3 CHAPTER 3: APPLYING AN APPROPRIATE THEORETICAL FRAMEWORK TO THE CASE STUDY

3.1 INTRODUCTION

As already indicated, the DOD expected that management practice should be based on sound scientific theory and that an appropriate strategic ICT planning process would conform to this. From this followed the requirement for the analysis of exiting theory along the same timeline as the actual research to support the institutionalisation of an appropriate strategic ICT planning process.

The quest to conform to the "Hermeneutic Principle" as presented by Klein and Myers (1999)[55] will also apply to the chronology of this literature study. The schema below provides insight into the research timeline and as such identifies the primary theoretical focus areas.

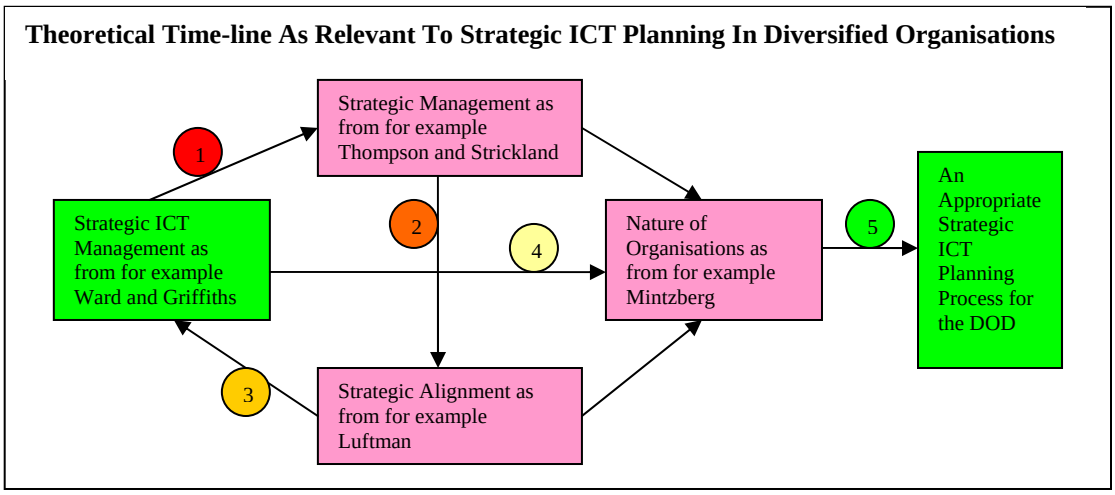

Figure 3.1: Progressive timeline as relevant to strategic ICT planning in the DOD

The timeline and the numbered sequence indicate the sequence of steps 1 to 5 with due consideration that the actual process was dynamically iterative with a number of activities taking place in parallel and with numerous reviews of areas already covered to ensure congruence, alignment and improvement. In the same process the interpretation, application and contributions to scientific knowledge were also addressed as summarised in the findings and conclusions of this research.

[55] Klein, H.K, & Myers, M.D. 1999. A set of principles for conducting and evaluating interpretive field studies in information systems. *MIS Quarterly*, 1999, vol.23, no.1, p.67-94.

The fact that structural or organizational arrangements influenced the institutionalisation and execution of the strategic ICT planning process, given the large number of role players and stakeholders involved, emphasised the clarification of roles and responsibilities in accordance with structural arrangements within the organization. Such structural arrangements and mechanisms were eventually found to be one of the imperatives to ensure the institutionalisation of the strategic ICT planning process in the DOD. It also served to provide a basis for alignment between business and information management.

As the research was undertaken as a process of enhanced learning, the initial understanding of the strategic ICT planning process was primarily directed by theory on strategic ICT planning as presented by Ward and Griffiths (1996)[56]. Knowing the theory without an understanding of the issues encountered in the DOD as a diversified organization was found to be inadequate to institutionalise the strategic ICT planning process. The ability to augment the existing theory regarding strategic ICT management with the experiences encountered in the DOD was enhanced by a thorough understanding of strategic management in general, as presented by authors such as Thompson and Strickland (2003)[57], and many others.

From the requirement to ensure alignment between the business environment and the ICT environment it was found that the theory provided by, for instance Luftman (1996)[58], presented a basis to ensure this alignment between the business and the business systems strategy and the information and the ICT system strategy. The complexity of the organization and the specific relationships that existed between the organizational components of the DOD necessitated collaboration and to this end the work done by authors such as Mintzberg *et al.* (1998)[59] provided an understanding of the characteristics of different types of organizations which would in some combination make up the diversified organization.

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[56] Ward, J. & Griffiths, P. 1996. *Strategic Planning for Information Systems*. New York: John Wiley and Sons.
[57] Thompson, A.A. Jr. & Strickland, A.J. III. 2003. *Strategic Management Concepts and Cases*. 13th Ed. New York: McGraw-Hill.
[58] Luftman, J.N. 1996. *Competing in the Information Age: Strategic Alignment in Practice*. New York: Oxford University Press.
[59] Mintzberg, H., Ahlstrand, B. and Lampel, J. 1998. *Strategy Safari: A guided tour through the wilds of Strategic Management*. New York: The Free Press.

When putting all of the relevant theory together into a single comprehensive reference or knowledge framework as a result of action and reflection, it served to guide the institutionalisation of the strategic ICT planning process for the DOD. The theory as indicated in the following sub-sections of this chapter therefore contributed to the institutionalisation of an appropriate strategic ICT planning process in the DOD as opposed to merely designing a process.

From these introductory comments that set out the intention for the presentation of the literature study the following will be presented:

- An overview of the nature of diversified organizations
- The strategic management process as appropriate to diversified organizations
- Strategic ICT planning as a function of strategic alignment
- Strategic ICT management in diversified organizations
- Strategic ICT planning approach, framework and process
- The application of strategic ICT planning as an integral part of strategic business management in diversified organizations
- Formulation of the IS/ICT management strategy
- The relationship between organizational learning and the requirement for structure

3.2 THE NATURE OF COMPLEX OR DIVERSIFIED ORGANIZATIONS

With the imperative that people have to execute the strategic ICT planning process in a coordinated and structured manner towards specific individual and corporate objectives, specific structural arrangements and management mechanisms became indispensable as confirmed during this research. An understanding of the nature of the organization became imperative.

3.2.1 Concept of the Diversified Organization

Most authors suggest that the more complex the organization, the greater the expected complexity of the planning process. This is in line with the thinking of authors on management theory such as Mintzberg (1998)[60], Thompson and Strickland (2003)[61], Lewis, Goodman and Fandt (1998)[62], and on strategic ICT management such as Ward and Griffiths (1996)[63]. Regarding ICT research authors such as Baskerville and Wood-Harper (1998)[64], Klein and Myers (1999)[65] have a similar position for ICT research that coincides with the position of Whitley (1984)[66] when he describes ICT research as a fragmented adhocracy. All of these have the element of complexity as an integral characteristic.

From a business perspective the complexity of diversity is described by Thompson and Strickland (2003:291)[67] as follows when referring to a "diversified" organization:

> "*... a diversified company is a collection of individual businesses, corporate strategy making is a bigger-picture making exercise than line-of-business strategy making. In a single-business enterprise, management has to contend with only one industry environment and the question of how to compete successfully in it. But in a diversified company corporate managers must strategize for several different business divisions competing in diverse industry environments and craft a multi-industry, multi-business strategy."*

3.2.2 Structure of Diversified Organizations

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[60] Mintzberg, H., Ahlstrand, B. and Lampel, J. 1998. *Strategy Safari: A guided tour through the wilds of Strategic Management*. New York: The Free Press.
[61] Thompson, A.A. Jr. & Strickland, A.J. III. 2003. *Strategic Management Concepts and Cases*. 13th Ed. New York: McGraw-Hill.
[62] Lewis, P.S., Goodman, S.H. & Fandt, P.M. 1998. *Management: Challenges in the 21st Century, 2nd Edition*. Cincinnati, Ohio: South-Western College Publishing.
[63] Ward, J. & Griffiths, P. 1996. *Strategic Planning for Information Systems*. New York: John Wiley and Sons.
[64] Baskerville, R & Wood-Harper, A.T 1998. Diversity in information systems action research methods. *European Journal of Information Systems*, 1998, vol.7, p.90-107.
[65] Klein, H.K, & Myers, M.D. 1999. A set of principles for conducting and evaluating interpretive field studies in information systems. *MIS Quarterly*, 1999, vol.23, no.1, p.67-94.
[66] Whitley, R., 1984. The Intellectual and Social Organization of the Sciences. Oxford: Clarendon Press.
[67] Thompson, A.A. Jr. & Strickland, A.J. III. 2003. *Strategic Management Concepts and Cases*. 13th Ed. New York: McGraw-Hill.

The essential element of diversified organizations is considered to be that they are not '*of single business*'. As such there is a multitude of disciplines and/or functions that could require recognition and need to be dealt with in the strategic management arena in general. The ability to harmonise the efforts of (semi-autonomous) strategic business units towards appropriate objectives or strategic intent within a structured policy framework, should therefore be addressed.

The high-level contextual construct for a diversified organization can be presented as follows with due consideration of corporate management and business unit management as interpreted from theory:

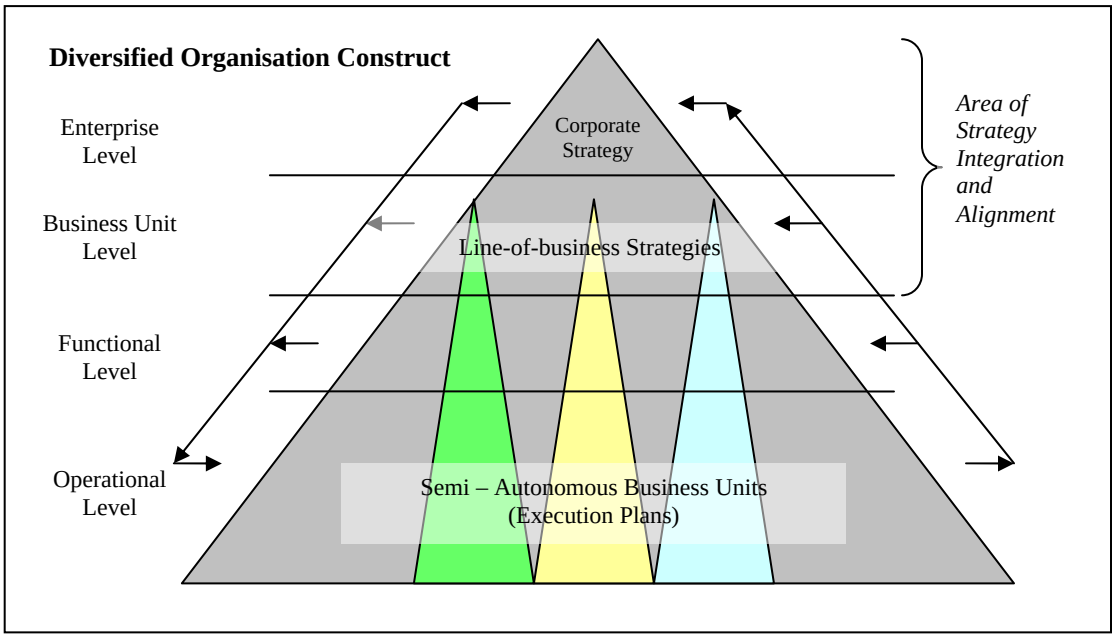

Figure 3.2: Contextual definition of the problem environment as interpreted from Thompson and Strickland (2003), Pearce and Robinson (2003) and Luftman (1996)

From Figure 3.2 as mainly interpreted from the work of Thompson and Strickland (2003) *op. cit.*, Pearce and Robinson (2003)[68] and Luftman (1996)[69], the emphasis is placed on the fact that the diversified organization has a corporate level that is separated from the strategic business unit management level. The ability to ensure alignment and integration from a corporate perspective with due consideration of the interests of the respective business units influenced the research paradigm.

[68] Pearce, J.A. & Robinson, R.B. 2003. *Strategic Management: Formulation, Implementation and Control Sited*. New York: McGraw-Hill.
[69] Luftman, J.N. 1996. *Competing in the Information Age: Strategic Alignment in Practice*. New York: Oxford University Press.

Given the imperative of structure the necessity to enable the ability to manage, the following management mechanisms as presented by Thompson and Strickland (2003) *op. cit.* reflect the functional and hierarchical nature of the diversified organization. This can be presented as follows as being relevant to the DOD and its specific structural arrangements:

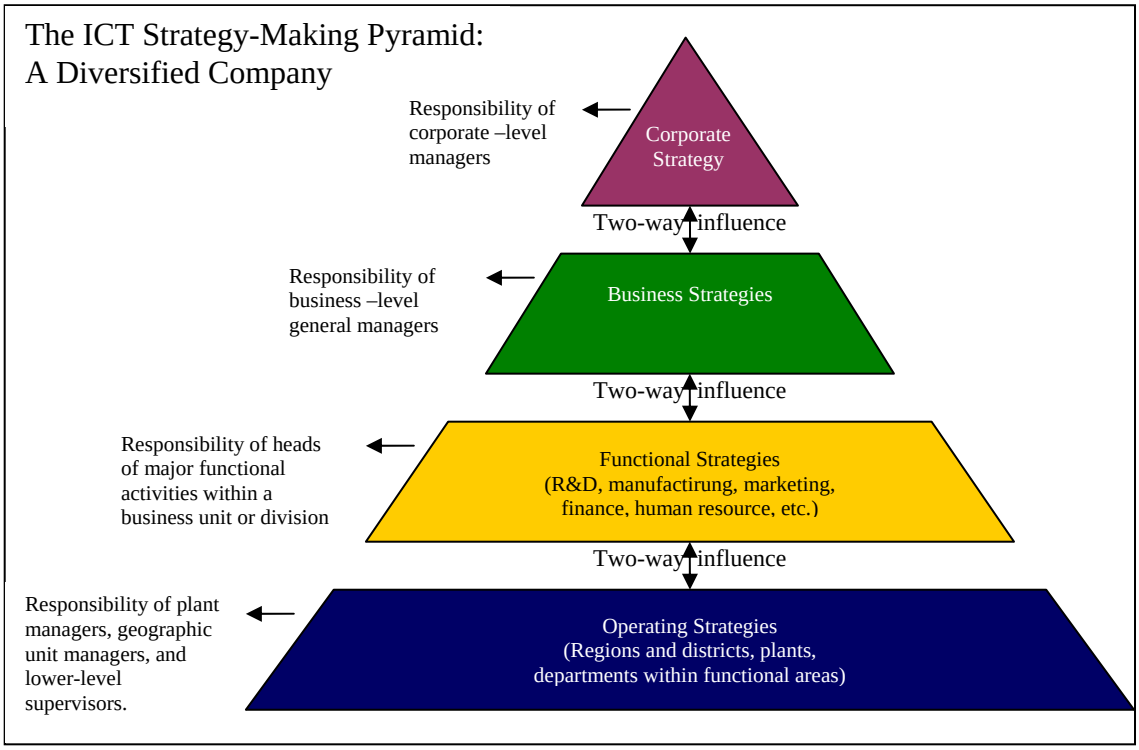

Figure 3.3: Organizational Hierarchy for Strategic ICT Planning in Diversified Organizations taken from Thompson and Strickland (2003)

When considering the corporate perspective of the organization and strategic management the respective lines of business can be presented as a value chain when considering the basic approach of Porter (1985)[70] regarding value chains and the fact that there is a separation between core business and supporting business. The requirement for corporate direction adds another dimension to such a corporate value chain for a diversified organization.

[70] Porter, M.E. 1985. *Competitive Advantage: Creating and Sustaining Superior Performance*. New York: Free Press.

