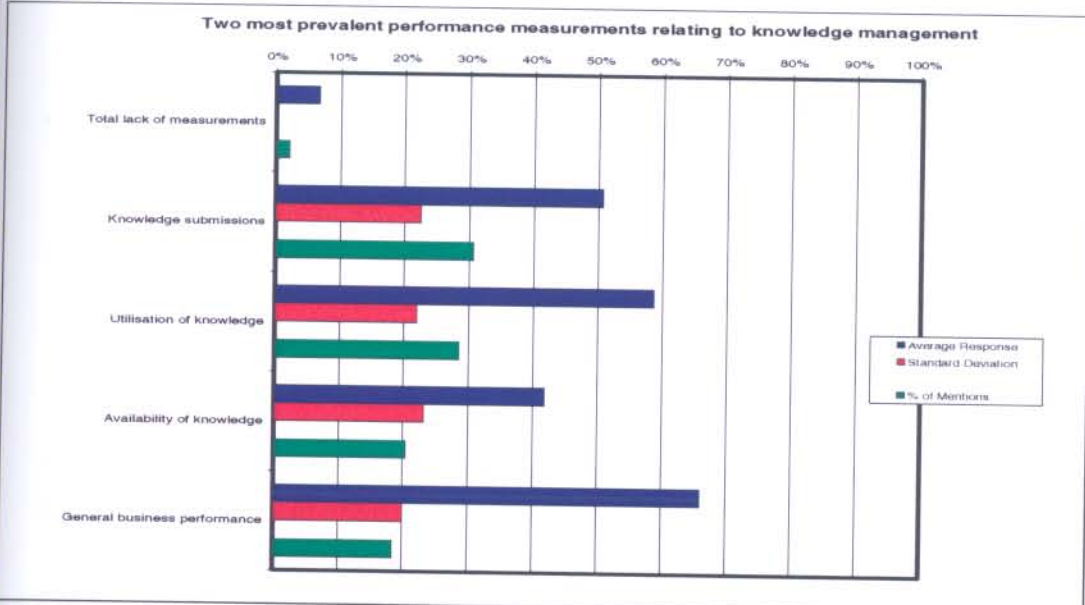


Figure B12. Two most prevalent performance measurements relating to knowledge management

The role of knowledge management in eBusiness and customer relationship management

The survey indicated a below average rating for the performance of the respondents with reference to specific knowledge management performance measures. This may be attributed to the fact that knowledge management is viewed as an integral part of day-to-day business and not seen as something that should be measured separately. On the one hand, this is a positive factor, showing that knowledge management is seen as integrated with the business. On the other hand, it has a negative impact due to the fact that it is not deemed to be making a significant contribution to the business, else it would have been measured alongside other specific areas in the business, e.g. other areas that impact efficiency or productivity. The impact of low performance in the implementation of performance measures for knowledge management is that the respondent organisations do not have a clear understanding of the value added by knowledge management. They also do not have a clear understanding of the impact of changes made to the knowledge management programme as it cannot be measured. The lack of quantifiable return on investment, in turn, may be the reason why knowledge management is not a top of mind issue on the corporate agenda, as stated in the analysis of Question 40.

The results of this question indicate the following:

- The fact that a large number of respondents indicated that knowledge management activity was implicitly measured as part of general business performance of staff results in knowledge management not being explicitly measured and rewarded, making it more difficult to create a knowledge sharing culture and mindset.
- In a very small percentage of organisations, no explicit knowledge management measures exist, i.e. there are no knowledge management measures. The implication for these organisations are that they will find it difficult to demonstrate the value that knowledge management adds to the business, rendering it a non-value adding activity, that in the minds of management, is not worthy of leadership attention on either a strategic or operational level.
- Weak percentage scores were allocated with a high level of agreement to current performance of knowledge submissions, knowledge utilisation and knowledge availability as performance measures. Both knowledge utilisation and submissions received 28-31% of mentions, indicating that it is of some importance to the organisations. The results show that the respondent organisations have limited ways of measuring the effectiveness of their knowledge management programmes. Once again it will be difficult for these organisations to quantify the value that they add to the business.

Potential strategic themes were also identified for the open questions prior to drawing up the questionnaire. The open ended strategic themes were aimed at addressing those questions not covered by the closed questions, but relevant to the testing of the hypothesis. For this question, the anticipated strategic themes were:

The role of knowledge management in eBusiness and customer relationship management

- Participation / behaviour
- Training
- Understanding of knowledge management
- Submissions to databases / measurable knowledge sharing
- Intellectual capital building

The anticipated strategic themes differed somewhat from the respondents' perceptions. Submissions were mentioned in both sets of data. In the anticipated themes, participation / behaviour can be linked to some extent to utilisation of knowledge in the respondents' data. However, training, understanding of knowledge management and intellectual capital building did not feature in the responses at all. This is critical, as in quite a number of questions it was evident that a lack of understanding of the value proposition of knowledge management leads to inefficiencies related to knowledge management and business operations. It is, however, not understood by the respondents that this has a significant impact and is therefore not measured. Training in knowledge management principles and philosophy and in using the knowledge management system and services were not mentioned. This is critical to enable the understanding of the value proposition of knowledge management in the organisation. It is also easy to measure. Intellectual capital building is also not measured, which indicates a relative focus on sharing knowledge that is currently available in the respondent organisations, rather than building on the current knowledge base or filling gaps in the knowledge base. This may be detrimental to the growth of these knowledge management programmes as there is a lack of focus on building the knowledge base as a strategic corporate asset.

The role of knowledge management in eBusiness and customer relationship management

10.4.3. Most essential leadership elements in knowledge management in your organization

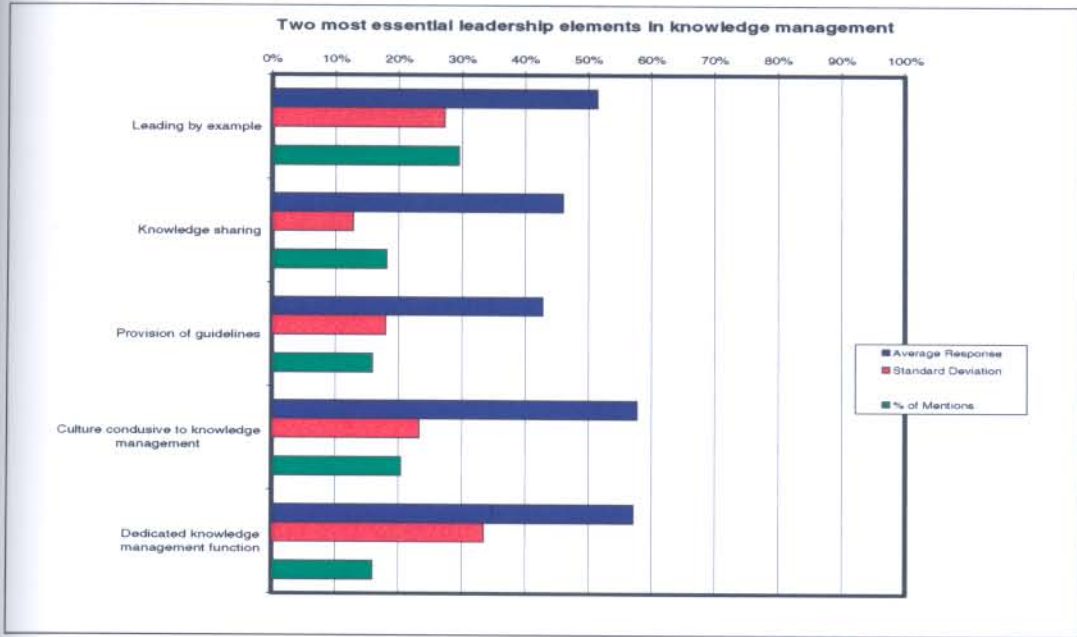


Figure B13. Essential leadership elements in knowledge management

The survey indicated a below average rating for the performance of the respondents with reference to specific knowledge management leadership issues. The fact that leadership received such a low scoring may be attributed to the fact that knowledge management is not a top of mind issue on the corporate agenda of South African organisations. It is not seen as a strategic issue and therefore does not receive management attention. The result of this is that knowledge management is currently being implemented on an operational level, rather than a strategic level. Knowledge management is not seen as a priority issue in organisations and will therefore not receive adequate resources to ensure the utilisation and implementation of it to its full potential. This can be tied back to the closed question dimensions that received a low scoring, e.g. pooling of expertise. It may be that the platforms, tools and processes to enable pooling of expertise haven't been developed due to a lack leadership leading to a lack of funding, human resources, etc, as well as due to a lack of priority attention. The impact of this is that knowledge management in these organisations will find it difficult to reach its full potential, as knowledge is not yet seen as of full strategic importance to the business.

The results of this question indicate the following:

- Culture conducive to knowledge management as leadership element scored the highest with some agreement between respondents on performance. It is, however not a top of mind issue for management to create a knowledge sharing culture though it is critical to enable knowledge sharing. The results of this question relate to the low score received in the closed question dimension on virtual communities and knowledge sharing. Due to a

The role of knowledge management in eBusiness and customer relationship management

lack of knowledge sharing culture, knowledge sharing and the implementation of virtual communities are not successful. The impact of this finding is that organisations do not have an understanding of the importance of having a knowledge sharing culture in the organisation in enabling a knowledge management programme. Knowledge management programmes will fail if there isn't a culture of knowledge sharing within the organisation and between organisations.

- A dedicated knowledge management function is deemed by some organisations as an important leadership element and some have implemented the concept, whilst others have not gone that route at all. This may be attributed to the two viewpoints of knowledge management, the first being that it is everyone's responsibility and should be totally integrated with the business, and the second being that a dedicated knowledge management function is required to ensure leadership focus. The researcher is of the opinion that the implication of these results is that culture as well as leadership and management style may determine which of the two alternatives are chosen. Neither is more correct or applicable than the other, but is dependent on the specific organisational situation. The researcher is of the opinion, however, that given the overall lack of leadership as indicated in previous questions, a dedicated knowledge management function could provide the respondent organisations with some focus and control in their knowledge management programmes.
- Leading by example is ranked second most important leadership element and is seen by all respondents as fairly important, but the high standard deviation shows that respondents differ on the current performance of this leadership element with reference to knowledge management. The fact that leading by example is lacking in some of these organisations may be attributed to the fact that knowledge management is not yet viewed by South African corporates as a top of mind issue. Leaders therefore do not focus on walking the talk in day-to-day operations. The impact is that knowledge management lacks focus and is not currently demonstrated as adding value to the business. Leaders are not entirely convinced of the strategic value that knowledge management can add *in practice*, although there may be some understanding of the value on a theoretical level, i.e. knowledge management is not being implemented to its full potential due to a lack of focus attributed to a lack of understanding of the value proposition of knowledge management.
- Knowledge sharing and provision of guidelines are the two leadership elements that respondents have the most agreement on. The scores for current performance are still below expectation, and the importance is not deemed as high. Once again the researcher is of the opinion that this may be attributed to the fact that, because leaders are not entirely convinced of the value that knowledge management can add to the business, it is not seen as strategic to the business, and therefore the provision of guidelines and knowledge sharing itself is not a focus area of these leaders. On the other hand, it may

The role of knowledge management in eBusiness and customer relationship management

also be that leaders are setting the culture of non-sharing in the organisation through their behaviour, and it is therefore not seen as important by their peers resulting in implementation below expectation.

Potential strategic themes were also identified for the open questions prior to drawing up the questionnaire. The open ended strategic themes were aimed at addressing those questions not covered by the closed questions, but relevant to the testing of the hypothesis. For this question, the anticipated strategic themes were:

- Operational ownership of knowledge management, e.g. knowledge manager
- Top management support
- Dedicated team
- Provision of guidelines
- Leadership communication and general visibility

Operational ownership and a dedicated team can be related to respondents' dedicated knowledge management function strategic theme. Respondents also mentioned provision of guidelines. Top management support and leadership communication and general visibility can be related to leading by example. The only strategic theme that was anticipated but not mentioned by respondents, is culture. This may be due to the fact that employees do not see culture as a factor determined by leadership in an organisation. This level of understanding of the drivers of culture, can make it difficult to change culture to enable or support knowledge management.

10.4.4. Role of communication in knowledge management

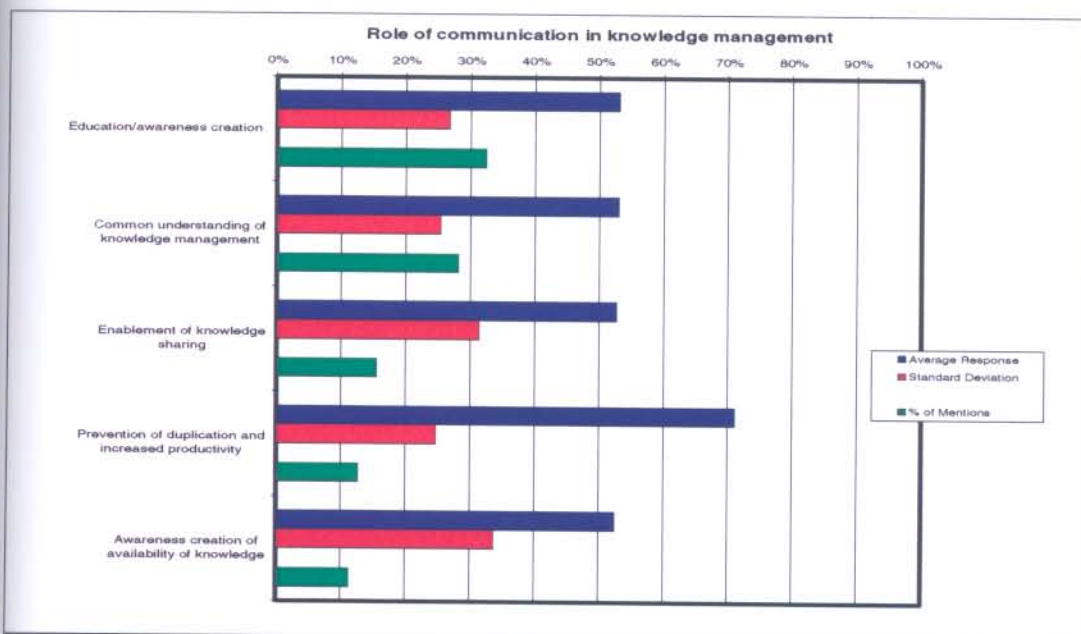


Figure B14. Role of communication in knowledge management

The role of knowledge management in eBusiness and customer relationship management

The survey indicated a below average rating for the performance of the respondents with reference to the role of communication in knowledge management. The researcher is of the opinion that this may be due to the fact that communication in general in these organisations may not be effective and that communication on knowledge management may suffer as a consequence. It may also be attributed to the fact that knowledge workers assume that other staff members understand all platforms, processes, tools and techniques relating to knowledge management and therefore do not communicate adequately on these issues to other staff members.

The results of this question indicate the following:

- Communication is currently applied satisfactorily within the knowledge management environment to ensure increased productivity and to prevent duplication. Although currently performed, it is not deemed as important. From the results the conclusion can be made that the main reason for communicating on knowledge management is to achieve work efficiency and to increase productivity. This may be attributed to the fact that efficiency improvements are currently the main focus of knowledge management in the respondent organisations. Communication in knowledge management is not, however, seen as the most important tool to enhance efficiency compared to other tools, e.g. technology platforms have been implemented which are more effective. The implication is that communication is not utilised to its full potential to enable knowledge management in organisations.
- There are large differences amongst respondent organisations in the awareness creation of the availability of knowledge. Awareness creation of the availability of knowledge is not of primary importance in communication in the knowledge management arena. This may be attributable to the fact that the closed question dimension on efficiency improvements through knowledge management indicated that there is some satisfaction with reference to the use of a single point of access to the knowledge base, and with reference to the availability and navigability of knowledge in the organisations. Availability of knowledge is thus promoted through the single point of access and availability of navigation tools enabling awareness, rather than was traditional communication to make users aware of the availability of knowledge. Once again the impact is that communication is not used to its full potential with reference to creating awareness of the availability knowledge.
- Enabling of knowledge sharing is not perceived as a primary role of communication in the knowledge management arena. This is attributable to the fact that the organisations' knowledge management programmes most probably have specific platforms for knowledge sharing, that are more effective than traditional communication, e.g. virtual communities and discussion groups. Communication as enabler of knowledge sharing has a high standard deviation indicating major differences in different organisations, i.e.

The role of knowledge management in eBusiness and customer relationship management

some of the respondents used traditional communication to share knowledge to a greater extent than others.

- Most organisations deem awareness creation of knowledge management as having some role in communication in the knowledge management arena. The implication is that the role of traditional communication in creating awareness of knowledge management should be a greater area of focus than it currently is to ensure better value. General awareness creation of knowledge management's high standard deviation suggests that organisations differ in the scale of application of this element. This may be attributed to the unique cultures of the organisations and their generic means of communicating.
- Most respondents indicated communication as having some role in gaining a common understanding of knowledge management, suggesting that it should receive more attention in future. The high standard deviation regarding gaining a common understanding of knowledge management suggests that organisations differ in the degree of practical application of this element as part of communication. This may be attributed to the fact that some organisations perceive other tools and means, e.g. training, as more effective in gaining a common understanding of knowledge management, or due to the fact that communication in general in the organisation is poor.

Potential strategic themes were also identified for the open questions prior to drawing up the questionnaire. The open ended strategic themes were aimed at addressing those questions not covered by the closed questions, but relevant to the testing of the hypothesis. For this question, the anticipated strategic themes were:

- Transparency
- Knowledge on what is available
- Timeous access
- Prevention / reduction of duplication
- Better knowledge of the organisation

The only two strategic themes that concurred were knowledge on what is available and prevention of duplication. Respondents did not mention transparency, providing a better understanding of the organisation and timeous access to knowledge through communication of availability of knowledge at the right time, as factors. The researcher is once again of the opinion that traditional communication is not the means for enabling the above-mentioned issues. If one looks at the results of Question 9, for example, relating to the role of knowledge management in providing transparency in the business, respondents rated it quite high, indicating that knowledge management plays a role, but in conjunction with this open question it is clear that transparency is achieved through other knowledge management tools or platforms other than traditional communication. The same principle applies to the other issues.

10.4.5. Most critical operational efficiencies effected by knowledge management

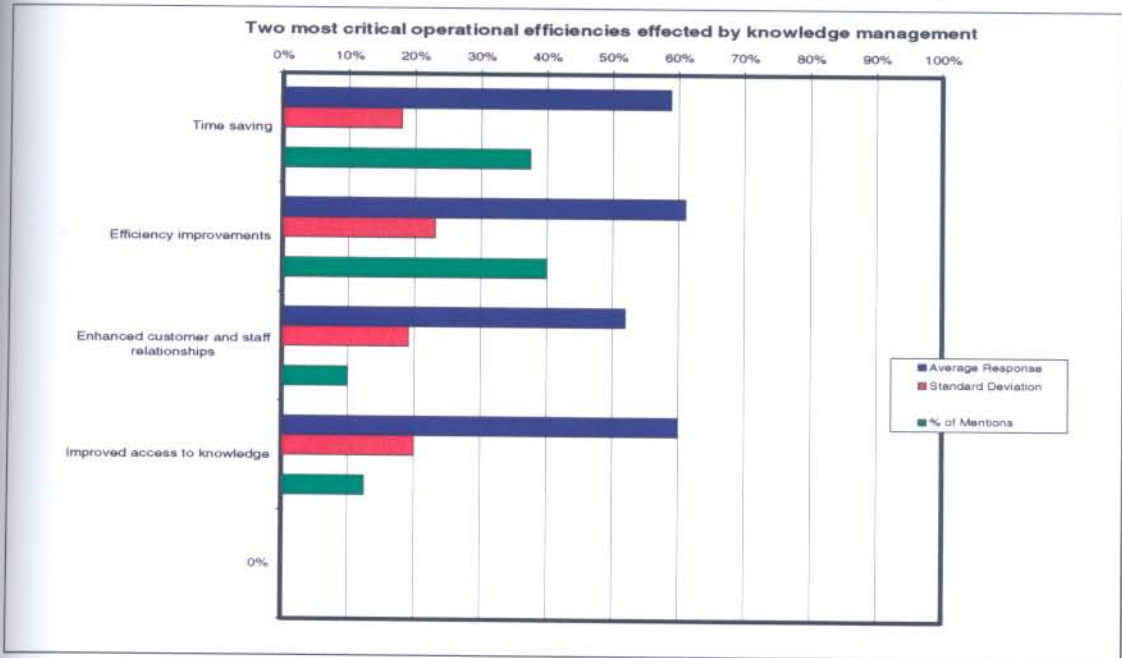


Figure B15. Two most critical operational efficiencies effected by knowledge management

The survey indicated agreement on a below average rating for the performance of the respondents with reference to critical operational efficiencies in knowledge management.

Firstly, the difference in perception in the rating in the closed question on efficiency improvements and this open question, is attributed to the fact that issues the researcher define as operational efficiencies with reference to knowledge management differs from respondents views in this open question. The researcher defines operational efficiencies achieved in much more specific terms, such as providing navigation tools for quicker and more efficient searching, providing a single point of entry, etc. (refer 10.2.3.), whilst the respondents grouped efficiency improvements into four very broad categories, namely time saving, efficiency improvements, enhanced customer and staff relationships and improved access to knowledge.

The results of this question indicate the following:

- A score of 62% for efficiency improvements (defined as working faster and smarter), with some agreement amongst respondents, shows that respondents are not entirely satisfied with the current performance of knowledge management in creating efficiency improvements. It is unclear what this may be attributed to, but the researcher is of the opinion that knowledge management in these organisations may e.g. have a bigger impact or focus in some areas or divisions than in others, thus creating a perception that some improvement can be made. The other fact that it may be attributed to is that

The role of knowledge management in eBusiness and customer relationship management

knowledge management per se is not achieving adequate attention in the organisation as a whole, and therefore leaves room for improvement. Respondents, however, view the issue as important. Although efficiency improvements have not yet been optimised, it is seen as important and therefore leaves room for improvement in the respondent organisations.

- Improved access to knowledge was scored at a level of some dissatisfaction, with reasonable agreement amongst respondents. This finding can be tied to the fact that problems are experienced in the utilisation of virtual communities and knowledge sharing (dimension 1 of the closed questions), as well as the pooling of expertise (dimension 5 of the closed questions), both dimensions which received relatively low scores. It may be attributed to the fact that knowledge management has not been fully developed in these organisations and is therefore not providing adequate tools, technologies and platforms to enable quick and efficient access to knowledge. Although access to knowledge has not yet been optimised, it is seen as important and therefore leaves room for improvement in the respondent organisations. It also indicates that the potential value of knowledge in the business is not extracted.
- Time saving is seen as a critical operational efficiency achieved through knowledge management, even though the current performance is perceived as inadequate. Current time saving through the use of knowledge management tools and techniques may currently not be optimised due to the fact that knowledge management is a relatively new concept and all staff may not be equally trained to use knowledge management systems, or they may not even be aware of the value that it can add in saving time in their day-to-day work practices. The fact that it is seen as critical to the business implies that this should be a focus area for respondent organisations in extracting maximum value from their knowledge management programmes and to ensure more efficient customer service and therefore improved customer relationships.
- Enhanced customer and staff relationships received a relatively low score for current performance with agreement amongst respondents. Knowledge management therefore plays only a limited role in enhancing staff and customer relationships. It is also not really a top of mind issue currently. The researcher is of the opinion that this may be due to the fact that employees do not make the connection between access and availability of knowledge with improved internal and external service and therefore improved customer and employee relationships. Staff is not aligned with reference to the potential value that knowledge can add in these relationships. The impact is that maximum value of knowledge management is not unlocked in the organisations, and therefore their service quality and culture is impacted negatively. Creating an understanding of the value proposition of knowledge management in improving customer and employee relationships should therefore be a future focus area in respondent organisations, to ensure value creation.

Potential strategic themes were also identified for the open questions prior to drawing up the questionnaire. The open ended strategic themes were aimed at addressing those questions not covered by the closed questions, but relevant to the testing of the hypothesis. For this question, the anticipated strategic themes were:

- Process efficiency
- Prevention of duplication
- Improved relationship management
- Improved and increased knowledge sharing
- Management of knowledge attrition

Improved and increased knowledge sharing relates to improved access to knowledge as stated by respondents, whilst process efficiency relates to efficiency improvements as mentioned by respondents, and improved relationship management relates to enhanced customer and staff relationships as mentioned by respondents. Prevention of duplication can indirectly be linked to time saving as mentioned by respondents. Management of knowledge attrition was not mentioned at all by respondents. This is clearly not a top of mind issue for respondents, as indicated in the dimension on knowledge attrition in the closed questions.

This means, however, that organisations can lose a lot of knowledge strategic to the organisation. This issue needs to receive a lot more attention from management in future to ensure that knowledge is retained by the organisations, thus extracting maximum value.

10.4.6. Most critical strategic efficiencies effected by knowledge management

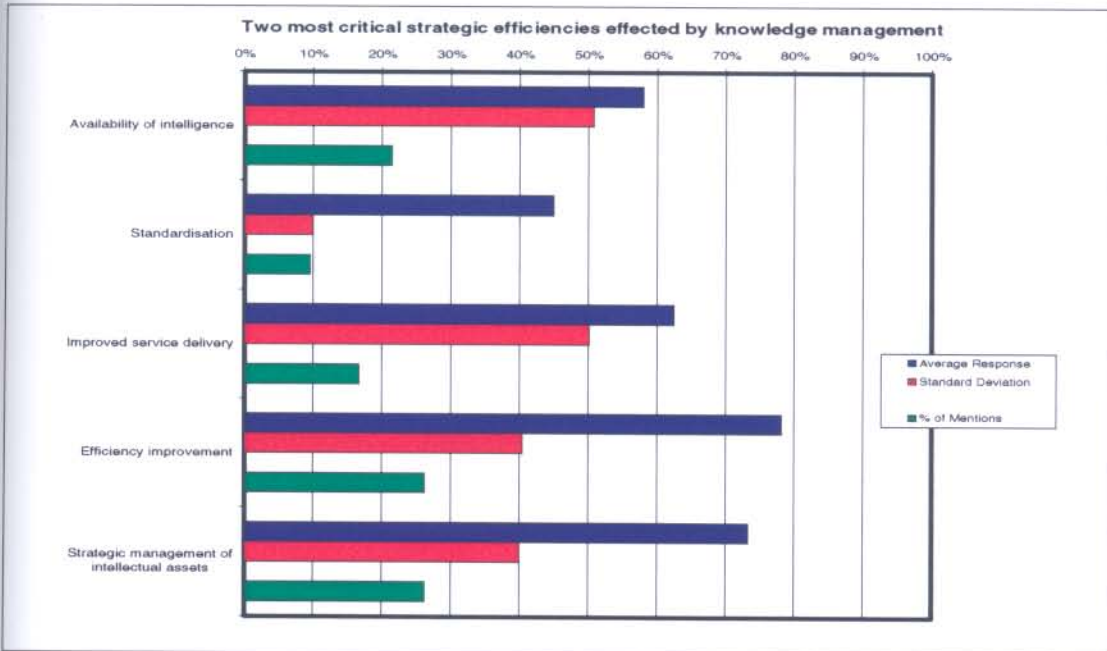


Figure B16. Two most critical strategic efficiencies effected by knowledge management

The role of knowledge management in eBusiness and customer relationship management

The survey indicated an average rating for the performance of the respondents with reference to critical strategic efficiencies in knowledge management. The results indicate a slightly lower score than the closed question dimensions on knowledge management's role in organisational agility, in setting organisational strategic direction and the adoption of the eBusiness model. The average rating may be attributed to the fact that South African organisations have recently become aware that they are operating in the knowledge economy and that knowledge is an asset as important as labour, capital or land. Due to this increased awareness, these organisations are extracting some value from knowledge available to them, more than before. This may also be due to the fact that, with the advent of technology and management systems, more knowledge is available to them on a global basis to extract value from. The impact is that South African companies are waking up to the fact that knowledge can provide them with a competitive edge in terms of determining of strategic direction, and are therefore standing on the brink of a new era where knowledge and the access to and management thereof will become the main differentiating factor for businesses. The realisation of the value of knowledge and knowledge management has, however, only been implemented or realised on a limited scale, and therefore a lot of potential for future exploitation exists. It is, however, also interesting to note a high discrepancy in opinion amongst respondents, indicating the performance being high in some respondent organisations, and low in others. This may be due to the fact that some of the respondent organisations are more knowledge intensive than others.

The results of this question indicate the following:

- Current performance with reference to strategic efficiency improvements (e.g. faster and more effective decision-making) had a high average score, but there is some disagreement amongst respondents of the degree of current performance. This may be due to the fact that some of the respondent organisations are more knowledge intensive than others, and were therefore quicker to realise the strategic impact of knowledge on their businesses, thus affecting the level of current performance. Strategic efficiency improvements were indicated as having some importance. Both the current performance and importance rating of the organisations with reference to strategic efficiencies indicate that the strategic value of knowledge and knowledge management has not yet been fully understood by the respondent organisations, or has not achieved the focus it deserves. Organisational agility can be improved vastly if this aspect receives more attention and gains more focus.
- Strategic management of intellectual assets also obtained a high score, but it is more important to some respondents than others. Respondents indicated relative importance of strategic management of intellectual assets. Once again, this may be due to the fact that some of the respondent organisations are more knowledge intensive than others, and were therefore quicker to realise the strategic impact of knowledge on their businesses,

The role of knowledge management in eBusiness and customer relationship management

thus affecting the level of current performance. Strategic management of intellectual assets were indicated as having some importance. Both the current performance and importance rating of the organisations with reference to strategic management of intellectual assets indicate that the strategic value of knowledge and knowledge management has not yet been fully understood by the respondent organisations, nor has it achieved the focus it deserves. Organisational agility can be improved vastly if this aspect receives more attention and gains more focus.

