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.

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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.

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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

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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.

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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.

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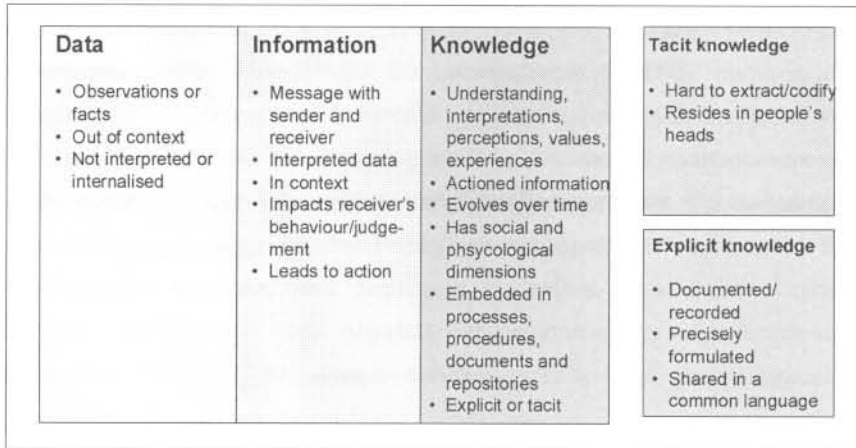To conclude this section of definitions, a summary is provided in Figure 1.

Data	Information	Knowledge	Tacit knowledge
• Observations or facts • Out of context • Not interpreted or internalised	• Message with sender and receiver • Interpreted data • In context • Impacts receiver's behaviour/judge-ment • Leads to action	• Understanding, interpretations, perceptions, values, experiences • Actioned information • Evolves over time • Has social and phsycological dimensions • Embedded in processes, procedures, documents and repositories • Explicit or tacit	• Hard to extract/codify • Resides in people's heads **Explicit knowledge** • Documented/recorded • Precisely formulated • Shared in a common language

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.

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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

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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.

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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.

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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 deducted 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.

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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.
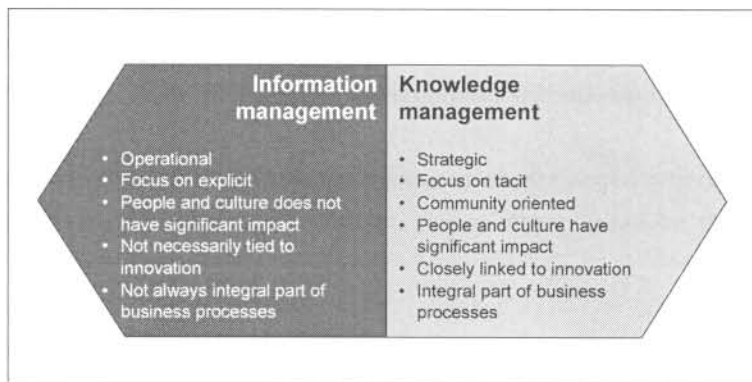

Information management	Knowledge management
• Operational	• Strategic
• Focus on explicit	• Focus on tacit
• People and culture does not have significant impact	• Community oriented
• Not necessarily tied to innovation	• People and culture have significant impact
• Not always integral part of business processes	• Closely linked to innovation
	• Integral part of business processes

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.

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- 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.
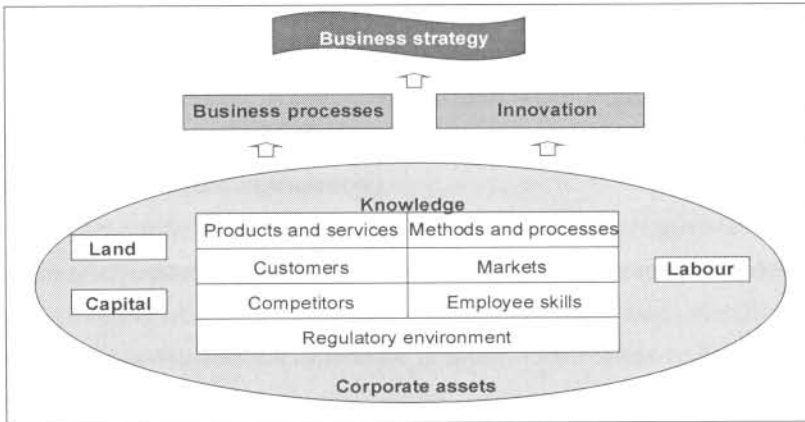

Figure 3. Knowledge representation for the purpose of this study

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).