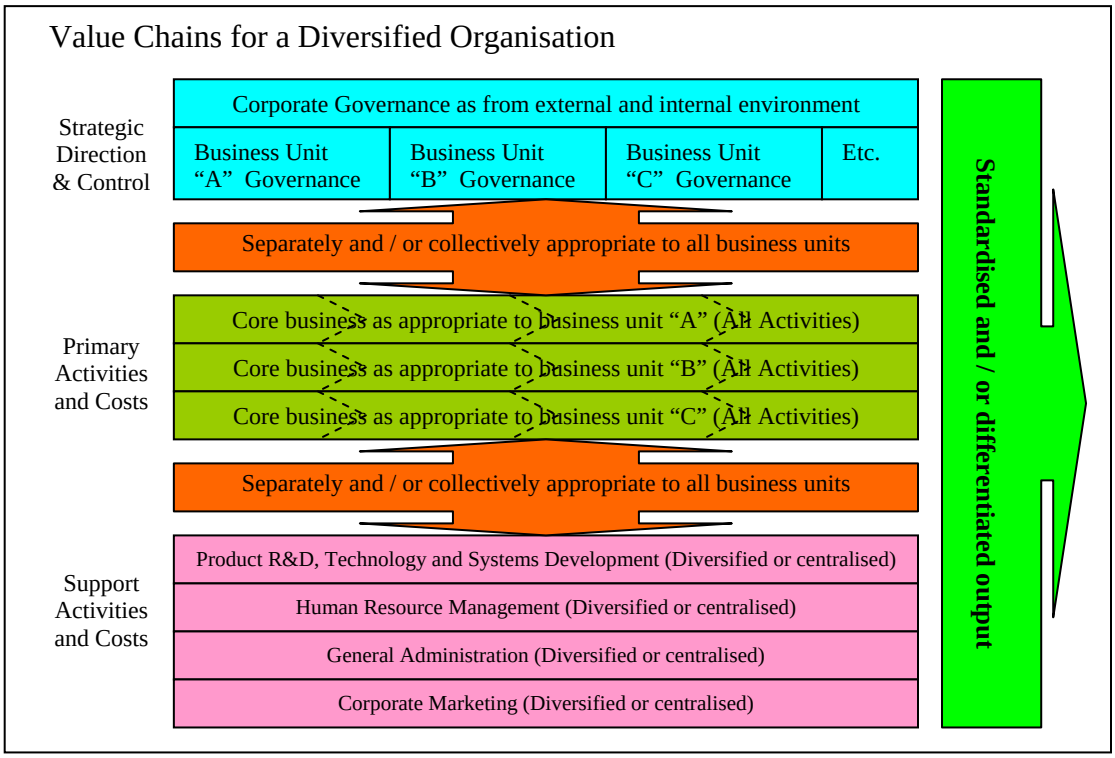

Figure 3.4: Value Chains for diversified organizations with differentiated output as adapted from Porter (1985)

Given the fact that ICT serves as an enabler for the organization as a whole, the three depictions presented in Figures 3.2 – 3.4 set the framework for the identification of those functions that could be transversely common within the organization and those processes that are unique in nature within the diversified organization from a holistic perspective.

Such a perspective highlights the necessity to identify role players, participants and stakeholders if the ICT strategy is required to represent a corporate and collaborative perspective. From this research appropriate structure to ensure specific collaboration and execution was considered a prerequisite for the successful institutionalisation of the strategic ICT planning process in the DOD.

To this end the problems experienced by the researcher with the nature of diversity within the enterprise and relevant to a strategic ICT planning process confirmed the observations of for instance Ward and Griffiths (1996)[71] relating to the following issues of management approaches as presented by Mintzberg (1998)[72], environmental

[71] Ward, J. & Griffiths, P. 1996. *Strategic Planning for Information Systems*. New York: John Wiley and Sons.
[72] Mintzberg, H., Ahlstrand, B. and Lampel, J. 1998. *Strategy Safari: A guided tour through the wilds of Strategic Management*. New York: The Free Press.

aspects as taken from for instance Thompson and Strickland (2003)[73], the process of strategy formulation as described by authors such as Pearce and Robinson (2003)[74] and requirements for alignment as presented by authors such as Luftman (1996)[75].

3.3 STRATEGIC MANAGEMENT IN DIVERSIFIED ORGANIZATIONS

With an understanding of the nature of the diversified organization, those influences and characteristics that are relevant to strategic management became important to this research. To this end the following discussion of theory will centre on the development of strategic management and its relevance to ICT management. It will also elucidate the implication of being able to manage change, with change being a characteristic of strategic management and the fact that the respective business units of the diversified organization might have different levels of maturity. Given the nature of the requirement for alignment, increased pressure is placed on the ability to manage activities in a structured, yet appropriate manner and as such the implication of alignment as an integral activity of strategic management will be discussed. All of these will constantly be made relevant to not only ICT management in general, but also the research undertaken.

3.3.1 Historical Development of Traditional Considerations for Strategic Business Management in Diversified Organizations

As far back as the venerable Sun Zi[76] (Tzu)[77], who around 400 BC started to delineate strategies and matched them to the conditions in which the military was involved in the development of management as a science and as a practice. Practitioners and authors such as Von Clausewitz (1780-1831) made further contributions to the management discipline. The gist of the contributions made by the Sun Zi and Von Clausewitz was that in order to be successful, planning was required and the better and more comprehensive the planning and the ability to manage change, the higher the potential for success. It is also clear from their writings that all the conditions

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[73] Thompson, A.A. Jr. & Strickland, A.J. III. 2003. *Strategic Management Concepts and Cases*. 13th Ed. New York: McGraw-Hill.
[74] Pearce, J.A. & Robinson, R.B. 2003. *Strategic Management: Formulation, Implementation and Control Sited*. New York: McGraw-Hill.
[75] Luftman, J.N. 1996. *Competing in the Information Age: Strategic Alignment in Practice*. New York: Oxford University Press.
[76] Chou-Hou Wee. 2003. *Sun Zi Art of War: An Illustrated Translation with Asian Perspectives and Insights*. Singapore: Prentice Hall.
[77] Sun Tzu, *The Art of War* (New York: Oxford University Press, reprinted 1971).

which could influence the outcome of strategic objectives had to be considered during the planning process. This still remains appropriate and relevant to this day and is even making a come-back.

Management as a scientific approach towards attaining objectives further developed during the mid-nineteenth century, when economists such as Adam Smith and Charles Babbage developed the *systematic management approach*[78]. Their essential approach was to understand the nature of the organization in its complexity as a system of interdependent components that function in harmony towards a common objective.

The next step and evolutionary approach that was developed was Frederick Taylor's (1911)[79] *"scientific approach"* towards management. The focus of scientific management was that it acknowledged the requirement to ensure that appropriate processes, frameworks and work arrangements should be established with a clear understanding of the requirement for commensurate skills management.

The scientific approach was augmented and elucidated upon by an understanding of the 'principles' that will guide the approach towards successfully realising strategic objectives. These 'principles', as deduced from the writings of Von Clausewitz by Summers (1981)[80], centre on the need for clear deliberate strategy; the centrality of authority to develop or at least execute the strategy; the need to keep it simple; and the presumed proactive nature of strategic management. These opinions demonstrate and confirm the requirement for structural arrangements and appropriate management mechanisms that are quite relevant to this specific research.

From the current theory one of the main problems encountered today regarding process and structure can be considered to centre on the diversity of organization and function, and thus a multitude of issues and aspects that need to be considered in the strategic management process and its requirement for alignment.

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[78] Bateman, T.S. & Zeithaml, C.P. 1990. *Management: Function and Strategy*. New York: Richard D. Irwin, Inc.
[79] Taylor, F. 1911. *The Principles of Scientific Management*. New York: Harper & Row.
[80] Summers, H.J., Jr. 1981. *On Strategy: The Vietnam War in Context*. Washington, DC: GPO, Strategic Studies Institute, U.S. War College, Carlisle Barracks, PA.

Irrespective of the nature of the organization, the ever-changing environment and therefore the nature of the demands constantly need to be considered. Robbins[81], as well as Brown and Covey[82], argue that organizational development is an important part of change management. They propose that the people who make up the organization be put through a change process in such a manner that it will contribute towards enhancing the output of the organization. Organizational development as taken from these two authors respectively can be described as "*a collection of change techniques or interventions built on humanistic-democratic values*" and that "*organisational development values human and organisational growth, collaboration and participative processes, and a spirit of enquiry".* From this the organizations are expected to continuously change in a manner that will enable them to continue to function optimally whilst continuously improving and realising their strategic intentions. Such change has to take place in a controlled and structured manner.

When considering the fact that the DOD can be seen to function as a system of systems given its organizational complexity, an understanding of the relationships between process, responsibility and mandate becomes imperative. Such awareness will contribute largely towards appropriate management arrangements and mechanisms to ensure collaboration within the diversified organization. This results in the imperative for balance between all of the respective systems given the requirement to focus such systems on a common set of objectives. Once again these objectives should represent both corporate intent and business unit intent as appropriate to not only the diversified organization, but also its strategic management and ICT management.

3.3.2 Conceptual Framework for Strategic Management

Miller and Friesen (1980b[83], 1982a[84]) view the “states” that an organization finds itself in as archetypes, being related to strategy, structure, situation and process. They

[81] Robbins, S.P. 1979. *Organizational Behavior, Concepts, Controversies, and Applications*, Fifth Edition. New Jersey: Prentice-Hall International Editions.
[82] Brown, L.D. & Covey, J.D. 1987. Development Organizations and Organization Development: Towards an Expanded Paradigm for Organization Development in *Research in Organizational Change and Developmen*t, vol. 1, edited by R.W. Woodman & W.A. Pasmore. Greenwich, Conn.: JAI Press, p.63.
[83] Miller, D. & Friesen, P.H. 1980b. Archetypes of Organizational Transition. *Administrative Science Quarterly Journal*, 1980b. no.25, p.268-299.

also see transition between archetypes and strategic and structural change as quantum rather than incremental. This is further expanded upon by Miller and Friesen (1984)[85] and Miller (1990)[86]. The strategic management of ICT could therefore be expected to follow and even to enable the same cycle of organizational change.

With quantum change having the implication of changing many aspects of the organization, at the same time such changes can be revolutionary and strategic (incremental) and are usually the result of mutual learning that takes place between strategists that in turn leads to revolutionary change. As such the characteristics of change and the fact that the cost and complexity of ICT solutions combined with the potential scale of the impact of implementing new ICT solutions, could be prohibitive. A quantum change approach could therefore be more suitable for large ICT systems in diversified organizations. This research found it to be susceptible to change being interspaced with incremental changes within clear and definite cycles of change as opposed to continuous revolutionary change.

With this in mind given the opinion of Prahalad and Hamel (1990)[87] that indicate that senior management should spend a significant amount of its time developing a corporate-wide strategic architecture that establishes objectives for competence building, strategy should be focused to continuously improve and sustain the competitive advantage of the organization. This is also appropriate to structural changes in the organization according to existing theory.

The position presented by Mintzberg, *et al.* (1998)[88] regarding the configuration schools for strategic management is considered appropriate to this research by the researcher to ensure an informed and balanced approach towards corporate strategic ICT planning. This should be done with due consideration of the nature and maturity of the respective strategic business units as presented by Marchand and Horton

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[84] Miller, D. & Friesen, P.H. 1982a. Structural Change and Performance: Quantum Versus Piecemeal-Incremental Approaches. *Academy of Management Journal*, 1982a, vol.25,4, p.867-892.
[85] Miller, D. & Friesen, P.H. 1984. *Organizations: A Quantum View*. Englewood, New Jersey: Prentice Hall.
[86] Miller, D. 1990. *The Icarus Paradox*. New York: Harper Business.
[87] Prahalad, C.K. & Hamel, G. 1990. The Core Competency of a Corporation, *Harvard Business Review 68:3*, 1990, p.79-91.
[88] Mintzberg, H., Ahlstrand, B. and Lampel, J. 1998. *Strategy Safari: A guided tour through the wilds of Strategic Management*. New York: The Free Press.

(1986)[89] to provide direction and to empower functionaries. Such an approach will ensure structure and capacity to serve the enterprise as a whole.

3.3.3 Characteristics of the Strategic Management Process as Appropriate to Diversified Organizations

When considering the generic model for strategic management as defined by Steiner (1969)[90] it becomes apparent that the underlying approach has not necessarily changed dramatically over the past forty years, but rather that the application of such as the basic approach, has changed due to continuous changes in the landscape that influences 'old' monolithic models.

Stewart (1963)[91], however started to address organizational complexity by referring to diversification when referring to the Stanford Research Institute's proposed "System of Plans" as illustrated below. This was, however, to ensure that the opportunity of diversification is realised as a strategy that would expand the enterprise from a corporate perspective and to indicate diversified sub-structures of the corporate structure.

Chaffey (1985)[92] concluded that strategy is complex and concerns both the organization and its environment holistically. When assessing the progression made with strategic management and its application in diversified or complex organizations, the work done by Pearce and Robinson (2003:2)[93] indicates that there is a sequential albeit causal relationship between strategic management (including planning) and functional management (including planning). It does, however, not explicitly indicate the nature of the diversified organization and its implications on strategic planning as a part of strategic management. This could be seen as a culmination of an understanding that the nature of strategic planning in diversified organization and the ability to ensure alignment between the strategic management process and the strategic ICT planning process is an issue. The ability to develop appropriate structure

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[89] Marchand, D.A, & Horton, F.W. Jr. 1986. *Profiting from Your Information Resources*. New York: John Wiley & Sons.
[90] Steiner, G.A. 1969. *Top Management Planning*. New York: Macmillan.
[91] Stewart, R.F. 1963. *Framework for Business Planning*. Stanford, California: Stanford Research Institute.
[92] Chaffey, E.E. 1985. Three Models of Strategy. *Academy of Management Review*, 1985, vol.10(1), p.89-98.
[93] Pearce, J.A. & Robinson, R.B. 2003. *Strategic Management: Formulation, Implementation and Control Sited*. New York: McGraw-Hill.

and apply the strategic ICT planning process to the point of institutionalisation in the DOD is confirmed by this requirement.

From Thompson and Strickland (2003:7)[94] an example of the generic strategic management process can be presented as follows:

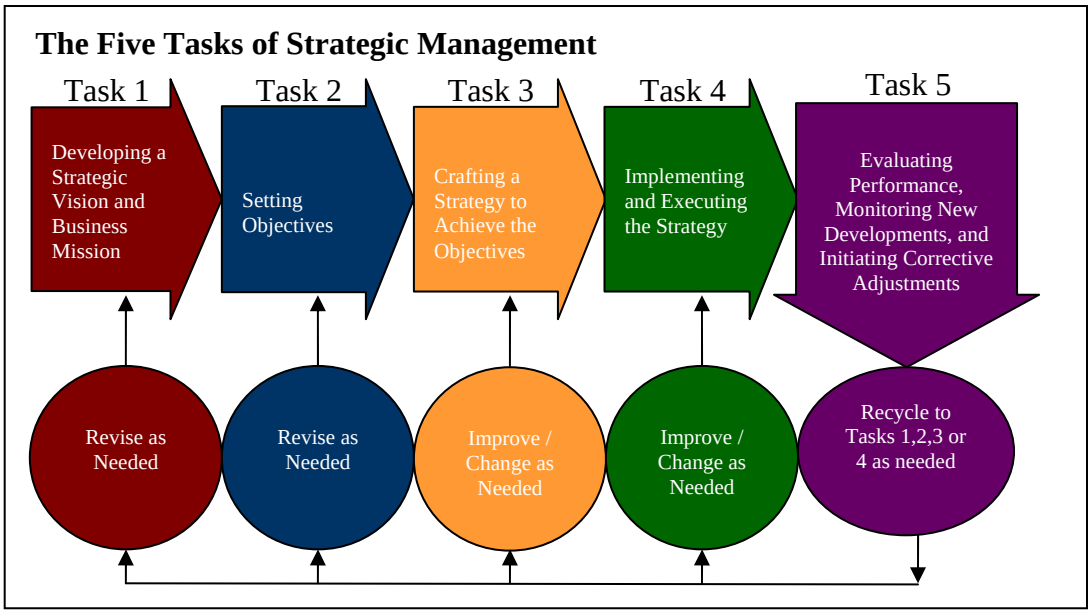

Figure 3.5: Five Tasks of Strategic Management as from Thompson and Strickland (2003)

From Figure 3.5 it is clear that the planning process relates to tasks 1, 2 and 3. This does not imply that no attention be given to tasks 4 and 5 as the required feedback from implementation and control will provide a great deal of input for consideration to continuously optimise and support the strategic ICT plan for the diversified organization. The emphasis is on realising the strategic intention as a process of continuous improvement and learning as is the case with the DOD.

3.3.4 Conclusions on Contextual issues Relating to Strategic Management in Diversified Organizations

For the purpose of establishing a reference framework for strategic ICT planning for the DOD the following can be concluded from the above:

- There should be a clear and unambiguous definition of the enterprise to determine the value chain of the organization. This will ensure that the management arrangements and mechanisms can be defined, internalised and

[94] Thompson, A.A. Jr. & Strickland, A.J. III. 2003. *Strategic Management Concepts and Cases*. 13th Ed. New York: McGraw-Hill.

institutionalised as related to the ICT management process. This definition will also provide the basis for enterprise architecture planning to define the business and as such serve as the basis for ICT solutions management.

- The nature of the diversified organization and the level of maturity of the various business units comprising the enterprise must be established to ensure that appropriate solutions can be managed effectively in accordance with the specific nature of the business units and the enterprise as a whole. This will also serve as the basis for the utilisation of the process and change management issues according to the nature of the specific business environment.