- Improved service delivery due to knowledge management leaves room for improvement according to the respondents. In some organisations this is achieved in practice, whilst in other organisations it is not the case at all. This may be due to the fact that most organisations have not yet fully implemented formalised customer relationship management programs through which customer knowledge can be used to improve service delivery. It is therefore difficult to fully understand the impact of knowledge management on the service delivery. Improved service delivery is not deemed as significant, also indicating that employees do not understand the value that knowledge can add in building and improving customer relationships. This is an area of potential improvement in future to ensure value extraction from knowledge in order to improve organisational efficiency in delivering products and services to the market.
- Availability of intelligence leaves room for improvement in this area. It has been implemented by some organisations and not at all or to a lesser extent by others. This may be due to the fact that most organisations do not yet have highly sophisticated knowledge management systems that, in conjunction with business intelligence systems, can deliver intelligence to the organisation. Some importance is attached to the availability of intelligence, which indicates this as an area of future focus for the respondent organisations to ensure organisational agility.
- Standardisation was the only theme on which there was significant agreement and it received an unsatisfactory score of 45%. This may be due to the fact that respondent organisations may have different knowledge management endeavours in the business that are not integrated. It may also be due to the fact that formal standards have not been set as yet within the knowledge management programmes. It is also not perceived as important by the respondents. Standardisation is thus not viewed as critical, although one of the principles of knowledge management is standardisation to some extent. This may therefore indicate that there is a lack of understanding on the philosophy of knowledge management, which needs to be rectified in the future.

Potential strategic themes were also identified for the open questions prior to drawing up the questionnaire. The open ended strategic themes were aimed at addressing those questions not covered by the closed questions, but relevant to the testing of the hypothesis. For this question, the anticipated strategic themes were:

The role of knowledge management in eBusiness and customer relationship management

- Management of knowledge as strategic asset
- Efficient decision-making
- Increased organisational agility
- Knowledge strategy assists in execution of business strategy
- Increases organisational capacity to expand customer base and global reach

The only strategic theme that was identical was the theme on management of knowledge as strategic asset, which concurred with strategic management of intellectual assets as mentioned by respondents. Respondents were not able to focus on true strategic issues, which may be attributed to the positions of the respondent individuals representing their respective organisations. The respondents were more operationally focused when responding to the questionnaire, although some of their strategic themes had some strategic elements to it. It did not, however, focus on increased organisational agility, efficient decision-making, increased organisational capacity and reach and support in the execution of the business strategy, which were identified by the researcher in Chapter 8 as part of the value proposition of knowledge management in eBusiness and customer relationship management. It does, however, indicate a current operational focus on knowledge management and reflects the position of knowledge management in the business.

11. RELATION OF DMAP FINDINGS TO HYPOTHESIS

The purpose of this chapter is to align the findings of the DMAP to the hypothesis as stated in Chapter 8. This chapter focuses on Phase 3 in Figure 45, with specific reference to mapping the influencing factors and organisational impact and to the hypothesis.

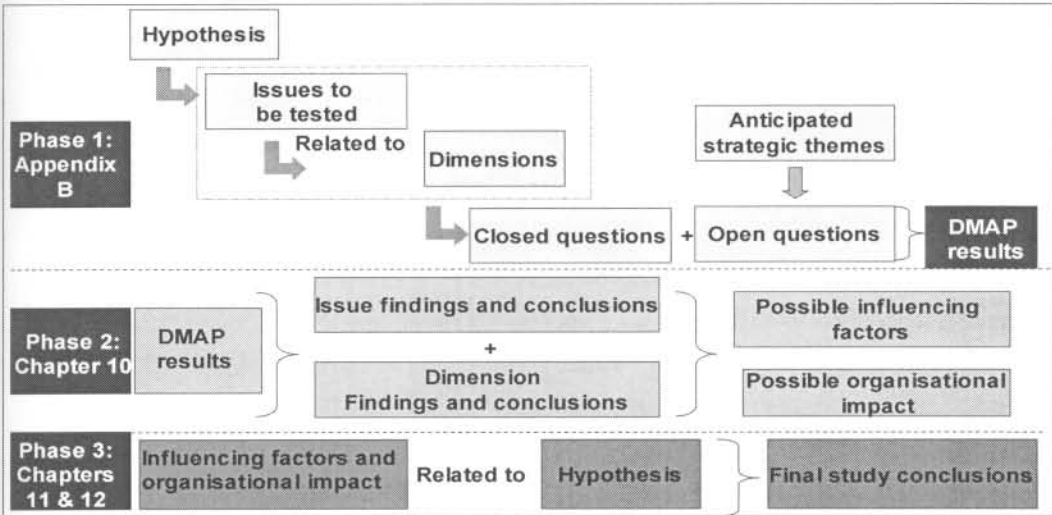


Figure 45. Approach of testing hypothesis and formulating conclusions and recommendations

The role of knowledge management in eBusiness and customer relationship management

11.1. Closed questions: comparison of findings per strategic dimension

STRATEGIC DIMENSION	HYPOTHESIS	DMAP FINDINGS
1. Virtual communities and knowledge sharing	<ul style="list-style-type: none"> • Issue 1: Knowledge management has a vital role in the retention and structuring of knowledge shared in virtual communities / collaborative forums (Q2 & Q3) • Issue 2: Knowledge management can ensure the transfer of tacit knowledge to explicit knowledge within collaborative forums / virtual communities (Q27) • Issue 3: Knowledge management provides tools and platforms for virtual communities / knowledge sharing (Q4) • Issue 4: Knowledge management ensures management of website content (Q5) • Issue 5: Virtual communities / collaboration leads to efficiency and productivity improvements due to sharing of knowledge (Q6) • Issue 6: Virtual communities, with specific reference to extranets, play a larger role in the eBusiness arena in terms of sharing knowledge with customers / suppliers (Q1) 	<ul style="list-style-type: none"> • Low score indicating severe problems • Low score indicating severe problems • Respondents not entirely satisfied • Low score indicating severe problems • Low score indicating severe problems • Respondents satisfied with current situation

STRATEGIC DIMENSION	HYPOTHESIS	DMAP FINDINGS
2. Knowledge management as integration and change agent	<ul style="list-style-type: none"> • Issue 1: Knowledge management facilitates integration inter- and intra-organisation (Q7, Q8, Q9) • Issue 2: Knowledge management provides transparency in the organisation (Q9) • Issue 3: Knowledge management is embedded in day to day work (Q18) • Issue 4: Knowledge management institutionalises customer relationship management (Q1, Q14, 15, 21) 	<ul style="list-style-type: none"> • High score indicating exceptional agreement • High score indicating exceptional agreement • Low score indicating severe problems • Respondents satisfied with current situation

The role of knowledge management in eBusiness and customer relationship management

<i>STRATEGIC DIMENSION</i>	<i>HYPOTHESIS</i>	<i>DMAP FINDINGS</i>
3. Knowledge management efficiency improvements due to knowledge management standards	<ul style="list-style-type: none"> • Issue 1: Knowledge management provides a single point of entry to the knowledge base (Q19) • Issue 2: Knowledge management provides 24-hour access to knowledge (Q10) • Issue 3: Knowledge management prevents duplication and encourages reuse of knowledge in different contexts (Q11, Q12) • Issue 4: Knowledge management provides navigation ability, making searches easier (Q13) • Issue 5: Standardised customer knowledge leads to better customer service through having one view of the customer (Q21) • Issue 6: Knowledge management provides an understanding of the flow of knowledge (Q17) 	<ul style="list-style-type: none"> • Low score indicating severe problems • High score indicating exceptional agreement • High score indicating exceptional agreement • High score indicating exceptional agreement • High score indicating exceptional agreement • High score indicating exceptional agreement

<i>STRATEGIC DIMENSION</i>	<i>HYPOTHESIS</i>	<i>DMAP FINDINGS</i>
4. Knowledge management as factor that overcomes organisational and knowledge base complexity	<ul style="list-style-type: none"> • Issue 1: Knowledge management provides a single point of entry to the knowledge base (Q19) • Issue 2: Knowledge management allows flow of knowledge across divisions and between organisations and geographical locations (Q17) • Issue 3: Knowledge management is embedded into day to day work (Q18) • Issue 4: Knowledge management provides navigation ability, making searches easier (Q22) • Issue 5: Importance of identification of tacit knowledge sources in overcoming increasing organisational and knowledge base complexity (Q16) 	<ul style="list-style-type: none"> • Low score indicating severe problems • High score indicating exceptional agreement • High score indicating exceptional agreement • High score indicating exceptional agreement • High score indicating exceptional agreement

<i>STRATEGIC DIMENSION</i>	<i>HYPOTHESIS</i>	<i>DMAP FINDINGS</i>
5. Pooling of expertise in one central interface with internal and external parties	<ul style="list-style-type: none"> • Issue 1: Knowledge management provides a single point of entry to the knowledge base inter-and intra organisational (Q19; Q20; Q21) • Issue 2: Knowledge management facilitate easier and quicker access to knowledge due to structure (Q22) • Issue 3: Knowledge management provides useful structure to the knowledge base (Q23) 	<ul style="list-style-type: none"> • Respondents not entirely satisfied • High score indicating exceptional agreement • Respondents not entirely satisfied

The role of knowledge management in eBusiness and customer relationship management

<i>STRATEGIC DIMENSION</i>	<i>HYPOTHESIS</i>	<i>DMAP FINDINGS</i>
6. Knowledge management as creator of environment of innovation, learning and improved communication	<ul style="list-style-type: none"> • Issue 1: Knowledge management increases the quality and speed of innovation (Q24) • Issue 2: Knowledge management leads to accelerated learning and skills development on individual, team and organisational level (Q25) • Issue 3: Knowledge management increases efficiency and productivity (Q26) 	<ul style="list-style-type: none"> • Low score indicating severe problems • High score indicating exceptional agreement • Respondents not entirely satisfied

<i>STRATEGIC DIMENSION</i>	<i>HYPOTHESIS</i>	<i>DMAP FINDINGS</i>
7. Knowledge management as measure to prevent knowledge attrition	<ul style="list-style-type: none"> • Issue 1: Tacit knowledge must be converted into explicit knowledge in stead of trying to retain employees (Q27) 	<ul style="list-style-type: none"> • Low score indicating severe problems

<i>STRATEGIC DIMENSION</i>	<i>HYPOTHESIS</i>	<i>DMAP FINDINGS</i>
8. Knowledge management as factor that increases knowledge management agility	<ul style="list-style-type: none"> • Issue 1: Knowledge management increases the quality and speed of decision-making (Q28) • Issue 2: Knowledge management increases organisational agility through faster decision making and quicker adaption to market changes (Q29, Q30) • Issue 3: Availability of knowledge leads to increased organizational agility (Q35) 	<ul style="list-style-type: none"> • Respondents not entirely satisfied • High score indicating exceptional agreement • High score indicating exceptional agreement

<i>STRATEGIC DIMENSION</i>	<i>HYPOTHESIS</i>	<i>DMAP FINDINGS</i>
9. Knowledge management as input in determining the organisation's strategic direction	<ul style="list-style-type: none"> • Issue 1: Knowledge management increases the quality and speed of decision-making (Q28) • Issue 2: Availability of knowledge at the right time to the right people increases organisation's agility (Q29) • Issue 3: Knowledge management provide the organisation with knowledge strategic to the business (Q32) • Issue 4: Knowledge is a corporate asset (Q34) • Issue 5: Knowledge management is tied to the business strategy (Q32, Q33) 	<ul style="list-style-type: none"> • Respondents not entirely satisfied • High score indicating exceptional agreement • High score indicating exceptional agreement • Respondents satisfied with current situation • High score indicating exceptional agreement

The role of knowledge management in eBusiness and customer relationship management

STRATEGIC DIMENSION	HYPOTHESIS	DMAP FINDINGS
<p>10. Knowledge management as factor in quicker adoption of the eBusiness model</p>	<ul style="list-style-type: none"> Issue 1: Knowledge management assists the organisation in adapting its value chain to the eBusiness model (Q38) Issue 2: Knowledge management allows staff to adjust to their new roles through knowledge that enables the transition (Q35) Issue 3: Knowledge management facilitates the implementation of the eBusiness model (Q36, Q37) Issue 4: Knowledge management manages tacit knowledge in the eBusiness model where it is prevalent (Q27) Issue 5: Knowledge management supports the different knowledge flows due to changed business processes (Q38) Issue 6: Knowledge management helps the organisation to cope with more knowledge due to explosion of richness and reach (Q39) 	<ul style="list-style-type: none"> Respondents not entirely satisfied Respondents not entirely satisfied Respondents not entirely satisfied Low score indicating severe problems Respondents not entirely satisfied High score indicating exceptional agreement

11.2. Open questions: comparison of findings according to strategic themes

QUESTION 40	ANTICIPATED STRATEGIC THEMES	DMAP RESPONDENT STRATEGIC THEMES
Describe the two most critical requirements for knowledge flow across divisional, organisational and geographical boundaries	<ul style="list-style-type: none"> Leadership Communication Co-operation / sharing Channels / platforms Technology 	<ul style="list-style-type: none"> Leadership Culture Co-operation/sharing Technology Availability and accessibility of knowledge

QUESTION 41	ANTICIPATED STRATEGIC THEMES	DMAP RESPONDENT STRATEGIC THEMES
Describe the two most prevalent performance measurements relating to knowledge management in your organisation	<ul style="list-style-type: none"> Participation / behaviour Training Understanding of knowledge management Submissions to databases / measurable knowledge sharing Intellectual capital building 	<ul style="list-style-type: none"> Total lack of measurements Knowledge submissions Utilisation of knowledge Availability of knowledge General business performance

QUESTION 42	ANTICIPATED STRATEGIC THEMES	DMAP RESPONDENT STRATEGIC THEMES
Describe the two most essential leadership elements in knowledge management in your organisation	<ul style="list-style-type: none"> Operational ownership of knowledge management, e.g. knowledge manager Top management support Dedicated team Provision of guidelines Leadership communication and general visibility 	<ul style="list-style-type: none"> Leading by example Knowledge sharing Provision of guidelines Culture conducive to knowledge management Dedicated knowledge management function

The role of knowledge management in eBusiness and customer relationship management

QUESTION 43	ANTICIPATED STRATEGIC THEMES	DMAP RESPONDENT STRATEGIC THEMES
Describe the role of communication in knowledge management	<ul style="list-style-type: none"> • Transparency • Knowledge on what is available • Timeous access • Prevention / reduction of duplication • Better knowledge of the organisation 	<ul style="list-style-type: none"> • Education / awareness creation • Common understanding of knowledge management • Enablement of knowledge sharing • Prevention of duplication and increased productivity • Awareness creation of availability of knowledge

QUESTION 44	ANTICIPATED STRATEGIC THEMES	DMAP RESPONDENT STRATEGIC THEMES
Describe the two most critical operational efficiencies effected by knowledge management	<ul style="list-style-type: none"> • Process efficiency • Prevention of duplication • Improved relationship management • Improved and increased knowledge sharing • Management of knowledge attrition 	<ul style="list-style-type: none"> • Time saving • Efficiency improvements • Enhanced customer and staff relationships • Improved access to knowledge

QUESTION 45	ANTICIPATED STRATEGIC THEMES	DMAP RESPONDENT STRATEGIC THEMES
Describe the two most critical strategic efficiencies effected by knowledge management	<ul style="list-style-type: none"> • Management of knowledge as strategic asset • Efficient decision-making • Increased organisational agility • Knowledge strategy assists in execution of business strategy • Increases organisational capacity to expand customer base and global reach 	<ul style="list-style-type: none"> • Availability of intelligence • Standardisation • Improved service delivery • Efficiency improvements • Strategic management of intellectual assets

11.3. Hypothesis in the South African context: proved or disproved?

From the analysis above, it is clear that the hypothesis as stated in Chapter 8 *has been neither proved nor disproved with specific reference to the South African context, with reference to both importance and performance*. On some issues a high level of agreement exists, whilst on other issues there are severe problems, and a high level of disagreement exists. The researcher is of the opinion that the issues in the hypothesis, as formulated based on the literature used, that have not been entirely proved, may be attributed to factors specific to the South African business environment and economy. These factors, and possible ways to address them, include:

- **Understanding of the value proposition of knowledge management and how knowledge management integrates with the business**

According to the results of this study, it seems that South African organisations attach *importance* to strategic knowledge to ensure competitiveness and innovation in the marketplace. It seems that knowledge and knowledge management is used to innovate in order to design new products and services and to build or assemble these new products and services, and to *implement or execute* these new strategies, but it does not play a significant part in the *strategic decision-making process*. **South African organisations**

thus understand the strategic importance of knowledge and knowledge management, but only apply knowledge and knowledge management on an operational level. This is supported by the fact that knowledge management is not integrated into the business, e.g. into the business process value chain, but is implemented as an administrative function. This also ties into the fact that there seems to be a lack of leadership for knowledge management initiatives and no apparent measurement of the return on investment of these programmes, indicating that it is seen as very much an operational issue and not a strategic, top of mind issue. Once again, however, it must be emphasized that the organisations *perceptually* understand the value at a strategic level, but it has not yet been *implemented* on a strategic level. South African organisations face two unique challenges to overcome this. The first challenge is to extract maximum value from knowledge and knowledge management on a strategic level. To enable these organisations to extract the value from knowledge management, they firstly need to understand the value that knowledge and knowledge management can provide on a strategic level. These organisations need to appoint leaders to drive knowledge management with a strategic agenda, ensuring that it is tied to the business strategy and supports strategic decision-making and adaption to changes in the marketplace. The knowledge management sponsor should also link the strategic and operational application of knowledge and knowledge management by linking knowledge to the business process value chain of the organisation, which in turn assists in execution of the business strategy. Through the linkage of knowledge and knowledge management to the organisational value chain, knowledge and knowledge management will be embedded in the day-to-day activities of employees, allowing knowledge management to become an integral part of the business.

- **Technology**

Knowledge management technology has a limited impact in South African organisations compared to countries like the UK and US, as there are not as many large corporations in South Africa that can afford sophisticated knowledge management technology as there are in other countries. Due to the limited application of technology, knowledge management programmes may also be limited with reference to knowledge management systems. This does not, however, preclude other knowledge management activities in these organisations. The implication is that organisations may not all have sophisticated technology based knowledge management systems, but they may have other processes, platforms and tools in place to assist in knowledge management. South African organisations can therefore not be compared to international organisations with reference to knowledge management systems, simply because the utilisation of sophisticated knowledge management technology is limited due to cost, size of organisations and other factors. South African organisations that cannot afford sophisticated knowledge management technology are faced with a challenge to structure their knowledge

management programmes in such a way to achieve maximum value from knowledge without or with limited support of technology. These organisations will have to focus heavily on their knowledge management processes (specifically knowledge flow processes) to ensure that the knowledge cycle of creation, sharing, harvesting and leveraging is optimised. For those organisations that can afford sophisticated technology, the challenge will be to apply the technology optimally to support the knowledge management programme.

- **Labour market**

Currently an over supply of labour, both skilled and unskilled, exists in the labour market in South Africa. This results in organisations finding it easy to replace employees and their skills, knowledge and expertise. This means that organisations need not have a strong focus on trying to retain knowledge in the organisation through knowledge management as they could easily replace that knowledge through appointing other individuals. This situation differs from other countries globally where there may be a labour shortage, or where it may be difficult to replace specialist knowledge and where the focus would therefore be on retaining knowledge through knowledge management. South African organisations are in a fortunate situation that if they lose key individuals in their organisation, their knowledge can be replaced fairly easily due to the over supply of labour. Organisations need to reflect on the fact, however, that skills and experience are more difficult to replace than knowledge and that these elements may still be lost when people leave the organisation. It may therefore be to their advantage to focus on retaining knowledge and some experience in the organisation through knowledge management programmes aimed at capturing tacit knowledge and transferring of skills and experience.

- **Limited implementation scale**

South Africa cannot be compared to countries like the UK and US with reference to the number of large corporates where highly sophisticated knowledge management programmes may be prevalent. In South Africa there are a small number of large corporates where knowledge management can and have been fully implemented. Most organisations do not have the capacity to implement knowledge management on a large scale. South African organisations also differ with reference to geographic spread. There are once again a small number of corporates that operate internationally, compared with a large number of organisations in other countries, e.g. in the US or UK, that operate internationally. Most organisations therefore have a local focus, which means that the need for sophisticated knowledge management programmes may not be as great as in other countries. This also influences the way that knowledge management is implemented in South African organisations. It seems that South African organisations are following a fragmented implementation approach rather than a "big bang" approach. They are more likely to implement knowledge management e.g. in specific divisions or in

specific areas of focus within the organisation. South African companies must be aware that the scale and sophistication requirements of their knowledge management programmes will be different than those of overseas organisations. Local companies should adapt programmes to suit their needs. The researcher is of the opinion that many knowledge management programmes in South Africa have failed due to the fact that organisation slavishly implemented copies of overseas programmes without adapting it to local conditions and requirements. Organisations should therefore ensure that local conditions and requirements are taken into account when designing and implementing knowledge management programmes.

- **Literacy levels and language differences**

There is a high level of limited literacy in South Africa. This means that knowledge management programmes will differ from those countries like the US and UK where there are high levels of literacy. Examples may be in using touch screen knowledge management systems with graphic images denoting specific knowledge nuggets or activities, which may be easier to use for people with limited literacy than text based systems. This may be especially applicable in certain industries e.g. mining, manufacturing, environmental management, conservation, etc. Having 11 official languages and some European languages spoken in South Africa, may also render knowledge management a concept that is more difficult to implement compared to countries like the UK where one language is dominant. South African organisations are therefore faced with many unique challenges relating to the country specific conditions with reference to number of languages and literacy levels and will not necessarily follow the American or European models of knowledge management implementations. Organisations must take language differences and literacy levels into account when designing and implementing knowledge management programmes. Once again this will differ from organisation to organisation and by nature makes knowledge management programmes in South African organisations very unique to each particular organisation.

- **“Knowledge is power” syndrome**

Due to the over supply of labour in South Africa, the labour market is fiercely competitive. Knowledge, skills and experience are what set an individual apart from another to ensure that they can obtain a position in an organisation and retain it. The “knowledge is power” syndrome may therefore be much more prevalent in South Africa than in other countries where there isn’t such a huge over supply of labour. Knowledge sharing and knowledge management programmes may therefore be more difficult to implement in South Africa and will have unique challenges to face. The fact that “knowledge is power” is a prevalent syndrome in the South African marketplace will pose unique challenges to South African knowledge management programmes. Organisations will have to have incentive schemes in place to ensure that people are willing to share their knowledge with others. They would also have to have strong performance measurements relating to knowledge

management in place to encourage participation in knowledge management and in knowledge sharing in particular. Organisations will also have to have a strong focus on creating a culture of knowledge management and embedding knowledge management in day-to-day activities to ensure a successful programme.

- **Limited knowledge management specialists**

There seems to be very few true knowledge management specialists with practical experience in South Africa. This is due to the fact that very few organisations have highly sophisticated knowledge management systems. This is a "catch-22" situation because due to the fact that few implementations are done, people are not getting practical experience, and without practical experience successful implementations cannot be done. South Africa cannot be compared equally to countries like the UK and US where they have moved beyond this point and where there is seemingly no shortage of knowledge workers to assist with implementation of knowledge management programmes. Due to limited availability of experienced and knowledgeable knowledge workers in South Africa the researcher is of the opinion that South African organisations will have to encourage the training of such individuals and also arrange possible international exposure to international knowledge management programmes where possible (e.g. through exchange programmes). Management should also promote the importance and status of knowledge workers in organisations.

- **Limited eBusiness implementation in South Africa**

eBusiness did not explode as anticipated in the years 1998-2000, globally but even more so in South Africa. The role that knowledge management played in eBusiness in South Africa will thus be smaller compared to other countries like the US and UK, simply because there is more eBusiness activity than in South Africa. It is important to note, though, that even within the limited eBusiness application in South Africa, knowledge management was rated in this study as having an important role. South African organisations should expose their knowledge workers to international knowledge management programs with an eBusiness focus where possible, e.g. through exchange programmes to ensure they get adequate exposure to developments overseas, which will empower them to adapt the experience to suit South African conditions.

11.4. Potential impact of South African specific market conditions on organisations

If South African organisations do not keep these market specific factors in mind, the impact may be visible on both strategic and operational levels of the organisation. The impact on both levels is discussed in the sections below.

11.4.1. Strategic impact

The strategic impact refers specifically to the fact or that the integration of knowledge management with the business, as well as its value proposition, is not fully understood. In summary, this will invariably impact on:

- *Decision-making*

The fact that the value of knowledge management in providing knowledge on which decisions can be based, is not fully understood, means that decision-makers may not have all the knowledge at their command when making decisions, or alternatively knowledge may be outdated or in unusable format. This may lead to incorrect or sub-optimal decision-making, which in turn may affect the agility of the organisation to adapt speedily to market changes and in execution of the business strategy. More profoundly, it may also lead to ineffective *strategic direction* determination by top management.

- *Organisational agility and innovation*

A lack of understanding of how knowledge management integrates with the business may lead to inefficient decision-making, which in turn negatively affects organisational agility. It may slow down the adaption to changes in the market place, or the incorrect changes may be effected due to inaccurate decision-making due to a lack of knowledge upon which to base decisions. A lack of knowledge and knowledge management and an understanding of its importance may also lead to limitations with reference to innovation, as the full value and potential of knowledge will not be exploited, and innovation will not be as effective as it could be. This in turn will affect the organisation's time to market and its general agility.

- *Execution of business strategy through successful implementation of the organizational value chain*

A lack of understanding of how knowledge management integrates with the business may lead to inefficiencies in the business process value chains of these organisations as their knowledge management programmes will not be aligned to support the processes and the knowledge flow within the processes. Core business processes are aimed at execution of the business strategy, so the result will be inefficient business strategy execution.

- *Customer / market focus*

A lack of understanding of how knowledge management integrates with the business and of its value proposition may lead to a lack of understanding of customer and market needs. Knowledge is the base for understanding these needs, i.e. if the value proposition of knowledge is not fully understood, maximum value will not be extracted from it in order to identify needs and deliver products and services to the market to satisfy the identified needs. Without knowledge the customer and market focus cannot be accurate, therefore knowledge and the management thereof is critical.

11.4.2. Operational

The operational impact if the factors in the South African marketplace are not taken into consideration, is summarised as follows:

- *Efficiency and effectiveness*
General efficiency and effectiveness in management of knowledge, but also in execution of day-to-day work activities will be negatively impacted. This will be due to rework, duplication, lack of speed of decision-making and work execution, lack of focus, lack of innovation due to lack of knowledge, lack of adequate technology, and limited skills, amongst others. The knowledge management cycle of creation, sharing, harvesting and leveraging will be negatively impacted with reference to efficiency and effectiveness throughout the core and enabling processes of the business process value chain.
- *Productivity*
Productivity will be negatively impacted due to the lack of or inefficient application of knowledge in the business. This will be due to rework, duplication, lack of speed of decision-making and work execution, lack of focus, lack of innovation due to lack of knowledge, lack of adequate technology, limited skills, amongst others. The complete business process value chain will be affected.
- *Learning / knowledge building*
Due to limited access to and availability of knowledge, which may be due to a variety of factors, employees will be limited in increasing their personal knowledge and learning. This in turn will affect efficiency, effectiveness, and productivity in the organisation. Innovation on the operational as well as strategic levels may also be negatively impacted due to limited learning or building of individual's and the organisation's knowledge base.
- *Implementation speed within business processes*
Lack of awareness of availability of knowledge and inefficiency in accessing or utilising knowledge will directly affect the speed of implementation of improvements and other changes to the day-to-day activities and tasks within the business process value chain.

12. CONCLUSIONS

12.1. Realisation of objectives

This study aimed to define the role of knowledge management in eBusiness and customer relationship management. Prior to this study, this role had not been formally defined. It is critical for organisations to understand the role of knowledge management in eBusiness and customer relationship management to enable them to manage and leverage knowledge as a corporate asset that supports the organisation's business strategy and operating model, and therefore the execution of the strategic intent of the business.

The researcher's opinion that the knowledge management has a role to play in eBusiness and customer relationship management was confirmed during this study. This role can broadly be defined as follows:

- Knowledge management is a prerequisite for eBusiness and its increasing client centric focus. To operate in an eBusiness environment, an organisation has to have a good command of knowledge on its markets, customers, products and services, methods and processes, competitors, employee skills and its regulatory environment. This is due to the fact that organisations can, with the advent of eBusiness, do business electronically, seamlessly across the globe, via the Internet and via intranets, which has caused an explosion of the richness and reach of information and knowledge. Knowledge management systems are now essential to ensure that value is extracted from knowledge internal and external to the organisation.
- eBusiness also broadens an organisation's customer base due to the possibility of operating globally through electronic means. Customer relationship management in the global and digital economy has therefore forced organisations to rethink the ways in which they build relationships with a broadened customer base. The researcher is of the opinion that customer relationships cannot take place without knowledge management. To enable organisations to become more efficient and effective in delivering products and / or services to customers, thus creating customer delight, knowledge on customers will have to be managed to ensure that the services organisations provide are those that will address customer needs. Knowledge management is therefore an integral part of customer relationship management.