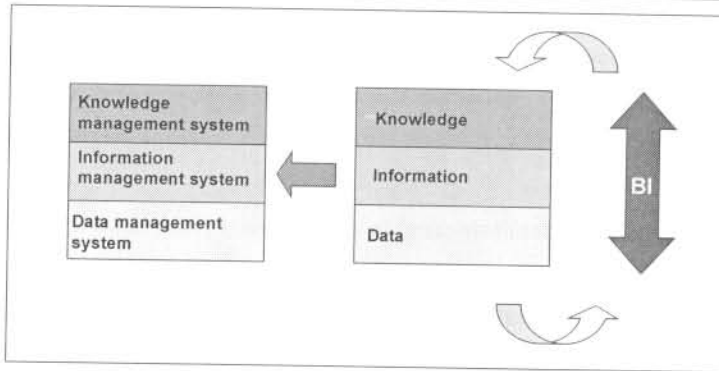The role of knowledge management in eBusiness and customer relationship management

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.

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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).

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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.

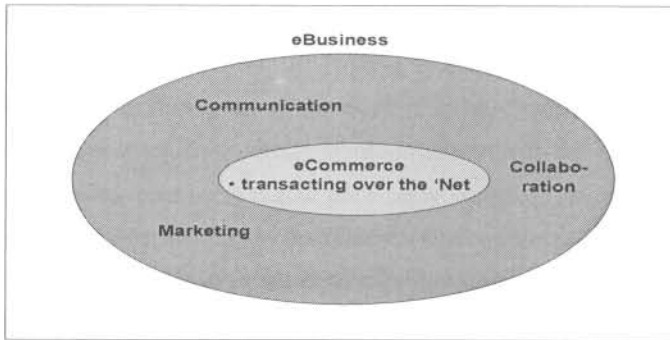**The role of knowledge management in eBusiness and customer relationship management**

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).
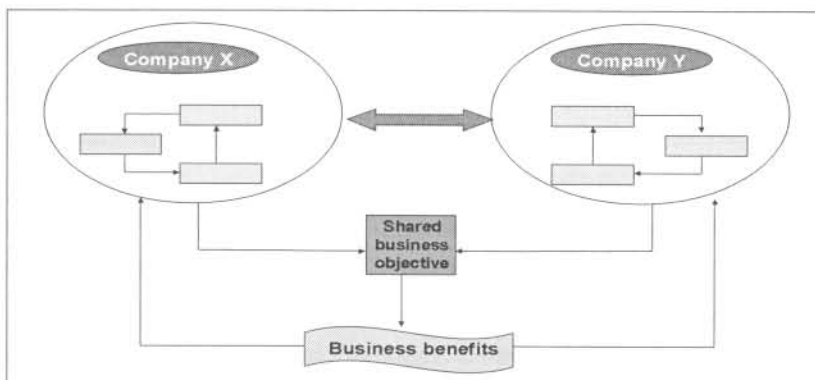

Figure 6. Collaborative knowledge sharing communities

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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).

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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).
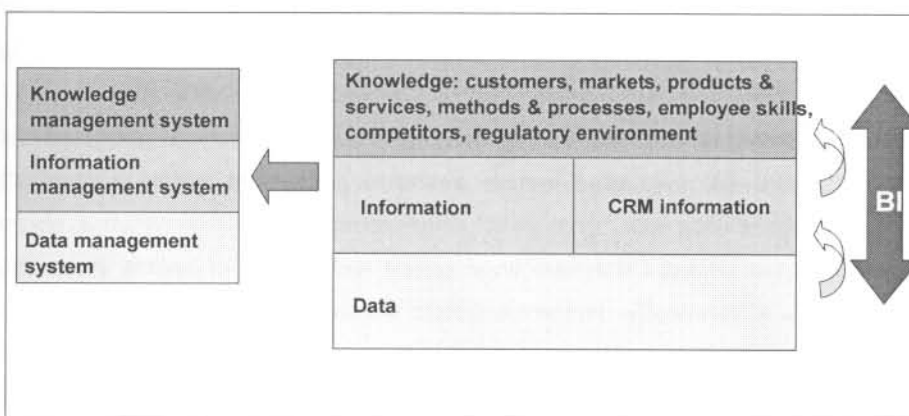

Figure 7. Customer relationship management's role in knowledge management

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 pertains 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.