3.3.5 Strategy Formation in Diversified Organizations

Mintzberg, et al. (1998)[95]suggests that diversified organizations tend not to utilise a specific approach simplistically, but that a combination of a number of approaches (or schools) can be utilised to address the issue of strategy formation as opposed to mere strategy formulation. Thus it can be deemed necessary to understand the organizational drivers and influences for determining the strategic management process as appropriate to the corporate level management, as well as to the business unit level management. These will also influence the eventual formalisation and institutionalisation of such a methodology in as much as it will effect the structural arrangements. This implication is also confirmed by, for example, Pearce and Robinson, (2003)[96] as advocators of strategic management in complex organizations.

According to Pearce and Robinson (2003) *op. cit*. and others such as Thompson and Strickland (2003)[97], it is problematic if the actual strategy formulation and its approval are not performed with due consideration of the respective hierarchical roles of managers/functionaries within the diversified organization. This is due to the fact that strategy usually involves the requirement for top management involvement. When considering the nature of strategic leadership and its relevance to change

[95] Mintzberg, H., Ahlstrand, B. and Lampel, J. 1998. *Strategy Safari: A guided tour through the wilds of Strategic Management*. New York: The Free Press.
[96] Pearce, J.A. & Robinson, R.B. 2003. *Strategic Management: Formulation, Implementation and Control Sited*. New York: McGraw-Hill.
[97] Thompson, A.A. Jr. & Strickland, A.J. III. 2003. *Strategic Management Concepts and Cases*. 13th Ed. New York: McGraw-Hill.

management as presented by Chorn (2004)[98] and others, the involvement of both corporate and business unit management becomes essential.

As strategic management is based on the premise of effecting organizational and environmental change through the implementation of the strategy, strategy has the intention of directing a movement from the present state to a new state as a result of reaction to a constantly changing environment. To this effect the appropriate theory regarding change management as utilised in this research was based on the work of Lewin (1951)[99] and Bjorkman (1989)[100] as a continuation of the process of strategy formulation on, for instance, the work done by Pearce and Robinson, *op. cit*. given the nature of the DOD.

3.3.6 Strategic Alignment within Diversified Organizations

The fact that there could be a divergence of strategic intent within the diversified organization has the underlying requirement for alignment. From a corporate perspective as presented by Thompson and Strickland (2003) *op. cit.* and others, this should not interfere inappropriately with the lines-of-business, even though there is a requirement and indeed imperative for corporate direction and business units' strategic direction.

To leverage the value of ICT for the organization, it is necessary that the objectives of the information system (IS) strategy be aligned with the organizational strategy in accordance with for instance the position presented by Luftman (1996)[101]. This is all the more imperative when, as in the case of the SA Department of Defence (DOD), there has never been a comprehensive, enterprise (corporate) orientated information system strategy that directs the utilisation of information and communication technology in support of organizational objectives, even though there is a corporate business strategy. The alignment has to ensure that informed decisions are made regarding the allocation and utilisation of scarce resources which should be done from

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[98] Chorn, N. 2004. *Strategic Alignment: How to Manage Business Leadership, The commercial Environment and Organisational Culture for Strategic Success*. Maryborough, Vic: McPherson Printing Group.
[99] Lewin, K. 1951. *Field Theory in Social Science*. New York: Harper & Row.
[100] Bjorkman, I. 1989. Factors Influencing Processes or Radical Change in Organisational Belief Systems. *Scandinavian Journal of Management*, 1989, vol.5,4, p.251-271.
[101] Luftman, J.N. 1996. *Competing in the Information Age: Strategic Alignment in Practice*. New York: Oxford University Press.

a corporate perspective. To this end the work done by Luftman, (1996) *op. cit*. I(C)T on aligning business strategy and I(C)T strategy as well as organizational infrastructure and processes and I(C)T infrastructure and processes was used as the basis of the alignment approach. This was applied in conjunction with general strategic management theory and the hierarchical nature and requirements of the diversified organization. It is also considered by this author as forthcoming from this research that it is necessary to understand that alignment is a many to many activity that requires structure, process and collaboration / participation. This aspect will be further expanded upon later on in the literature study.

3.3.7 Characteristics of the Strategic Management Process as Appropriate to Diversified Organizations

Given the nature of diversity within the DOD and its systemic implication on the institutionalisation of an appropriate strategic ICT planning process for the DOD, the necessity for structural arrangements became very obvious as this research progressed. As such the nature of the organization and its specific characteristics served to determine the functional foci that presented the systemic components of management. These “systemic” issues were utilised to guide this research as being representative of a more holistic approach towards determining the strategic ICT planning process to ensure institutionalisation as opposed to merely addressing the strategic ICT planning process itself. These issues focused on the following:

- The ability to determine the actual strategic ICT planning process in order to align it with the strategic business management process.
- Determining the relevant issues that will ensure systemic success given the nature of the diversified organization.
- Determining the relationships and collaboration requirements for role players and stakeholders/participants during the strategy formulation process to ensure congruency and synergy.
- Determining the appropriate management arrangements and mechanisms that would ensure a realistic and institutionalisable strategic ICT plan.

- Determining the specific issues and requirements that need to be addressed to ensure alignment of the Strategic ICT Plan with the enterprise strategy in diversified organizations.

Given the hermeneutic context of these characteristic issues as related to the strategic ICT planning process, the following representation can be made:

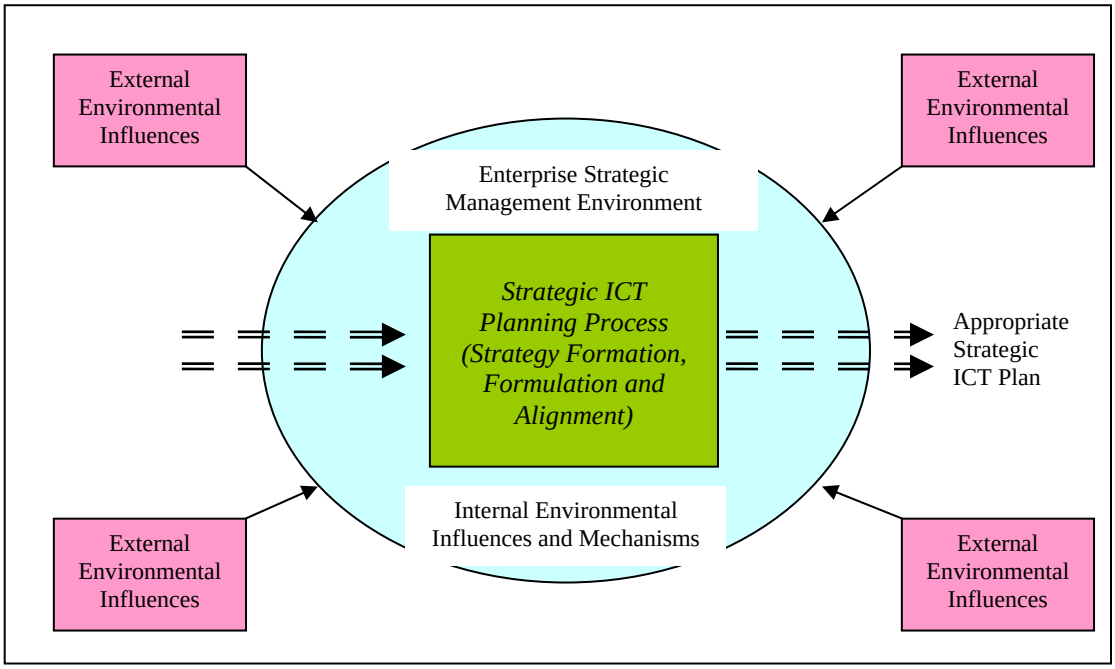

Figure 3.6: Generic Contextual Model for Strategic ICT Planning as Appropriate to this Research

3.4 STRATEGIC ICT PLANNING AS A FUNCTION OF STRATEGIC ALIGNMENT

3.4.1 The Relationships between Business and ICT Solutions

When considering that in accordance with the early approaches presented by Ward and Griffiths from the research and findings of people such as Gibson and Nolan (1974)[102], Anthony (1965)[103] King and Kraemer (1984)[104], Wiseman (1985)[105] and Friedman (1994)[106], and the work done by specifically by researchers such as Ward

[102] Gibson, C. F. & Nolan, R. L. 1974. Managing the four stages of EDP growth. *Harvard Business Review (52)*, January/February 1974, p.76-88.
[103] Anthony, R.N. 1965. *Planning and Control: A Framework for Analysis*, Cambridge, MA: Harvard University Press.
[104] King, J.L. & Kraemer, K.L. 1984. Evolution and organizational information systems: and assessment of Nolan's stage model, *Communications of the ACM*, 1984. vol.27(5).
[105] Wiseman, C. 1985. *Strategy and Computers*, Homewood, IL: Dow Jones-Irwin.
[106] Friedman, A. 1994. The stages model and the phases of the IS field, *Journal of Information Technology*, 1994. vol.9, p.137-148.

and Griffiths'(1996)[107] interpretation of the work published in the EDP Analyser[108], emphasis is placed on the movement from computer or data processing management to information (systems) management with due consideration of the roles and functions as presented below.

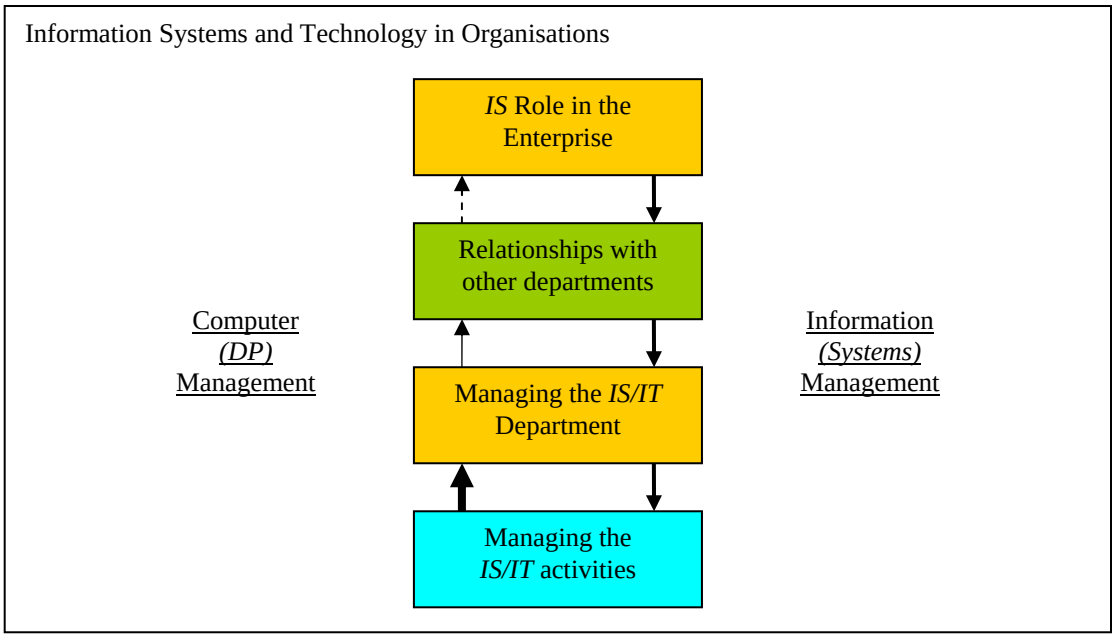

Figure 3.7: Transition between computer and information management: relationships and emphasis as from Ward and Griffiths (1996:6)

The problem as relevant to the research undertaken in the DOD, requires attention with due consideration of the complexity of the organization as opposed to the monolithic approach that is inherent to the work done by Ward and Griffiths (1996)[109]. The complexity of diversified organization is acknowledged by Ward and Griffiths (1996) *op. cit.* For the purposes of this study, when reference is made to IT in literature, it is interpreted as ICT.

[107]Ward, J. & Griffiths, P. 1996. *Strategic Planning for Information Systems*. New York: John Wiley and Sons.
[108] United States of America. EDP Analyser. 1984. *Transition between computer and information management: relationships and emphasis*. USA: EDP Analyser, June 1984, vol.22, no.6,
[109] Ward, J. & Griffiths, P. 1996. *Strategic Planning for Information Systems*. New York: John Wiley and Sons.

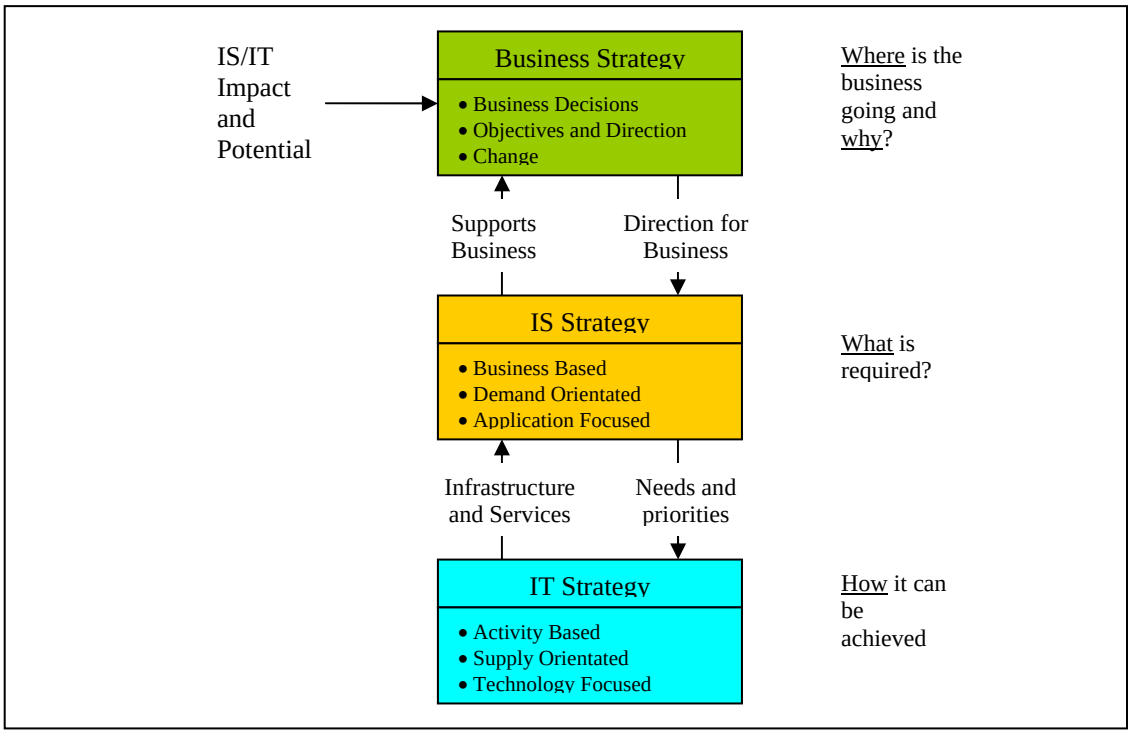

Figure 3.8: The relationship between business, IS and IT Strategies as from Ward and Griffiths (1996:31)

3.4.2 Functions of Strategy as appropriate to ICT

The organization in its complexity and diversity functions as a system of systems and as such has process inherent to its functioning. This is clear from the work done by authors such as Senge (1990)[110] and Sage and Rouse (1999)[111] on systems, Carr and Johansson (1995)[112] on process optimisation and Thompson and Strickland (2003)[113] on strategic management. It is considered relevant to all aspects of the organization as the organization in itself functions as a system and thus has processes to contend with from a management perspective. When considering the application of these approaches within context of the ICT solutions, a high degree of correlation is apparent between the nature of the ICT solution and the organization's functional requirements to follow the same system related requirements and imperatives for continuous improvement.

[110] Senge, P.M. 1990. *The Fifth Discipline*. New York: Doubleday.
[111] Sage, A.P. & Rouse, W.B. 1999. *Handbook of Systems Engineering and Management*, New York: John Wiley and Sons.
[112] Carr, D.K. & Johansson, H.J. 1995. *Best Practices in Reengineering: what works and what doesn't in the reengineering process.* New York: McGraw-Hill.
[113] Thompson, A.A. Jr. & Strickland, A.J. III. 2003. *Strategic Management Concepts and Cases*. 13th Ed. New York: McGraw-Hill.

3.4.3 The Nature of Alignment from a Business Perspective

The high level definition of the strategic management process as appropriate to the six tasks of strategic management as from Thompson and Strickland (2003:5) *op. cit.* and augmented by the approach for alignment presented by Luftman (1996)[114] can be presented as follows for this research.