The first objective of the study was to define the role of knowledge management in eBusiness and customer relationship management in the new economy. To enable this, the following were undertaken:

The role of knowledge management in eBusiness and customer relationship management

- The three concepts were clearly defined to determine their conceptual boundaries. This includes an investigation of the goals or aims of each of the three concepts.
- The nature or characteristics of these concepts were also discussed to create a high level understanding of the nature and implications of probable relationships.
- There are numerous similarities between the drivers of the three concepts, but also some unique drivers to each. An overview of the drivers of these concepts provides a common understanding of the commonality and differences between the concepts with reference to the reasons for their existence.
- A discussion around the critical success factors of each of the three concepts provides a better understanding of the nature of the concepts and will provide more insight into their relationship.
- The value proposition, i.e. the value that each concept adds to a business, provides an understanding of the nature of the concepts and their interrelationship.

The nature of the role that knowledge management plays in eBusiness and customer relationship management was also defined, as well as the value that knowledge management can add to eBusiness and customer relationship management.

The second objective of the study was to test the validity of this role and value proposition of knowledge management in eBusiness and customer relationship management as defined by the researcher in the South African context, through the administering of questionnaires to large South African corporates where knowledge management has been implemented to some extent. A DMAP questionnaire was administered to enable the testing.

12.2. Hypothesis testing

The original hypothesis was that knowledge management plays an integral part in the design, implementation and management of eBusiness and customer relationship management in organisations. This hypothesis was neither proven nor disproven *in the South African context* specifically, with reference to both importance and performance of issues identified.

12.3. Expected results

The researcher was of the opinion that the research would identify knowledge management as having a significant impact in the design, implementation and management of a business environment where eBusiness and customer relationship management plays a critical role. Expected results confirmed are listed below:

- eBusiness success demands increased customer intimacy over new channels. Knowledge is required to build customer intimacy. However, sharing knowledge on customers is currently poorly developed in most organisations.

The role of knowledge management in eBusiness and customer relationship management

- eBusiness expands the competitive arena. Increased competition requires greater inventiveness and improved competitive intelligence, which can be provided by knowledge management.
- Knowledge management seeks to leverage this richer knowledge, e.g. by achieving an intelligent supply chain.
- Knowledge management and collaboration allows organisations to quickly communicate precise, reliable knowledge across all internal and external processes and all stakeholders.
- Knowledge management allows the building of trust and collaboration among diverse business partners.
- Knowledge management provides all stakeholders with access to the right knowledge at the right time.
- Knowledge management enables the creation, sharing, harvesting and leveraging of knowledge, whether in tacit or explicit format, through provision of access to knowledge through a single point of access, using search and retrieval capability, categorised content, knowledge on expert skills to enable one-to-one contact and the creation of knowledge sharing and collaboration environments e.g. communities of interest, communities of practice, project teams, through which knowledge can be shared by an organisation, its business partners and customers.
- Knowledge management can put knowledge into context, i.e. personalise knowledge, thus minimising knowledge overload.

Expected results that were not confirmed, include:

- Knowledge management provides the ability to internalise external knowledge.
- eBusiness drives faster reaction times - it creates a greater demand to consolidate knowledge faster, which makes knowledge management imperative.
- Explicit knowledge is exposed in the eBusiness environment and the demand for it is well understood. Demand will increase for more of the enterprise's tacit knowledge to be distributed to a wider audience external to the organisation through one central interface. This has wide-ranging implications, from security to assessing and providing context for knowledge-based interactions.
- Customer data resulting from eBusiness distribution will be much richer than was traditionally available to business, because more context of the transactions can be captured.

12.4. Utilisation of DMAP

The utilisation of the DMAP tool was successful in this environment according to the researcher. The tool provided information in a usable format in order for the participants to be

The role of knowledge management in eBusiness and customer relationship management

able to make effective business decisions. It also allowed the researcher to make sound conclusions from the questionnaires in order to complete this study.

The most value was added by the open questions in the questionnaire, where participants were allowed to provide their own opinions. The tool provided valuable insight into specific concepts that were addressed by the participants. The researcher is of the opinion that this section specifically added a lot of value as participants identified some unexpected concepts and themes.

12.5. Conclusion

The researcher has made three overarching conclusions subsequent to this study. These conclusions put the role of knowledge management in eBusiness and customer relationship management in the South African context in perspective with reference to practical application thereof:

- **Knowledge management value proposition**

The knowledge management value proposition with reference to eBusiness and customer relationship management is not very different than the generic value proposition of knowledge management in other areas of the business. There are, however, *subtle differences in focus and areas of importance*, e.g. the scale of knowledge sharing over geographical, divisional and organisational boundaries, consolidation of knowledge to provide one view of organisational knowledge, the role of technology in providing platforms for sharing knowledge internal and external to the organisation, etc. Where organisations have eBusiness and customer relationship management programmes, these subtle differences will need to be taken into account when designing, implementing and managing knowledge management programmes.

- **Knowledge management: operational vs. strategic**

Organisations understand the strategic importance of knowledge and knowledge management, but currently only apply knowledge and knowledge management on an operational level. In the researcher's opinion this is partly due to the fact that management does not understand the linkage between business strategy, the organisational business process value chain that is the mechanism to execute the business strategy, and knowledge that enables these processes. Once management understands the linkage between these concepts, knowledge management will become a strategic, top of mind issue for organisations. The researcher is also of the opinion that the lack of understanding of the value that knowledge and knowledge management can add to the business, on a conceptual and monetary level, leads to a lack of strategic focus with reference to knowledge management. Once organisations understand the potential impact of knowledge and knowledge management, they will embrace knowledge

The role of knowledge management in eBusiness and customer relationship management

management as a strategic issue. The understanding, however, once again ties back to the understanding of the linkage between the business strategy, the organisational value chain and knowledge that enables it.

- **Market conditions influence knowledge management**

Market and economic conditions definitely influence the acceptance and implementation realities of knowledge management. South African organisations specifically have certain limitations in implementing knowledge management, which may not pertain to other countries in the world. This needs to be taken into account when designing, implementing and managing knowledge management programmes. Knowledge management is not a totally generic concept that can be applied in the same way everywhere across the world. As there are unique conditions in each and every organisation that need to be taken into account, there will be country or region specific issues that will also play a role in the successful implementation of knowledge management. The researcher is of the opinion that a lot of programmes fail for this reason, as European and American models are followed which may not apply to conditions in South Africa.

The researcher concludes by defining knowledge management as having a clear and significant role in eBusiness and customer relationship management according to the market. This must, however, be seen against the background of a lot of identified issues currently affecting the successful application of this value proposition in practice.

12.6. Value added by this study

This study firstly makes a contribution to the understanding of the inherent nature of knowledge management, as concept in its own right, or as concept within an eBusiness or customer relationship environment. It is clear from this study that knowledge management may have different nuances in different environments, but the core principles remain the same. The researcher is of the opinion that this conclusion has an important impact on implementation issues in the eBusiness and customer relationship management environment, as the same principles can be applied, but with different focuses.

The second contribution this study makes is in understanding how knowledge management is perceived and applied in the South African market, given the advent of eBusiness and customer relationship management. It is clear that, even though South African top executives understand the value that knowledge management can add, they currently perceive the benefits to be reaped on an operational efficiency level only. This perception can only be managed once it is understood.

The role of knowledge management in eBusiness and customer relationship management

The third contribution that this study makes is in understanding that knowledge management in South Africa has its own unique challenges and that knowledge management programmes cannot be carbon copied from systems and programmes in Europe and the USA. eBusiness and customer relationship management has also not been implemented as substantially in South Africa as in Europe and the US, impacting on this conclusion even more. The researcher is of the opinion that this is a crucial value adding contribution to knowledge management practices in South Africa, as most organisations with knowledge management programmes are utilising research and case studies from international programmes, assuming that it will apply to the South African situation. This study will hopefully stimulate thought on how knowledge managers in South Africa can adapt programs to suit local conditions.

12.7. Recommendations for the future

The researcher's first recommendation is that a greater and more in-depth understanding needs to be gained by South African knowledge management specialists on the nature and complexities of knowledge management, albeit in the eBusiness or customer relationship management, or any other environment. Too many people in the market have the perception that this is not a specialised field of expertise and that perception needs to change. As can be seen from this study, knowledge management is a complex concept that is difficult to implement successfully.

The researcher's second recommendation is that perceptions should be changed to ensure that knowledge management is seen as a strategic issue in organisations. Knowledge is an inherent part of core processes of any business, therefore the knowledge and how it is managed must be seen to be as important as the core processes and how these are managed. In a knowledge-based economy, organisations cannot afford not to change their perceptions in this regard, as they will lose competitive advantage. A perception change of this magnitude will be difficult, and will only be achieved once the value proposition of knowledge management is clearly understood by top executives. Being able to show quantifiable savings or value added may support a clear understanding of the value proposition of knowledge management, but from practical experience and from the literature it is clear to the researcher that this is a very complex matter in itself. Knowledge management specialists and champions, however, need to work at finding the right way in communicating and creating awareness of the value proposition of knowledge management, in order for it to be viewed as a matter of strategic importance.

The third recommendation in this regard is that awareness and education of knowledge management specialists need to take place to ensure an understanding of the intricacies of

The role of knowledge management in eBusiness and customer relationship management

implementing knowledge management in a South African environment. Knowledge management programmes in South Africa is in dire need of adaption to local conditions, and this awareness needs to be created informally, but also through formal education of knowledge management specialists.

BIBLIOGRAPHY

1. **ABELA, A.V. & SOCCONAGHI, A.M. JR.** 1997. *Value exchange: the secret of building customer relationships online*. McKinsey Quarterly, no.2, pp.216-219. [Online]. Available: http://www.mckinseyquarterly.com/article_page.asp?articlenum=230.
2. **ABRAMS, C.** 2001. *Multichannel retailing: the need for a content strategy*. GartnerGroup report, Jun.26. [Online]. Available: <http://gartner4.gartnerweb.com:80/gg/purchase>
3. **ABRAMSON, G.** 1999. *The thrill of the hunt*. CIO Enterprise Magazine, Jan. 15. [Online]. Available: http://www.cio.com/archive/enterprise/015599_ceo_content.html.
4. *Adding value through web-enabled CRM*. 2000. Chemical Week (Internet Focus 2000 Supplement), July 26, pp.S22-S23. [Online]. Available: <http://proquest.umi.com/pqdweb>.
5. **ALLAN, J. & WARD, V.** 2000? *Lessons for liberating knowledge*. In: Liberating knowledge. Edited by Joanna Reeves. London: Caspian Publishing, pp.88-96.
6. **AMBROSIO, J.** 2000. *Knowledge management mistakes*. Computerworld, 34(27), p.44. [Online]. Available: <http://proquest.umi.com/pqdweb>.
7. **ANDERSEN CONSULTING.** 1998. *Consumers in control*. Outlook, June. [Online]. Cited 2000-01-19. Available: http://www.ac.com/ideas/Outlook/6.98/over_currentf1.html.
8. **ANDERSON, H. & JACOBSEN, P.O.** 2000a. *Creating loyalty: its strategic importance in your customer strategy*. In: Customer relationship management: a strategic imperative in the world of e-Business. Edited by Stanley A. Brown. Toronto: John Wiley & Sons, pp.55-67.
9. **ANDERSEN, H. & JACOBSEN, P.O.** 2000b. *Implementing CRM: 20 steps to success*. In: Customer relationship management: a strategic imperative in the world of e-Business. Edited by Stanley A. Brown. Toronto: John Wiley & Sons, pp.267-282.
10. **ASSABI, Y.** 2001. *How to overcome the challenge of consistent service across multiple channels - a Ster Kinekor case study*. In: Infosmart Africa 2001. 10-12 July 2001. The Dome at Northgate, Gauteng, South Africa. Johannesburg: Terrapin.
11. **AT KEARNEY.** 2000a. *E-business performance: snapshots of sales innovation on the Web*. [Online]. Cited 2000-05-11. Available: http://www.atkearney.com/ATK/Publications/ic_detail/1,1071,1045,00.html.
12. **AT KEARNEY.** 2000b. *E-tailing strategies for automakers and dealers*. [Online]. Cited 2000-10-05. Available: http://www.atkearney.com/ATK/Publications/ic_detail/1,1071,788,00.html.
13. **AT KEARNEY.** 2000c. *Creating a high-impact digital customer experience*. [Online]. Cited 2000-10-05. Available: http://www.atkearney.com/ATK/Publications/ic_detail/1,1071,925,00.html.

The role of knowledge management in eBusiness and customer relationship management

14. **BARNETT, C.H.** 1999. *Opportunities in e-commerce and knowledge management*. New Steel, 15(6), p.76. [Online]. Available:
http://web5.infotrac.london.galegroup.com/itw/infomark/628/646/72731174w3/purl=rc1_GBIM_0_A55166410&dyn=10!xrn_40_0_A55166410?sw_aep=up_itw.
15. **BARNETT, N., HODGES, S. & WILSHIRE, M.J.** 2000. *M-commerce: an operator's manual*. McKinsey Quarterly, no.3, pp.163-173. [Online]. Available:
http://www.mckinseyquarterly.com/article_page.asp?articlenum=845.
16. **BARSH, J., CRAWFORD, B. & GROSSO, C.** 2000. *How e-tailing can rise from the ashes*. McKinsey Quarterly, no.3, pp.98-109. [Online]. Available:
http://www.mckinseyquarterly.com/article_page.asp?articlename=hoet00&Industry=MEDIA%20Entertainment.
17. **BEATTY, D.** 2001. *Strategies for building an integrated CRM system*. In: Infosmart Africa 2001. 10-12 July 2001. The Dome at Northgate, Gauteng, South Africa. Johannesburg: Terrapin.
18. **BEKKER, E.** 2001. *The emerging role of knowledge workers in an economy based on intellectual assets - to share or not to share: the impact of your business*. In: Infosmart Africa 2001 Conference Proceedings. 10-12 July 2001. The Dome at Northgate, Gauteng, South Africa. Johannesburg: Terrapin.
19. *Benefits of E-CRM*. 1999. Sales & Marketing Management, 151(8), p.2a. [Online]. Available:
[http://web6.infotrac.london.galegroup.com/itw/infomark/754/229/72724942w3/purl=rc2_GBIM_1_\(benefits+of+e-crm\)+and+da+\(1999\)+_1999_&dyn=2!sg_df_benefits+of+e-crm_1999_?sw_aep=up_itw](http://web6.infotrac.london.galegroup.com/itw/infomark/754/229/72724942w3/purl=rc2_GBIM_1_(benefits+of+e-crm)+and+da+(1999)+_1999_&dyn=2!sg_df_benefits+of+e-crm_1999_?sw_aep=up_itw).
20. **BENTLEYWEST MANAGEMENT CONSULTANTS.** 2000. *Bentley West Dictionary*. Internal Bentley West working document.
21. **BERGER, B.** 2001. *Developing a 360 degree view of the customer*. In: Infosmart Africa 2001 Conference Proceedings. 10-12 July 2001. The Dome at Northgate, Gauteng, South Africa. Johannesburg: Terrapin.
22. **BERRYMAN, E.** 2000. *E-business: impacting customer relationships*. [Online]. Cited 2000-01-20. Available: <http://www.pwcglobal.com>.
23. **BERRYMAN, E. et al.** 1998. *Electronic commerce: three emerging strategies*. McKinsey Quarterly, no.1, pp.152-159. [Online]. Available:
http://www.mckinseyquarterly.com/article_page.asp?articlenum=919.
24. **BICKNELL, D.** 1999. *After CRM, complex CRM*. Computer Weekly, Dec. 16, p.20. [Online]. Available:
http://web4.infotrac.london.galegroup.com/itw/infomark/430/644/72715798w3/purl=rc1_GBIM_0_A59134761&dyn=62!xrn_6_0_A59134761?sw_aep=up_itw.

The role of knowledge management in eBusiness and customer relationship management

25. **BOEY, S.** 1999. *CRM solution for local financial services*. Business Times (Malaysia), Aug. 27, p.BSSMAA6919920. [Online]. Available:
http://web7.infotrac.london.galegroup.com/itw/infomark/722/431/72713664w3/purl=rc1_GBIM_0_A55582890&dyn=7!xrn_99_0_A55582890?sw_aep=up_itw.
26. **BONTIS, N.** 1996. *There is a price on your head: managing intellectual capital strategically*. Business Quarterly, 60(4), pp.40-47. [Online]. Available:
http://web6.infotrac.london.galegroup.com/itw/infomark/148/304/72712067w3/purl=rc1_GBIM_0_A18452819&dyn=4!xrn_5_0_A18452819?sw_aep=up_itw.
27. **BOULTON, G., GUPTA, S. & BENTON, B.** 2000. *Best practices in outsourcing CRM and lessons learned*. In: Customer relationship management: a strategic imperative in the world of e-Business. Edited by Stanley A. Brown. Toronto: John Wiley & Sons, pp.295-306.
28. **BROWN, S.A.** 2000a. *Preface*. In: Customer relationship management: a strategic imperative in the world of e-Business. Edited by Stanley A. Brown. Toronto: John Wiley & Sons, pp. xix-xvii.
29. **BROWN, S.A.** 2000b. *A case study on CRM and mass customization*. In: Customer relationship management: a strategic imperative in the world of e-Business. Edited by Stanley A. Brown. Toronto: John Wiley & Sons, pp.40-53.
30. **BROWN, S.A.** 2000c. *From customer loyalty to customer dependency: a case for strategic customer care*. In: Customer relationship management: a strategic imperative in the world of e-Business. Edited by Stanley A. Brown. Toronto: John Wiley & Sons, pp.69-86.
31. **BROWN, S.A.** 2000d. *Channel management and CRM*. In: Customer relationship management: a strategic imperative in the world of e-Business. Edited by Stanley A. Brown. Toronto: John Wiley & Sons, pp.129-142.
32. **BROWN, S.A** 2000e. *Conclusion*. In: Customer relationship management: a strategic imperative in the world of e-Business. Edited by Stanley A. Brown. Toronto: John Wiley & Sons, pp.339-342.
33. **CALDWELL, F.** 1999. *Knowledge management risk analysis framework*. GartnerGroup report, Dec. 28. [Online]. Available:
<http://gartner4.gartnerweb.com:80/gg/purchase/0/00/853/52/doc/00085352/>.
34. **CALDWELL, F.** 2001. *Layoffs? Intellectual capital walking out the door*. GartnerGroup report, Jan. 25. [Online]. Available:
<http://gartner4.gartnerweb.com:80/gg/purchase/>
35. **CALKINS, J.D., FARELLO, M.J., & SHI, C.S.** 2000. *From retailing to e-tailing*. McKinsey Quarterly, no.1., p.NA. [Online]. Available:
http://www.mckinseyquarterly.com/article_page.asp?articlenum=384.

The role of knowledge management in eBusiness and customer relationship management

36. CARTELLIERI, C. et al. 1997. *The real impact of Internet advertising*. McKinsey Quarterly, no.3, pp.44-62. [Online]. Available: http://www.mckinseyquarterly.com/article_page.asp?articlenum=243.
37. CHAIT, L.P. 1999. *Creating a successful knowledge management system*. Journal of Business Strategy, March-April 1999, p.NA. [Online]. Available: http://web7.infotrac.london.galegroup.com/itw/infomark/482/356/72858976w3/purl=rc1_GBIM_0_A54293715&dyn=26!xrn_1_0_A54293715?sw_aep=up_itw.
38. CHOY, J. 1999. *CRM 11i pulls together enterprise-wide information*. Asia Computer Weekly, Nov. 5, p.ACW8083876. [Online]. Available: http://web4.infotrac.london.galegroup.com/itw/infomark/430/644/72715798w3/purl=rc1_GBIM_0_A57297060&dyn=59!xrn_14_0_A57297060?sw_aep=up_itw.
39. CHU, J. et al. 1999. *The Year 2000 online retailing agenda*. [Online]. Cited 2000-05-03. Available: http://www.bain.com/bainweb/about/insights/pract_insights_read.asp?article_id=246&sort=all&industry_id=0&capability_id=0&status=2.
40. CLUROE, I. & ROSENBAUM, B. 2000. *1998 Global CIO survey shows 300 percent jump in e-commerce within two years*. [Online]. Cited 2000-01-20. Available: <http://www.dc.com/obx/search.php?AppID=117&search=e-commerce&result=10>.
41. COLE, P. 1999. *Plugged in to customer growth*. [Online]. Cited: 2000-01-19. Available: http://www.ey.com/global/gcr.nsf/International/International_Home.
42. COLLIER, K. & MORRIS, L. 2000. *Know your customers: leveraging knowledge management with business intelligence tools*. [Online]. Cited 2000-09-20. <http://www.kpmgconsulting.com/kpmgsite/insight/kce/customer.htm>.
43. CONLON, G. 1999. *No turning back*. Sales & Marketing Management, 151(12), p.50. [Online]. Available: http://web4.infotrac.london.galegroup.com/itw/infomark/430/644/72715798w3/purl=rc1_GBIM_0_A58157792&dyn=68!xrn_1_0_A58157792?sw_aep=up_itw.
44. COOK, M et al. 2000. *Order fulfillment: delivering on the e-promise*. [Online]. Cited 2000-05-03. Available: <http://www.bain.com>.
45. COOPER, M. 2001. *The Disney approach to customer loyalty*. In: Infosmart Africa 2001 Conference Proceedings. 10-12 July 2001. The Dome at Northgate, Gauteng, South Africa. Johannesburg: Terrapin.
46. DAR LING, M.S. 2000. *Building the knowledge organisation*. Business Quarterly, 61(2), pp.61-67. [Online]. Available: http://web4.infotrac.london.galegroup.com/itw/infomark/611/543/72569684w3/purl=rc2_GBIM_1_Michele+S.+Darling_1996_Business+Quarterly_&dyn=sig!11?sw_aep=up_itw.
47. DAVENPORT, T. 1999. *Knowledge management, round two*. CIO Magazine, Nov.1. [Online]. Available: http://www.cio.com/archive/110199_think_content.html.

The role of knowledge management in eBusiness and customer relationship management

48. **DAVENPORT, T.H. & PRUSAK, L.** 1998. *Working knowledge: how organisations manage what they know*. Boston: Harvard Business School Press, pp.vii-199.
49. **DEISE, M.V. et.al.** 2000. *Executive's guide to e-business: from tactics to strategy*. New York: John Wiley and Sons.
50. **DESISTO, R.** 1999. *Evaluating sales knowledge: depth and speed of use*. GartnerGroup report, Aug 31. [Online]. Available: <http://gartner4.gartnerweb.com:80/gg/purchase/0/00/825/44/doc/00082544/>.
51. **DESISTO, R. & ROSS, C.** 2000. *Ways to achieve effective selling in the new millennium*. GartnerGroup report, July 19. [Online]. Available: <http://gartner4.gartnerweb.com:80/gg/purchase/0/00/910/82/doc/00091082/>.
52. **DHANJI, A. & JABLONSKI, A.** 2000. *Retaining customers online*. [Online]. Cited 2000-10-19. Available: <http://www.e-business.pwcglobal.com/external/ebib.nsf/1e03fed127f4dd718025690a003e0412/795e1e21cbc9934580256920003fec5?OpenDocument>.
53. **DONAGHUE, L.P., HARRIS, J.G. & WEITZMAN, B.E.** 1999. *Knowledge management strategies that create value*. Outlook, Jan. 1999. [Online]. Cited: 2000-01-19. Available: http://www.ac.com/ideas/Outlook/1.99/over_currente4.html.
54. **DRESNER, H.** 1999. *E-business intelligence: what should customers know?* GartnerGroup report, June 28. [Online]. Available: <http://gartner4.gartnerweb.com:80/gg/purchase/0/00/805/42/00080542/>.
55. **DULL, S.F.** 1999. *Measuring the payback on customer relationship management*. Outlook, Point of View Archives. [Online]. Cited: 2000-01-19. Available: <http://www.ac.com/ideas/Outlook/pov/pdf/measure.pdf>.
56. **DUNSTER, R.** 2001. *Strategies for building an integrated CRM system*. In: Infosmart Africa 2001 Conference Proceedings. 10-12 July 2001. The Dome at Northgate, Gauteng, South Africa. Johannesburg: Terrapin.
57. **EARL, M.J.** 1999. *What is a chief knowledge officer?* Sloan Management Review, 40(2), p.29. [Online] Available: http://web4.infotrac.london.galegroup.com/itw/infomark/200/558/72567783w3/purl=rc1_GBIM_0_A55937365&dyn=3!xrn_5_0_A55937365?sw_aep=up_itw.
58. **EARL, M.J. & SCOTT, I.A.** 1999. *What is a chief knowledge officer?* Sloan Management Review, 40(2), p.29. [Online]. Available: <http://proquest.umi.com/pqdweb>.
59. *E-business transformation: from CFO to CEO, finance in an Internet economy*. 1999. Financial Executive, 15(6), p.31. [Online]. Available: http://web4.infotrac.london.galegroup.com/itw/infomark/430/644/72715798w3/purl=rc1_GBIM_0_A57829859&dyn=86!xrn_9_0_A57829859?sw_aep=up_itw.

The role of knowledge management in eBusiness and customer relationship management

60. **ELLIS, V.J.** 1999. *Europe 2008: the shape of things to come*. Outlook, Jan. 1999. [Online]. Cited: 2000-01-19. Available: http://www.ac.com/ideas/Outlook/1.99/over_currente1.html.
61. **ERNST & YOUNG.** 1999a. *The connected society: winning the new battle for the customer*. [Online]. Cited 2000-10-04. Available: http://www.ey.com/global/gcr.nsf/US/TCE_-_Thought_Center_-_Ernst_&_Young_LLP.
62. **ERNST & YOUNG.** 1999b. *Limits to the new economy: a conversation with the Center for Business Innovation's visiting fellows*. [Online]. Cited 2000-01-20. Available: <http://www.ey.com>.
63. **ERNST & YOUNG.** 1999c. *Choosing your spots for knowledge management*. [Online]. Cited: 2000-01-19. Available: http://www.ey.com/global/gcr.nsf/International/International_Home.
64. **ERNST & YOUNG.** 1999d. *E-Commerce: 1999 Special report technology in financial services*. [Online]. Cited: 2000-10-16. Available: http://www.ey.com/global/gcr.nsf/International/TIFS99_-_Financial_Services.
65. **ERNST & YOUNG.** 1999e. *A blueprint for success: how to put knowledge to work in your organization*. [Online]. Cited 2000-01-19. Available: <http://www.ey.com>.
66. **ERNST & YOUNG.** 2000a. *Customer Relationship Management Strategies and Capabilities: an enabler for growth in revenue, profitability and shareholder value*. [Online]. Cited: 2000-01-19. Available: http://www.ey.com/global/gcr.nsf/International/International_Home.
67. **ERNST & YOUNG.** 2000b. *Customer relationship management point of view*. [Online]. Cited 2000-01-19. Available: <http://www.ey.com>.
68. **ETTORRE, B.** 1999. *Knowledge Management*. Management Review, Apr. 1999, p.8. [Online]. Available: http://web6.infotrac.london.galegroup.com/itw/infomark/649/928/72862105w3/purl=rc1_GBIM_0_A54730075&dyn=6!xrn_2_0_A54730075?sw_aep=up_itw.
69. **EVANS, P. & WURSTER T.S.** 2000. *Blown to bits: how the new economy of information transforms strategy*. Boston: Harvard Business School Press, pp1-261.
70. **FALQUE, E.** 2000. *Using the tools: database marketing, data warehousing and data mining*. In: Customer relationship management: a strategic imperative in the world of e-Business. Edited by Stanley A. Brown. Toronto: John Wiley & Sons, pp.227-240.
71. **FAULKNER & GRAY, Inc.** 1999. *Making a successful CRM transformation*. US Banker, Sept., p.ITEM9928991C. [Online]. Available: http://web4.infotrac.london.galegroup.com/itw/infomark/970/76/14478504w3/purl=rc2_GBIM_2_Making+a+successful+CRM+transformation_1999_&dyn=sig!4?sw_aep=up_itw.

The role of knowledge management in eBusiness and customer relationship management

72. **FENN, J.** 2000. *Techniques for improving search and retrieval*. GartnerGroup report, Jan.19. [Online]. Available:
<http://gartner6.gartnerweb.com:80/gg/purchase/0/00/856/56/doc/00085856/>.
73. **FERRON, J.** 2000. *The customer-centric organization in the automotive industry – focus for the 21st century*. In: Customer relationship management: a strategic imperative in the world of e-Business. Edited by Stanley A. Brown. Toronto: John Wiley & Sons, pp.189-211.
74. **FIELD, C.J.** 2000a. *Loyalty cards are unlikely to carry all the answers*. The Financial Times, May 3, p.4. [Online]. Available:
http://web6.infotrac.london.galegroup.com/itw/infomark/148/304/72712067w3/purl=rc1_GBIM_0_A61870035&dyn=20!xrn_1_0_A61870035?sw_aep=up_itw.
75. **FIELD, M.** 2000? *The art of classification*. In: Liberating knowledge. Edited by Joanna Reeves. London: Caspian Publishing, pp.52-57.
76. **FISHER, A.** 1999. *The customer is king as business moves to the web*. The Financial Times, May 1999, p.16. [Online]. Available:
http://web4.infotrac.london.galegroup.com/itw/infomark/430/644/72715798w3/purl=rc6_GBIM&dyn=39!ecita?sw_aep=up_itw.
77. **FLUSS, D.** 2000a. *Management update: the future of e-services is e-crm*. GartnerGroup report, June 28. [Online]. Available:
<http://gartner4.gartnerweb.com:80/gg/purchase/0/00/894/52/doc/00089452/>.
78. **FLUSS, D.** 2000b. *The future of e-service is e-crm*. GartnerGroup report, June 9. [Online]. Available:
<http://gartner4.gartnerweb.com:80/gg/purchase/0/00/890/51/doc/00089051/>.
79. **FORGER, G.** 2000. *The secret to e.success*. Modern Materials Handling, 55(6), pp.8-12. [Online]. Available: <http://proquest.umi.com/pqdweb>.
80. **FORMANT, C.** 2000. *Customer acquisition: a financial sales perspective*. In: Customer relationship management: a strategic imperative in the world of e-Business. Edited by Stanley A. Brown. Toronto: John Wiley & Sons, pp.87-106.
81. **FREEMANTLE D.** 2001. *Pushing back the boundaries of customer contact*. In: Infosmart Africa 2001 Conference Proceedings. 10-12 July 2001. The Dome at Northgate, Gauteng, South Africa. Johannesburg: Terrapin.
82. **FRICK, V.** 2000a. *E-business pitfalls: channel conflict and financial analysis*. GartnerGroup report, Apr. 20. [Online]. Available: <http://gartner4.gartnerweb.com:80/gg/purchase/0/00/879/633/doc/00087963/>.
83. **FRICK, A.** 2000b. *In e-business strategy the “e” is silent*. GartnerGroup report, May 16. [Online]. Available:
<http://gartner4.gartnerweb.com:80/gg/purchase/0/00/885/13/doc/00088513/>.