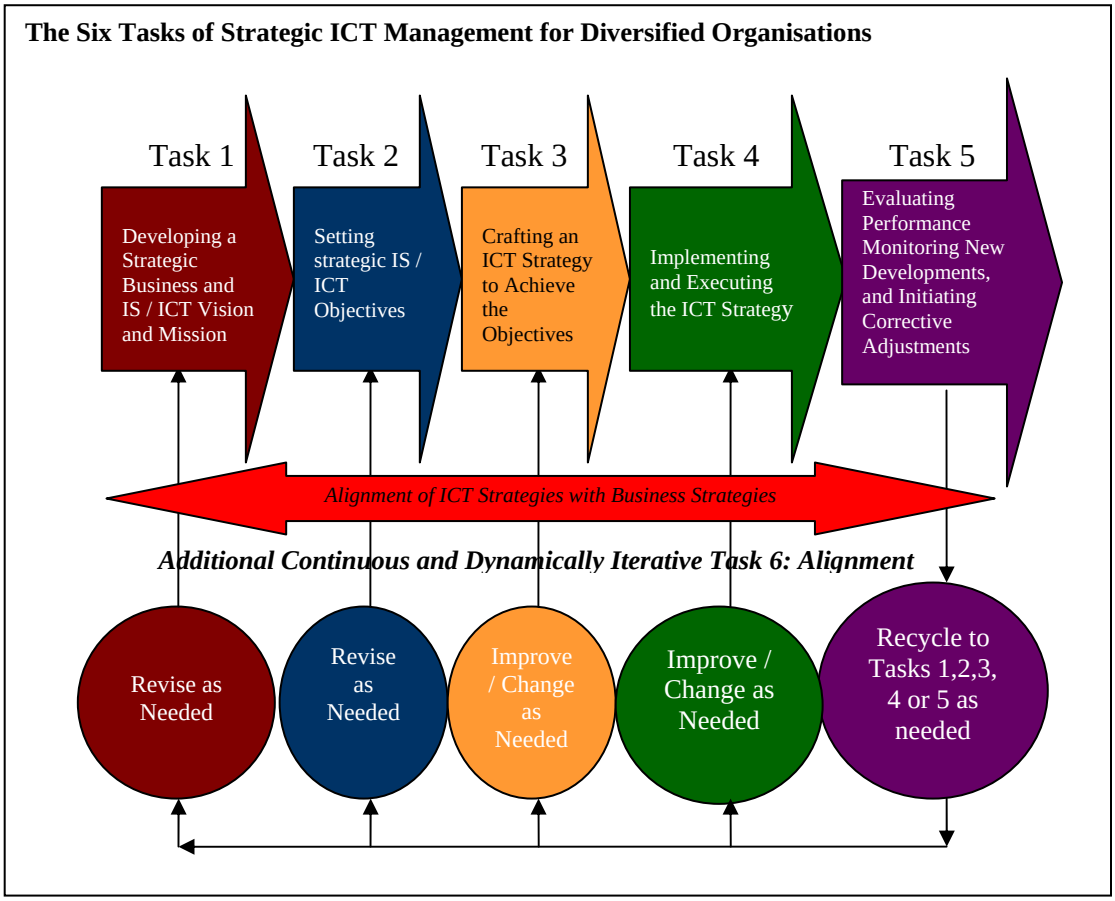

Figure 3.9: Strategic Management as adapted from Thompson and Strickland (2003:5) to include the task of Alignment for Strategic ICT Planning in Diversified Organizations with Control Feedback Loop

From Figure 3.9 it can be concluded that it is necessary to commence the definition of the strategic ICT planning process by understanding that even though alignment is included as a formal task within the strategic management process it has to be performed as part of every cycle of the strategic ICT planning process. This happens as it cycles through the enterprise from group level to business unit level to strategic ICT plans for the whole enterprise and it respective business units. This represents the main difference between the 'standard' approach to an "*Extended Enterprise ICT Strategic Planning Approach*" with the implication that there is a greater and more

[114] Luftman, J.N. 1996. *Competing in the Information Age: Strategic Alignment in Practice*. New York: Oxford University Press.

dynamic requirement for alignment than described above. This is primarily driven by the greater implications coming from the increased diversity of environmental influences – internal and external. The following alignments are considered imperative:

- Enterprise strategy and strategic business plans with business unit strategy and strategic business plans
- Enterprise ICT strategy and ICT Systems Master Plans with business unit ICT strategy and ICT Systems Master Plans
- The respective business strategies and plans with the ICT strategies and plans as an enabler or in accordance with the value chain indication of the relation of ICT to the business
- Note: Alignment is an integral part of strategising and planning and cannot mechanistically be performed after the fact, even though formal confirmation of alignment is required in a formal session. Alignment is as much a function of design as it is of control.

The strategic planning process therefore cycles through the enterprise in a specific manner.

3.5 STRATEGIC ICT MANAGEMENT IN DIVERSIFIED ORGANIZATIONS

With an improved understanding of the characteristics and contextual issues for strategic management the focus can now be placed on strategic ICT management, as an integral part of strategic business management. To this effect current theory regarding strategic ICT management and specifically planning will be presented, analysed and interpreted as appropriate to this specific research.

3.5.1 Approach for ICT Management in Diversified Organizations

Information as a resource and a commodity is acknowledged in the DOD as being subject to strategic direction, policy and control, as would any other resource in the DOD. It is also acknowledged as a resource that permeates throughout the organization and is encountered on and utilised throughout the organization. The

combination of information and information systems within the context of the organization implies not only a systems approach towards information management, but also a systemic perspective towards information management and utilisation. This has to be done as a collaborative activity to ensure coordination and collaboration.

For the purpose of business alignment models such as the one presented by Chorn (2004)[115] provides some insight into this activity and can be presented as follows:

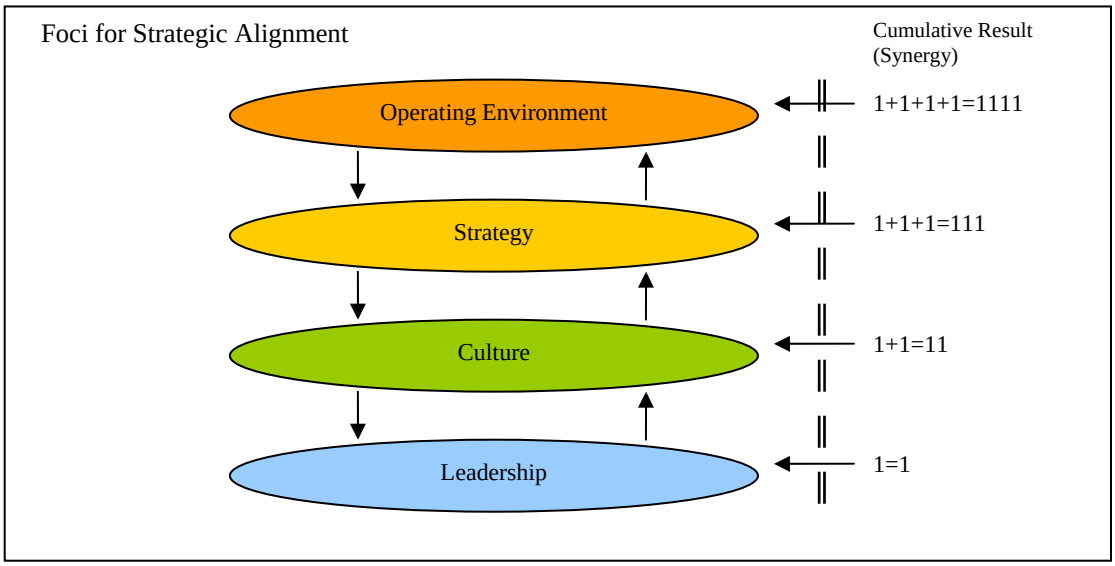

Figure 3.10: Strategic Alignment Model as Adapted from Chorn (2004) to indicate alignment for synergy

The emphasis in this model is centred on aligning the business orientated activities within the organization to ensure that synergy can be achieved and continuously improved. This is, however, another example where the enterprise is presented as if there were a single line-of-business.

The level of organizational maturity has a direct impact on the level of maturity for managing ICT in the diversified organization as inferred from the maturity model presented by Marchand and Horton (1986)[116]. When considering the fact that ICT research is described as a 'fragmented adhocracy' by Whitley (1984)[117] when indicating that it is "*essentially pluralistic*" with "*very limited intellectual and*

[115] Chorn, N. 2004. *Strategic Alignment: How to Manage Business Leadership, The commercial Environment and Organisational Culture for Strategic Success*. Maryborough, Vic: McPherson Printing Group.
[116] Marchand, D.A, & Horton, F.W. Jr. 1986. *Profiting from Your Information Resources.* New York: John Wiley & Sons.
[117] Whitley, R., 1984. *The Intellectual and Social Organization of the Sciences*. Oxford: Clarendon Press.

organizational cohesion or standardisation of methods", and its correlation to managing the ICT function, a standardised approach towards strategic ICT management becomes all the more essential. Flexibility and the recognition of uniqueness is, however, important according to already referenced literature to accommodate unique requirements of the respective strategic business units. Strategic leadership as corporatively managed can therefore be considered as an integral part of the strategic management process and therefore also of the strategic ICT planning process.

From a study done by Ramanujam, Camillus and Venkatraman (1987)[118] it was concluded that strategic management is seen as instrumental to high performance. It might be evolutionary and perhaps revolutionary in its growing sophistication, but still requires action orientation and to be contributing to cost effectiveness. This is considered to be similar for strategic ICT planning given the half-life of ICT and its relationship with business as an enabler.

When performing the functions of strategic management, Pearce and Robinson (2003:3)[119] indicate that it consists of nine critical tasks that focus on the strategic intention of the organization, its environment, the critical success factors or key performance areas that are related to specific scenarios and the 'plans' to realise the strategic objectives. The ability to plan, organize, lead and control these are, however, inherent to any strategic management and therefore planning function.

3.5.2 Considerations for Strategic ICT Planning in Diversified Organizations

From the above the ability to allocate and manage the responsibilities for the management and execution of an appropriate strategic ICT plan in the diversified organization becomes very important. This has to be done with due consideration of the requirement for specific structural arrangements and mechanisms.

3.5.3 Critical Issues to Successful Strategic ICT Planning in Diversified Organizations

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[118] Ramanujam, V., Camillus, J.C. & Venkatraman, N. 1987. "Trends in Strategic Planning," in *Strategic Planning and Management Handbook*, Edited by W.R. King and D.I. Cleland. New York: Van Nostrand Reinhold, p.611-628.
[119] Pearce, J.A. & Robinson, R.B. 2003. *Strategic Management: Formulation, Implementation and Control Sited*. New York: McGraw-Hill.

When relating the approach towards Strategic ICT Planning to the actual Strategic ICT planning process, Ward and Griffiths (1996:108)[120] indicate that there are several questions that need to be answered before embarking on strategic IS/ICT planning. These questions became very pertinent to the ability to institutionalise an appropriate strategic ICT planning process in the DOD and refer to issues such as:

- *"What are the purpose and the main stimuli prompting the need for planning, and what are the key business drivers to be addressed?*
- *What aspects of the current business and technical environment, and what issues, constraints, underlying problems and risks are likely to affect the conduct and outcome of planning?*
- *What should be the scope of planning, and where should planning be focused – on the corporate organization as a whole, at strategic business unit level or on a specific core business process?*
- *How can the planning process be effectively integrated with business planning?*
- *What are the expectations and business objectives to be met, and what deliverables are required?*
- *How should the IS Strategy be "marketed" and consolidated with other elements of the business strategy to ensure that optimal support and cooperation are obtained from the organization?*
- *Should the approach employed be totally prescriptive, tailored, or a mixture of both, and how can the organization build on its previous experience of IS planning?*
- *What are the most effective approaches, and which techniques achieve best results – for example, determining the critical success factors associated with top level business functions or employing business analysis down to a very detailed level?*

[120] Ward, J. & Griffiths, P. 1996. *Strategic Planning for Information Systems*. New York: John Wiley and Sons.

- *What resources, from which areas of business, fulfilling which roles and responsibilities, and which skills should ideally be involved in the process and are they available? What training will be required?*
- *What other resources are required (automated tools, administrative support, physical facilities)?*
- *How long will the planning process take and what will it cost?*
- *How should the process be steered and managed?"*

It was considered by the researcher that there could be variations between that which is presented by Ward and Griffiths (1996) *op. cit.* and the way it is applied in the DOD. It has eventually become progressively clear from the research that the difference primarily revolves around the structural relationships as related to the degree of autonomy that is found in the business units of the diversified organization as opposed to that of the monolithic organization that might have full and direct control over the respective business units. This framework will be used to evaluate this research.

To understand the implication of strategic ICT management in the DOD as managing the enabler for the Information and Communication System, emphasis was placed on managing information as a strategic resource and as a commodity it was considered necessary in the DOD to elucidate the contextual issues related to managing information systems.

3.5.4 Establishing a Contextual Definition for an Expanded Strategic ICT Planning Process for Diversified Organizations

From the requirement to understand the context for strategic ICT planning in the DOD the establishment of a common theoretical framework became necessary. The fact that the directing function is separated from the execution function in the DOD required a similar separation of duties for the ICT management function, whilst still ensuring close collaboration. This separation is confirmed by authors such as Andrews and

Christiansen *et al.* (1982)[121], indicating that there should be "a clear separation of strategy and execution based on the issues of detaching thinking from acting". Steiner (1969)[122] added to this by indicating that "top management planning" should set some main steps that will serve as a basis for the actual process whilst "not specifically defining" the environmental influences.

Ward and Griffiths (1996)[123] utilises such frameworks to demonstrate the strategic ICT planning given their perceived challenges whilst adding that the ability to utilise tools, methodologies and mechanisms to support the strategic ICT planning process for diversified organizations also becomes important as a result of the scale, volume and complexity of the work to be undertaken. The context can be therefore be presented as follows:

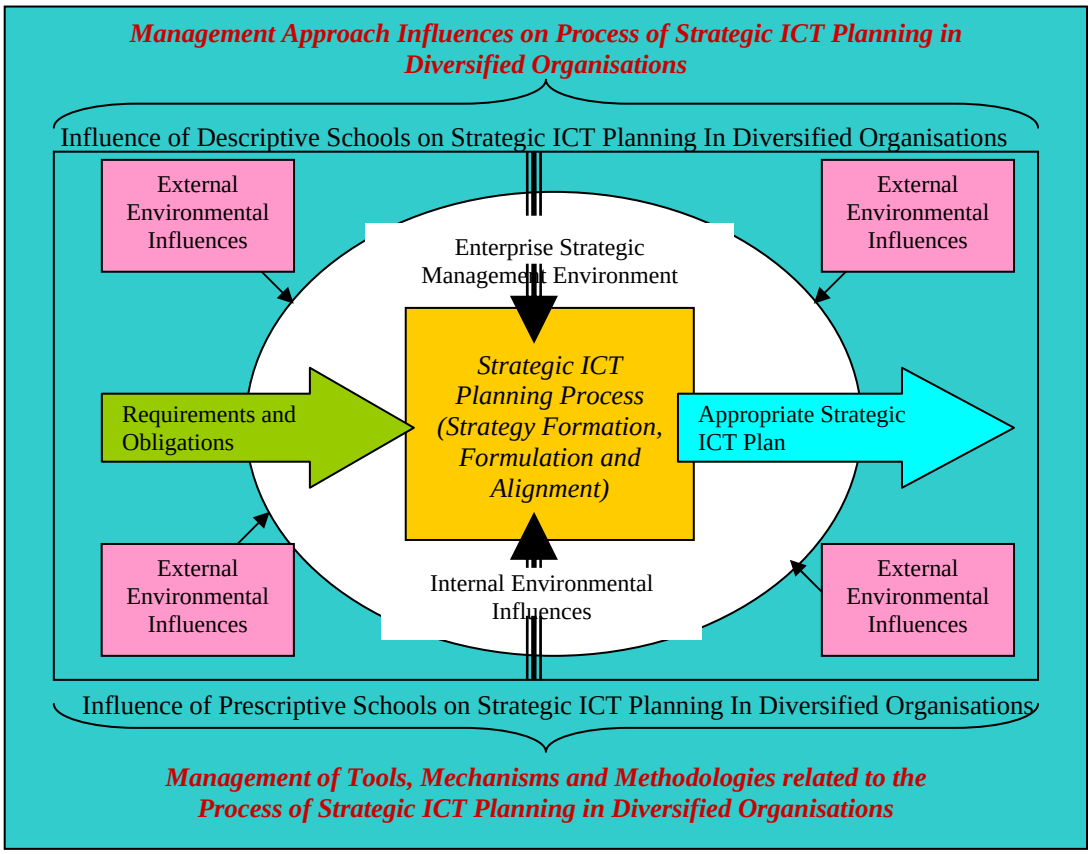

Figure 3.11: Expanded Contextual Positioning of the Influences of the Management Approach towards the Strategic ICT Planning Process in Diversified Organizations

[121] Christensen, C.R., Andrews, K.R., Bower, J.L., Hamermesh, G., & Porter, M.E. 1982. *Business Policy: Text and Cases*, 5th edition. Homewood, Illinois: Irwin.
[122] Steiner, G.A. 1969. *Top Management Planning*. New York: Macmillan.
[123] Ward, J. & Griffiths, P. 1996. *Strategic Planning for Information Systems*. New York: John Wiley and Sons.

The position presented by Mintzberg, *et al.* (1998:58-60)[124] relating to the 'planning school' for strategic management can be confirmed by recent developments and interpretations such as those made by Kruger and Snyman (2002)[125], who indicate that "*[i]t is clear that the Anthony three-tier structure approach*[126] *to defining organisational systems and the 'Nolan and Gibson - six-stage' model*[127] *can be considered as useful starting points in understanding the institutionalisation of ICT. However, the inability of these models to offer guidelines for identifying or explaining the strategic importance of ICT, makes them virtually unusable in our quest to determine the interdependability between strategic management and strategic ICT management.*" This relates to aspects of strategic management such as scenario planning to investigate different scenarios as part of the strategic planning process. It also relates to strategic control that includes activities such as strategic planning, financial control and strategic control that "*involves both business unit autonomy and promotion of corporate interests*" and "*responsibility rests with the division, but strategies must be ultimately approved by headquarters*" according to Thompson and Strickland (2003).

3.5.5 Establishing a Strategic IS/ICT Planning Process for Diversified Organizations

As an inherent part of interpretive research the ability to apply theory appropriately to specific circumstances is imperative. As appropriate to this research it is then considered necessary to understand the "traditional" mistakes that are generally made during the process of strategic management as confirmed in the 'seven deadly sins of strategic planning' as defined by Mintzberg (1994)[128].

According to the planning approach as presented by Mintzberg (1994) *op. cit.* the relationship between corporate management and execution should be such that corporate management is descriptive with execution being prescriptive. This is also confirmed by authors such as Thompson and Strickland (2003) *op. cit.* for general

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[124] Mintzberg, H., Ahlstrand, B. and Lampel, J. 1998. *Strategy Safari: A guided tour through the wilds of Strategic Management*. New York: The Free Press.
[125] Kruger, C.J. & Snyman, M.M.M. 2002. The interdependability between Strategic Management, and the formulation of an Information and Communication Technology Strategy. *South African Journal of Information Management*, 2002, vol.4,2.
[126] Anthony, R.N. 1965. *Planning and control: a framework for analysis*. Cambridge, MA: Harvard University Press.
[127] Gibson, C. F. & Nolan, R. L. 1974. Managing the four stages of EDP growth. *Harvard Business Review 52*, January/February 1974, p.76-88.
[128] Mintzberg, H. 1994. *Rise and Fall of Strategic Planning*. New York: Free Press.

management and by authors such as Ward and Griffiths (1998) *op. cit*. for ICT management. ICT planning should therefore not take place in isolation from the "implementers" where ownership of the ICT solutions resides. This characteristic of management is described by Marianne Jelinek (1979)[129] as the "*fallacy of detachment"* and is based on the fact that there should be *appropriate* detachment of the strategists from the executors. In the researcher's view this is like two sides of the same coin that requires a strong relationship without overlapping. The focus of solutions should not be allowed to shift to specific issues as opposed to focusing on business-orientated solutions as related to core or approved business as contended by Ward and Griffiths (1998) *op. cit.*

If strategies ignore organizational and cultural issues by focusing simplistically on the external environment, then the preponderance towards performing "single point forecasting" becomes an inappropriate basis for planning when the environment is changing so rapidly that a single scenario simply does not exist. This is especially appropriate to ICT with its extremely short half-life and its implications for the diversified organization. It therefore becomes increasingly relevant when considering the difference between corporate strategic management and management of ICT solutions at business unit level.

The ability to think outside the conventional approaches and thereby finding innovative solutions, should be tempered with reality, which requires continuous and conscious interaction of the whole IS management cadre of the enterprise. The premise in this case should be the necessity of not only understanding the nature of the business, but also displaying the ability to contribute towards the optimisation of the organizational capacity and capability. Given the imperative to continuously improve the competitive advantage of the whole corporation planning activities should not negate the semi-autonomous nature of the strategic business units of the diversified organization. To this end change management to realise continuous improvement throughout the whole enterprise requires firm baselines for the definition of future business requirements and the subsequent delivery of appropriate IS solutions and services.

[129] Jelinek, M. 1979. *Institutionalizing Innovation: A Study of Organizational learning Systems*. New York: Praeger.

3.5.6 Strategic ICT Planning as a Continuous Learning Process

A structured and appropriately managed approach will allow for the identification of deviations that can be used to guide the management of planned change. The problem usually encountered is that implementation becomes subject to internalisation and institutionalisation and should be managed with these requirements. A progressive approach might be appropriate given the scope and complexity of the change management initiative in a complex organization.

From the above implication for general management it could be expected that the strategic ICT management plan should place emphasis on continuously improving both the ICT solutions and issues of continuous learning to improve the strategic ICT planning process. This conforms to the phenomenon of "*double-loop learning*' as defined by Argyris and Schön (1978)[130] which relates to the practice of learning about "how to learn". This characteristic of learning has an influence on this research being conducted as action research and specifically this research as an ongoing process as also confirmed by Ward and Griffiths (1996:106) *op. cit*. when not only referring to the process, but also the structural and management requirements to ensure institutionalisation.

As suggested by Porter (1980)[131] the process of business strategy formulation should result in four generic strategies as opposed to a myriad of strategies that position the enterprise in the market and industry. This is also appropriate to the DOD as a diversified organization to support both its centralised and decentralised functions. Therefore the collaborative relationship within the ICT community within the enterprise should deliver solutions that will add value to the organization whilst at the same time adhere to appropriate requirements. The development of enabling methodologies, structural arrangements and toolsets for the enterprise are therefore of paramount importance.

The ability to project target IS/ICT architectures and solutions pro-actively into the long-term from the perspective of a knowledgeable user becomes an important driver,

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[130] Argyris, C., & Schön, D.A. 1978. *Organizational Learning: A Theory of Action Perspective*. Reading, Massachusetts: Addison-Wesley.
[131] Porter, M.E. 1980. *Competitive Strategy: Techniques for Analyzing Industries and Competitors*. New York: Free Press.

according to authors such as Ward and Griffiths (1996) *op. cit*. As such the ability to continuously improve the organizational maturity as a whole, given the relationship between user and enabler, must be managed as part of strategic ICT management. Maturity in this respect is considered with due cognisance of quality management as addressed in assessment for performance awards such as Malcolm Baldrige National Quality Award[132] presented by Schulmeyer and McManus (1996:133)[133] and the Capability Maturity Model (CMM) of the Software Engineering Institute (SEI) as presented by Humphrey (1989)[134], the latter relating to process maturity where five phases have been identified.

Not all of the strategic business units of the diversified organization will necessarily be on the same level of maturity when considering the nature of their respective businesses. The five stages as summarised from Ward and Griffiths (1996:38)[135] move progressively from being technology driven to being method driven to being administratively focused and eventually moving from driven by specific business requirements to a position where it serves the strategic intentions of the organization as a whole. These characteristics will also have an influence on the ability to realise common or transverse solutions that could be centrally managed with unique requirements being managed within the semi-autonomous business units.

3.6 STRATEGIC ICT PLANNING APPROACH, FRAMEWORK AND PROCESS AS APPROPRIATE TO THE DOD

Given the elucidation of the strategic management environment, the characteristics of general strategic management and strategic ICT management and its application in the DOD can now be addressed.

3.6.1 The Strategic ICT Planning Process: an Overview of the Model

As indicated above, the following depiction of the planning framework can be presented to serve as terms of reference for the establishment of a strategic ICT

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[132] United States of America. National Institute of Standards and Technology. 1999. *Malcolm Baldrige National Quality Award, MD 20899 – 1999 Application Guidelines*. Gaithersburg: The Institute.
[133] Schulmeyer, G.G. & McManus J.I. 1996. *Total Quality Management for Software*. Boston: International Thompson Computer Press.
[134] Humphrey, W. S. 1989. *Managing the Software Process*. New York: Addison-Wesley.
[135] Ward, J. & Griffiths, P. 1996. *Strategic Planning for Information Systems*. New York: John Wiley and Sons.

planning process for the DOD given the nature of diversified organizations and the contextual and structural issues described above. The one prerequisite for successful implementation of a strategic ICT planning process is a dedicated process leader as reference from authors on change management such as Lewin (1951)[136] and Bjorkman (1989)[137] as read in conjunction with Ward and Griffiths (1996) *op. cit.*

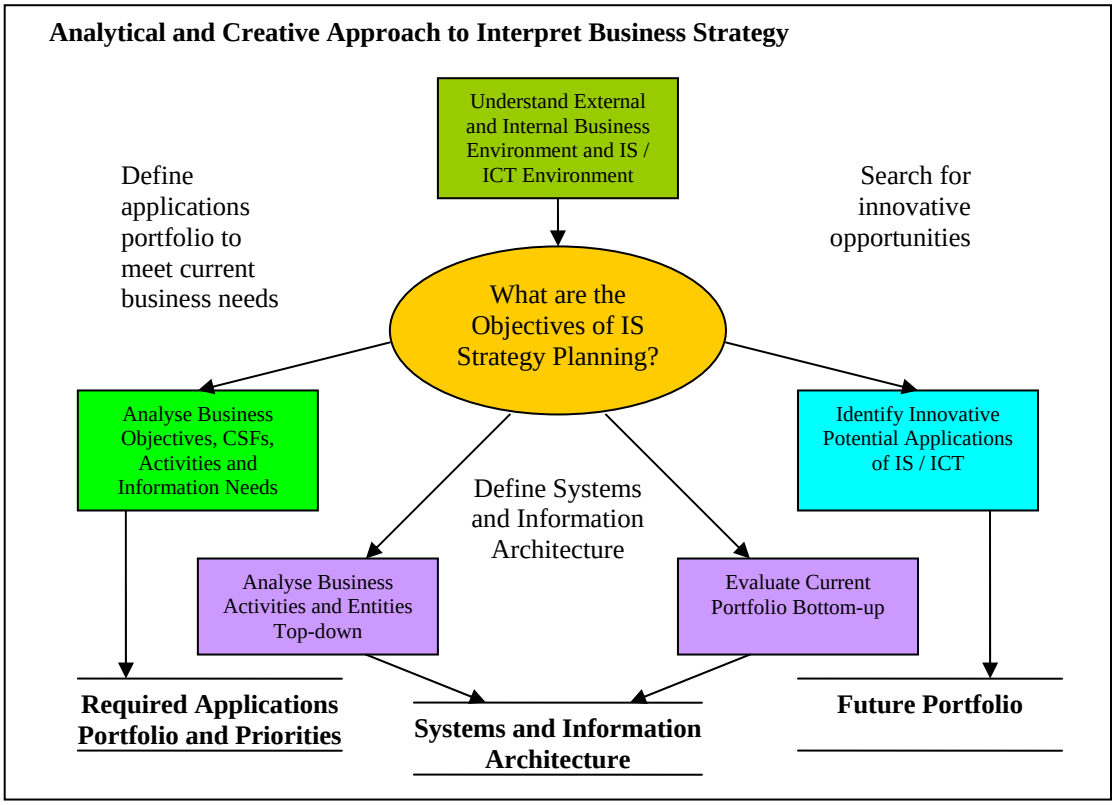

Figure 3.12: Analytic and Creative Approach to Interpret Business as from Ward and Griffiths (1996:137)

When describing the strategic ICT planning process at conceptual process level figure 3.12 defines the main activities of strategic ICT planning as presented by Ward and Griffiths (1996:128-129) *op. cit.* This process takes place within a specific organizational context that has as its essence the ability to ensure implementation with due consideration of relevant issues to ensure success. This is reflected in the following depiction.

[136] Lewin, K. 1951. *Field Theory in Social Science*. New York: Harper & Row.
[137] Bjorkman, I. 1989. Factors Influencing Processes or Radical Change in Organisational Belief Systems. *Scandinavian Journal of Management*, 1989, vol.5,4, p.251-271.

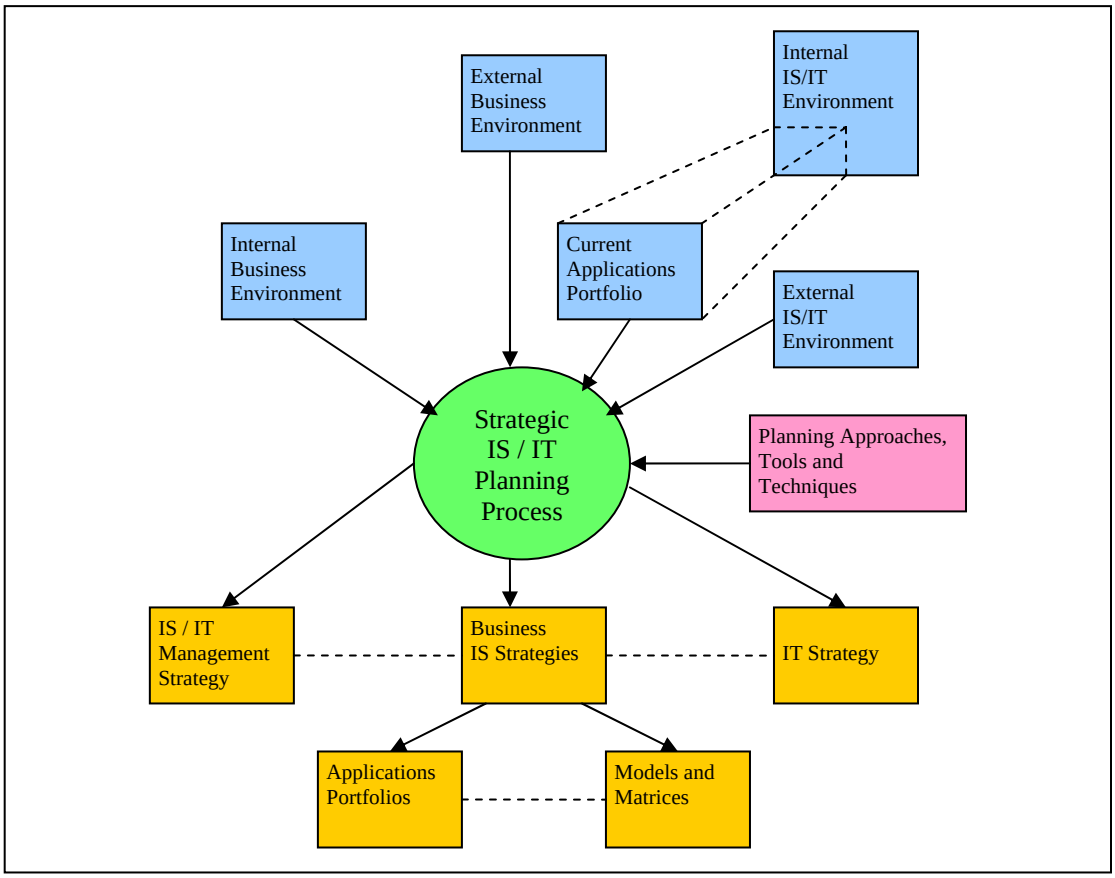

Figure 3.13: The inputs, outputs and related process activities and enablers as from Ward and Griffiths (1996:129)

This holistic approach towards strategic ICT management as presented in Figure 3.13 takes cognisance of the complexity of the organization and the researcher believes that it serves to confirm the requirement and necessity for appropriate structural arrangements to ensure collaboration, participation and alignment. The nature of the organization therefore starts playing a deciding role in the ability to institutionalise an appropriate strategic ICT planning process.

3.6.2 Outputs of the Strategic ICT Planning Process for Diversified Organizations

The strategic direction that results from applying the strategic ICT planning process should focus on the following, according to Ward and Griffiths (1996:129-130)[138]:

- *IS/ICT management strategy*: The focus is on establishing a common approach towards the management of IS/IT by means of policy.

[138] Ward, J. & Griffiths, P. 1996. *Strategic Planning for Information Systems*. New York: John Wiley and Sons.

- *Business IS strategies*: How each unit will deploy IS/IT to achieve its business objectives. Each business unit therefore has its own information architectures and IS/IT portfolios.

- *ICT strategy*: Policies and strategies for the management of technology and specialist resources.

The ability to support the strategic management obligations according to Ward and Griffiths (1996) is not disputed by this author when reference is made to the analytical and creative techniques and enabling toolsets that can be utilised within the planning process to provide the deliverables of the process as discussed previously. Cognisance should, however, be taken of the continuous requirement for alignment at both corporate and business unit level as well as bi-directionally between the two levels.