The role of knowledge management in eBusiness and customer relationship management

84. **FRICK, V. & LILL, A.** 2000. *Ten imperatives for e-business success*. GartnerGroup report, Aug. 4. [Online]. Available: <http://gartner4.Gartnerweb.com:80/gg/purchase/0/00/914/85/doc/00091485/>.
85. **FRIEDMAN, J.P. & LANGLINIAS, T.C.** 1999. *Best intentions: a business model for the eEconomy*. *Outlook*, Jan. 1999. [Online]. Cited 2000-01-20. Available: http://www.ac.com/ideas/Outlook/1.99/over_currente2.html.
86. **FROOK, J.E.** 2000. *E-CRM alliances aim to jump-start b-to-b*. *B to B*, 85(11), pp.8, 46. [Online]. Available: <http://proquest.umi.com/pqdweb>.
87. **GARTNERGROUP.** 1999a. *The enterprise portal: is it knowledge management?* GartnerGroup report, Sept. 19. [Online]. Available: <http://gartner6.gartnerweb.com:80/glet/purchase/g/lc/is0/9990/2/doc/glcis099902>.
88. **GARTNERGROUP.** 1999b. *Marketing e-business, e-transformation and e-crm*. GartnerGroup report, Dec. [Online]. Available: <http://gartner4.gartnerweb.com:80/glet/purchase/g/lh/pdl/2990/1/doc/glhpd129901/>.
89. **GARTNERGROUP.** 2000a. *KM benefits: from building productivity to creating wealth*. GartnerGroup report, Apr. [Online]. Available: <http://gartner4/gartnerweb.com:80/glet/purchase/g/lc/is0/4010/001/doc/glcis04010001/>.
90. **GARTNERGROUP.** 2000b. *Critical e-business success factors*. GartnerGroup report, Jan. [Online]. Available: <http://gartner4.gartnerweb.com:80/glet/purchase/g/li/bs0/1010/002/doc/glibs01010002/>.
91. **GERBER, R.** 2001. *Knowledge management development in South Africa*. In: *Infosmart Africa 2001 Conference Proceedings*. 10-12 July 2001. The Dome at Northgate, Gauteng, South Africa. Johannesburg: Terrapin.
92. **GILBERT, M et al.** 2000. *The elements of a content management strategy*. GartnerGroup report, Feb. 25. [Online]. Available: <http://gartner4.gartnerweb.com:80/gg/purchase/0/00/867/11/doc/00086711/>.
93. **GILLOOLY, S.** 2000. *Intranets, extranets, and the electronic storefront*. [Online]. Cited 2000-09-20. Available: <http://208.203.128.56/external/ebib.nsf/Docid/6BD2E299B6111F1580256920003517C5?OpenDocument>.
94. **GORDON, H. & ROTH, S.** 2000. *The need for market-intelligent enterprise (MIE): laying the foundation*. In: *Customer relationship management: a strategic imperative in the world of e-Business*. Edited by Stanley A. Brown. Toronto: John Wiley & Sons, pp. 19-39.
95. **GORMLEY, J.T. III.** 1999. *The demise of CRM*. *Forrester Report*. [Online]. Available: <http://www.forrester.com/ER/Search/Results/1,1326,0,FF.html>.

The role of knowledge management in eBusiness and customer relationship management

96. **GRECO, J.** 1999. *Knowledge is power*. Journal of Business Strategy, March-April, p.NA. [Online]. Available:
http://web7.infotrac.london.galegroup.com/itw/infomark/482/356/72858976w3/purl=rc1_GBIM_0_A54293713&dyn=30!xrn_10_0_A54293713?sw_aep=up_itw.
97. **GROENFELDT, T.** 2000. *Customer data, right here, right now*. US Banker, 110(5), pp.73-75. [Online]. Available: <http://proquest.umi.com/pqdweb>.
98. **GUADAGNO, N.** 2000. *The new economy demands Web-enabled call centres*. Call Centre Solutions, 19(1), pp.62-70. [Online]. Available:
<http://proquest.umi.com/pqdweb>.
99. **GULATI, R. & GARINO, J.** 2000. *Get the right mix of bricks & clicks*. Harvard Business Review, 78(3), pp.107-114. [Online]. Available:
<http://proquest.umi.com/pqdweb>.
100. **GULERI, T.** 2000. *CRM throughout the enterprise: how to make it happen*. Call Centre Solutions, 18(12), pp.44-49. [Online]. Available:
<http://proquest.umi.com/pqdweb>.
101. **GULYCZ, M.** 2000. *Implementing CRM: the need for performance alignment*. In: Customer relationship management: a strategic imperative in the world of e-Business. Edited by Stanley A. Brown. Toronto: John Wiley & Sons, pp.321-337.
102. **HAGEL, J. III & RAYPORT, J.F.** 1997a. *The coming battle for customer information*. McKinsey Quarterly, no. 3, pp.65-76. [Online]. Available:
http://www.mckinseyquarterly.com/article_page.asp?articlenum=235.
103. **HAGEL, J. III & RAYPORT, J.F.** 1997b. *The new infomediaries*. McKinsey Quarterly, no.4, pp.54-70. [Online]. Available:
http://www.mckinseyquarterly.com/article_page.asp?articlenum=259
104. **HAGEL, J. III, & SINGER, M.** 1999. *Private lives*. McKinsey Quarterly, no.1, pp.6-15. [Online]. Available:
http://www.mckinseyquarterly.com/article_page.asp?articlenum=325
105. **HALL, R. & ANDRIANI, P.** 2000. *Managing knowledge in an innovative environment*. In: Liberating knowledge. Edited by Joanna Reeves. London: Caspian Publishing, pp. 43-52.
106. **HANDEN, L.** 2000a. *Putting CRM to work: the rise of the relationship*. In: Customer relationship management: a strategic imperative in the world of e-Business. Edited by Stanley A. Brown. Toronto: John Wiley & Sons, pp. 7-18.
107. **HANDEN, L.** 2000b. *The tools for CRM: the three Ws of technology*. In: Customer relationship management: a strategic imperative in the world of e-Business. Edited by Stanley A. Brown. Toronto: John Wiley & Sons, pp.217-226.

The role of knowledge management in eBusiness and customer relationship management

108. **HARGADON, A. & SUTTON, R.I.** 2000. *Building an innovation factory*. Harvard Business Review, 78(3), pp.157-166. [Online]. Available: <http://proquest.umi.com/pqdweb>.
109. **HARLEY, G.** 1997. *A comprehensive model for knowledge management*. In: Leveraging knowledge for business performance: the proceedings of the first South African knowledge management conference. Johannesburg: WITS Business School, pp.157-170.
110. **HARRIS, K.** 1999. *The GartnerGroup e-business glossary: version 1.0*. GartnerGroup report, Oct.8. [Online]. Available: <http://gartner4.gartnerweb.com:80/gg/purchase/0/00/834/75/doc/00083475>.
111. **HARRIS, K. & DRESNER, H.** 1999. *Business intelligence meets knowledge management*. GartnerGroup report, March 1. [Online]. Available: <http://gartner4.gartnerweb.com:80/gg/purchase/0/00/769/0/00/769/42/doc/00076942/>.
112. **HARRIS, K. & JACOBS, J.** 2000. *Knowledge management vs. information management*. GartnerGroup report, Sept.13. [Online]. Available: <http://gartner4.gartnerweb.com:80/gg/purchase/0/00/925/17/doc/00092517/>.
113. **HARRIS, K., CALDWELL, F. & LEHMAN, J.** 2000. *Capturing knowledge from retiring employees*. GartnerGroup report, Apr.4. [Online]. Available: <http://gartner4.gartnerweb.com:80/gg/purchase/0/00/876/01/doc/00087601/>.
114. **HARRIS, K., PHIFER, G. & HAYWARD, S.** 1999. *Important distinctions between enterprise portals and knowledge management*. GartnerGroup report, 25 Aug. [Online]. Available: <http://gartner6.gartnerweb.com:80/gg/purchase/0/00/822/92/doc/00082292/>.
115. **HARRIS, R.T.** 1999. *Rethink value to win – and keep – great customers*. Harvard Business Review, 77(6), p.S14. [Online]. Available: http://web4.infotrac.london.galegroup.com/itw/infomark/430/644/72715798w3/purl=rc2_GBIM_2_rethink+value+to+win_xx_1999_Harvard+Business+Review_&dyn=sig!8?sw_aep=up_itw.
116. **HAVENGA, J.** 2001. *The impact of eBusiness on business intelligence*. In: Infosmart Africa 2001 Conference Proceedings. 10-12 July 2001. The Dome at Northgate, Gauteng, South Africa. Johannesburg: Terrapin.
117. **HAVENS, C. & KNAPP, E.** 1999. *Easing into knowledge management*. Strategy & Leadership, 27(2), pp.4-10. [Online]. Available: http://web4.infotrac.london.galegroup.com/itw/infomark/430/644/72715798w3/purl=rc1_GBIM_0_A54370966&dyn=16!bmk_1_0_A54370966?sw_aep=up_itw.
118. **HAYWARD, S.** 2000. *Technologies and products for knowledge management*. GartnerGroup report, Feb. 1. [Online]. Available: <http://gartner6.gartnerweb.com:80/gg/purchase/0/00/861/47/doc/00086147/>.

The role of knowledge management in eBusiness and customer relationship management

119. **HAYWARD, S. & HARRIS, K.** 1999. *Is knowledge management needed for e-business?* GartnerGroup report, Oct.8. [Online]. Available: <http://gartner4.gartnerweb.com:80/gg/purchase/0/00/834/68/doc/00083468/>.
120. **HICKINS, M.** 1999. *Xerox shares its knowledge.* Management Review, Sept. 1999, p.40. [Online]. Available: http://web2.infotrac.london.galegroup.com/itw/infomark/740/622/72562376w3/purl=rc1_GBIM_0_A55676727&dyn=3!xrn_5_0_A55676727?sw_aep=up_itw.
121. **HOBMEIER, M. & BRINER, U.** 2000. *CRM in the industry: case study of Swisscom.* In: Customer relationship management: a strategic imperative in the world of e-Business. Toronto: John Wiley & Sons, pp.241-265.
122. **HOFFMAN, T.P. & NOVAK, T.P.** 2000. *How to acquire customers on the web.* Harvard Business Review, 78(3), pp.179-183. [Online]. Available: <http://proquest.umi.com/pqdweb>.
123. **HOPKINS, W.S., LUSHER, J.C. & MANASCO, B.** 1999. *Can technology strengthen customer loyalty?* Sales and Marketing Management, 151(11), p.S4. [Online]. Available: http://web7.infotrac.london.galegroup.com/itw/infomark/482/356/72858976w3/purl=rc1_GBIM_0_A57625590&dyn=4!xrn_2_0_A57625590?sw_aep=up_itw
124. **HOWE, C.D. et al.** 1999. *Managing eMarketplace risks.* Forrester Report, Dec. 1999. [Online]. Available: <http://www.forrester.com/ER/Search/Results/1,1326,0,FF.html>
125. **KAPLAN, S. & SAWHNEY, M.** 2000. *E-hubs: the new B2B marketplaces.* Harvard Business Review, 78(3), pp.97-100. [Online]. Available: <http://proquest.umi.com/pqdweb>.
126. **KAWASAKI, G.** 2000. *Supporting a for-profit cause.* Sales & Marketing Management, 152(5), p.S16. [Online]. Available: http://web4.infotrac.london.galegroup.com/itw/infomark/611/543/72569684w3/purl=rc2_GBIM_1_guy+kawasaki_2000_Sales+%26+Marketing+Management_&dyn=sig!9?sw_aep=up_itw.
127. **KEHOE, L.** 2000. *Put your faith in e-business: Internet technologies can be applied to bring about radical change in the way that companies operate.* The Financial Times, Feb.2, p.13. [Online]. Cited 2000-10-12. Available: http://web5.infotrac.london.galegroup.com/itw/infomark/947/688/73572830w3/purl=rc1_GBIM_0_CJ59124240&dyn=7!xrn_73_0_CJ59124240?sw_aep=up_itw.
128. **KENNEDY, M.L.** 1996. *Positioning strategic information: partnering for the information advantage.* Special Libraries, 87(2), pp.120-132. [Online]. Available: http://web4.infotrac.london.galegroup.com/itw/infomark/430/644/72715798w3/purl=rc2_GBIM_2_mary+lee+kennedy_1996_&dyn=sig!28?sw_aep=up_itw.

The role of knowledge management in eBusiness and customer relationship management

129. **KHOSOO, R. & McFADDEN, T.** 2000. *The fact and future of collaborative product design*. Machine Design, 72(13), pp.90-96. [Online]. Available: <http://proquest.umi.com/pqdweb>.
130. **KOSIUR, D.** 1997. *Understanding electronic commerce*. Washington, Microsoft Press, pp.iii - 286
131. **KOTKIN, J.** 1999. *Online retailing comes of age: the new merchants of the internet stake out territory in the cyber-mall wars*. [Online]. Cited: 2000-01-20. Available: http://www.ey.com/global/gcr.nsf/US/Online_Retailing_Comes_of_Age_-_Entrepreneur_Of_The_Year_-_Ernst_%26_Young_LLP.
132. **KPMG CONSULTING.** 2000. *Knowledge management research report 2000*. [Online]. Cited 2000-09-26. Available: <http://www.kpmgconsulting.com>.
133. **KRANSDORFF, A.** 2000. *Knowledge management's role in experiential learning*. In: Liberating knowledge. Edited by Joanna Reeves. London: Caspian Publishing, pp.73-79.
134. **KRITZINGER, J.** 2001. *Knowledge based customer centric CRM systems for high ROI*. In: Infosmart Africa 2001 Conference Proceedings. 10-12 July 2001. The Dome at Northgate, Gauteng, South Africa. Johannesburg: Terrapin.
135. *Lawson: web is driving CRM*. 1999. PC Week, Dec. 20, p.25. [Online]. Available: http://web7.infotrac.london.galegroup.com/itw/infomark/482/356/72858976w3/purl=rc1_GBIM_0_A58349173&dyn=17!xrn_38_0_A58349173?sw_aep=up_itw.
136. **LENT, A.F.** 1999. *The new age of e-business*. Sales & Marketing Management, 151(8), p.1a. [Online]. Available: http://web7.infotrac.london.galegroup.com/itw/infomark/482/356/72858976w3/purl=rc1_GBIM_0_A55384779&dyn=13!xrn_3_0_A55384779?sw_aep=up_itw.
137. *Lessons learned on the knowledge highways and byways*. 1996. Strategy and Leadership, 24(2), pp.16-21. [Online]. Available: http://web4.infotrac.london.galegroup.com/itw/infomark/611/543/72569684w3/purl=rc2_GBIM_2_knowledge+highways+and+byways_1996_Strategy+%26+Leadership_&dyn=sig!17?sw_aep=up_itw.
138. **LINDEN, A. & HAYWARD, S.** 2000. *Enabling better information access on web sites*. GartnerGroup report, June 20. [Online]. Available: <http://gartner4.gartnerweb.com:80/gg/purchase/0/00/892/56/doc/00089256/>.
139. **LOGAN, D. , CALDWELL, F. & YOUNG, C.** 2001. *New rules for measuring and managing intellectual capital*. GartnerGroup report, March 13. [Online]. Available: <http://gartner4.gartnerweb.com:80/gg/purchase>
140. **MACHTYNGER, L.** 2000. *Knowledge and customer relationships*. In: Liberating knowledge. Edited by Joanna Reeves. London: Caspian Publishing, pp.97-104.

The role of knowledge management in eBusiness and customer relationship management

141. **MAITLAND, A.** 1999. *Blind to the brave new digital new world.* The Financial Times, March 16, p.17. [Online]. Available:
http://web2.infotrac.london.galegroup.com/itw/infomark/109/714/72858791w3/purl=rc1_GBIM_0_CJ54111052&dyn=5!xrn_28_0_CJ54111052?sw_aep=up_itw.
142. *Making a successful CRM transformation.* 1999. US Banker, Sept. 1999, p.ITEM9928001C. [Online]. Available:
http://web7.infotrac.london.galegroup.com/itw/infomark/482/356/72858976w3/purl=rc2_GBIM_2_CRM+transformatio_1999_&dyn=sig!7?sw_aep=up_itw.
143. **MANCHESTER, P.** 1999. *Starting point for e-business ambitions.* The Financial Times, Oct. 21, p.09. [Online]. Available:
http://web4.infotrac.london.galegroup.com/itw/infomark/970/76/14478504w3/purl=rc6_GBIM&dyn=2!kwstart?sw_aep=up_itw.
144. **MAOZ, M.** 2000. *Extending the contact centre to the web.* GartnerGroup report. [Online]. Available:
<http://gartner4.gartnerweb.com:80/gg/purchase/0/00/881/24/doc/00088124/>.
145. **MAOZ, M.** 2001. *Relationship value is measured by mutual advantage.* GartnerGroup report, March 26. [Online]. Available:
<http://gartner4.gartnerweb.com:80/gg/purchase>
146. **MARTINY, M.** 1998. *Knowledge management at HP consulting.* Organizational Dynamics, 27(2), pp.71-78. [Online]. Available:
http://web4.infotrac.london.galegroup.com/itw/infomark/430/644/72715798w3/purl=rc2_GBIM_2_marilyn+martiny_1998_&dyn=sig!33?sw_aep=up_itw.
147. **McCOY, D.** 1999. *Why e-business craves workflow technology.* GartnerGroup report, Dec. 16. [Online]. Available:
<http://gartner4.gartnerweb.com:80/gg/purchase/0/00/851/12/doc/00085112/>.
148. **McEACHERN, C.** 2000. *Financial firms grapple with eCRM, an evolving concept.* Wall Street & Technology, E-Business Supplement, pp.18-20. [Online]. Available: <http://proquest.umi.com/pqdweb>.
149. **McMAHON, F. & MOORE, K.** 2000. *Knowledge exchange.* In: Liberating knowledge. Edited by Joanna Reeves. London: Caspian Publishing, pp.66-72.
150. **McMANUS, T.** 1999. *So what exactly is e-commerce? Clearing up terms in the new era.* Crain's Chicago Business, Nov. 29, p.SR30. [Online]. Available:
http://web4.infotrac.london.galegroup.com/itw/infomark/430/644/72715798w3/purl=rc1_GBIM_0_A58468299&dyn=65!xrn_3_0_A58468299?sw_aep=up_itw.
151. **MEANS, G. & SCHNEIDER, D.** 2000. *Metacapitalism.* New York: John Wiley & Sons, pp.ix-186.
152. **MELNICOFF, R.M.** 1999. *The eEconomy: it's later than you think.* Outlook, no. 21. [Online]. Cited 2000-05-22. Available:
http://www.ac.com/ecommerce/ecom_outlook.html.

The role of knowledge management in eBusiness and customer relationship management

153. **MERALI, Y.** 2000. *Self-organising communities*. In: Liberating knowledge. Edited by Joanna Reeves. London: Caspian Publishing, pp.80-87.
154. **MINES, C., MERINGER, J. & HARMSDORF, L.** 1999. *Organizing for e-commerce*. Forrester Report, Oct. 1999. [Online]. Available: <http://www.forrester.com/ER/Search/Results/1,1326,0,FF.html>.
155. **MINOCHA, H. & CALDWELL, F.** 2001. *Learning and knowledge management programs in the age of CRM*. In: Customer relationship management: a strategic imperative in the world of e-Business. Edited by Stanley A. Brown. Toronto: John Wiley & Sons, pp.307-320.
156. **MORELLO, D.T.** 2001. *What are knowledge workers? What makes them tick?* GartnerGroup report, Jan.24. [Online]. Available: <http://gartner4.gartnerweb.com:80/gg/purchase>
157. **MOORE, K. & BIRKINSHAW, J.** 1998. *Managing knowledge in global services firms: centers of excellence*. The Academy of Management Executive, 12(4), p.81. [Online]. Available: http://web4.infotrac.london.galegroup.com/itw/infomark/430/644/72715798w3/purl=rc1_GBIM_0_A53437070&dyn=91!xrn_1_0_A53437070?sw_aep=up_itw.
158. **MUDGE, A.** 1999. *Knowledge management: do we know what we know?* Communication World, 16(5), pp.24-29. [Online]. Available: http://web4.infotrac.london.galegroup.com/itw/infomark/430/644/72715798w3/purl=rc2_GBIM_2_alden+mudge_1999_&dyn=sig!29?sw_aep=up_itw.
159. **MULLIN, R.** 1996. *Knowledge management: a cultural evolution*. Journal of Business Strategy, 17(5), pp.56-60. [Online]. Available: http://web2.infotrac.london.galegroup.com/itw/infomark/779/325/72556939w3/purl=rc2_GBIM_1_cultural+evolution.
160. **MULLIN, R.** 1999. *Facing customers with CRM*. Chemical Week, Oct. 27, p.35. [Online]. Available: http://web4.infotrac.london.galegroup.com/itw/infomark/430/644/72715798w3/purl=rc1_GBIM_0_A56899974&dyn=80!xrn_7_0_A56899974?sw_aep=up_itw.
161. **MUKUND, K.S.** 2001. *ECRM: the new buzz*. [Online]. Available: <http://www.crm-forum.com/library/art/art-106/art-106.html>.
162. **NAKAZAWA, M.** 1999. "Soft" side of knowledge. Business Times, Nov. 30, [Online]. Cited 2000-01-19. Available: <http://www.pwcglobal.com/extweb/ncinthenews.nsf/DocID/D2CC0F53ECAB5BF68525684100161799>.
163. **NELSON, S. & BERG, T.** 2000. *Customer relationship management: an overview*. GartnerGroup report, Aug. 1. [Online]. Available: <http://gartner4.gartnerweb.com:80/gg/purchase/0/00/914/23/doc/00091423/>.

The role of knowledge management in eBusiness and customer relationship management

164. **NEETHLING, J.** 2001. *Keep your intellectual capital motivated*. In: Infosmart Africa 2001 Conference Proceedings. 10-12 July 2001. The Dome at Northgate, Gauteng, South Africa. Johannesburg: Terrapin.
165. **NEVENS, T.M.** 1999. *The mouse that roared*. McKinsey Quarterly, no.1, pp. 145-148. [Online]. Available: http://www.mckinseyquarterly.com/article_page.asp?articlenum=323.
166. **NICOLETT, M., ANDREN, E. & GILBERT.M.** 2000. *Challenges of aggregating and managing catalog content*. GartnerGroup report, Apr. 12. [Online]. Available: <http://gartner4.gartnerweb.com:80/gg/purchase/0/00/877/63/doc/00087763/>.
167. **NONAKA, I. & TAKEUCHI, H.** 1995. *The knowledge creating company: how Japanese companies create the dynamics of innovation*. New York: Oxford University Press, pp.vii-284.
168. **O'DELL, C. & GRAYSON, C.J. jr.** 1999. *Knowledge transfer: discover your value proposition*. Strategy & Leadership, 27(2), pp.10-16. [Online]. Available: http://web4.infotrac.london.galegroup.com/itw/infomark/430/644/72715798w3/purl=rc2_GBIM_2_knowledge+transfer_1999_Strategy+%26+Leadership_&dyn=sig!22?sw_aep=up_itw.
169. **ODY,P.** 1999. *CRM today – 'viral marketing' tomorrow*. The Financial Times, Sept.1, p.03. [Online]. Available: http://web1.infotrac.london.galegroup.com/itw/infomark/238/381/74610659w3/purl=rc2_GBIM_2_Penelope+Ody_&dyn=sig!1?sw_aep=up_itw.
170. *Online purchasing frees buyers for strategic work*. 1999. Purchasing, Dec. 16, p.S53. [Online]. Available: http://web4.infotrac.london.galegroup.com/itw/infomark/430/644/72715798w3/purl=rc1_GBIM_0_A58306947&dyn=45!xrn_3_0_A58306947?sw_aep=up_itw.
171. **OUREN, J. et al.** 1998. *Electronic bill payment and presentment*. McKinsey Quarterly, no.4, pp.98-106. [Online]. Available: http://www.mckinseyquarterly.com/article_page.asp?articlenum=310.
172. **OVANS, A.** 2000. *E-procurement at Schlumberger*. Harvard Business Review, 78(3), pp.20-21. [Online]. Available: <http://proquest.umi.com/pqdweb>.
173. **PARKE, J.S.** 2000. *Front office & the extraprise: realizing the potential of web-enabled front-office*. [Online]. Cited: 2000-05-03. Available: http://www.ac.com/services/crm/news/crm_frontoffice.html.
174. **PARLBY, D. & TAYLOR, R.** 2000. *The power of knowledge: a business guide to knowledge management*. [Online]. Cited 2000-10-31. Available: <http://www.kpmgconsulting.com/index.html>.

The role of knowledge management in eBusiness and customer relationship management

175. **PATMORE, A.B. & RENNER, D.H.** 1997. *Closer to the customer, closer to the goal.* Outlook, Nov.– Dec. [Online]. Cited 2000-01-19. Available: http://www.ac.com/ideas/Outlook/over_2nov97.html.
176. **PLUMMER, D.** 1999. *The faces of e-business: finding the right perspective.* GartnerGroup report, Oct. 8. [Online]. Available: <http://gartner4.gartnerweb.com:80/gg/purchase/0/00/834/83/doc/00083483/>.
177. *Poll reveals lack of e-relationships.* 1999. Newsbytes, Nov. 29, p.NSBT8421420. [Online]. Available: http://web4.infotrac.london.galegroup.com/itw/infomark/430/644/72715798w3/purl=rc2_GBIM_2_poll+reveals+lack+of+e-relationships_1999_&dyn=sig!30?sw_aep=up_itw_relationships_1999_&dyn=sig!30?sw_aep=up_itw.
178. **POLANYI, M.** 1966. *Tacit dimension.* Chicago: Doubleday.
179. **POLYANI, M.** 1974. *Personal knowledge towards a post-critical philosophy.* Chicago: University of Chicago Press.
180. **PONEMON, L.A. & SULLIVAN, P.F.** 2000. *Privacy fears online.* [Online]. Cited 2000-01-20. Available: <http://www.pwcglobal.com>.
181. **POTOMAC.** 2000. *Catalogs are foundation of e-marketplaces.* Electronic Commerce News, 5(21), p.1. [Online]. Available: <http://proquest.umi.com/pqdweb>.
182. **POWELL, T.** 2000. *Valuation of intellectual capital.* In: Liberating knowledge. Edited by Joanna Reeves. London: Caspian Publishing, pp.58-65.
183. **PRICEWATERHOUSECOOPERS.** 1999a. *Inside the mind of the CEO: the 1999 global CEO survey.* World Economic Forum, 1999 Annual Meeting, Davos, Switzerland. [Online]. Cited 2000-10-05. Available: <http://www.pwcglobal.com/extweb/ncsurvres.nsf/DocID/BA7779AD2FBCB621852568DA00311F64>.
184. **PRICEWATERHOUSECOOPERS.** 1999b. *SME Electronic Commerce Study.* [Online]. Cited 2000-10-04. Available: http://www.apec.pwcglobal.com/sme_report.pdf.
185. **PRICEWATERHOUSECOOPERS.** 1999c. *The CBI/PricewaterhouseCoopers e-business survey of financial services.* [Online]. Cited: 2000-10-06. Available: http://www.pwcglobal.com/uk/eng/about/ind/invmgt_html/2000/3/execsum3.html.
186. **PRICEWATERHOUSECOOPERS.** 1999d. *Introduction.* Global Enterprise Advisor, vol. 10, pp.1-2.
187. **PRICEWATERHOUSECOOPERS.** 1999e. *GartnerGroup's knowledge management glossary.* Global Enterprise Advisor, vol. 10, pp.3-5.
188. **PRICEWATERHOUSECOOPERS.** 1999f. *Is knowledge management needed for e-business?* Global Enterprise Advisor, vol. 10, pp.5-7.
189. **PRICEWATERHOUSECOOPERS.** 1999g. *KM business value: lessons learned from early adopters.* Global Enterprise Advisor, vol. 10, pp.7-8.

The role of knowledge management in eBusiness and customer relationship management

190. **PRICEWATERHOUSECOOPERS.** 1999h. *E-commerce professional services firms: clarifying choices.* Global Enterprise Advisor, vol. 10, pp.9-11.
191. **PRICEWATERHOUSECOOPERS.** 1999i. *Choosing a knowledge management consultancy.* Global Enterprise Advisor, vol. 10, pp.11-12.
192. **PRICEWATERHOUSECOOPERS.** 1999j. *E-knowledge: a maturity diagnostic.* Global Enterprise Advisor, vol. 10, pp.12-13.
193. **PRICEWATERHOUSECOOPERS.** 1999k. *E-business project planning: proceed at your own risk.* Global Enterprise Advisor, vol. 10, pp.14-15.
194. **PRICEWATERHOUSECOOPERS.** 1999l. *Knowledge management project planning: start with a knowledge agenda.* Global Enterprise Advisor, vol. 10, p.16.
195. **PRICEWATERHOUSECOOPERS.** 2000a. *Embracing the e-Channel.* In: Customer relationship management: a strategic imperative in the world of e-Business. Toronto: John Wiley & Sons, pp.143-158.
196. **PRICEWATERHOUSECOOPERS.** 2000b. *E-visioning your future...today.* [Online]. Cited 2000-01-02. Available: <http://www.pwcglobal.com>.
197. **PRICEWATERHOUSECOOPERS.** 2000c. *European businesses under threat from new entrants.* [Online]. Cited 2000-01-20. Available: <http://www.pwcglobal.com/extweb/ncpressrelease.nsf/DocID/98FB3F7A125CCA138525680A00685DEC>.
198. **PRICEWATERHOUSECOOPERS.** 2000d. *Electronic business outlook: a guide to seizing the opportunities, meeting the challenges, and implementing E-Business solutions.* [Online]. Cited 2000-10-19. Available: <http://www.pwcglobal.com/extweb/ncsurvres.nsf/docid/D290CD558B9A6283852566B70073218B?OpenDocument>.
199. **PRICEWATERHOUSECOOPERS.** 2000e. *E-visioning your future...today.* [Online]. Cited 2000-01-20. Available: <http://www.pwcglobal.com>.
200. **PRITCHARD, A. & CANTOR, P.** 2000. *E-Channel management: electronic customer relationship management.* In: Customer relationship management: a strategic imperative in the world of e-Business. Edited by Stanley A. Brown. Toronto: John Wiley & Sons, pp.159-187.
201. **RAAEN, D.** 2000. *CRM takes the driving seat for shareholder value.* [Online]. Cited: 2000-05-23. Available: http://www.ac.com/services/crm/news/crm_telecommunications.html.
202. **RAYPORT, J.F. & SVIOKLA, J.J.** 1996. *Exploiting the virtual value chain.* McKinsey Quarterly, no. 1, pp.20-37. [Online]. Available: http://www.mckinseyquarterly.com/article_page.asp?articlenum=132.
203. **REILLY, B.** 1999. *Competitive-advantaged e-business strategies.* GartnerGroup report, Nov.1. [Online]. Available: <http://gartner4.gartnerweb.com:80/gg/purchase/0/00/839/13/doc/00083913/>.

The role of knowledge management in eBusiness and customer relationship management

204. **REISS, D.A.** 1999. *Companies need to learn how to leverage knowledge to sustain competitive advantage*. [Online]. Cited 2000-01-19. Available: http://www.ey.com/global/gcr.nsf/US/Knowledge_-_Real_Estate_-_Ernst_&_Young_LLP.
205. **RESEARCH INSTITUTE OF AMERICA INC.** 1999. *What is a CKO – and should you have one?* Journal of Business Strategy, March-Apr. 1999, p.NA. [Online]. Available: http://web2.infotrac.london.galegroup.com/itw/infomark/739/322/14467583w3/purl=rc2_GBIM_1_What+is+a+CKO++and+should+you+have+one_&dyn=sig!2?sw_aep=up_itw.
206. **RIGBY, D et al.** 2000a. *Assuring the price is right online*. [Online]. Cited 2000-05-03. Available: http://www.bain.com/bainweb/about/insights/pract_insights_read.asp?article_id=886&sort=all&industry_id=0&capability_id=0&status=2.
207. **RIGBY, D. et al.** 2000b. *The value of online customer loyalty and how you can capture it*. [Online]. http://www.bain.com/bainweb/about/insights/pract_insights_read.asp?article_id=888&sort=capability&industry_id=0&capability_id=15&status=1.
208. **ROLLYSON, C.S.** 1999. *Exploring the communications economics of electronic communities*. [Online]. Cited 2000-09-20. Available: <http://208.203.128.56/external/ebib.nsf/Docid/F2D24C1793DC513E8025691F00560464?OpenDocument>.
209. **ROZWELL, C.** 2000. *CEO and CIO update: critical success factors for e-business*. GartnerGroup report, Jan.1. [Online]. Available: <http://gartner4.gartnerweb.com:80/gg/purchase/0/00/859/03/doc/00085903/>.
210. **ROZWELL, C., REILLY, G & LEHONG, H.** 2001. *Fully leveraging eBusiness? Think again*. GartnerGroup report, March 29. [Online]. Available: <http://gartner4.gartnerweb.com:80/gg/purchase>
211. **SANGHANI, V.** 2001. *Creating value from knowledge*. In: *Infosmart Africa 2001 Conference Proceedings*. 10-12 July 2001. The Dome at Northgate, Gauteng, South Africa. Johannesburg: Terrapin.
212. **SEMPLE, E.** 2000. *Knowledge management in a digital world*. In: Liberating knowledge. Edited by Joanna Reeves. London: Caspian Publishing, pp.31-35.
213. **SEYBOLD, P.B.** 2000. *Web wise*. Sales & Marketing Management, 152(5), p.S4. [Online]. Available: http://web4.infotrac.london.galegroup.com/itw/infomark/611/543/72569684w3/purl=rc2_GBIM_2_Patricia+B.+Seybold_2000_Sales+%26+Marketing+Management_&dyn=sig!12?sw_aep=up_itw.

The role of knowledge management in eBusiness and customer relationship management

214. **SHEVLIN, R.** 1999. *Organizing for eCommerce*. Forrester Research Report, Oct. 1999, pp.1-16. [Online]. Available: <http://www.forrester.com/ER/Search/Results/1,1326,0,FF.html?sloc=all&method=&orderBy=relevance&squery=Organizing+for+eCommerce&x=5&y=11>.
215. **SNOWDEN, D.** 2000. *Liberating knowledge*. In: Liberating knowledge. Edited by Joanna Reeves. London: Caspian Publishing, pp. 6-19.
216. **SODANO, A.** 2000. *Build better products by leveraging CRM*. National Underwriter, 104(27), pp. 15, 21. [Online]. Available: <http://proquest.umi.com/pqdweb>.
217. **SOLOMON, M.** 1999. *Next generation e-business intelligence: e for external*. Searcher, 7(10), p.26. [Online]. Available: http://web7.infotrac.london.galegroup.com/itw/infomark/482/356/72858976w3/purl=rc1_GBIM_0_A57484262&dyn=9!xrn_1_0_A57484262?sw_aep=up_itw.
218. **STADLER, C. & STONE, T.** 2001. *eBusiness: knowledge management's new killer application*. In: Infosmart Africa 2001 Conference Proceedings. 10-12 July 2001. The Dome at Northgate, Gauteng, South Africa. Johannesburg: Terrapin.
219. **STAHL, P.** 2000. *New challenges of knowledge management*. In: Liberating knowledge. Edited by Joanna Reeves. London: Caspian Publishing, pp.36-42.
220. **STAISEY, N. & STANMEYER C.M.** 2000. *Using catalytic measures to improve CRM*. In: Customer relationship management: a strategic imperative in the world of e-Business. Edited by Stanley A. Brown. Toronto: John Wiley & Sons, pp.283-294.
221. **STEAR, E. & BAIR, J.** 1997. *Information management is not knowledge management*. GartnerGroup report, Dec.17. [Online]. Available: <http://gartner4/gartnerweb.com:80/gg/purchase/0/00/549/55/doc/00054955/>.
222. **STEPHENSON, M. & DAVIES, T.** 2000. *Technology support for sustainable innovation*. In: Liberating knowledge. Edited by Joanna Reeves. London: Caspian Publishing, pp.105-112.
223. **STEWART, T.H.** 1997. *Intellectual Capital: the new wealth of organisations*. London: Nicholas Brealey Publishing, pp.ix-261.
224. **STEWART, T.R.** 1998. *Perspectives on business in cyberspace: confidentiality and identity*. [Online]. Cited 2000-01-20. Available: <http://www.deloitte.com/tidalwave/default.htm>.
225. **STEWART, T.R.** 2000. *The e-business tidal wave*. [Online]. Cited 2000-10-31. Available: <http://www.deloitte.com/tidalwave/default.htm>.
226. **SUBRAMANIAN, S.** 2000. *Electronic supply chain management*. [Online]. Cited 2000-10-19. Available: <http://www.e-business.pwcglobal.com/external/ebib.nsf/1e03fed127f4dd718025690a003e0412/cc6164c6c0882d1080256920003313fd?OpenDocument>.

The role of knowledge management in eBusiness and customer relationship management

227. **SUE, P. & MORIN, P.** 2001. *A strategic framework for CRM*. {Online}. Available: <http://www.crm-forum.com/library/art/art-100/art-100.html>.
228. **SWART, H.** 2001. DMAP Example Report: Company ABC Management Team. Bentley West Management Consultants internal working paper.
229. **SWART, H. & GREEFF, H.** 2001. *DMAP Introductory Presentation*. Internal Bentley West Management Consultants Presentation and Working Document
230. **TAKIS, W.M., COTE, L.M. & STANMEYER C.M.** 2000. *Customer relationship management through new product development*. In: Customer relationship management: a strategic imperative in the world of e-Business. Edited by Stanley A. Brown. Toronto: John Wiley & Sons, pp.113-127.
231. **TEMKIN, L.** 2001. *Building tomorrow's corporate portal*. In: Infosmart Africa 2001. 10-12 July 2001 Conference Proceedings. The Dome at Northgate, Gauteng, South Africa. Johannesburg: Terrapin.
232. **TICOLL, D. & TAPSCOTT, D.** 1998. *A strategy for e-commerce transformation*. Outlook, June 1998. [Online]. Cited 2000-01-20. Available: http://www.ac.com/ideas/Outlook/6.98/over_currente6.html.
233. **TIMMERS, P.** 1998. *Business models for electronic markets*. Electronic markets, 8(2), pp.3-8.
234. **TORRES, A.** 1999. *Unlocking the value of intellectual assets*. McKinsey Quarterly, no. 4, pp.28-37. [Online]. Available: http://www.mckinseyquarterly.com/article_page.asp?articlenum=360.
235. **TURNER, A. & HUDIG, D.** 2000. *Foreword*. In: Liberating knowledge. Edited by Joanna Reeves. London: Caspian Publishing, p.5.
236. **VALES, J. & ENG, B.** 1999. *E-business process outsourcing paving the way for virtual corporations of the future, says PricewaterhouseCoopers*. [Online]. Cited 2000-001-20. Available: <http://www.pwcglobal.com/extweb/ncpressrelease.nsf/DocID/4702797220033C5185256818007046C2>.
237. **VANDERKAAY, S.** 2000. *Measuring the vital signs of intellectual capital*. CMA Management, 74(4), pp.18-21. [Online]. Available: <http://proquest.umi.com/pqdweb>.
238. **VAN DER KAMP, M.** 2001. *A corporate portal for customer intelligence*. In: Infosmart Africa 2001 Conference Proceedings. 10-12 July 2001. The Dome at Northgate, Gauteng, South Africa. Johannesburg: Terrapin.
239. **VAN DER SPEK, R. & KINGMA, J.** 2000. *Achieving successful knowledge management initiatives*. In: Liberating knowledge. Edited by Joanna Reeves. London: Caspian Publishing, pp.20-30.

The role of knowledge management in eBusiness and customer relationship management

240. **VAN NIEKERK, J.** 2001. *MyLife@bluebean.com - content management: cornerstone of today's eBusiness*. In: Infosmart Africa 2001 Conference Proceedings. 10-12 July 2001. The Dome at Northgate, Gauteng, South Africa. Johannesburg: Terrapin.
241. **VERNON, M.** 1999. "Knowledge paradox" puts Europe ahead: Europe versus the US. The Financial Times, Nov. 10, p.11. [Online]. Available: http://web4.infotrac.london.galegroup.com/itw/infomark/430/644/72715798w3/purl=rc1_GBIM_0_CJ57472030&dyn=71!xrn_1_0_CJ57472030?sw_aep=up_itw.
242. **VIEDGE, C.** 1997. *Knowledge management: remaking organisations through learning*. In: Leveraging knowledge for business performance: the proceedings of the first South African knowledge management conference. Johannesburg: WITS Business School, pp.45-52.
243. **VOTSCH, V. & LINDEN, A.** 2000. *Do you know what 'personalization' means?* GartnerGroup report, May 18. [Online]. Available: <http://gartner4.gartnerweb.com:80/gg/purchase/0/oo/886/10/doc/00088610/>.
244. **WANG, S. & DILLE, S.** 1999. *Turn business information into strategic assets*. e-Business Advisor, 17(6), p.26. [Online]. Available: http://web7.infotrac.london.galegroup.com/itw/infomark/526/688/14472986w3/purl=rc6_GBIM&dyn=2!kwstart?sw_aep=up_itw.
245. **WONG, A.** 2000. *Integrating supplier satisfaction with customer satisfaction*. Total Quality Management, 11(4-6), p. S427. [Online]. Available: <http://proquest.umi.com/pqdweb>.
246. **YOUNG, C.** 2001. *Reaping value from knowledge and innovation*. GartnerGroup report, Jan. 26. [Online]. Available: <http://gartner4.gartnerweb.com:80/gg/purchase>
247. **YOUNG, J. & GALIMI, J.** 2000. *CRM and e-business: are your strategies coordinated?* GartnerGroup report, July 6. [Online]. Available: <http://gartner4.gartnerweb.com:80/gg/purchase/0/00/896/18/doc/00089618/>.
248. **YU, D.** 1999. *Building the knowledge advantage*. [Online]. Cited: 2000-01-19. Available: <http://www.pwcglobal.com/extweb/newcolth.nsf/DocID/D68D5EE66EDBFE828525679F0050D362>.
249. **ZACK, M.H.** 1999. *Managing codified knowledge*. Sloan Management Review, 40(4), p.45. [Online]. Available: http://web4.infotrac.london.galegroup.com/itw/infomark/430/644/72715798w3/purl=rc1_GBIM_0_A55487411&dyn=4!xrn_1_0_A55487411?sw_aep=up_itw.

The role of knowledge management in eBusiness and customer relationship
management

APPENDIX A: DMAP QUESTIONNAIRE

Questionnaire on the role of knowledge management in eBusiness and customer relationship management

Please fill in the questionnaire by working down columns C and E. Try to fill in all fields, but if you simply do not know, leave text fields blank (column C) and put a "9" in assessment fields (column E).

The questionnaire contains eleven sections. Please complete all sections. For your convenience these sections are colour coded.

Introductory notes	
Virtual communities and knowledge sharing	
Knowledge management as integration and change agent	
Knowledge management efficiency improvements	
Increased organisation and knowledge base complexity	
Pooling of expertise	
Knowledge management in the learning environment	
Knowledge attrition	
Organisational agility	
Organisational strategy definition	
Adoption of the eBusiness model	
Open questions	
Respondent Details	

The examples below show how the questions have to be answered. Answer each question from your perspective of the performance of your business unit.

Do you know how to answer this questionnaire?

3
 Business unit performance on scale between 0 and 5 (where "0" is poor, "5" is excellent and numbers in between denote performance between these two extremes). If you really do not know the answer, put a "9".

In the space provided below, list the potentially most important COMMENT you have on the business performance of @company. Then rate @company's current performance for this issue in the block to the right of your answer. Typically do not use more than ten words in the text block.

@company is the Number 1 e-business group in SA in the financial sector

4
Business unit performance on scale between 0 and 5 (where "0" is poor, "5" is excellent and numbers in between denote performance between these two extremes). If you really do not know the answer, put a "9".

This is an anonymous questionnaire. Your comments will not be traced back to you. Be honest in your feedback.

If you have any queries related to the filling in of this questionnaire, please call Marina du Plessis on 082 452 0479

VIRTUAL COMMUNITIES AND KNOWLEDGE SHARING refer to the practice of creating, sharing, harvesting, and leveraging of knowledge across divisional, organisational and geographical boundaries, mostly using electronic means

How important is it for your organization to use extranets to share knowledge with customers/suppliers?

Business unit performance on scale between 0 and 5 (where "0" is poor, "5" is excellent and numbers in between denote performance between these two extremes). If you really do not know the answer, put a "9".

To what extent does your organization retain knowledge shared in virtual communities / collaborative forums?

Business unit performance on scale between 0 and 5 (where "0" is poor, "5" is excellent and numbers in between denote performance between these two extremes). If you really do not know the answer, put a "9".

How important is it for your organization for the knowledge management function to interface with / have any responsibility for centers of excellence?

Business unit performance on scale between 0 and 5 (where "0" is poor, "5" is excellent and numbers in between denote performance between these two extremes). If you really do not know the answer, put a "9".

To what extent does knowledge management provide virtual communities / knowledge sharing platforms and/or tools?

Business unit performance on scale between 0 and 5 (where "0" is poor, "5" is excellent and numbers in between denote performance between these two extremes). If you really do not know the answer, put a "9".

To what extent is the knowledge management function in your organization responsible for structuring of content on your company's website?

Business unit performance on scale between 0 and 5 (where "0" is poor, "5" is excellent and numbers in between denote performance between these two extremes). If you really do not know the answer, put a "9".

To what extent does collaboration by means of virtual communities prevent duplication of work in your organisation?

Business unit performance on scale between 0 and 5 (where "0" is poor, "5" is excellent and numbers in between denote performance between these two extremes). If you really do not know the answer, put a "9".

Question # 1

Question # 2

Question # 3

Question # 4

Question # 5

Question # 6

KNOWLEDGE MANAGEMENT AS INTEGRATION AND CHANGE AGENT

involves using knowledge management to effect intra- or inter-organisational integration through provision and use of knowledge, and to enable change management through provision and use of knowledge relating to change

Question # 7

To what extent does knowledge management, through the provision of knowledge, facilitate an easier transition when organisational changes are made, e.g. restructuring?

Business unit performance on scale between 0 and 5 (where "0" is poor, "5" is excellent and numbers in between denote performance between these two extremes). If you really do not know the answer, put a "9".

Question # 8

How important is it to facilitate integration between eBusiness partners through knowledge management practices?

Business unit performance on scale between 0 and 5 (where "0" is poor, "5" is excellent and numbers in between denote performance between these two extremes). If you really do not know the answer, put a "9".

Question # 9

How important is it to facilitate transparency in the organisation through the use of knowledge management?

Business unit performance on scale between 0 and 5 (where "0" is poor, "5" is excellent and numbers in between denote performance between these two extremes). If you really do not know the answer, put a "9".

KNOWLEDGE MANAGEMENT EFFICIENCY IMPROVEMENTS refer to easier access and improved navigability of knowledge as well as the possibility of reuse of knowledge through standards provided for the creation, sharing, harvesting and leveraging of knowledge

Question # 10

How would you rate the importance of providing 24-hour access to knowledge?

Business unit performance on scale between 0 and 5 (where "0" is poor, "5" is excellent and numbers in between denote performance between these two extremes). If you really do not know the answer, put a "9".

Question # 11

How would you rate the importance of knowledge management in preventing duplication of work?

Business unit performance on scale between 0 and 5 (where "0" is poor, "5" is excellent and numbers in between denote performance between these two extremes). If you really do not know the answer, put a "9".

Question # 12

To what extent does knowledge management enable reuse of knowledge in various contexts?

Business unit performance on scale between 0 and 5 (where "0" is poor, "5" is excellent and numbers in between denote performance between these two extremes). If you really do not know the answer, put a "9".

Question # 13

To what extent does knowledge management and its related activities, e.g. content structuring, minimise time that result from ineffective searches for knowledge?

Business unit performance on scale between 0 and 5 (where "0" is poor, "5" is excellent and numbers in between denote performance between these two extremes). If you really do not know the answer, put a "9".

Question # 14

To what extent does availability of knowledge lead to better customer relationships?

Business unit performance on scale between 0 and 5 (where "0" is poor, "5" is excellent and numbers in between denote performance between these two extremes). If you really do not know the answer, put a "9".

How important is knowledge management in contributing to better service delivery?

Business unit performance on scale between 0 and 5 (where "0" is poor, "5" is excellent and numbers in between denote performance between these two extremes). If you really do not know the answer, put a "9".

Question # 15

INCREASED ORGANISATIONAL AND KNOWLEDGE BASE COMPLEXITY refers to organisations using knowledge management to overcome organisational and knowledge base complexity through provision of knowledge across intra- and inter-organisational boundaries and through the embedding of knowledge in day-to-day work activities

How important is it for your organisation to identify tacit knowledge sources?

Business unit performance on scale between 0 and 5 (where "0" is poor, "5" is excellent and numbers in between denote performance between these two extremes). If you really do not know the answer, put a "9".

Question # 16

How important is knowledge management in enabling cross-divisional flow of knowledge?

Business unit performance on scale between 0 and 5 (where "0" is poor, "5" is excellent and numbers in between denote performance between these two extremes). If you really do not know the answer, put a "9".

Question # 17

To what extent does your organisation embed knowledge management in staff's day-to-day activities?

Business unit performance on scale between 0 and 5 (where "0" is poor, "5" is excellent and numbers in between denote performance between these two extremes). If you really do not know the answer, put a "9".

Question # 18

POOLING OF EXPERTISE refers to organisations providing one point of entry to their knowledge bases to ensure efficiency in the organisation and retrieval of knowledge

To what extent does your organisation provide a single point of entry to the knowledge base?

Business unit performance on scale between 0 and 5 (where "0" is poor, "5" is excellent and numbers in between denote performance between these two extremes). If you really do not know the answer, put a "9".

Question # 19

To what extent does knowledge management provide an electronic interface with business partners?

Business unit performance on scale between 0 and 5 (where "0" is poor, "5" is excellent and numbers in between denote performance between these two extremes). If you really do not know the answer, put a "9".

Question # 20

How important is it for your organisation to have one view of the customer?

Business unit performance on scale between 0 and 5 (where "0" is poor, "5" is excellent and numbers in between denote performance between these two extremes). If you really do not know the answer, put a "9".

Question # 21

Question # 22

How important is it for your organisation to facilitate easier access to knowledge?

Business unit performance on scale between 0 and 5 (where "0" is poor, "5" is excellent and numbers in between denote performance between these two extremes). If you really do not know the answer, put a "9".

Question # 23

To what extent does your organisation provide useful structure to the knowledge base?

Business unit performance on scale between 0 and 5 (where "0" is poor, "5" is excellent and numbers in between denote performance between these two extremes). If you really do not know the answer, put a "9".

KNOWLEDGE MANAGEMENT IN THE LEARNING ENVIRONMENT refers to the provision of access to knowledge that can enhance staff knowledge and skills, as well as knowledge that can stimulate innovation

Question # 24

To what extent does knowledge management currently lead to increased innovation?

Business unit performance on scale between 0 and 5 (where "0" is poor, "5" is excellent and numbers in between denote performance between these two extremes). If you really do not know the answer, put a "9".

Question # 25

How would you rate the importance of knowledge management as critical factor for accelerated learning?

Business unit performance on scale between 0 and 5 (where "0" is poor, "5" is excellent and numbers in between denote performance between these two extremes). If you really do not know the answer, put a "9".

Question # 26

To what extent does knowledge management currently increase employee productivity?

Business unit performance on scale between 0 and 5 (where "0" is poor, "5" is excellent and numbers in between denote performance between these two extremes). If you really do not know the answer, put a "9".

KNOWLEDGE ATTRITION refers to the loss of knowledge when employees leave the organisation

Question # 27

To what extent is tacit knowledge converted to explicit knowledge in your organisation?

Business unit performance on scale between 0 and 5 (where "0" is poor, "5" is excellent and numbers in between denote performance between these two extremes). If you really do not know the answer, put a "9".

Knowledge management increases **ORGANISATIONAL AGILITY** through availability and accessibility of knowledge that leads to quicker and more efficient decision-making

Question # 28

To what extent does knowledge management increase the efficiency of decision-making in your organisation?

Business unit performance on scale between 0 and 5 (where "0" is poor, "5" is excellent and numbers in between denote performance between these two extremes). If you really do not know the answer, put a "9".

Question # 29

How important is it for your organisation to provide the right knowledge timeously to speedily adapt to changes in the marketplace?

Business unit performance on scale between 0 and 5 (where "0" is poor, "5" is excellent and numbers in between denote performance between these two extremes). If you really do not know the answer, put a "9".

Question # 30

How important is knowledge management in your organisation in reducing time to market of products and services?

Business unit performance on scale between 0 and 5 (where "0" is poor, "5" is excellent and numbers in between denote performance between these two extremes). If you really do not know the answer, put a "9".

Organisations use knowledge strategic to the business to influence the ORGANISATIONAL STRATEGIC DIRECTION of the business

Question # 31

To what extent does the availability of knowledge increase your organisation's agility?

Business unit performance on scale between 0 and 5 (where "0" is poor, "5" is excellent and numbers in between denote performance between these two extremes). If you really do not know the answer, put a "9".

Question # 32

How important is knowledge management in providing the organisation with knowledge strategic to the business, e.g. knowledge on products and services, markets, competitors, customers, employee skills, processes and procedures and the regulatory environment?

Business unit performance on scale between 0 and 5 (where "0" is poor, "5" is excellent and numbers in between denote performance between these two extremes). If you really do not know the answer, put a "9".

Question # 33

How important is knowledge management in assisting in identifying new business opportunities?

Business unit performance on scale between 0 and 5 (where "0" is poor, "5" is excellent and numbers in between denote performance between these two extremes). If you really do not know the answer, put a "9".

Question # 34

To what extent is knowledge seen as a corporate asset?

Business unit performance on scale between 0 and 5 (where "0" is poor, "5" is excellent and numbers in between denote performance between these two extremes). If you really do not know the answer, put a "9".

Knowledge management can assist organisations in quicker ADOPTION OF THE eBUSINESS MODEL through the provision of knowledge along the eBusiness business process value chain and by providing the capacity to handle larger volumes of knowledge

Question # 35

How important is knowledge management, through the provision of knowledge, in allowing staff to adjust to their changing roles in the eBusiness environment?

Business unit performance on scale between 0 and 5 (where "0" is poor, "5" is excellent and numbers in between denote performance between these two extremes). If you really do not know the answer, put a "9".

Question # 36

To what extent does knowledge management facilitate the implementation of the eBusiness model by facilitating knowledge flow across organisational and geographical boundaries?

Business unit performance on scale between 0 and 5 (where "0" is poor, "5" is excellent and numbers in between denote performance between these two extremes). If you really do not know the answer, put a "9".

Question # 37

To what extent does knowledge management facilitate the implementation of the eBusiness model by facilitating knowledge flow *within* organisational boundaries?

Business unit performance on scale between 0 and 5 (where "0" is poor, "5" is excellent and numbers in between denote performance between these two extremes). If you really do not know the answer, put a "9".

Question # 38

How would you rate the importance of knowledge management in supporting the different knowledge flows due to changed business processes in the eBusiness model versus the traditional business model?

Business unit performance on scale between 0 and 5 (where "0" is poor, "5" is excellent and numbers in between denote performance between these two extremes). If you really do not know the answer, put a "9".

Question # 39

How would you rate the importance of knowledge management in helping the organisation to cope with more knowledge due to explosion of richness and reach of knowledge in the eBusiness environment?

Business unit performance on scale between 0 and 5 (where "0" is poor, "5" is excellent and numbers in between denote performance between these two extremes). If you really do not know the answer, put a "9".

Question # 40

In the two spaces provided below, describe the two most critical requirements for knowledge flow across divisional, organisational and geographical boundaries. Then rate your unit's current performance for these two issues in the blocks to the right of your two answers. Typically do not use more than ten words in each text block.

Business unit performance on scale between 0 and 5 (where "0" is poor, "5" is excellent and numbers in between denote performance between these two extremes). If you really do not know the answer, put a "9".

Business unit performance on scale between 0 and 5 (where "0" is poor, "5" is excellent and numbers in between denote performance between these two extremes). If you really do not know the answer, put a "9".

Question # 41

In the two spaces provided below, describe the two most prevalent performance measurements relating to knowledge management in your organisation. Then rate your unit's current performance for these two issues in the blocks to the right of your two answers. Typically do not use more than ten words in each text block.

Business unit performance on scale between 0 and 5 (where "0" is poor, "5" is excellent and numbers in between denote performance between these two extremes). If you really do not know the answer, put a "9".

Business unit performance on scale between 0 and 5 (where "0" is poor, "5" is excellent and numbers in between denote performance between these two extremes). If you really do not know the answer, put a "9".

Question # 42

In the two spaces provided below, describe the two most essential leadership elements in knowledge management in your organisation. Then rate your unit's current performance for these two issues in the blocks to the right of your two answers. Typically do not use more than ten words in each text block.

Business unit performance on scale between 0 and 5 (where "0" is poor, "5" is excellent and numbers in between denote performance between these two extremes). If you really do not know the answer, put a "9".

Business unit performance on scale between 0 and 5 (where "0" is poor, "5" is excellent and numbers in between denote performance between these two extremes). If you really do not know the answer, put a "9".

Question # 43

In the two spaces provided below, describe the role of communication in knowledge management. Then rate your unit's current performance for these two issues in the blocks to the right of your two answers. Typically do not use more than ten words in each text block.

Business unit performance on scale between 0 and 5 (where "0" is poor, "5" is excellent and numbers in between denote performance between these two extremes). If you really do not know the answer, put a "9".

Business unit performance on scale between 0 and 5 (where "0" is poor, "5" is excellent and numbers in between denote performance between these two extremes). If you really do not know the answer, put a "9".

Question # 44

In the two spaces provided below, describe the two most critical operational efficiencies effected by knowledge management in your organisation. Then rate your unit's current performance for these two issues in the blocks to the right of your two answers. Typically do not use more than ten words in each text block.

Business unit performance on scale between 0 and 5 (where "0" is poor, "5" is excellent and numbers in between denote performance between these two extremes). If you really do not know the answer, put a "9".

Business unit performance on scale between 0 and 5 (where "0" is poor, "5" is excellent and numbers in between denote performance between these two extremes). If you really do not know the answer, put a "9".