3.7 APPLYING THE STRATEGIC ICT PLANNING PROCESS

The original expectation of the DOD and this researcher was to simply apply the strategic ICT planning process as presented by Ward and Griffiths (1996)[139] and augment the process with aspects of alignment as presented by authors such as Luftman (1996)[140]. The nature and complexity of the organization, however, play an ever-increasing role in both practice and the research undertaken when referring to the complexity of the DOD as a type of diversified organization. To this end strategic management in diversified organizations presented by authors such as Thompson and Strickland (2003)[141] provide the essential theory. The core theory provided by these authors is substantially augmented by additional interpretation from the existing body of both scientific and practical knowledge as appropriate to the DOD.

3.7.1 Initiating the Planning Cycle

With due consideration of the research timeline the ability to initiate the planning cycle and thereby the definition and utilisation of a strategic ICT planning process require that a determination should be made as to the '*T*erms *O*f *R*eference' (TOR) to

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[139] Ward, J. & Griffiths, P. 1996. *Strategic Planning for Information Systems*. New York: John Wiley and Sons.
[140] Luftman, J.N. 1996. *Competing in the Information Age: Strategic Alignment in Practice*. New York: Oxford University Press.
[141] Thompson, A.A. Jr. & Strickland, A.J. III. 2003. *Strategic Management Concepts and Cases*. 13th Ed. New York: McGraw-Hill.

be utilised for the planning process. The appointment of the Director Enterprise Information Systems Architecture (DEISA)[142] in the newly established CMIS Division created a nodal point for strategic ICT planning and commenced this research, with the TOR being drafted and eventually approved by top management in the DOD. The TOR served to initiate and guide both the establishment and institutionalisation of an appropriate strategic ICT planning process and this research. The DEISA, who eventually became the Government IT Officer (GITO) for the DOD, as the primary practitioner and researcher served as the single point of continuity throughout the past eight years during which the research was undertaken to the point where the strategic ICT planning process was actually institutionalised in the DOD. The migration of the then DEISA from practitioner to researcher is addressed later in this thesis as part of the discussion of the research methodology. The private sector would loosely compare the GITO to the Chief information Officer (CIO).

3.7.1.1 Environmental Issues that Will Initiate the Strategic ICT Planning Process

According to Ward and Griffiths (1996: 109-110) *op. cit.* the stimuli that will initiate the strategic ICT planning process could come from both the internal and the external environment as appropriate to all "sectors" of the enterprise. This is supported by Porter (1979[143], 1980[144]) with reference to his position on "competitive forces" that effect organizations in their internal functioning and their interaction with the external environment.

This position is confirmed by the understanding presented by Kruger and Snyman (2002)[145] in their interpretation of Applegate, McFarlen and McKenney (1999:71)[146] as well as from Frenzel (1999)[147], King (1987)[148] and also the position presented by

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[142] South Africa. Department of Defence. 2000. *SA DOD Performance Agreement for the Director Enterprise Information Systems Architecture dated with reference Def Sec/PP/DIMS/C/501/5 June 2000*. Pretoria: The Department.
[143] Porter, M.E. 1979. How Competitive Forces Shape Strategy, *Harvard Business Review 57:2*, March-April 1979, p.137-45.
[144] Porter, M.E. 1980. *Competitive Strategy: Techniques for Analyzing Industries and Competitors*. New York: Free Press.
[145] Kruger, C.J. & Snyman, M.M.M. 2002. The interdependability between Strategic Management, and the formulation of an Information and Communication Technology Strategy. *South African Journal of Information Management*, 2002, vol.4,2.
[146] Applegate, L.M., McFarlen, W.F. & and McKenny, J.L. 1999. *Corporate information system management: text and cases*. Boston: Irwin/McGraw-Hill.
[147] Frenzel, C.W. 1999. *Management of information technology*. Cambridge: Thomson Publishing Company.
[148] King, W.R. 1987. It's time to get out of the dark. *Datamation*, July 1987.

Earl (1989)[149] regarding the association that exists between business and IS/ICT and specifically exists between strategic ICT planning and its relationship to strategic "business" management. They place this emphasis squarely on the fact that such strategies should be exploitative and entrepreneurial.

It is also stated by Ward and Griffiths (1996) *op.* cit. that ICT strategy requires new attitudes to the use of IS/ICT and in this process requiring new skills and for different people to participate with new types of technology. This is considered as quite appropriate to the defence environment where technology plays a huge role. The adoption of such an approach allows the organization – such as the DOD – to respond to technical risks and/or threats from both the internal and the external environment. As taken from theory these "issues" should be addressed in relation to all the components of the systemic model that is being utilised in the DOD as appropriate to this research.

3.7.1.2 Information Flows and Monitoring Mechanisms

The activity of monitoring runs in parallel with the actual planning process. According to Thompson and Strickland (2003)[150] and others this is to ensure that there is continuous feedback regarding not only the inputs, but also the actual progressively improving process of ICT strategy formulation, the necessity to create monitoring mechanisms becomes a critical success factor in the ability to plan effectively and appropriately.

The ability to monitor ensures that there is continuous dynamic and iterative feedback across the total ICT system life cycle management process of the diversified organization. The ability to monitor and ensure the feedback into the planning process contributes to the necessity of establishing structure and appropriate structural arrangements in the DOD. According to Ward and Griffiths (1996:112)[151] this can be presented as follows:

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[149] Earl, M.J. 1989. *Management strategies for information technology*. Englewood Cliffs, NJ: Prentice Hall.
[150] Thompson, A.A. Jr. & Strickland, A.J. III. 2003. *Strategic Management Concepts and Cases*. 13th Ed. New York: McGraw-Hill.
[151] Ward, J. & Griffiths, P. 1996. *Strategic Planning for Information Systems*. New York: John Wiley and Sons.

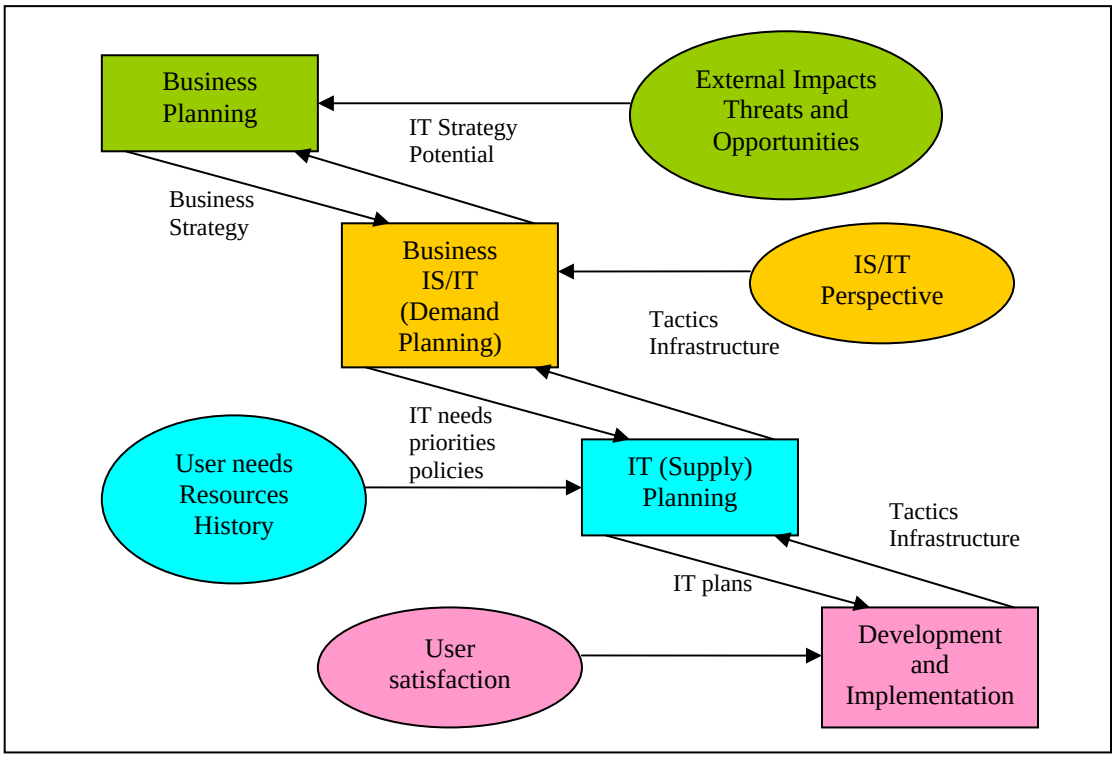

Figure 3.14: Information Flows and Feedback for IS/IT planning as from Ward and Griffiths (1996:112)

The underlying issues are from the depiction above and centred on the ability to identify the issues to be focused on during the planning life cycle of the IS/ICT system. Given the functions of corporate management and its relevance to control these underlying issues correspond greatly to the perspectives that for instance Luftman (1996)[152] uses for purposes of alignment and are described by Ward and Griffiths (1996) *op. cit.*, occurring at business planning level, business IS/ICT demand planning level, ICT supply planning level and development and implementation level. These activities have to be addressed with a clear and distinct allocation of responsibilities. This should be done with due consideration of corporate and business unit level management functions in the DOD. For purposes of this research the focus will be on the strategic planning environment and therefore confined to the "*Business Planning Level*" and the "*Business IS/ICT demand planning level*".

3.7.1.3 Current Environment Issues and Risks Affecting IS Planning and its Outcomes

[152] Luftman, J.N. 1996. *Competing in the Information Age: Strategic Alignment in Practice*. New York: Oxford University Press.

According to Ward and Griffiths (2003) *op. cit.* the intention of initiating the strategic ICT planning processes is to provide focus for the ICT management function. This is confirmed by Wainright Martin *et al.* (1999:539)[153] and the contention that the ICT vision/mission statement should set forth the fundamental rationale for the future activities of the ICT department by providing common guidelines for the corporate ICT planning process. From a business management perspective and specifically the characteristics of strategic leadership as presented by for instance Pearce and Robinson (2003)[154] this is confirmed as being a function of strategic management and therefore also strategic ICT management.

3.7.1.4 Scope, Expectations and Objectives

With due consideration of the fact that the purpose of the ICT planning has been determined, the current environment assessed, as well as the stimuli and the principles that affect IS/IT planning should be done, a determination of the scope and objectives of the planning becomes necessary. This was augmented by establishing a clear and unambiguous indication of the expectations that business has of the planning results.

3.7.1.5 IS Demand and ICT Supply

As a next step the objective of managing IS demand and ICT supply is to align the demand for IS solutions in such a manner with the supply of ICT solutions that there is no confusion. It is indicated that IS strategy therefore deals with "*what*" to do with information, systems and technology. It also deals with how to manage applications from a business point of view. IT strategy on the other hand indicates "*how*" ICT will be utilised to deliver information and systems and ultimately contribute towards the competitive advantage of the organization.

3.7.1.6 Strategic IS Planning for the Strategic Business Units as Part of the Corporation (Enterprise)

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[153] Wainright Martin, E., Brown, C.V., DeHayes, D.W., Hoffer, J.A. & Perkins, W.C. 1999. *Managing information technology – what managers need to know*. 5th Edition. New Jersey: Prentice Hall.
[154] Pearce, J.A. & Robinson, R.B. 2003. *Strategic Management: Formulation, Implementation and Control Sited*. New York: McGraw-Hill.

With due consideration of the nature of the diversified organization and its challenges as alluded to by authors such as Sifonis and Goldberg (1996)[155] and the level of autonomy that is afforded each business unit in relation to centralised corporate functions, conscious decisions are required as to the structure of IS/ICT strategies throughout the organization. Ward and Griffiths (1996:119)[156] presents this as follows:

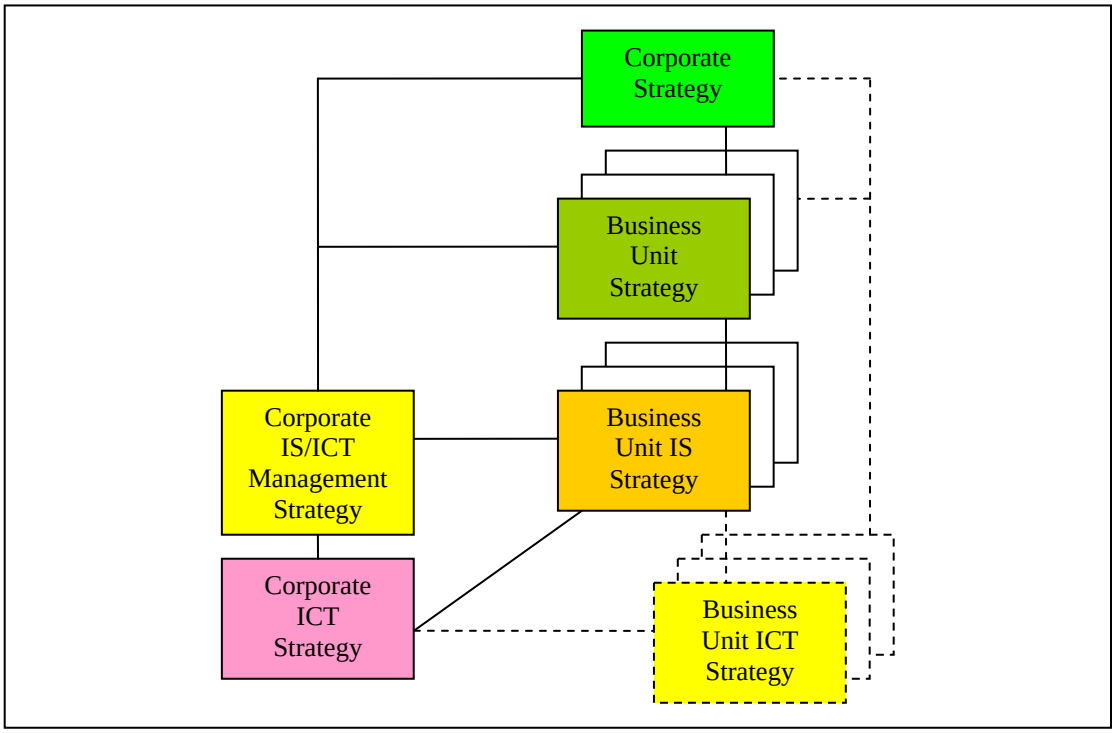

Figure 3.15: Options for ICT strategies for an organization with distinctive business units as from Ward and Griffiths (1996:119)

The important issue highlighted by Ward and Griffiths (1996) above is that there should be a direct relationship between the business strategy and the related IS/ICT strategy. This confirmation implies that structures might have to be created and incumbents appointed to manage the function of strategic ICT planning at corporate and business unit level given the imperative for appropriate alignment. The requirement for such arrangements amounts to vertical and horizontal collaboration and could be expected to play a huge role in the DOD, given its complexity.

As indicated by Ward and Griffiths (1996:120-121) *op. cit.* the attempts to develop corporate IS/ICT strategies as opposed to Strategic Business Unit IS/ICT strategies

[155] Sifonis, J.G. & Goldberg, B. 1996. *Corporation on a tightrope: Balancing leadership, governance, and technology in an age of complexity*. New York: Oxford University Press.
[156] Ward, J. & Griffiths, P. 1996. *Strategic Planning for Information Systems*. New York: John Wiley and Sons.

are not always successful. The corporate strategic business unit can also be considered a distinct user group on its own, whilst simultaneously having the responsibility to participate in corporate strategic direction for the total diversified organization. To ensure that the strategic ICT planning process for diversified organization can be managed effectively, issues related to commitment, participation and collaboration with a clear acceptance of role of ICS and ICT in the organization and the enterprise are necessary. Ward and Griffiths (1996:123) *op. cit.* contend that the ability to manage these aspects is strongly dependant upon established strategic business planning. The requirement for collaboration and therefore alignment furthermore allows for the identification and exploitation of opportunities towards "*mutual support*". This should, however, not take place to the determent of unique requirements throughout the organization.

The underlying imperative is that 'the enterprise' must make the necessary conscious decisions to manage its information systems as enabled by the utilisation of technology and organizational capacity. These implications also fit into the contextual construct of the strategic ICT planning process as presented earlier.

3.7.1.7 Expectations and Setting of Strategic ICS Objectives

With due consideration of the strategic ICT management process presented by Ward and Griffiths *op. cit.* it is the intention to set strategic ICS objectives to guide the ICT function and align it with business objectives that should also include the expectation of business in general terms. Such focus and alignment is in line with the opinions of Kruger and Snyman (2002)[157] in their consideration of the findings by Haag, Cummings and Dawkins (1998:304)[158]. This approach is also confirmed by King[159] and Earl (1989)[160]. Kruger and Snyman (2002) *op. cit.* can be quoted as stating that "*the whole point of the ICT planning process is to find systems that enable the business to go where it needs to go*".