Question # 45

<p>In the two spaces provided below, describe the two most strategic operational efficiencies effected by knowledge management in your organisation. Then rate your unit's current performance for these two issues in the blocks to the right of your two answers. Typically do not use more than ten words in each text block.</p>		
		<p>Business unit performance on scale between 0 and 5 (where "0" is poor, "5" is excellent and numbers in between denote performance between these two extremes). If you really do not know the answer, put a "9".</p>
		<p>Business unit performance on scale between 0 and 5 (where "0" is poor, "5" is excellent and numbers in between denote performance between these two extremes). If you really do not know the answer, put a "9".</p>

RESPONDENT DETAILS

ROLE		
Knowledge Management Professional		Put a "1" in the relevant block or blocks, to indicate your situation.
Other		

YEARS IN ORGANISATION		
0 to 1 yrs		Put a "1" in the relevant block.
1 to 2 yrs		
2 to 5 yrs		
5 to 10 yrs		
10 to 20 yrs		
20 yrs +		

YEARS IN CURRENT POSITION		
0 to 1 yrs		Put a "1" in the relevant block.
1 to 2 yrs		
2 to 5 yrs		
5 to 10 yrs		
10 to 20 yrs		
20 yrs +		

YEARS SINCE LAST ORGANISATIONAL RESTRUCTURING		
0 to 1 yrs		Put a "1" in the relevant block.
1 to 2 yrs		
2 to 5 yrs		
5 to 10 yrs		

If you have completed all questions and have reached this point, you have successfully completed the questionnaire. Now "SAVE" the document under the same name and send it back to **Marina.duplessis@bentleywest.com** for analysis. **REMEMBER**, this is an anonymous questionnaire and confidentiality is guaranteed.

APPENDIX B: QUESTIONNAIRE RESULTS

The role of knowledge management in eBusiness and customer relationship management

B. KNOWLEDGE MANAGEMENT QUESTIONNAIRE: DMAP

B.1. Aim of the questionnaire administered in this study

The aim of the questionnaire is to test the validity of the hypothesis of the value proposition of knowledge management in eBusiness and customer relationship management, as set out in Chapter 8 (with specific focus on sections 8.4. and 8.5) within the South African context.

B.2. Design and administering of the questionnaire

The questionnaire for this study was carefully designed to ensure that it covered all the elements of the proposed hypothesis as stated in Chapter 8. The questionnaire consists of ten major dimensions, namely:

- Virtual communities and knowledge sharing.
- Knowledge management as integration and change agent.
- Knowledge management efficiency improvements.
- Increased organisational and knowledge base complexity.
- Pooling of expertise.
- Knowledge management in the learning environment.
- Knowledge attrition.
- Organisational agility.
- Organisational strategy definition.
- Adoption of the eBusiness model.

These dimensions were tested by 39 closed questions in the DMAP. Prior to administering the questionnaire, specific issues pertaining to the dimensions were identified to test the hypothesis later in the analysis phase and the questions in the questionnaire were mapped to each of the issues. The issues per se were not used in the questionnaire, but have been utilised during the analysis and conclusion formulation. The analysis of the closed question data in this chapter comprises of six elements:

- Average profile of all respondents
- Profile of all respondents with reference to all questions
- Comparison of respondents with reference to closed questions with significant differences
- Comparison of respondents with reference to average of the ten strategic dimensions
- Comparison of industries with reference to average of each of the ten strategic dimensions
- Comparison of knowledge workers and other staff

The role of knowledge management in eBusiness and customer relationship management

There were also six open questions, testing the rest of the themes not covered at all or covered inadequately by the ten strategic themes above. The open questions tested the following strategic themes:

- Critical requirements for the flow of knowledge across divisional, organisational and geographical boundaries.
- Knowledge management performance measurements.
- Leadership elements relating to knowledge management.
- Role of communication in knowledge management.
- Operational efficiencies achieved through knowledge management.
- Strategic efficiencies achieved through knowledge management.

Prior to administering the questionnaire, specific issues pertaining to the strategic themes were identified to test the hypothesis later in the analysis phase and the questions in the questionnaire were mapped to each of the issues. The issues per se were not used in the questionnaire, but have been utilised in the following chapter during the analysis and conclusion formulation.

Respondent details were provided at the end of each questionnaire enabling a view of the respondent and his / her organisation, their role within the organisation relating to knowledge management, the time spent in their current positions and in the organisation, and the years since they were part of a restructuring within the particular organisation.

B.3. Data analysis and interpretation

B.3.1. Summary

This questionnaire was administered in January and February 2002 to 40 individuals in companies spanning the following industries:

- Information Technology (3): small, medium and large organisations.
- Professional Services (2): medium and large international organisations.
- Financial Services (2): large local organisations, includes banking and insurance.
- Telecommunications (1): large organisation.
- Manufacturing (1): large organisation.
- Research (1): small organisation.

A response rate of 55% of individuals targeted was achieved, with responses covering all the industries as stated above, except the Research industry, where no responses were received.

The role of knowledge management in eBusiness and customer relationship management

The survey measured virtual communities and knowledge sharing; knowledge management as integration and change agent; knowledge management efficiency improvements; increased organisational and knowledge base complexity; pooling of expertise; knowledge management in the learning environment; knowledge attrition; organisational agility; organisational strategy definition; adoption of the eBusiness model.

The specific results pertaining to the selection as articulated above, are summarised below in terms of these strategic dimensions, of which the first ten are based on closed-question responses and the eleventh is made up entirely of open questions.

B.3.2. Framework for analysis

The interpretation of the DMAP questionnaire is based on the statistical data and principles of analysis as indicated by Swart (2001, p.12) – see Chapter 9, Figure 33.

B.4. Questionnaire results

The results of the questionnaire can be viewed from different perspectives and many charts can be drawn. The researcher has selected the perspectives and charts most appropriate to the study. The results are depicted in separate sections below.

B.4.1. Results: closed questions

B.4.1.1. Average profile of all respondents

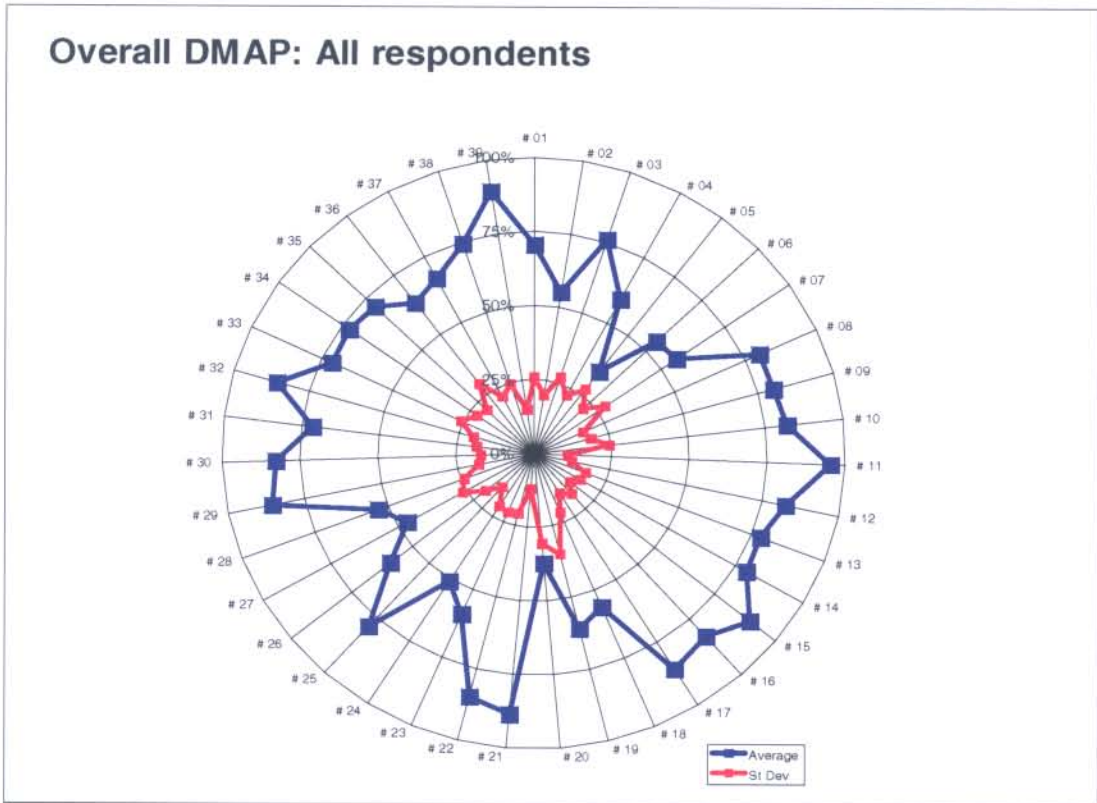


Figure B1. Overall DMAP: all respondents

The diagram depicts an average profile of importance and performance relating to knowledge management in the respondents' organisations with an overall agreement on most issues (approximately 75% of issues were agreed on). Some questions scored a high level of satisfaction, whilst others scored a low level of satisfaction from respondents.

The following strengths (> 65%) have been identified in this diagram:

- It is important for the respondent organisations to use extranets to share knowledge with customers / suppliers, although there is not a high level of agreement, indicating the level of importance differs for the various respondents (Q1).
- It is very important for the respondent organisations that the knowledge management function interfaces with / has responsibility for centres of excellence, although there is not a high level of agreement, indicating that the level of importance differs for the various respondents (Q3).

The role of knowledge management in eBusiness and customer relationship management

- There is a high level of agreement amongst respondents on the importance for the respondent organisations to facilitate integration between eBusiness partners through knowledge management practices (Q8).
- There is a high level of agreement amongst respondents on the importance for the respondent organisations to facilitate transparency in the organisation through the use of knowledge management (Q9).
- There is some agreement amongst respondents that 24-hour access to knowledge is important for the respondent organisations (Q10).
- An extremely high level of consensus exists amongst respondents that knowledge management is important with reference to the prevention of duplication of work (Q11).
- An extremely high level of agreement exists amongst respondents on the current performance relating to the reuse of knowledge in various contexts (Q12).
- A high level of consensus exists amongst respondents on the performance of knowledge management as factor that minimises time spent looking for knowledge (Q13).
- There is a high level of agreement amongst respondents that the availability of knowledge in the respondent organisations currently leads to better customer relationships (Q14).
- There is a high level of agreement amongst respondents that knowledge management in the respondent organisations currently lead to better service delivery (Q15).
- A high level of agreement exists that it is important for the respondent organisations to identify tacit knowledge sources (Q16).
- A high level of consensus exists amongst respondents on the importance of knowledge management in enabling cross-divisional flow of knowledge (Q17).
- An extremely high level of agreement exists amongst respondents on the importance of having one view of the customer (Q21).
- Agreement exists amongst respondents that it is important for respondent organisations to facilitate easier access to knowledge (Q22).
- A high level of consensus exists on the importance of knowledge management as critical factor for accelerated learning (Q25).
- There is a high level of agreement amongst respondents on the importance of providing the right knowledge timeously to speedily adapt to changes in the marketplace (Q29).
- A high level of agreement exists that knowledge management is important in reducing time to market of products and services (Q30).
- A high level of consensus exists on the importance of knowledge management in providing the respondent organisations with knowledge strategic to the business (Q32).
- Some agreement exists on the importance of knowledge management in supporting the different knowledge flows due to changed business processes in the eBusiness model versus the traditional business model (Q38).

The role of knowledge management in eBusiness and customer relationship management

- A high level of agreement exists amongst respondents on the importance of knowledge management in assisting the respondent organisations to cope with more knowledge due to an explosion in richness and reach of knowledge in the eBusiness environment (Q39).

The following weaknesses (<60%) have been identified in this diagram:

- A high level of agreement exists amongst respondents that the respondent organisations do not retain knowledge shared in virtual communities / collaborative forums (Q2).
- There is agreement that respondents are not entirely satisfied with reference to the extent to which the respondent organisations' knowledge management function provides virtual communities / knowledge sharing platforms and / or tools (Q4).
- Knowledge management functions in the respondent organisations are not seen as responsible for the structuring of the companies' websites. There is, however, some disagreement amongst respondents on the degree of the functions' involvement (Q5).
- A high level of agreement exists amongst respondents that collaboration, by means of virtual communities, does not adequately prevent duplication of work in the respondent organisations (Q6).
- Knowledge management does not adequately facilitate an easier transition when organisational changes are made through the provision of knowledge. There is, however, some disagreement amongst respondents on this issue (Q7).
- Agreement exists that the respondent organisations do not embed knowledge management in day-to-day activities of staff (Q18).
- Respondents are not entirely satisfied with reference to the provision of one point of entry to the knowledge base in each of the respondent organisations. There is a relatively high disagreement between respondents on this issue, indicating that some organisations may be performing satisfactory, whilst others are not (Q19).
- A high level of agreement exists amongst respondents that their adequate structure to the knowledge bases of the respondent organisations are not useful (Q23).
- A high level of agreement exists that knowledge management does not lead to innovation to a great extent (Q24).
- Not all respondents are entirely satisfied with the extent to which knowledge management increases employee productivity (Q26).
- Severe problems exist in translating tacit knowledge into explicit knowledge in the average profile of respondents (Q27).
- Not all respondents are entirely satisfied with the extent to which knowledge management increases the efficiency in decision-making in their respective organisations (Q28).

The role of knowledge management in eBusiness and customer relationship management

B.4.1.2. Profile of respondents with reference to all questions

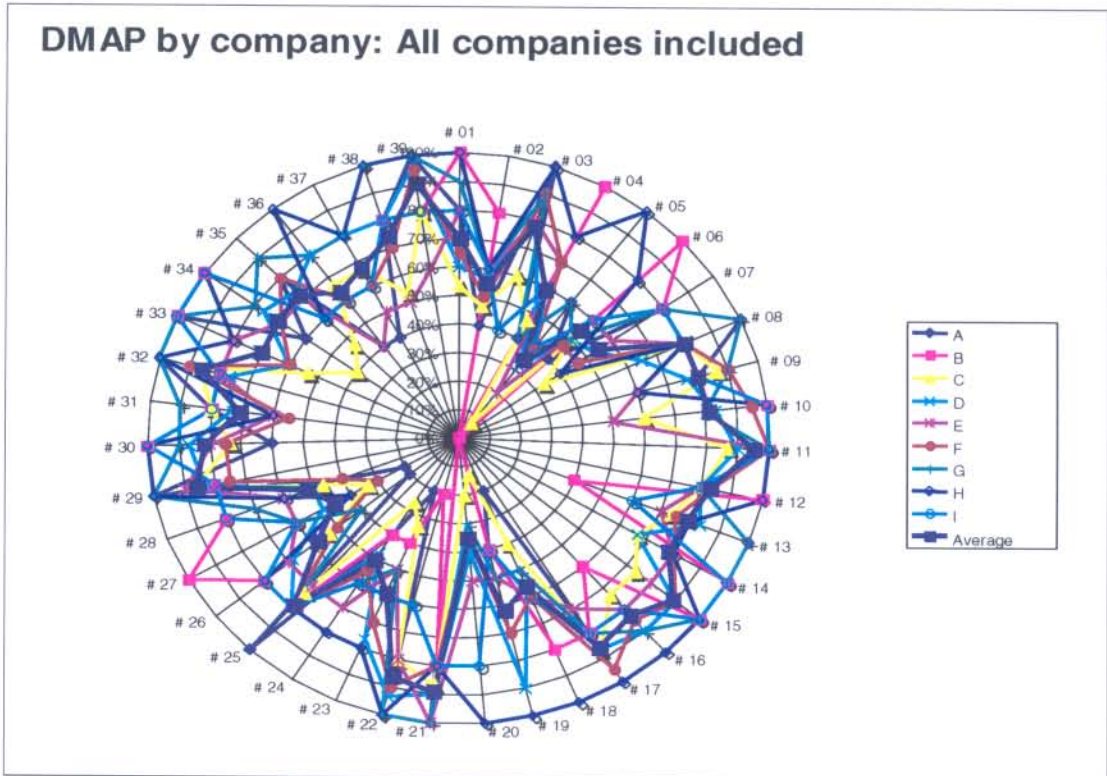


Figure B2. DMAP by company: all companies included

All companies' results per question in the DMAP have been included in the diagram above. For the purpose of the analysis of this questionnaire, only the profiles of the companies detailed in the diagram below will be analysed, as more than one response were received from these companies, rendering the sample more representative.

It is, however, interesting to note in the diagram above, that Organisation B, which is a small organisation compared to all of the other respondents, have very different strengths and weaknesses relating to knowledge management. The differentiation between small and large organisations is, however, not the aim of this study and this will not be analysed in detail, as the sample of small organisations is not representative.

The role of knowledge management in eBusiness and customer relationship management

DMAP by company: Companies with only 1 respondent excluded

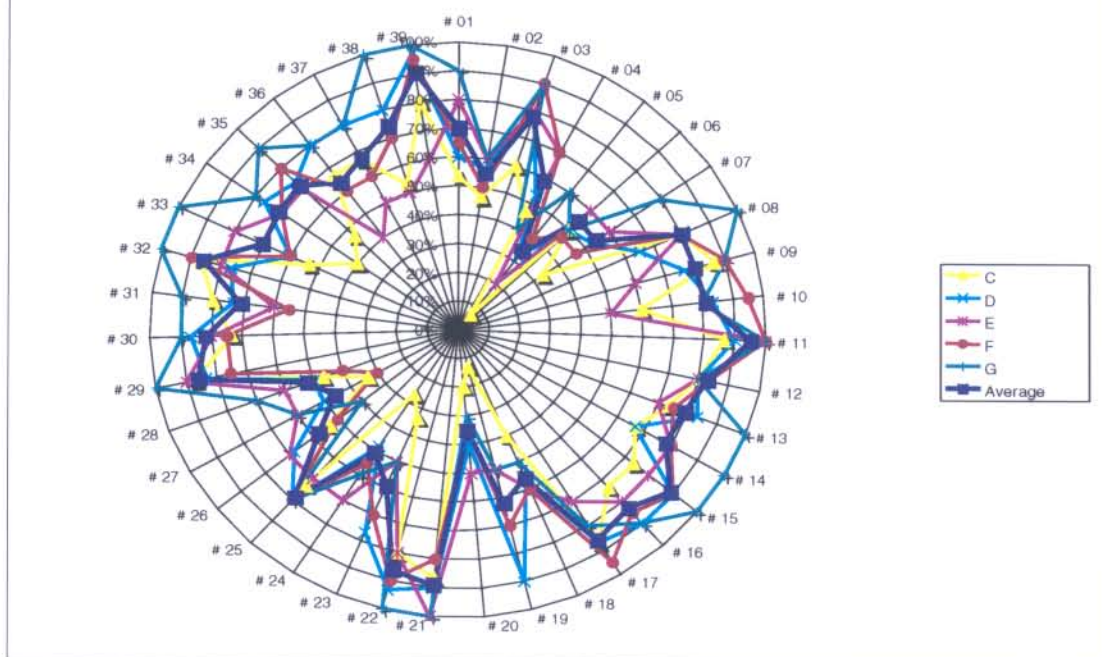


Figure B3. DMAP by company: companies with only one respondent excluded

Analysis: Respondent Organisation C

Respondent organisation C is a medium sized IT organisation. This organisation has a profile well below average with reference to knowledge management performance and importance. This warrants serious management attention, as the IT industry is one of the industries widely considered to be knowledge based, and generally has a services component, which is based upon knowledge, skills and competence.

The following strengths (score > 65%) in Respondent Organisation C have been identified in this diagram:

- Respondent Organisation C deems knowledge management practices as critical to facilitate integration between eBusiness partners (Q8).
- Knowledge management is seen as an important element in facilitating transparency in the organisation (Q9).
- Knowledge management is seen as important in preventing duplication of work (Q11).
- The current performance of knowledge management in enabling the reuse of knowledge in various contexts is high (Q12).
- The current performance of knowledge management in minimising time spent searching for knowledge is high (Q13).

The role of knowledge management in eBusiness and customer relationship management

- Currently availability of knowledge has a valuable role in improving customer relationships (Q14).
- Knowledge management is deemed as an important contributing factor in improving service delivery (Q15).
- Respondent Organisation C deems it important to identify tacit knowledge sources (Q17)
- Knowledge management is perceived as important in enabling cross-divisional knowledge flow (Q17).
- It is highly important for Respondent Organisation C to have one view of the customer (Q21).
- Respondent Organisation C perceives the provision of easier access to knowledge as very important (Q22).
- Knowledge management is seen as a highly critical factor for accelerated learning in Respondent Organisation C (Q25).
- High importance is allocated to the timeous provision of the right knowledge to speedily adapt to changes in the marketplace (Q29).
- Knowledge management is deemed as important in reducing time to market of products and services (Q30).
- Availability of knowledge currently increases Respondent Organisation C's agility (Q31).
- Knowledge management is perceived as important in providing the organisation with knowledge strategic to the business (Q32).
- Knowledge management currently facilitates the adoption of the eBusiness model by facilitating knowledge flow across organisational and geographical boundaries (Q36).
- Knowledge management currently facilitates the adoption of the eBusiness model by facilitating knowledge flow within organisational and geographical boundaries (Q37).
- Knowledge management is deemed as crucially important in helping the organisation to cope with more knowledge due to the explosion of richness and reach of knowledge in the eBusiness environment (Q39).

The following weaknesses (scores < 60%) within Respondent Organisation C have been identified in this diagram:

- It is not deemed highly important to share knowledge with customers / suppliers via extranets (Q1).
- Currently knowledge shared in virtual communities / collaborative forums is not adequately retained (Q2).
- Respondent Organisation C does not perform well in embedding knowledge management into day-to-day activities of staff (Q18).
- Respondent Organisation C scores extremely low on providing a single point of entry to the knowledge base (Q19).

The role of knowledge management in eBusiness and customer relationship management

- Respondent Organisation C scores extremely low on providing an electronic interface with business partners (Q20).
- Respondent Organisation C scores very low on providing a useful structure to the organisation's knowledge base (Q23).
- Knowledge management plays an extremely small role currently in increasing innovation within the organisation (Q24).
- Knowledge management received a low score as factor in increasing employee productivity (Q26).
- Respondent Organisation C scores extremely low in conversion of tacit knowledge to explicit knowledge (Q27).
- Knowledge management does not largely affect the efficiency of decision-making (Q28).
- Knowledge management does not significantly contribute to increased organisational agility (Q33).
- Respondent Organisation C does not deem knowledge a corporate asset at all (very low score <40%) (Q34).
- Knowledge management does not play a significant role at all in allowing staff to adjust to their changing roles in the eBusiness environment through the provision of knowledge (Q35).
- Knowledge management is not perceived as being very important in helping the organisation to cope with more knowledge due to the explosion in richness and reach of knowledge in the eBusiness environment (Q38).

Analysis: Respondent Organisation D

Respondent Organisation D is a small to medium sized international professional services organisation. This organisation has an above average knowledge management profile, but there are some elements that deserve serious management attention.

The following strengths (score > 65%) in Respondent Organisation D have been identified in this diagram:

- It is very important for the knowledge management function to interface with / have responsibility for centers of excellence (Q3).
- Respondent Organisation D deems it very important to facilitate transparency in the organisation through the use of knowledge management (Q9).
- Providing 24-hour access to knowledge is extremely important (Q10).
- Knowledge management is ranked as extremely important in the prevention of duplication of work (Q11).
- Knowledge management currently enables the reuse of knowledge in various contexts to a large extent (Q12).

The role of knowledge management in eBusiness and customer relationship management

- Knowledge management and related activities largely minimise time spent on searching for knowledge (Q13).
- Availability of knowledge leads to better customer service (Q14).
- Knowledge management is deemed to be extremely important in contributing to better service delivery (Q15).
- It is extremely important for Respondent Organisation D to identify tacit knowledge sources (Q16).
- Knowledge management plays an instrumental role in facilitating cross-divisional knowledge flow (Q17).
- Respondent Organisation D scores highly in providing a single point of access to knowledge (Q19).
- Providing one view of the customer is extremely important (Q21).
- Facilitating easier access to knowledge is extremely important (Q22).
- A useful structure to the knowledge base is provided (Q23).
- Knowledge management is deemed as a critical factor for accelerated learning (Q25).
- Knowledge management currently increases employee productivity significantly (Q26).
- It is extremely important for Respondent Organisation D to provide the right knowledge timeously to speedily adapt to changes in the marketplace (Q29).
- Knowledge management is extremely important in reducing time to market of products and services (Q30).
- Availability is important in increasing the organisation's agility (Q31).
- Knowledge management is important in providing the organisation with knowledge strategic to the business (Q32).
- Knowledge is perceived to be a corporate asset (Q34).
- Knowledge management is perceived as important in allowing staff to adjust to their changing roles in the eBusiness environment (Q35).
- Knowledge management currently facilitates the implementation of the eBusiness model by facilitating knowledge flow across organisational and geographical boundaries (Q36).
- Knowledge management currently facilitates the implementation of the eBusiness model by facilitating knowledge flow within organisational and geographical boundaries (Q37).
- Knowledge management is perceived as important in supporting the different knowledge flows due to changed business processes in the eBusiness model versus the traditional business model (Q38).
- Knowledge management is perceived as having a very high rating (100%) in helping the organisation cope with more knowledge due to the explosion of richness and reach of knowledge in the eBusiness environment (Q39).

The role of knowledge management in eBusiness and customer relationship management

The following weaknesses (scores < 60%) within Respondent Organisation D have been identified in this diagram:

- Knowledge management does not adequately provide virtual communities / knowledge sharing platforms and / or tools (Q4).
- Knowledge management is not responsible for the structuring of content on the organisation's website (Q5).
- Collaboration through virtual communities does not adequately prevent duplication of work (Q6).
- Knowledge management does not play a significant role in facilitating an easier transition when organisational changes are made (Q7).
- Knowledge management is not perceived to as embedded in day-to-day activities of staff (Q18).
- Knowledge management plays virtually no role in providing an electronic interface with business partners (Q20).
- Knowledge management does not significantly contribute to increased innovation in the organisation (Q24).
- Tacit knowledge is to a great extent not converted into explicit knowledge (Q27).
- Knowledge management does not significantly contribute to increased efficiency in decision-making (Q28).
- Knowledge management does not play a significant role in assisting in identifying new business opportunities (Q33).

Analysis: Respondent Organisation E

Respondent Organisation E is a South African telecommunications organisation. This organisation has a slightly above average knowledge management profile. There are many knowledge management issues that warrant serious management attention.

The following strengths (score > 65%) in Respondent Organisation E have been identified in this diagram:

- It is very important to utilise extranets to share knowledge with customers / suppliers (Q1).
- Knowledge management currently fairly adequately provides virtual communities / knowledge sharing platforms and / or tools (Q4).
- It is very important to facilitate integration between eBusiness partners through knowledge management practices (Q8).
- Knowledge management is perceived to be extremely important in preventing duplication of work (Q11).

The role of knowledge management in eBusiness and customer relationship management

- Knowledge management enables the reuse of knowledge in various contexts to a large extent (Q12).
- Knowledge management and its related activities minimise time spent in searching for knowledge (Q13).
- Availability of knowledge is very crucial to improve customer relationships (Q14).
- Knowledge management is very important in contributing to improved service delivery (Q15).
- It is very important to identify tacit knowledge sources (Q16).
- Knowledge management is crucial in enabling cross-divisional knowledge flow (Q17).
- It is extremely important for Respondent Organisation E to have one view of the customer (Q21).
- Facilitating easier access to knowledge is important (Q22).
- Knowledge management currently leads to increased innovation to a great extent (Q24).
- Knowledge management is a critical factor for accelerated learning (Q25).
- Knowledge management currently greatly increases employee productivity (Q26).
- It is extremely important to provide the right knowledge timeously to speedily adapt to changes in the marketplace (Q29).
- Knowledge management is very important in reducing time to market of products and services (Q30).
- Knowledge management is important in providing the organisation with knowledge strategic to the business (Q32).
- Knowledge management is very important in assisting in identifying new business opportunities (Q33).
- Knowledge is seen as a corporate asset to a large extent (Q34).
- Knowledge management is important in allowing staff to adjust to their changing roles in the eBusiness environment (Q35).

The following weaknesses (scores < 60%) within Respondent Organisation E have been identified in this diagram:

- The knowledge management function is only marginally responsible for the structuring of the knowledge on the organisation's website (Q5).
- Providing 24-hour access to knowledge is not perceived as very important (Q10).
- The organisation is not really perceived as providing a single point of entry to the knowledge base (Q19).
- Knowledge management only partially provides an electronic interface with business partners (Q20).
- The organisation's knowledge base does not have a useful structure (Q23).

The role of knowledge management in eBusiness and customer relationship management

- Knowledge management is not perceived as playing a significant role in facilitating the implementation of the eBusiness model by facilitating knowledge flow across organisational and geographical boundaries (Q36).
- Knowledge management is not perceived as playing a significant role in facilitating the implementation of the eBusiness model by facilitating knowledge flow within organisational and geographical boundaries (Q37).
- Knowledge management is not seen as very important in supporting the different knowledge flows due to changed business processes in the eBusiness model versus the traditional business model (Q38).

Analysis: Respondent Organisation F

Respondent Organisation F is a large international professional services organisation. This organisation has a slightly above average knowledge management profile.