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[157] Kruger, C.J. & Snyman, M.M.M. 2002. The interdependability between Strategic Management, and the formulation of an Information and Communication Technology Strategy. *South African Journal of Information Management*, 2002, vol.4,2.
[158] Haag, S., Cummings, M. & Dawkins, J. 1998. *Management information systems for the information age*. Boston: Irwin/McGraw-Hill.
[159] King, W.R. 1987. It's time to get out of the dark. *Datamation*, July 1987.
[160] Earl, M.J. 1989. *Management strategies for information technology*. Englewood Cliffs, NJ: Prentice Hall.

In order to align organizational goals with ICT goals, Haag, Cumming and Dawkins (1998) *op. cit.* proposed five distinctive steps, appropriately named the "*Information Technology System Planning Process*".

The implications of expectations that are relevant to the strategic ICS/ICT planning process for diversified organization can once again be referred to as being relevant to the systemic foci for ICT management. Ward and Griffiths (1996:126)[161] confirm this by clarifying this implication when indicating that "*the process should be institutionalised to translate to a progressive yet comprehensive process that addresses the expectations of the organisation as appropriately aligned with the strategic business intent*". This position is also confirmed by Pearce and Robinson (2003)[162] when they state that the emphasis of strategic analysis and choice, centre around identifying strategies that are most effective at building sustainable competitive advantage based on the core competencies and capabilities of the firm. This increases the importance of making the connection between ICT solutions and the business requirements within the constant suspicion of non-compliance and performance at ever-increasing cost as stated by Ward and Griffiths (1996:126) *op. cit.* This requires the ability to manage specific planning constraints as appropriate to corporate considerations with due cognisance of considerations as appropriate to the respective business units.

3.7.2 Selecting, Defining and Implementing a Planning Approach

The acquisition of military equipment generally has an extensive lead-time; therefore the requirement for the approach to be flexible, adaptable and modular is imperative. As such the specifics of the deliverables with clear indications of the process checkpoints should be recognised as being cyclic in nature. This could be illustrated by simple diagrams to elucidate what might be a very complex process. Ward and Griffiths (1996:131) confirm some of these process characteristics as appropriate to the ICT environment when referring to the ability to provide context, consistency, and communication as formalised in documentation. All of these are focused on the ability

[161] Ward, J. & Griffiths, P. 1996. *Strategic Planning for Information Systems*. New York: John Wiley and Sons.
[162] Pearce, J.A. & Robinson, R.B. 2003. *Strategic Management: Formulation, Implementation and Control Sited*. New York: McGraw-Hill.

to make rational decisions based on the strategic intention with due consideration of context, but under full configuration management.

3.7.3 Framework for the IS Planning Approach

The framework and characteristics for the IS planning approach as described by Ward and Griffiths (1996:132-136) *op. cit.* places emphasis on the ability of the organization and specifically the planners to assess the nature of the planning activities to be undertaken with due consideration of the current status of IS/IT planning in the organization. As such the framework provides a definition that guides the planner to the actions to be taken by providing a generic construct that guides to planner to this decision. The framework is presented as follows:

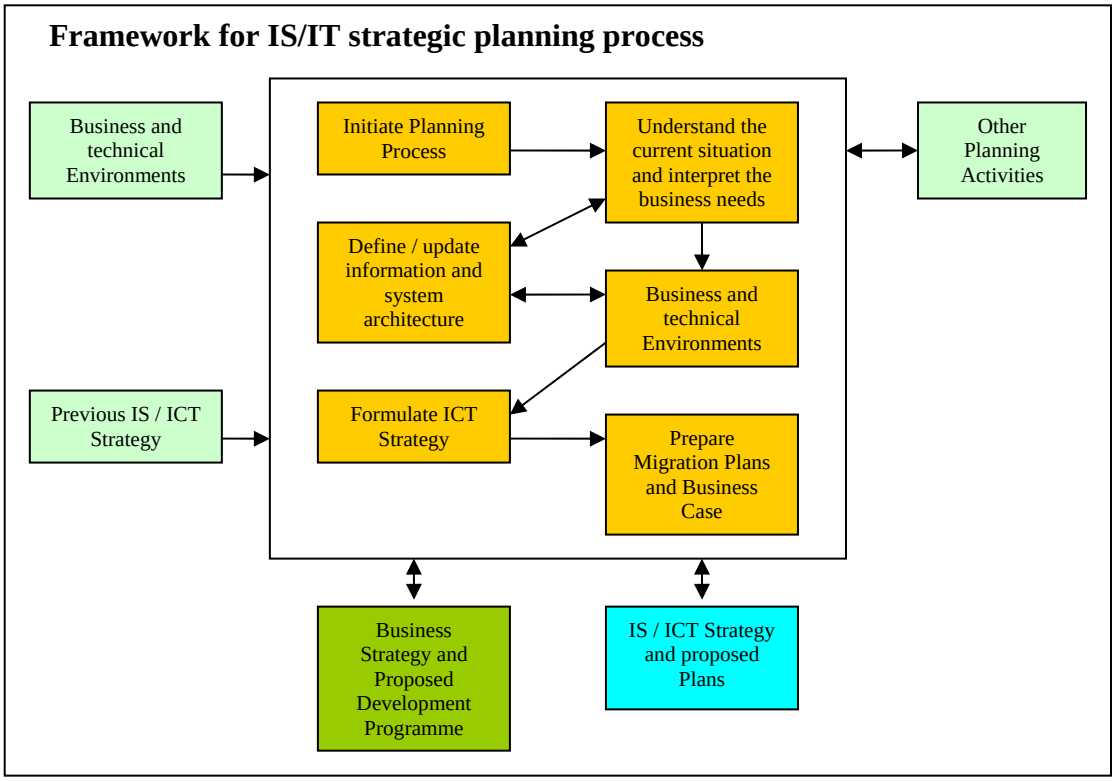

Figure 3.16: Framework for IS/ICT Strategic Planning process as from Ward and Griffiths (1996:133)

The primary planning activities are indicated by Ward and Griffiths (1996:132) as such that it focuses the attention of the planner on the following where it provides the planner with the opportunity to understand the organization and its business needs with specific reference to the fact that it includes activities such as confirmation of the purpose, objectives, scope and deliverables with a clear and unambiguous approach to be followed. This process should be supported by “tools” that can be utilised to support the effort.

Given the requirement for alignment between business and ICT as taken from Henderson and Venkatraman (1990)[163], Luftman, *et al.* (1993)[164] and eventually Luftman (1996:26)[165] developed a theoretical model that explores the interrelationship between business and I(C)T referred to as "The theoretical construct of strategic alignment". This model was based on two distinct linkages: strategic fit and functional integration. The model has as its basic foci for comparison and alignment the business strategy, the I(C)T strategy, the organizational infrastructure and processes and the I(C)T strategy and processes. This becomes more important for diversified organization by their very nature and complexity when considering the degree of collaboration required to facilitate continuous alignment.

With due consideration of the complexity of the organization the establishment and institutionalisation of firm planning baselines become important to create stability in the planning process, the determination and management of appropriate mandates, as well as for the establishment of management arrangement and management mechanisms. Such a stable situation will assist to not only manage the corporate ICT function, but also towards the determination of the Business IS Strategy where an application portfolio is defined for each Strategic Business Unit with a clear consideration of the current systems, required systems and future systems. It provides a common reference framework for the enterprise.

3.7.4 Structure for Strategic ICT Planning Deliverables

Ward and Griffiths (1996:139) *op. cit.* indicate that the strategic ICT planning framework that they present should be adapted to conform to the nature of the organization that wants to apply it. Given that this is also the focus of this research a few general points can be highlighted that relate to aspects such as the need to have statements of demand for information, information systems and information and communications technology in the business IS strategy and accompanying application/ICT portfolio. As such the supply initiatives should be contained in the

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[163] Henderson, J, & Venkatraman, N. 1990. *Strategic alignment: a model for organisational transformation via information technology*. Boston: Sloan School of Management, (Working Paper 3223-90).
[164] Luftman, J., Lewis, P. & Oldach, S. 1993. Transforming the enterprise: the alignment of business and information technology strategies. *IBM Systems Journal*, vol.32(1), p.198-221.
[165] Luftman, J.N. 1996. *Competing in the Information Age: Strategic Alignment in Practice*. New York: Oxford University Press.

ICT strategy whilst the ICS/ICT management strategy contains the overall direction/policies for satisfying and balancing demand and supply.

It can also be stated that there should be an appropriate ICS/ICT management strategy for any organization where ICS/ICT are applied consistently throughout the organization. There may, however, according to Ward and Griffiths (1996) *op. cit.* be several business IS strategies, one for each business unit, or even separate strategies for specific functional or geographically located business units. Given the perspective provided by authors such as Thompson and Strickland (2003)[166], Pearce and Robinson (2003)[167] and Kruger and Snyman (2006)[168] of strategic management for diversified organization the ability to align these with corporate strategy remains important.

3.7.5 Formulation of the Business IS Strategy to Manage the Demand for IS/ICT

As indicated previously the soft factors that will influence the ability of the organization to manage its information management solutions focus on providing insight into the management style of the organization as well as corporate values and business practices. Given the command orientated (autocratic) culture of the military these soft issues have a tendency to become extremely "hard" issues of not managed appropriately towards collaborative continuous improvement. This implication in turn leads to the requirement for appropriate structural arrangements and mechanisms to ensure participation, collaboration and integration. This has to be determined as appropriate to the respective organizations with due consideration of all the dynamics that will impact on the business environment and from the business environment on the IS/IT solutions. Ward and Griffiths (1996:141-142)[169] provide an indication of the aspects that are to be addressed and contained in the business IS strategy.

3.7.6 Formulation of the Strategy to Supply ICT Solutions

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[166] Thompson, A.A. Jr. & Strickland, A.J. III. 2003. *Strategic Management Concepts and Cases*. 13th Ed. New York: McGraw-Hill.
[167] Pearce, J.A. & Robinson, R.B. 2003. *Strategic Management: Formulation, Implementation and Control Sited*. New York: McGraw-Hill.
[168] Kruger, C.J. & Snyman, M.M.M. 2002. The interdependability between Strategic Management, and the formulation of an Information and Communication Technology Strategy. *South African Journal of Information Management*, 2002, vol.4,2.
[169] Ward, J. & Griffiths, P. 1996. *Strategic Planning for Information Systems*. New York: John Wiley and Sons.

The current literature related to supplying ICT solutions indicates that it should not only cover the central (common) ICT function, but also the responsibility of unique users where appropriate. Strategic direction therefore should provide the intention of the organization regarding the way in which it is going to manage its information resources and enabling technologies. From a military perspective given the importance of ICT infrastructure and its enabling ability towards force employment, the ICT strategy indicates the changes required to the information systems and ICT into focus. This should be done with due consideration of the changes in the business environment and its requirements, or where new options for IS/ICT solutions are required due to changes in technology and the ability to sustain the implemented baseline. According to Ward and Griffiths (1996:142) *op. cit.* the IS/ICT strategy will normally reflect on application portfolio management, the organization of IS/IT as well as the management of its resources and administrative matters. It will also address issues related to managing the information resources and the provision of information services as well managing investment, prioritisation and benefits. The ability to manage relevant technology should also be addressed. Once again emphasis is placed on the ability to manage the ICT function with due cognisance of the requirement to establish and institutionalise structural arrangements and mechanisms.

3.7.7 Expansion of the Strategic ICT Planning Process

The requirement to ensure appropriate governance as well as management arrangements and mechanisms had the implication that the implementation for the utilisation of the strategic ICT planning approach had to be changed to include organizational issues. This necessitated an expansion of the theoretical reference framework to address those issues that became relevant to the ability to manage the ICT function as a collaborative effort within the organization and with strategic business management.

3.8 FORMULATION OF THE ICS/ICT MANAGEMENT STRATEGY

With the intention of the ICS/ICT management strategy being to provide focus for ICT solutions and as such guide commensurate structural arrangements, it has become necessary for the DOD to address the total system and its related life cycle. It serves to strategically direct the resource and the resource management system for the

enterprise and has the nature of policy once approved, whilst including change management imperatives to keep up with the ever-changing environment and the supporting requirements for ICS/ICT and information.

The supply factors as addressed by Ward and Griffiths (1996:143) *op. cit.* focus on the ability to establish strategic direction, formalise and implement ICT related master plans that reflect appropriately prioritised ICT requirements with full recognition of a holistic system perspective sustaining cover of the total life cycle of ICT solutions. This once again confirms the requirement for specific structural arrangements and mechanisms in the diversified organization as for any other type of organization.

The nature of change and the manner in which it is managed is directly and indirectly related to the need of the organization of adapting to accommodate the changes in the environment. As represented by Robbins (1979)[170], as well as Brown and Covey (1987)[171], organizational development is an important part of change management. It is indicated by these authors that the people who make up the organization be put through a change process in such a manner that it will contribute towards enhancing the output of the organization. Organizational development[172] is described as "*a collection of change techniques or interventions built on humanistic-democratic values*". In addition to this Brown and Covey (1987) *op. cit.* also state that "*Organisational development values human and organisational growth, collaboration and participative processes, and a spirit of enquiry".* Robbins (1979) *op. cit.* further states that managers can adopt certain strategies to ensure that the collaborative nature of participants can be managed by implementing certain strategies. These should not only address issues of process and capacity, but also management issues to ensure alignment through participation and collaboration. This is once again in line with the "*fallacy of detachment*" as described by Jelinek (1979)[173] and appropriate to the

[170] Robbins, S.P. 1979. *Organizational Behavior, Concepts, Controversies, and Applications*, Fifth Edition. New Jersey: Prentice-Hall International Editions.
[171] Brown, L.D. & Covey, J.D. 1987. Development Organizations and Organization Development: Towards an Expanded Paradigm for Organization Development in *Research in Organizational Change and Developmen*t, vol. 1, edited by R.W. Woodman & W.A. Pasmore. Greenwich, Conn.: JAI Press, p.63.
[172] Robbins, S.P. 1979. *Organizational Behavior, Concepts, Controversies, and Applications*, Fifth Edition. New Jersey: Prentice-Hall International Editions.
[173] Jelinek, M. 1979. *Institutionalizing Innovation: A Study of Organizational learning Systems*. New York: Praeger.

establishment and institutionalisation of a strategic ICT planning process for the DOD.

3.8.1 ICS/ICT Management Strategy

Whilst the ICT strategy focuses in the information systems the focus of the ICS/ICT management strategy is on ensuring that there is sufficient and appropriate capacity and capability to manage the total life cycle and the total system within an appropriate management model, given the nature of the organization. Issues such as centralisation and the degree of autonomy afforded to respective strategic business units will play a role in these decisions. It has the implication that it is part of the governance within the organization over the information management function. Ward and Griffiths (1996:143) *op. cit.* contend that "*The strategy should also contain a concise summary of the individual business IS strategies, and any IT strategies derived for the organisation. It should relate these to its own stated corporate aims and CSFs*".

It is however also indicated by Ward and Griffiths (1996:143) that if the organization consists of "… *a single SBU organisation, or one with complete autonomy, then the IS management strategy can be amalgamated with the business IS strategy*". There is an indication that it separates the strategic management of IS/ICT infrastructure from the ICT strategy where the supporting infrastructure as part of the organizational enabling capacity to manage IS/IT comes into effect. This was the case with the DOD.

In considering the issues presented by Ward and Griffiths (1996:144) *op. cit.* the emphasis is clearly placed on the fact that the ICT management strategy should include all relevant governance, functions and capacity regarding all role players and stakeholders to ensure alignment with organizational requirements and imperatives.

3.8.2 Issues Related to Institutionalisation of the Strategic ICT Planning Process

The ability to increase the potential for success stemming from the realisation of the ICS/ICT related strategies revolve very strongly around the ability to realise strategic leadership within the organization as pertaining to this function. Essentially, this implies that there should be representation at all relevant levels of the organization that can function in accordance with specific management arrangements and objectives as appropriate. Appropriateness relates in this instance to the ability to

manage the process of strategic ICT management in the diversified organization within the organizational construct and mandate related to ICS/ICT process and resource management. This was in fact confirmed by DOD top management as an imperative for the optimisation of Defence ICT Management as taken from Ward and Griffiths (1996:147-152) *op. cit.*

When considering the change management imperatives as presented by for example Lewin (1951)[174] and Bjorkman (1989)[175] as read in conjunction with Ward and Griffiths, the requirement to establish a *"Management Sponsor"* who should preferably be a director of the organization is confirmed. This does, however, have implications for the diversified organization that once again relates to mandate, process as well as management arrangements and mechanisms. The establishment of a *Steering Committee* that "orchestrates the involvement and thereby obtains *commitment from team members"* becomes a confirmed imperative. The ability to support the functioning of such arrangements can be enhanced by establishing *automated support facilities* that can support the electronic management of data captured during the planning process. With the advent of the Enterprise Architecture Planning approach towards information systems management as described by Spewak and Hill (1992)[176] and based on the Zachman Framework (1987)[177] the desire for a comprehensive enterprise architecture toolset is becoming more and more imperative.