The following strengths (score > 65%) in Respondent Organisation F have been identified in this diagram:

- Respondent Organisation F deems it extremely important for the knowledge management function to interface with / have any responsibility for centers of excellence (Q3).
- Knowledge management provides virtual communities / knowledge sharing platforms and / or tools to a large extent (Q4).
- Knowledge management practices are perceived as playing a very important role in facilitating integration between eBusiness partners (Q8).
- Knowledge management is perceived as extremely important in facilitating transparency in the organisation (Q9).
- 24-Hour access to knowledge is critically important (Q10).
- Knowledge management is extremely important in preventing duplication of work (Q11).
- Knowledge management currently enables the reuse of knowledge in various contexts (Q12).
- Knowledge management assists in minimising time spent on searching for knowledge (Q13).
- Availability of knowledge is important in improving customer relationships (Q14).
- Knowledge management is very important in contributing to better service delivery (Q15).
- It is very important for Respondent Organisation F to identify tacit knowledge sources (Q16).
- Knowledge management is critically important in enabling cross-divisional flow of knowledge (Q17).
- Having one view of the customer is very important (Q21).

The role of knowledge management in eBusiness and customer relationship management

- Facilitating easier access to knowledge is critically important for Respondent Organisation F (Q22).
- The organisation provides a useful structure to the knowledge base (Q23).
- Knowledge management is perceived to be a critical factor in accelerated learning (Q25).
- Knowledge management increases employee productivity (Q29).
- Knowledge management is important in reducing time to market of products and services (Q30).
- Knowledge management is extremely vital in providing knowledge strategic to the business (Q32).
- Knowledge is seen as a corporate asset (Q34).
- Knowledge management is very important in allowing staff to adjust to their changing roles in the eBusiness environment (Q35).
- Knowledge management is important in supporting the different knowledge flows due to changed business processes in the eBusiness model versus the traditional business model (Q38).
- Knowledge management is critically important in helping the organisation to cope with more knowledge due to the explosion of richness and reach of knowledge in the eBusiness environment (Q39).

The following weaknesses (scores < 60%) within Respondent Organisation F have been identified in this diagram:

- Knowledge shared in virtual communities / collaborative forums is not adequately retained (Q2).
- The knowledge management function is only partly responsible for the structuring of the company's website (Q5).
- Collaboration by means of virtual communities does not really prevent duplication of work (Q6).
- Knowledge management does not really facilitate an easier transition when organisational changes are made (Q7).
- Knowledge management does not currently lead to increased innovation (Q24).
- Knowledge management does not satisfactorily increase employee productivity (Q26).
- Tacit knowledge is not converted to explicit knowledge (Q27).
- Knowledge management does not adequately increase the efficiency of decision-making (Q28).
- The availability of knowledge does not increase the organisation's agility (Q31).

The role of knowledge management in eBusiness and customer relationship management

Analysis: Respondent Organisation G

Respondent Organisation G is a large South African insurance organisation. This organisation has an above average knowledge management profile.

The following strengths (score > 65%) in Respondent Organisation G have been identified in this diagram:

- It is extremely important for Respondent Organisation G to share knowledge with customers / suppliers via an extranet (Q1).
- It is extremely important for the knowledge management function to interface with and / or have responsibility for centers of excellence (Q3).
- Knowledge management plays a large role in facilitating an easier transition when organisational changes are made (Q7).
- Knowledge management practices are critical in facilitating integration with eBusiness partners (Q8).
- It is extremely important in facilitating transparency in the organisation through the use of knowledge management practices (Q9).
- It is very important in providing 24-hour access to knowledge (Q10).
- Knowledge management is critically important in preventing the duplication of work (Q11).
- Knowledge management greatly enables the reuse of knowledge in various contexts (Q12).
- Knowledge management and its related activities are critically important in minimising time spent searching for knowledge (Q13).
- Availability of knowledge currently leads to improved customer relationships (Q14).
- Knowledge management is perceived as critical in contributing to improved service delivery (Q15).
- Identifying tacit knowledge sources is very important (Q16).
- Knowledge management is very important in enabling cross-divisional flow of knowledge (Q17).
- Having one view of the customer is critical (Q21).
- Facilitating easier access to knowledge is extremely important (Q22).
- Knowledge management is very important for accelerated learning (Q25).
- Knowledge management increases the efficiency of decision-making (Q28).
- It is critically important to provide the right knowledge timeously to speedily adapt to changes in the marketplace (Q29).
- Knowledge management is extremely important in reducing time to market of products and services (Q30).
- The availability of knowledge greatly increases the organisation's agility (Q31).

The role of knowledge management in eBusiness and customer relationship management

- Knowledge management is critically important in providing knowledge strategic to the business (Q32).
- Knowledge management is critical in assisting in identifying new business opportunities (Q33).
- Knowledge is seen as a corporate asset (Q34).
- Knowledge management is extremely important in allowing staff to adjust to their changing roles in the eBusiness environment (Q35).
- Knowledge management facilitates the implementation of the eBusiness model by facilitating knowledge flow across organisational and geographical boundaries (Q36).
- Knowledge management facilitates the implementation of the eBusiness model by facilitating knowledge flow within organisational and geographical boundaries (Q37).
- Knowledge management is of critical importance in supporting the different knowledge flows due to changed business processes in the eBusiness model versus the traditional business model (Q38).
- Knowledge management is critical in helping the organisation cope with more knowledge due to the explosion of richness and reach of knowledge in the eBusiness environment (Q39).

The following weaknesses (scores < 60%) within Respondent Organisation G have been identified in this diagram:

- Knowledge management does not adequately provide virtual communities / knowledge sharing platforms and / or tools (Q4).
- Collaboration via virtual communities does not prevent duplication of work to a large extent (Q6).
- Knowledge management is not adequately embedded into staff's day-to-day activities (Q18).
- A single point of entry to the organisational knowledge base does not exist (Q19).
- Knowledge management does not provide an electronic interface with business partners (Q20).
- There is no useful structure to the knowledge base (Q23).
- Knowledge management does not increase employee productivity (Q26).

The role of knowledge management in eBusiness and customer relationship management

B.4.1.3. Comparison of respondents with reference to closed questions with significant differences

For the purpose of this study, the focus will be on the respondent diagram (Figure B3), which includes only those organisations where more than one response was received. Figure B3 will be analysed below in terms significant individual differentiation between organisations with reference to specific questions. The purpose is to establish trends in specific organisations, and to identify high and low scores in organisations.

The following significant differentiation between responses has been identified:

- In the first question, responses are spread evenly, but with a rather large spread, from 50% to 90%, with Respondent Organisation C (IT) ranking the lowest and Respondent Organisation G (Insurance) ranking the highest. This signifies that the perception of importance to all organisations to share knowledge with customers and suppliers via extranets, differs vastly (Q1).
- Respondent Organisation C does not involve knowledge management at all in the structuring of its company website. The response received an extremely low score (Q5).
- In the seventh question, responses are spread evenly, but with a rather large spread, from 30% to 80%, with Respondent Organisation C (IT) again ranking the lowest and Respondent Organisation G (Insurance) ranking the highest. This signifies that the perception of the current role of knowledge management in facilitating an easier transition when organisational changes are made, differs vastly amongst respondents (Q7).
- Respondent Organisation G (insurance organisation) attaches a much higher importance rating to the facilitation of integration between eBusiness partners through knowledge management practices than the other respondents, though all of the respondents ranked it of high importance (Q8).
- Respondent Organisation E (telecommunications organisation) attaches a much lower importance rating (60%) to the facilitation of transparency in the organisation through knowledge management. The other respondent organisations have a high level of satisfaction on the facilitation of transparency provided through knowledge management (Q9).
- In question ten, responses are spread evenly, but with a rather large spread, from 50% to 96%, with Respondent Organisation E (Telecommunications) ranking the lowest and Respondent Organisation F (Professional Services) ranking the highest. This signifies that the perception relating to 24-hour access to knowledge differs vastly amongst respondents (Q10).

The role of knowledge management in eBusiness and customer relationship management

- Respondent Organisation G (Insurance) ranks higher compared to the other respondents in the extent to which knowledge management and related activities minimizes time spent for knowledge (Q13).
- Respondent Organisation G (Insurance) ranks higher compared to the other respondents in the extent to which knowledge availability leads to better customer relationships (Q14).
- Respondent Organisation G (Insurance) ranks higher compared to the other respondents in the extent to which knowledge management contributes to better service delivery (Q15).
- Respondents differ to a large extent on the extent to which knowledge management enables cross-divisional knowledge flow, with scores ranging from 70% (Respondent E – Telecommunications) to 96% (Respondent F – Professional Services) (Q17).
- Respondents differ vastly on the extent to which their organisations provide a single point of entry to the organisational knowledge base, with scores ranging from 12% (Respondent C – IT) to 90% (Respondent D – Professional Services) (Q19).
- Respondent C (IT) ranked slightly lower compared to the rest of the respondents on the extent to which the organisation currently provides a useful structure to the knowledge base (Q23).
- Respondent C (IT) ranked slightly lower compared to the rest of the respondents on the extent to which the organisation currently leads to increased innovation (Q24).
- In question 26, responses are spread evenly, but with a rather large spread, from 40% to 70%, with Respondent Organisation D (Professional Services) and Organisation E (Telecommunications) ranking the highest and Respondent Organisation G (Insurance) ranking the lowest. This signifies that the perception of the extent to which knowledge management currently leads to increased employee productivity, differs vastly (Q26).
- In question 27, responses are spread evenly, but with a rather large spread, from 30% to 60%, with Respondent Organisation E (Telecommunications) and Respondent Organisation G (Insurance) ranking the highest and Respondent Organisation F (Professional Services) ranking the lowest. This signifies that the perception of the extent to which tacit knowledge is converted to explicit knowledge, differs vastly (Q27).
- In question 28, responses are spread evenly, but with a rather large spread, from 40% to 70%, with Respondent Organisation G (Insurance) ranking the highest and Respondent Organisation F (Professional Services) ranking the lowest. This signifies that the perception of the extent to which tacit knowledge is converted to explicit knowledge, differs vastly (Q28).
- Respondent Organisation G (Insurance) deems provision of the right knowledge speedily to adapt to changes in the marketplace more important than the other respondent organisations (Q29).

The role of knowledge management in eBusiness and customer relationship management

- In question 31, responses are spread evenly, but with a rather large spread, from 55% to 90%, with Respondent Organisation G (Insurance) ranking the highest and Respondent Organisation F (Professional Services) ranking the lowest. This signifies that the perception of the extent to which availability of knowledge currently increases organisational agility differs quite vastly (Q31).
- Respondent Organisation G (Insurance) deems the provision of knowledge strategic to the business as more important than the other respondent organisations (Q32).
- In question 33, responses are spread evenly, but with a rather large spread, from 54% to 100%, with Respondent Organisation G (Insurance) ranking the highest and Respondent Organisation C (IT) ranking the lowest. This signifies that the perception of the importance of knowledge management in identifying new business opportunities, differs vastly (Q33).
- Respondent Organisation C (IT) perceives knowledge much less of a corporate asset than the other respondent organisations (Q34).
- Respondent Organisation C (IT) perceives knowledge management of much less importance than other respondent organisations in allowing staff to adapt to their changing roles in the eBusiness environment (Q35).
- In question 36, responses are spread evenly, but with a rather large spread, from 40% to 80%, with Respondent Organisation D (Professional Services) and Respondent Organisation G (Insurance) ranking the highest and Respondent Organisation E (Telecommunications) ranking the lowest. This signifies that the perception of the importance of knowledge management in facilitating the implementation of the eBusiness model by facilitating knowledge flow across organisational and geographical boundaries, differs vastly (Q36).
- In question 37, responses are spread evenly, but with a rather large spread, from 50% to 80%, with Respondent Organisation D (Professional Services) and Respondent Organisation G (Insurance) ranking the highest and Respondent Organisation E (Telecommunications) ranking the lowest. This signifies that the perception of the importance of knowledge management in facilitating the implementation of the eBusiness model by facilitating knowledge flow within organisational and geographical boundaries, differs vastly (Q37).
- In question 38, responses are spread evenly, but with a rather large spread, from 50% to 100%, with Respondent Organisation G (Insurance) ranking the highest and Respondent Organisation C (IT) ranking the lowest. This signifies that the perception of the importance of knowledge management in supporting the different knowledge flows due to changed business processes in the eBusiness model versus the traditional business model, differs vastly (Q38).

The role of knowledge management in eBusiness and customer relationship management

B.4.1.4. Comparison of respondents with reference to average of each of the ten strategic dimensions

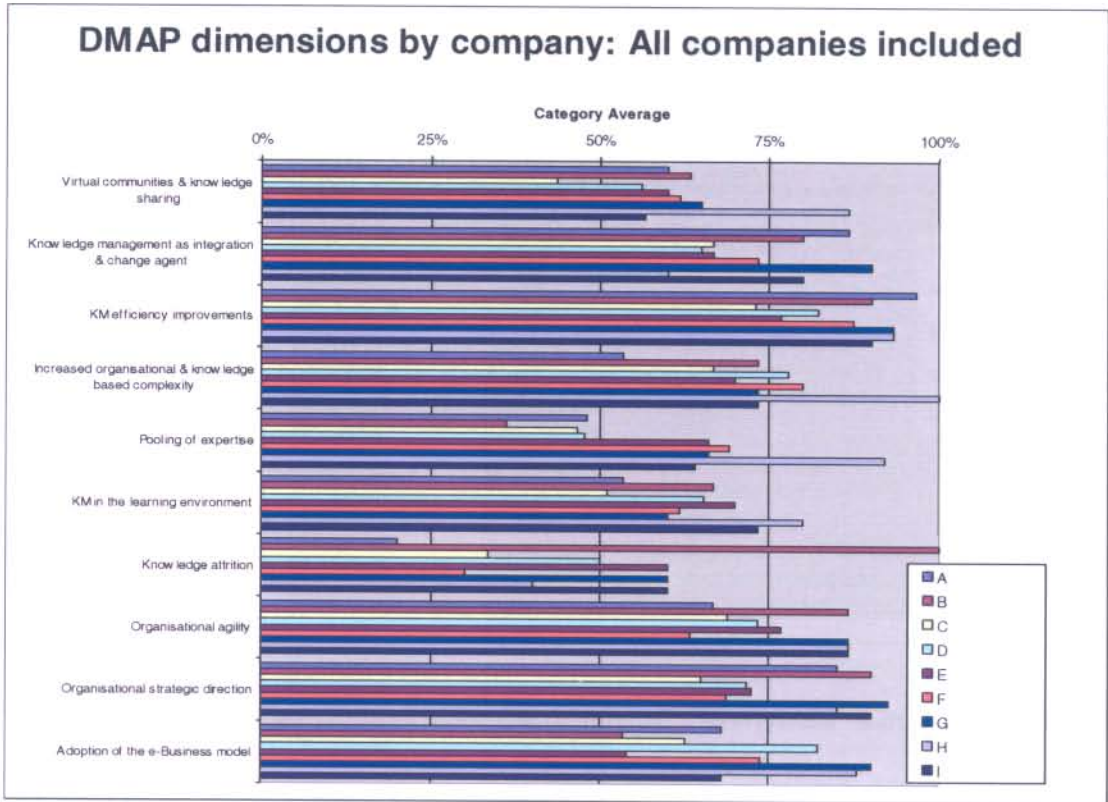


Figure B4. DMAP dimensions by company: all companies included

All companies' results per question in the DMAP have been included in the diagram above. For the purpose of the analysis of this questionnaire, only the profiles of the companies detailed in the diagram below will be analysed, as more than one response were received from these companies, rendering the sample more representative.

The role of knowledge management in eBusiness and customer relationship management

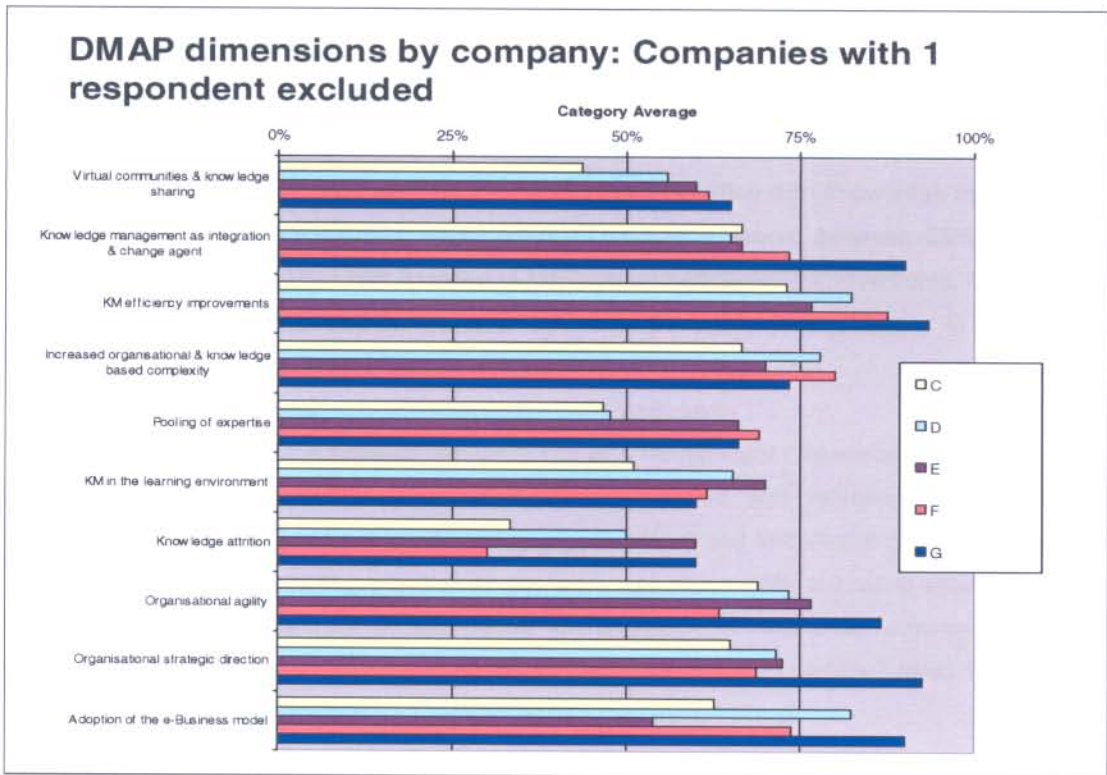


Figure B5. DMAP dimensions by company: companies with one respondent excluded

The diagram above will be analysed with reference to the level of the scoring for organisations within each strategic dimension, and a comparison between the generic scores of the strategic dimensions will be made.

- Virtual communities and knowledge sharing

The score for this dimension is fairly low. 3 Out of 5 Respondent Organisations scored between 60% and 65%, indicating that they are not entirely satisfied with the performance relating to virtual communities and knowledge sharing. 2 Of the Respondent Organisation scores were well below 60%, indicating severe problems. Respondent Organisation C (IT) had the lowest score, whilst Respondent Organisation G (Insurance) had the highest score.

- Knowledge management as integration and change agent

The score for this dimension is high. 2 Out of 5 Respondent Organisations scored above 75%, indicating that they are exceptionally satisfied with the performance relating to knowledge management as integration and change agent. 3 Of the Respondent Organisation scores were well above 65%, indicating satisfaction with the performance relating to knowledge management as integration and change agent. Respondent

The role of knowledge management in eBusiness and customer relationship management

Organisation D (Professional Services) had the lowest score, whilst Respondent Organisation G (Insurance) had the highest score.

- Knowledge management efficiency improvements

The score for this dimension is very high. 4 Out of 5 Respondent Organisations scored above 75%, indicating that they are exceptionally satisfied with knowledge management efficiency improvements. 1 Respondent Organisation scored between 65% and 75%, indicating satisfaction with knowledge management efficiency improvements. Respondent Organisation C (IT) had the lowest score, whilst Respondent Organisation G (Insurance) had the highest score.

- Increased organisational and knowledge base complexity

The score for this dimension is high. 2 Out of 5 Respondent Organisations scored above 75%, indicating that they are exceptionally satisfied with reference to the role of knowledge management in alleviating organisational and knowledge base complexity. 3 Of the Respondent Organisation scores were well above 65%, indicating satisfaction with reference to the role of knowledge management in alleviating organisational and knowledge base complexity. Respondent Organisation C (IT) had the lowest score, whilst Respondent Organisation F (Insurance) had the highest score.

- Pooling of expertise

The score for this dimension is average. 3 out of 5 Respondent Organisations scored between 65% and 75%, indicating that they are satisfied with reference to the role of knowledge management in pooling of expertise. 2 Of the Respondent Organisation scores were well below 50%, indicating severe problems with reference to the role of knowledge management in the pooling of expertise. Respondent Organisation C (IT) had the lowest score, whilst Respondent Organisation F (Professional Services) had the highest score.

- Knowledge management in the learning environment

The score for this dimension is average. 2 out of 5 Respondent Organisations scored between 65% and 75%, indicating that they are satisfied with reference to the role of knowledge management in the learning environment. 2 Of the Respondent Organisation scores were between 60% and 65%, indicating some dissatisfaction with reference to the role of knowledge management in the learning environment. 1 Respondent Organisation had a score below 60% indicating severe problems with reference to the role of knowledge management in the learning environment. Respondent Organisation C (IT) had the lowest score, whilst Respondent Organisation E (Telecommunications) had the highest score.

- Knowledge attrition

The score for this dimension is low. All Respondent Organisations scored 60% or below indicating severe problems relating to the role of knowledge management in preventing knowledge attrition. Respondent Organisation C (IT) had the lowest score (at 29%

The role of knowledge management in eBusiness and customer relationship management

indicating, extremely severe problems in this area), whilst Respondent Organisation F (Professional Services) and Respondent Organisation G (Insurance) had the highest scores.

- Organisational agility

The score for this dimension is above average. 2 out of 5 Respondent Organisations scored higher than 75%, indicating exceptional satisfaction with reference to the role of knowledge management in achieving organisational agility. 2 Of the Respondent Organisation scores were between 65% and 75%, indicating satisfaction with reference to the role of knowledge management in achieving organisational agility. 1 Respondent Organisation had a score between 60% and 65%, indicating some dissatisfaction with reference to the role of knowledge management in achieving organisational agility. Respondent Organisation F (Professional Services) had the lowest score, whilst Respondent Organisation G (Insurance) had the highest score.

- Organisational strategic direction

The score for this dimension is high. 1 Respondent Organisation scored higher than 75%, indicating exceptional satisfaction with the role of knowledge management in organisational strategic direction. 4 out of 5 Respondent Organisations scored between 65% and 75%, indicating satisfaction with the role of knowledge management in organisational strategic direction. Respondent Organisation C (IT) had the lowest score, whilst Respondent Organisation G (Insurance) had the highest score.

- Adoption of the eBusiness model

The score for this dimension is above average. 2 Respondent Organisations scored higher than 75%, indicating exceptional satisfaction with the role of knowledge management in the adoption of the eBusiness model. 2 out of 5 Respondent Organisations scored between 65% and 75%, indicating satisfaction with the role of knowledge management in the adoption of the eBusiness model. 1 Respondent Organisation scored below 60%, indicating severe problems with the role of knowledge management in the adoption of the eBusiness model. Respondent Organisation E (Telecommunications) had the lowest score, whilst Respondent Organisation G (Insurance) had the highest score.

In analysis of the strategic dimensions in comparison to one another, there are clearly some high scoring dimensions and low scoring dimensions.

The top three high scoring dimensions are:

- Knowledge management efficiency improvements received the highest overall score from all the respondent organisations. The lowest score in that dimension is 73% and the highest 94%.

The role of knowledge management in eBusiness and customer relationship management

- The second highest score was the role of knowledge management in overall strategic direction, with the highest score on 93%, and all the other scores above 65%.
- The third ranking score was achieved by knowledge management as integration and change agent, with a highest score of 90% and the rest of the scores above 65%.

The lowest scoring dimensions are:

- Knowledge attrition received the lowest ranking score, with the highest score on 60% and the lowest score on 29%, indicating severe dissatisfaction at the highest level, and extreme problems that need change management intervention at the lowest level.
- The second lowest score was allocated for virtual communities and knowledge sharing, with the highest score of 65%, and the lowest score of 44%, indicating dissatisfaction at the highest level and severe problems at the lowest level.
- Pooling of expertise is the third lowest scoring dimension. Its highest score is 71%, indicating some satisfaction, and the lowest two scores on 48% and 47% respectively, indicating severe problems.

B.4.1.5. Comparison of industries with reference to average of each of the ten strategic dimensions



Figure B6. DMAP dimensions by sector

This diagram includes all respondents in the sectors indicated, including those with just one respondent. It is important to note that, with reference to this study, the financial services industry includes both banking and insurance, the IT industry includes small, medium and

The role of knowledge management in eBusiness and customer relationship management

large IT organisations, the professional services industry includes medium and large professional services firms, and the telecommunications industry is represented by one of the major players in the telecommunications arena in South Africa.

The analysis of this diagram will include a comparison between the four industries, the highest and lowest ranking industries in relation to the three highest and lowest scoring dimensions, and industry analysis with reference to the high and low scores of each industry relating to the knowledge management strategic dimensions as identified in this study.

The scores of the industries relating to the three highest scoring dimensions are:

- Knowledge management efficiency improvements
Financial Services had the highest score of 95% whilst Telecommunications had the lowest score of 77%.
- Role of knowledge management in overall strategic direction
Financial Services had the highest score of 90% whilst Professional Services had the lowest score of 71%.
- Knowledge management as integration and change agent
Financial Services had the highest score of 88% whilst Telecommunications had the lowest score of 66%.

The scores of the industries relating to the three lowest scoring dimensions are:

- Knowledge attrition
Telecommunications had the highest score of 60% whilst Professional Services had the lowest score of 42%.
- Virtual communities and knowledge sharing
Financial Services had the highest score of 63% whilst IT had the lowest score of 51%.
- Pooling of expertise
Professional Services had the highest score of 75% whilst IT had the lowest score of 48%.

The top three strengths and weaknesses of each industry relating to knowledge management strategic dimensions have been identified. The strengths and weaknesses per industry are:

- Financial Services
The strengths of the financial services industry are knowledge management efficiency improvements, knowledge management as integration and change agent, and the role of knowledge management in strategic organisational direction. The weaknesses of the Financial Services industry are knowledge attrition, knowledge management in the learning environment and pooling of expertise.

The role of knowledge management in eBusiness and customer relationship management

- IT

The strengths of the IT industry are knowledge management efficiency improvements, organisational agility and organisational strategic direction. The weaknesses of the IT industry are pooling of expertise, virtual communities and knowledge sharing, and the pooling of expertise.

- Professional Services

The strengths of the Professional Services industry are knowledge management efficiency improvements, increased organisational and knowledge base complexity, and adoption of the eBusiness model. The weaknesses of the Professional Services industry are knowledge attrition, virtual communities and knowledge sharing, and knowledge management in the learning environment.

- Telecommunications

The strengths of the Telecommunications industry are knowledge management efficiency improvements, organisational agility and organisational strategic direction. The weaknesses of the Telecommunications industry are adoption of the eBusiness model, virtual communities and knowledge sharing, and knowledge attrition.

Comparing the total scores of the industries on this diagram (adding all scores and expressing them as a percentage), Financial Services scored way above the other industries at 74.2%, followed by Professional Services at 68.8%, Telecommunications at 67.6% and IT at 64.6%.

B.4.1.6. Comparison of perceptions of knowledge workers and other staff

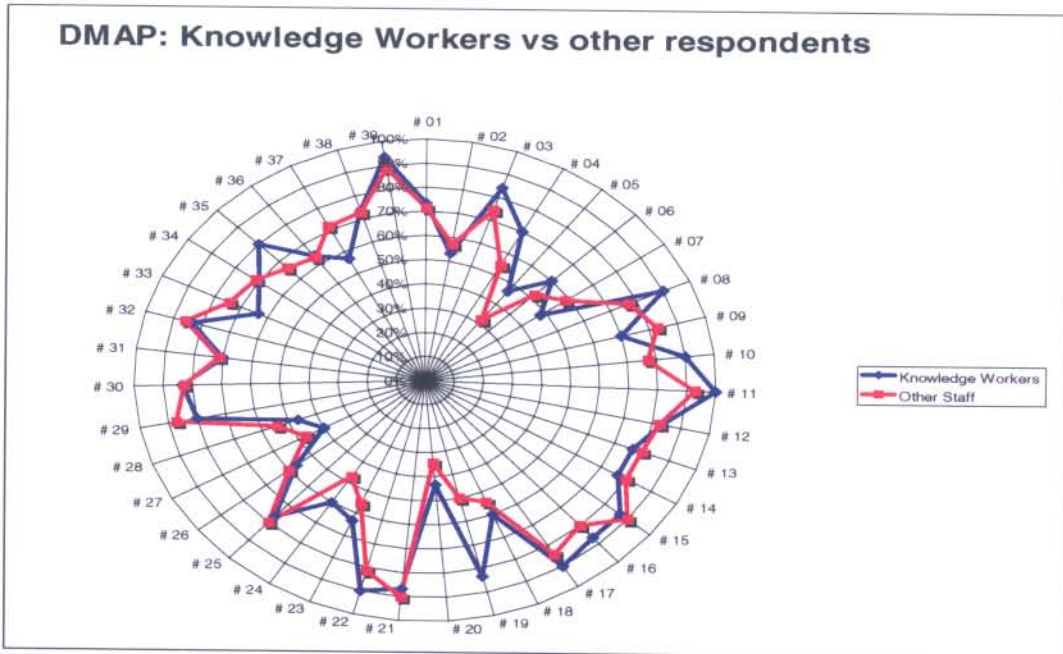


Figure B7. DMAP: knowledge workers vs. other respondents

The role of knowledge management in eBusiness and customer relationship management

In the diagram above, it is clear that the perceptions of knowledge workers and users of knowledge management practices and systems, do not differ vastly. In the section below, the major differences in perceptions (>10%) will be highlighted.

- The first major difference in perception is the extent to which knowledge management provides virtual communities / knowledge sharing platforms and / or tools. Knowledge workers are of the opinion that knowledge management plays a larger role in providing these platforms, in contrast with the perceptions of other staff (Q4).
- Differences in perception also exist on the role of knowledge management in structuring the organisations' website content. Knowledge workers perceive themselves to be involved more than other staff perceives them to be (Q5).
- The role of knowledge management in facilitating an easier transition when organisational changes are made is perceived greater by other staff than knowledge workers themselves (Q7).
- Knowledge workers perceive the role of knowledge management in facilitating integration between eBusiness partners through knowledge management practices to be higher than other staff do (Q8).
- Other staff perceives the role of knowledge management in facilitating transparency in the organisation to be higher than knowledge workers do (Q9).
- Knowledge workers perceive 24-hour access to knowledge as more important than other staff do (Q10).
- There is a huge (30%) perception difference on the provision of one single point of entry to knowledge in the organisation. Knowledge workers perceive the provision thereof much higher than other staff do (Q19).
- Knowledge workers believe that knowledge management leads to innovation more than other staff do (Q24).
- Other staff perceives knowledge management as being more important in identifying new business opportunities than knowledge workers do (Q33).
- Knowledge workers perceive knowledge management to play a larger role in allowing staff to adapt to their changing roles in the eBusiness environment rather than other staff does (Q35).
- Other staff perceives knowledge management as playing a larger role in facilitating the flow of knowledge within organisational and geographical boundaries (Q37).

B.4.1.7. Relative importance vs. performance rating

The DMAP questionnaire was also designed to test the importance versus performance of the dimensions. For this purpose, the dimensions were numbered in order to plot them graphically with reference to importance versus performance:

The role of knowledge management in eBusiness and customer relationship management

1. Virtual communities and knowledge sharing
2. Knowledge management as integration and change agent
3. Knowledge management efficiency improvements
4. Increased organisational and knowledge base complexity
5. Pooling of expertise
6. Knowledge management in the learning environment
7. Knowledge attrition
8. Organisational agility
9. Organisational strategy definition
10. Adoption of the eBusiness model

The dimensions were plotted on a matrix, where the X-axis indicates performance and the Y-axis indicates importance (refer Figure B9) and extrapolated to a table indicating the percentages (Figure B10).

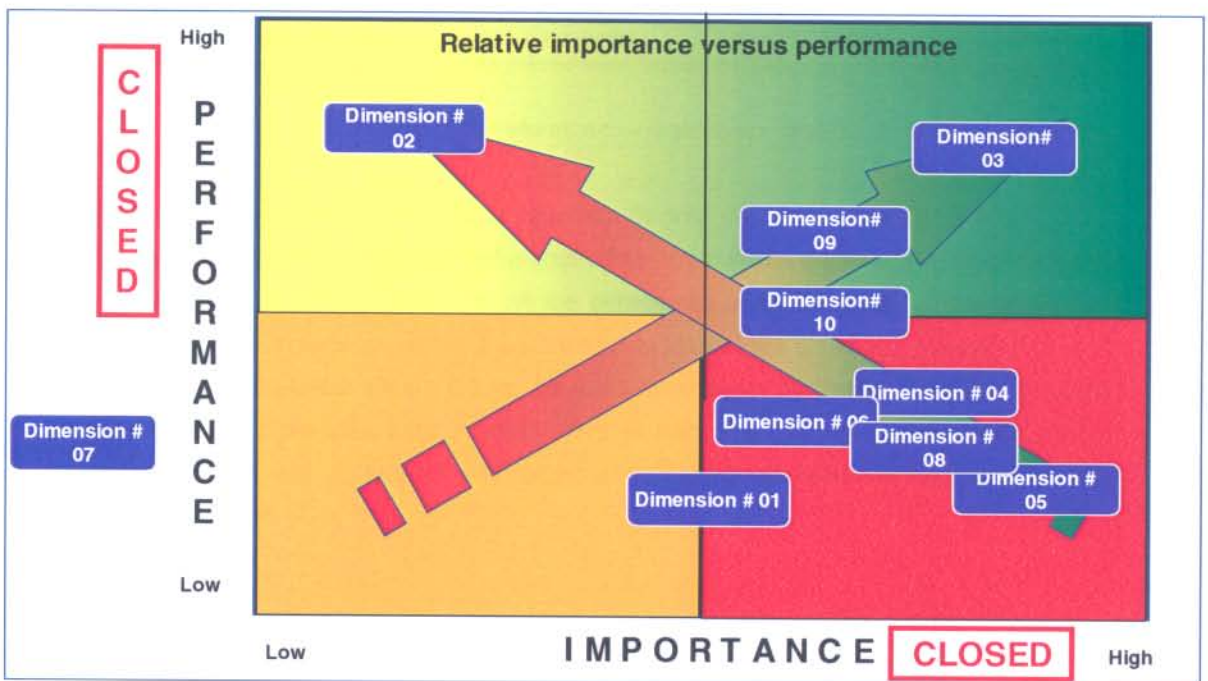


Figure B8. Relative importance versus performance of 10 dimensions

The role of knowledge management in eBusiness and customer relationship management

		Relative Importance	Relative Performance
1	Virtual communities and knowledge sharing	51%	22%
2	Knowledge management as integration and change agent	20%	80%
3	Knowledge management efficiency improvements	80%	80%
4	Increased organisational and knowledge base complexity	71%	32%
5	Pooling of expertise	76%	25%
6	Knowledge management in the learning environment	62%	30%
8	Organisational agility	71%	27%
9	Organisational strategic direction	61%	64%
10	Adoption of the eBusiness model	60%	50%

Figure B9. Performance – importance matrix

Before the researcher proceeds, it is important to note that the Figure B8 denotes *relative* importance. Figure B8 represents just a small slice of the actual data sample, as can be seen in Figure B10. Due to the fact that all the dimensions were clustered in one area in the performance vs. importance rating, it was difficult to identify the dimension locations in such a large data set, therefore Figure B8 will be used for analysis purposes, but with the context that Figure B10 provides kept in mind. This is also true for Figure B9, which denotes percentages for each dimension with reference to importance versus importance, relating it back to Figure B8.

The role of knowledge management in eBusiness and customer relationship management

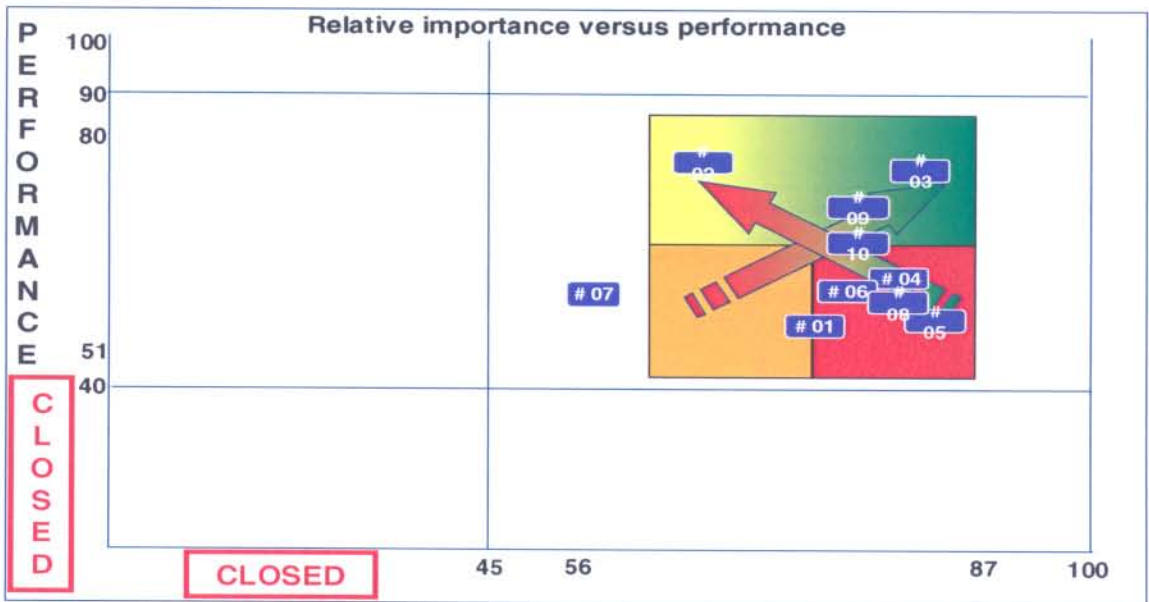


Figure B10. Relative importance versus performance of 10 dimensions in context

The performance-importance matrix results indicate that most dimensions that are important to the respondent organisations (Dimensions 1, 4, 5, 6, 8), are not performed well at all. Some dimensions that are important, are, however, being performed well (Dimensions 3, 9 and 10). Dimensions that were identified as important but not performing adequately are virtual communities and knowledge sharing, the role of knowledge management in overcoming increased organisational and knowledge base complexity, pooling of expertise, knowledge management in the learning environment and the role of knowledge management in organisational agility. Dimensions that were identified as performing well and are perceived as being important, are knowledge management efficiency improvements, the role of knowledge management in organisational strategic direction setting, and the role of knowledge management in adoption of the eBusiness model (see Figures B8 & B9).

Knowledge management as change and integration agent (Dimension 2) has little importance, though performance is very high. Knowledge management's role in prevention of knowledge attrition ranked off the "relative chart" indicating no importance and no performance *in relative terms* (see Figure B8 & B10).

The role of knowledge management in eBusiness and customer relationship management

B.4.2. Results: open questions

B.4.2.1. Question 40: Describe the two most critical requirements for knowledge flow across divisional, organisational and geographical boundaries.

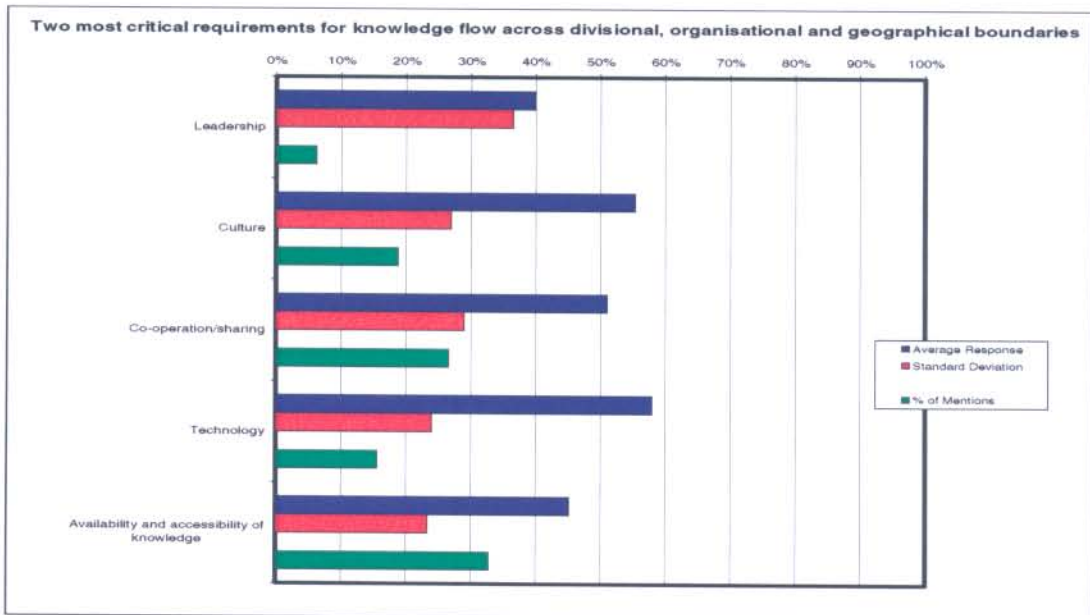


Figure B11. Two most critical requirements for knowledge flow across divisional, organisational and geographical boundaries

The survey indicated a below average rating for the performance of the respondents with reference to factors critical to the flow of knowledge across divisional, organisational and geographical boundaries. This dimension should receive urgent attention from top management of the respondent organisations in question to improve knowledge flow in general.

There are no strengths in this diagram. It must be pointed out, however, that the relatively high number of mentions received with reference to the availability and accessibility of knowledge, together with a standard deviation of below 24% shows that this is a factor deemed as important and that is currently performed to some extent across the board, and should be built upon in future. There is also some consensus that technology is critical and is currently utilised to enable knowledge flow across boundaries.

The following weaknesses have been identified:

- Leadership scored quite a low percentage (40%) for current performance, the high standard deviation (37%) together with the low percentage of mentions (6%) indicates

The role of knowledge management in eBusiness and customer relationship management

that it is not deemed important and is not widely prevalent in the organisations of the majority of respondents. A small percentage of the respondents thus rated it as having some importance and is currently implemented to some extent, with the majority rating it as low.

- Culture scored a relatively low percentage for current performance (55%). Together with a high standard deviation of 27% and a low percentage of mentions (28%), culture is seen as somewhat important and has been implemented to some degree by selected respondents. Management does not view this as a critical issue.
- Knowledge sharing and co-operation has been implemented and is seen as important to some extent (52%), but the high standard deviation (29%) and the small amount of mentions (26%) indicate that it is somewhat more important and has been implemented to a greater extent in some organisations than in others. It is not, however, receiving adequate management attention

B.4.2.2. Question 41: Describe the two most prevalent performance measurements relating to knowledge management in your organisation



Figure B12. Two most prevalent performance measurements relating to knowledge management

The survey indicated a below average rating for the performance of the respondents with reference to specific knowledge management performance measures. This dimension should receive urgent attention from top management of the respondent organisations in question to improve the implementation, utilisation and management of knowledge management systems and the knowledge management philosophy.

The role of knowledge management in eBusiness and customer relationship management

The following strengths have been identified in this diagram:

- 66% of respondents indicated that knowledge management activity was implicitly measured as part of general business performance of staff. Though this comes to the fore as a strong point that can be built upon, the researcher argues that it can also be a weak point, as knowledge management is not explicitly measured and rewarded, making it more difficult to create a knowledge sharing culture and mindset.

The following weaknesses have been identified in this diagram:

- In a very small percentage of organisations, no explicit knowledge management measures exist.
- Weak percentage scores were allocated to current performance of knowledge submissions, knowledge utilisation and knowledge availability as performance measures. The standard deviation was quite low, ranging between 22%-23%, showing agreement amongst respondents. Both knowledge utilisation and submissions received 28-31% of mentions, indicating that it is of some importance.

B.4.2.3. Question 42: Describe the two most essential leadership elements in knowledge management in your organisation

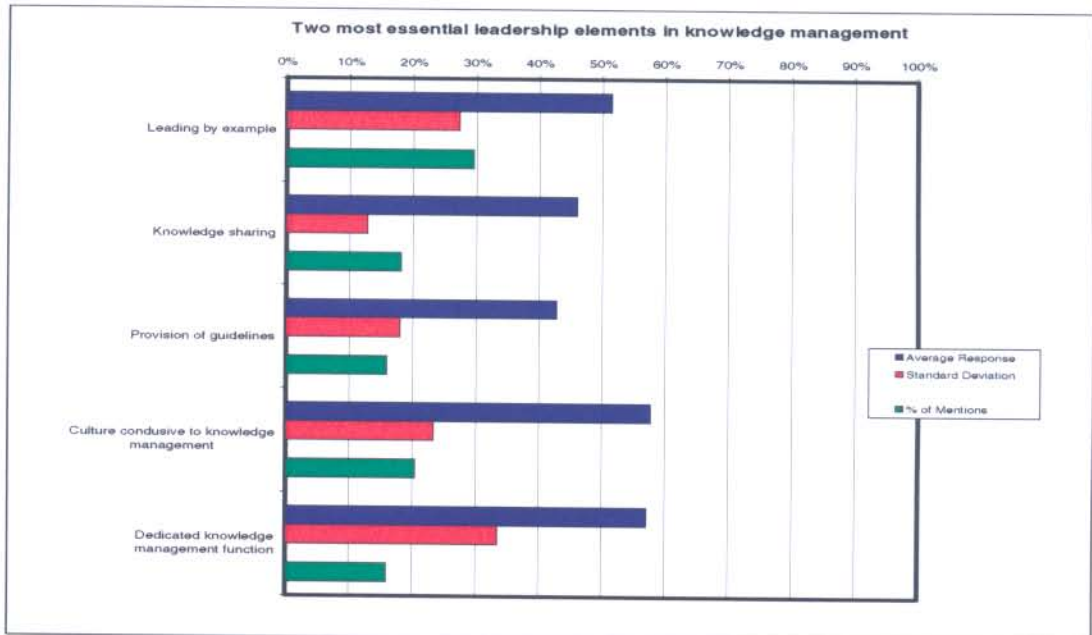


Figure B13. Two most essential leadership elements in knowledge management

The survey indicated a below average rating for the performance of the respondents with reference to specific knowledge management leadership issues. This dimension should receive urgent attention from top management of the respondent organisations in question to

The role of knowledge management in eBusiness and customer relationship management

improve management of knowledge management systems and the knowledge management philosophy within the respondent organisations.

No strengths have been identified in this diagram.

The following weaknesses have been identified in this diagram:

- Culture conducive to knowledge management scores the highest at 58%, with a standard deviation of 24%, indicating some agreement between respondents on the performance of this leadership element with reference to knowledge management. The relative low number of mentions (20%) indicates that it is not a top of mind issue.
- A dedicated knowledge management function is scored at 57%, but the high standard deviation (33%) shows that some organisations perceive this as important and have implemented the concept, whilst others have not gone that route at all. The relatively high number of mentions (34%) indicates that it is deemed as an important issue.
- Leading by example also scores second highest at 52%, but the high standard deviation of 27% shows that respondents differ on the performance of this leadership element with reference to knowledge management. It is important to note, however, that it is the element mentioned the most (29%), which shows that the importance of this element is fairly high.
- Knowledge sharing and provision of guidelines are the two leadership elements that respondents have most agreement on (low standard deviations of 13% and 17% respectively). The scores for current performance are still below expectations at 46% and 43% respectively, and the importance is not deemed as high, with the number of mentions on 16% and 18% respectively.

The role of knowledge management in eBusiness and customer relationship management

B.4.2.4. Question 43: Describe the role of communication in knowledge management

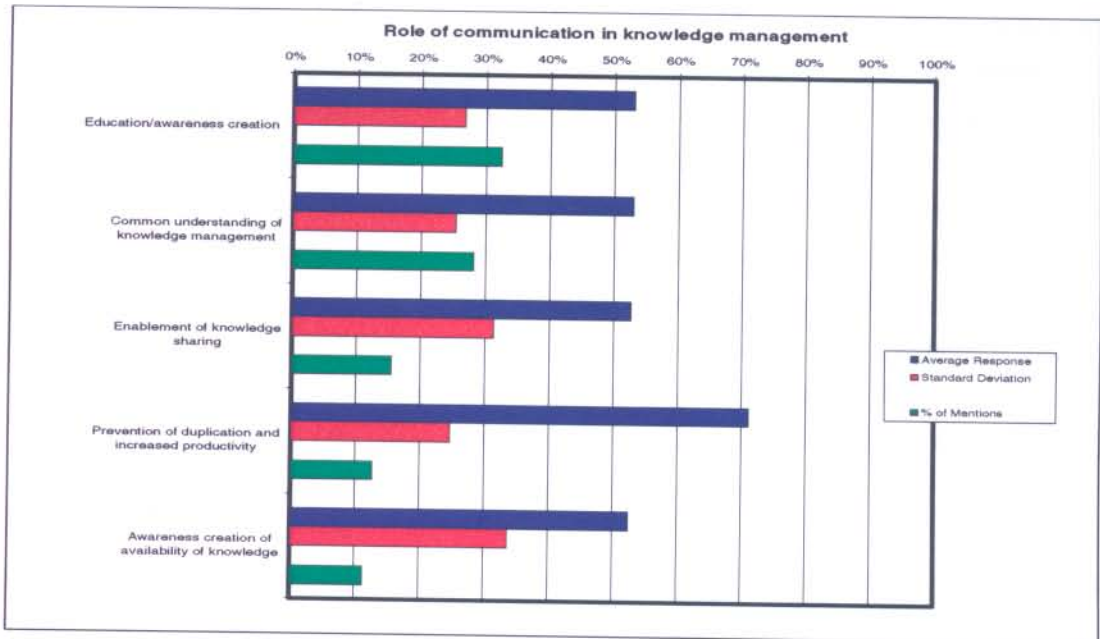


Figure B14. Role of communication in knowledge management

The survey indicated a below average rating for the performance of the respondents with reference to the role of communication in knowledge management. This dimension should receive urgent attention from organisations' top management, to ensure that communication is utilised as change agent for the institutionalising of knowledge management in organisations.

The following strengths have been identified in this diagram:

- Communication is currently utilised satisfactorily within the knowledge management environment to ensure increased productivity and to prevent duplication (71%). The standard deviation of 24% shows some agreement on this issue, and a relatively low percentage of mentions (12%) show that although currently performed it is not deemed as important.

The following weaknesses have been identified in this diagram:

- Awareness creation of the availability of knowledge has a score of 52%, but the high standard deviation (33%), shows that there are big differences in organisations. The low score on number of mentions (11%) also shows that this awareness creation of the availability of knowledge is not of primary importance in communication in the knowledge management arena.

The role of knowledge management in eBusiness and customer relationship management

- Communication as enabler of knowledge sharing has a score of 52%, but the high standard deviation (31%), indicates major differences in different organisations. The low score on number of mentions (15%) also shows that enabling of knowledge sharing is not perceived as a primary role of communication in the knowledge management arena.
- General awareness creation of knowledge management scored 52%. The high standard deviation (26%) suggests that organisations differ in application of this element. The relatively high number of mentions (32%) suggests that most organisations deem this element as having some role in communication in the knowledge management arena.
- Gaining a common understanding of knowledge management scored 52%. The high standard deviation (25%) suggests that organisations differ in their perceptions regarding the practical application of this element as part of communication. The relatively high number of mentions (28%) shows that most respondents deem this element as having some role in communication in the knowledge management arena.

B.4.2.5. Question 44: Describe the two most critical operational efficiencies effected by knowledge management

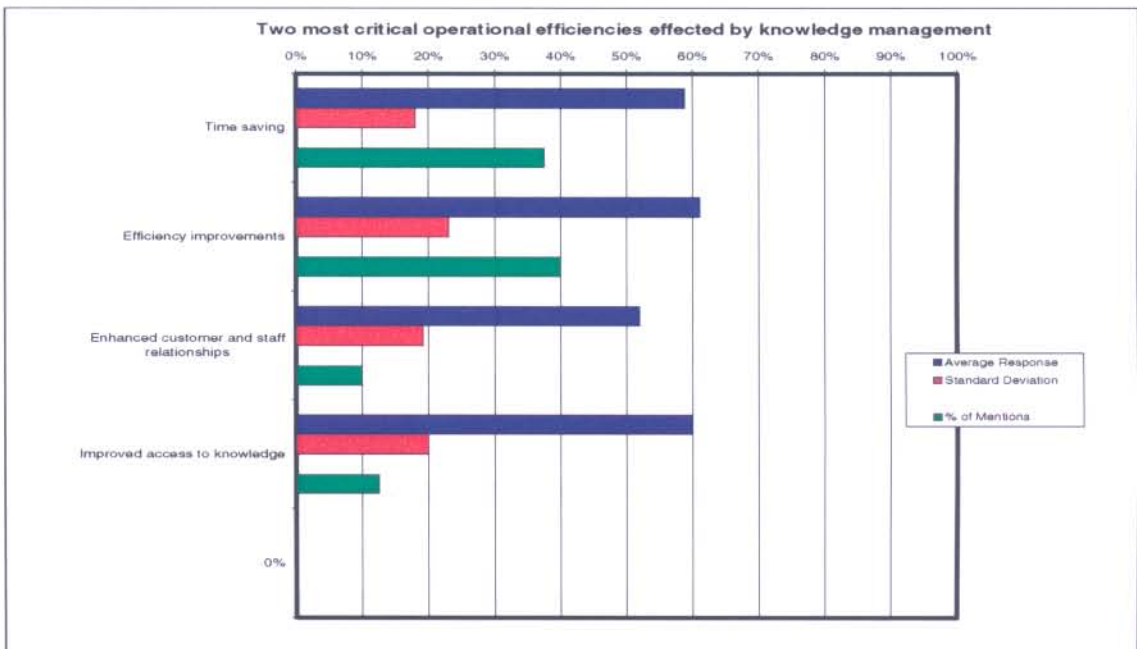


Figure B15. Two most critical operational efficiencies effected by knowledge management

The survey indicated a below average rating for the performance of the respondents with reference to critical operational efficiencies in knowledge management. It is, however, interesting to note that the standard deviation is low in all the strategic themes, indicating agreement on the current performance in these areas.

The role of knowledge management in eBusiness and customer relationship management

No strengths have been identified in this diagram.

The following weaknesses have been identified in this diagram:

- A score of 62% for efficiency improvements (defined as working faster and smarter) shows that respondents are not entirely satisfied with the current performance. There is a reasonable agreement (standard deviation of 23%) amongst respondents, with the issue mentioned in 40% of the responses, indicating high importance to the respondents.
- Improved access to knowledge was scored at 60%, with reasonable agreement amongst respondents (20% standard deviation). The issue is however not a top of mind issue as it scored low in number of mentions (12%).
- Time saving scored 59% with a low standard deviation of 17%, showing agreement amongst respondents. The number of mentions (37%) shows that time saving is seen as a critical operational efficiency for knowledge management, even though the current performance is perceived as inadequate.
- Enhanced customer and staff relationships received a relatively low score (52%), though there is agreement amongst respondents on the current performance in their organisations relating to this issue (standard deviation of 17%). It was only mentioned in 10% of responses, indicating that it is not really a top of mind issue in achieving operational efficiencies in knowledge management.

B.4.2.6. Question 45: Describe the two most critical strategic efficiencies effected by knowledge management

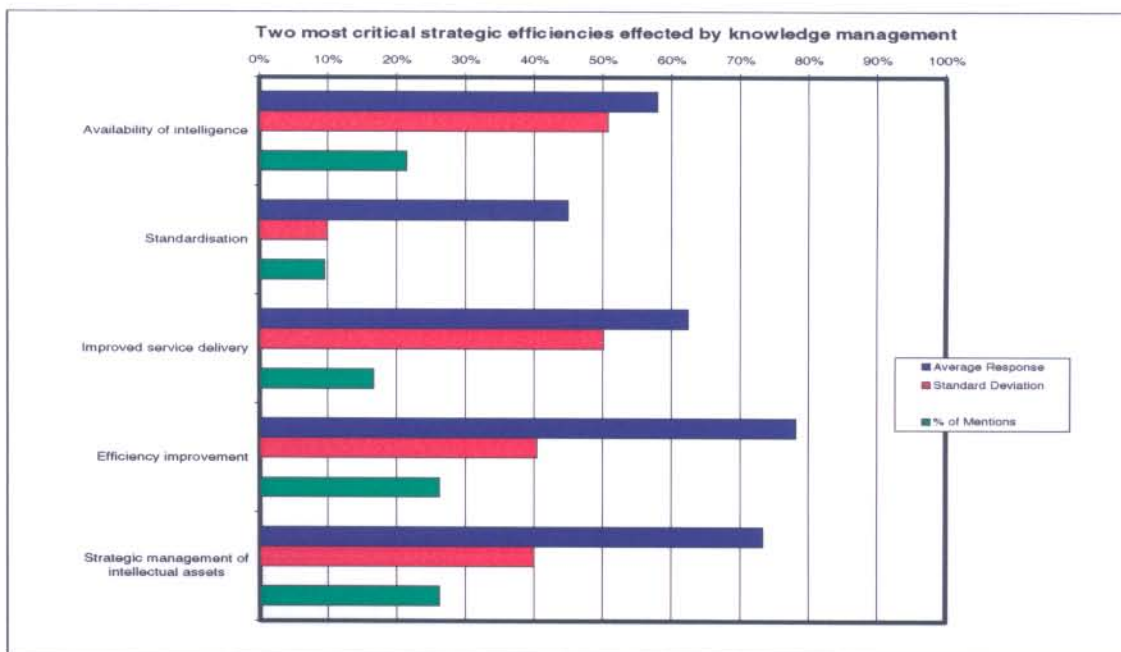


Figure B16. Two most critical strategic efficiencies effected by knowledge management

The role of knowledge management in eBusiness and customer relationship management

The survey indicated an average rating for the performance of the respondents with reference to critical strategic efficiencies in knowledge management. It is, however, interesting to note that the standard deviation is high in most of the strategic themes, indicating a high discrepancy in opinion amongst respondents.

The following strengths have been identified in this diagram:

- Strategic efficiency improvements (e.g. quicker and more accurate decision making) scored 78%, but a high standard deviation of 41% shows disagreement amongst respondents on the current performance of efficiency improvements in the knowledge management arena. Strategic efficiency improvements were mentioned in 26% of the responses, indicating some importance attached to strategic efficiency improvements.
- Strategic management of intellectual assets also obtained a high score of 73%, but the high standard deviation of 40% indicates that it is more important to some respondents than to others. It received a 26% number of mentions in the response, indicating relative importance of strategic management of intellectual assets.
- Improved service delivery, with a score of 62%, leaves room for improvement according to the respondents. The high standard deviation of 50% shows that in some cases this is achieved in practice, whilst in other organisations it is not the case at all. This theme had a low rate of mentions at 16%, showing that it is not deemed as significant.

The following weaknesses have been identified in this diagram:

- A score of 58% for availability of intelligence shows there is room for improvement in this area. The high standard deviation of 51% indicates that it is extremely relevant for some organisations and not at all or of very little importance for others. This theme was mentioned in 22% of the responses, i.e. some importance is attached to the availability of intelligence.
- Standardisation was the only theme on which there was significant agreement (standard deviation of 9%), and it received a reasonable, though still unsatisfactory score of 45%. It was also mentioned in only 9% of the responses, and is therefore not perceived as important by the respondents.