The availability of *dedicated physical facilities* then becomes more important the greater the volume of work required in formulating the strategic ICT plan for a diversified organization. This is to decrease the likelihood of interruptions, to get the executives away from day-to-day management problems and commitments as well as to ensure that the supporting "tools" can be accommodated and enhance continuity.

With the expectation that strategic ICT planning should contribute towards sustaining competitive advantage as discussed before, the institutionalisation of an appropriate

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[174] Lewin, K. 1951. *Field Theory in Social Science*. New York: Harper & Row.
[175] Bjorkman, I. 1989. Factors Influencing Processes or Radical Change in Organisational Belief Systems. *Scandinavian Journal of Management*, 1989, vol.5,4, p.251-271.
[176] Spewak, S.H. & Hill, S.C. 1992. *Developing a Blueprint for Data, Applications, and Technology: Enterprise Architecture Planning*. New York: John Wiley & Son.
[177] Zachman, J. 1987. A Framework for Information Systems Architecture. *IBM Systems Journal*, 1987. vol.26, no.3.

strategic ICT planning process as presented by Ward and Griffiths (1996) *op. cit.* and supported by other authors is based on the following critical success factors.

- Creating a centre of excellence representative of all the disciplines involved with strategic ICT planning.
- Gaining the enthusiasm, support and commitment towards the strategic ICT planning process and its subsequent activities to realise the objectives.
- Understanding the full nature of both the internal and the external business environment and its imperatives for ICT systems and solutions.
- Ensuring alignment of the objectives with the maturity of the organization whilst employing a mixture of analytical and creative techniques.
- Ensuring that the business believes in its own recommendations and that it is willing to execute them to achieve the purpose.
- The ability to ensure that the potential utility of ICT cab be leveraged towards the continuous improvement of the organization.

3.9 RELATIONSHIP BETWEEN ORGANIZATIONAL LEARNING AND THE REQUIREMENT FOR STRUCTURE

The logical progression of this research from initially being focused on the strategic ICT planning process and then being augmented by understanding structural issues that surrounds the process required an understanding of strategy as a process of learning. Mintzberg (1998)[178] presented sufficient insight for purposes of this research to this effect when addressing the “five P’s” that serve to enhance the understanding of the process of learning as relevant to the process of strategy formation. The emphasis placed on ‘*intended strategy*’ as opposed to the ‘*realised strategy*’ has the implication for this research that the reasons for deviation have to be understood. This was found to be the case with understanding the necessity to not only focus on the process, as intended, but that the process is influenced by practice and as such can and did in fact alter the outcome of this research from what had initially been expected.

[178] Mintzberg, H., Ahlstrand, B. and Lampel, J. 1998. *Strategy Safari: A guided tour through the wilds of Strategic Management*. New York: The Free Press.

With the consideration that strategy follows a pattern the fact that the progression of this research process follows a pattern that is commensurate with the action research process was also found to be relevant. Establishing governance for the strategic ICT planning process and its relationship with strategic planning in general creates the opportunity to develop a framework that can guide such an appropriate strategic ICT planning process.

When considering the relationship between theory and practice the potential to draw the analogy between this research and the idea of "*emergent strategies*" as presented by Mintzberg *et al.* (1998)[179] and others it is once again confirmed that the findings of this research 'emerged' from putting theory into practice. This serves as a demonstration of the relationship between theory and practice and its relationship to research methodology. The fact that the essence of strategic management (planning) is commensurate to the process of developing the process of strategic planning adds strength to the final conclusions of this research in the opinion of the researcher. As such with the essence of strategy being placed on change management, it is essential to ensure that there can be a firm movement from one state of being to the next.

Unstructured and unmanaged strategic direction has the potential to result in sub-optimal ICT solutions where duplication and omissions as well as an inability to align and integrate become the order of the day. An understanding of the relevant and appropriate 'perspective' as discussed by Mintzberg (1998) *op. cit.* when referring to strategy as a ploy and the particular way in which each company does its business, also becomes relevant to establishing an appropriate strategic ICT planning process. With strategy as a position, the focus is outward, whilst with strategy as a perspective the focus is inward; requiring collaboration and alignment that once again confirm the requirement for structure.

Thompson and Strickland (2003:12)[180] indicate that companies in general have a wide degree of freedom that can spill over into diversification. This phenomenon can in turn result in non-standardisation of policy, structure and even conflicting strategic intent and as such is also appropriate to ICT management. Such diversification can be

[179] Mintzberg, H., Ahlstrand, B. and Lampel, J. 1998. *Strategy Safari: A guided tour through the wilds of Strategic Management*. New York: The Free Press.
[180] Thompson, A.A. Jr. & Strickland, A.J. III. 2003. *Strategic Management Concepts and Cases*. 13th Ed. New York: McGraw-Hill.

broad or narrow and can extend into related or unrelated industries or across national and/or geographic boundaries. Such diversification can be realised through acquisition, joint ventures, strategic alliances, or internal start-up. This characteristic of collaboration and role clarification was found to be relevant to this study; confirming and elucidating the requirement for structure and therefore also influencing the context understanding for strategic ICT planning in diversified organizations.

3.9.1 The Development of Appropriate Structure for Strategic ICT Planning from Learning Experiences

With the intention of sustaining survival and the competitive advantage of the organization through strategies for growth and profitability as presented by Porter (1980:4)[181] and expanded upon by Callon (1996:46)[182] in identifying strategies for innovation, growth and alliance, the focus should be both internal and external. This is confirmed by the idea presented by Introna (1998)[183] when indicating that humans are what they are as a result of their interaction with their environment. This can be the result of explicit or implicit interaction where the interaction can be either conscious or unconscious. This is once again in line with the work done by Giddens (1984)[184] in his "structuration theory" and it appropriateness to learning and therefore the development of an appropriate strategic ICT planning process for diversified organizations. To understand the implications of this perspective and the organizational implication notice can be taken of the advantages and disadvantages of strategy due to the nature of organizations as presented by, for example, Mintzberg *et al.* (1998)[185].

3.9.1.1 Strategy Sets Direction and Structure

Mintzberg *et al. op. cit.* indicate that strategy has the ability to set direction, since it provides the objectives that guide the activities in an organization. These objectives

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[181] Porter, M.E. 1980. *Competitive Strategy: Techniques for Analyzing Industries and Competitors*. New York: Free Press.
[182] Callon, J.D. 1996. *Competitive advantage through information technology*. New York: McGraw-Hill.
[183] Introna, L.D. 1997. *Management, Information and Power*. London: Macmillan Press Ltd.
[184] Giddens, A. 1984. *The Constitution of Society: Outline of the Theory of Structuration*, Cambridge, MA: Polity Press.
[185] Mintzberg, H., Ahlstrand, B. and Lampel, J. 1998. *Strategy Safari: A guided tour through the wilds of Strategic Management*. New York: The Free Press.

provide the framework for the allocation of responsibilities and dependencies which in a diversified organization has the implication of requiring structure to ensure a coordinated effort towards corporate strategic intent. As such the fact that "structure follows strategy" as presented by Chandler (1962)[186] further lends credibility to the necessity for frameworks to provide structure to the strategic ICT planning process. The development of frameworks by Gluck, Kaufmann and Walleck (1980)[187] to not only address the strategic planning process, but specifically the increasing maturity of strategic planning in organization contributes towards this approach.

Ward and Griffiths (1996:48)[188] further apply this same perspective of structure and continuously improving maturity of the strategic planning process to the strategic ICT planning process. The fact that there are distinct relationships between the general strategic planning process and the strategic ICT planning process further increases the need for both processes to be managed and maintained/improved and aligned, or even terminated. Omitting to do so will have serious consequences or risks if not addressed appropriately. This once again confirms the necessity for collaboration between general strategic management and strategic ICT management.

With due consideration of Mintzberg (1998) *op. cit.* and the position on the nature of strategy as being emergent, so that a strategic planning process when properly institutionalised provides continuity and consistency. This should, however, be tempered by the nature of the organization when considering the fact Thompson and Strickland (2003:291)[189] allow for the semi-autonomous nature of organizations that require some kind of corporate governance – direction and policy. The primary advantage according to Mintzberg *et al.* (1998) *op. cit.* is that it promotes coordination of activity and improves the final results and utilisation of resources. What is considered to be necessary is a strong sense of objective without being too restrictive in nature and thereby inhibiting innovation and synergy. It is necessary to prevent 'group thinking' that can occur when efforts are too prescriptive. There could

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[186] Chandler, A.D., Jr. 1962 *Strategy and Structure: Chapters in the History of Industrial Enterprise*. Cambridge, Massachusetts: MIT Press.
[187] Gluck, F.W., Kaufmann, S.P. & Walleck, A.S. 1980. Strategic Management for Competitive Advantage, *Harvard Business Review*, July / August 1980.
[188] Ward, J. & Griffiths, P. 1996. *Strategic Planning for Information Systems*. New York: John Wiley and Sons.
[189] Thompson, A.A. Jr. & Strickland, A.J. III. 2003. *Strategic Management Concepts and Cases*. 13th Ed. New York: McGraw-Hill.

therefore be a differentiation between corporate governance and governance for execution.

Mintzberg *et al.* (1998)[190] refer to descriptive management (strategy) as appropriate to the "*learning school*" as an approach to strategic management. The implication of this could be that 'governance for execution' could be prescriptive which in turn could result in a restriction of 'semi-autonomous' executives to consider uniqueness in the nature of specific ICT solutions. Structural relationships and management mechanisms between corporate management and business unit management would therefore have to be structured and managed with due consideration of this implication.

Strategy as also presented by Mintzberg *et al.* (1998) *op. cit* thus becomes the "cognitive structure (story) to simplify and explain the world" and thereby to facilitate action even for diversified organizations. This is also appropriate to strategic ICT planning when considering the shared opinions of authors such as for instance Ward and Griffiths (1996) *op. cit.*

3.9.1.2 Issues for Strategic Management in Diversified Organizations

One of the most important aspects of strategic planning as a vehicle for organizational excellence is captured in the eight characteristics defined by Peters and Waterman (1982)[191]. These characteristics have as its essence the implication that people should perform work that can be performed within a clear set of objectives with appropriate freedom to allow for innovation, given their specific circumstances.

From a vast number of authors that include opinions as far back as those of Mary Parker Follet (1934)[192], to modern opinions on management, it becomes clear that one of the essential elements for management is the ability to coordinate. The institutionalisation of the ability to coordinate is also subject to continuous improvement as an evolutionary process. This opinion is confirmed by authors such as

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[190] Mintzberg, H., Ahlstrand, B. and Lampel, J. 1998. *Strategy Safari: A guided tour through the wilds of Strategic Management*. New York: The Free Press.
[191] Peters, T.J. & Waterman, R.H. 1982. *In Search of Excellence: Lessons from America's Best-Run Companies*. New York: Harper & Row.
[192] Follet, M.P. 1934. *Creative Experience*. London: Longmans and Green.

Kruger and Snyman (2006)[193] as influenced by Pearce and Robinson (2003)[194] on issues of general management and others such as Byrne (1996)[195], Pearce and Robinson (2000), Ward and Griffiths (1998) in describing strategic management as an evolutionary process. Taken from the requirement for collaboration as required for coordination, the ability to integrate the strategic ICT planning process into its environment becomes a fundamental issue.

According to Chaffey (1985)[196] there are a number of areas of agreement on strategy that can serve as confirmation of the inferences drawn from the work done by Mintzberg (1998) *op. cit*., Thompson and Strickland (2003:12)[197] as well as Introna (1998)[198]. From these authors and this research the specific focus of strategy requiring and providing a structured framework that can be applied to ensure the institutionalisation of an appropriate strategic ICT management process for the DOD as an example of a diversified or complex organization, is once again confirmed.

These interpretations provided by Chaffey (1985) indicate that strategy concerns both organization and environment and that an essential substance of strategy is complexity. Strategies in its very nature of effecting change affects the welfare of the organization and as such are influenced by it. With strategies involving issues of both context and process within the diversified organization and its structural relationships between corporate and business unit management as different levels of the enterprise all strategies cannot be seen as being purely deliberate, but involving various thought processes. This is cognisant of the diversified nature and its implication for corporate strategic ICT planning as relevant to the diversified organization.

In the process of comparing Chaffey's definition with the interpretation derived from Sun Zi *op. cit.* it becomes apparent that not only is there great confluence between the organization and strategic management and strategic ICT management, but there has

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[193] Kruger, C.J. & Snyman, M.M.M. 2002. The interdependability between Strategic Management, and the formulation of an Information and Communication Technology Strategy. *South African Journal of Information Management*, 2002, vol.4,2.
[194] Pearce, J.A. & Robinson, R.B. 2003. *Strategic Management: Formulation, Implementation and Control Sited*. New York: McGraw-Hill.
[195] Byrne, J A. 1996. Strategic planning. *Business Week*, 1996, Issue 3490, p.46-51.
[196] Chaffey, E.E. 1985. Three Models of Strategy. *Academy of Management Review*, 1985, vol.10(1), p.89-98.
[197] Thompson, A.A. Jr. & Strickland, A.J. III. 2003. *Strategic Management Concepts and Cases*. 13th Ed. New York: McGraw-Hill.
[198] Introna, L.D. 1997. *Management, Information and Power*. London: Macmillan Press Ltd.

also not been as much change in the basic understanding of the characteristics of strategy as some proponents might want to believe or advocate. To this end the issue can be considered to reside in the application of basic or fundamental characteristics being dependant upon the structural arrangements that are in turn influenced by the nature and focus of the organization. It merely requires confirmation of definition and interpretation within context as confirmed by authors such as those interpreted and contextualised by Kruger and Snyman (2006) *op. cit*, (2001)[199] and even Ruddin (2006)[200].

When considering the process of strategic ICT planning in diversified organizations, it can therefore be considered necessary to provide a clear definition and understanding of the context within which such a process will be defined and utilised. This conforms to the "research principle" of the hermeneutic circle as defined by Klein and Meyers (1999)[201]. In the endeavour to understand the context of the DOD as a diversified organization, a comparison can be drawn to the conceptual implications for the configuration school for strategic management, as presented by Mintzberg, *et al.* (1998)[202]. From this perspective strategy formation is considered to be a process of transformation that provides insight into the considerations and issues that will either directly or indirectly influence strategic planning in diversified organizations.

The configuration school has two specific contextual sides according to Mintzberg, *et al.* (1998) *op. cit.*, being one side that describes the 'states' of the organization and its surrounding context as configurations, and the other side that describes the strategy making process as a process of transformation. The relevance of this resides in the fact that there is a causal relationship between the nature of the organization as structure and the strategy of such an organization according to Chandler (1962)[203]. Therefore both structure and business strategy will have an influence on and be influenced by the ICT strategy of the organization.

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[199] Flyvbjerg, B. 2001. *Making social science matter: Why social enquiry fails and how it can succeed again.* Translated by S. Sampson. Cambridge, UK: Cambridge University Press.
[200] Ruddin, L.P. 2006. You Can Generalise Stupid! Social Scientists, Bent Flyvbjerg, and Case Study Methodology. *Quality Inquiry*, August 2006, vol.12, no.4, p.797-812.
[201] Klein, H.K, & Myers, M.D. 1999. A set of principles for conducting and evaluating interpretive field studies in information systems. *MIS Quarterly*, 1999, vol.23, no.1, p.67-94.
[202] Mintzberg, H., Ahlstrand, B. and Lampel, J. 1998. *Strategy Safari: A guided tour through the wilds of Strategic Management.* New York: The Free Press.
[203] Chandler, A.D., Jr. 1962 *Strategy and Structure: Chapters in the History of Industrial Enterprise.* Cambridge, Massachusetts: MIT Press.

For purposes of this research an understanding of the nature and complexity of the diversified organization and its respective semi-autonomous business units becomes necessary as it will have a strong bearing on the ability interact with the corporate strategic ICT planning process due to potentially differing levels of maturity within the enterprise. Collaboration should take place with the appropriate consideration of such issues that will either have a direct or indirect impact on the organization as a whole as opposed to only being focused on the interests of the respective semi-autonomous business units, given its ability to function as a learning organization. The concept of '*double-loop learning*' as described by Argyris and Schon (1978)[204] becomes important to not only understand the planning process, but also the way in which the organization as a whole interacts and learns.

From a practical perspective the inability to understand the issues that will effect the institutionalisation of an appropriate strategic ICT planning process should therefore be cognisant of the specific issues forthcoming from functional diversity throughout the enterprise. If this collaborative state of functioning can be realised whilst the organization can maintain its focus given its diversity, the ability to not only create strategic competitive advantage, but to continuously improve such an organization as a whole, can be realised.

3.9.2 Relevance Of Strategic Management Framework To Strategic ICT Planning In Diversified Organizations

According to Mintzberg, *et al.* (1998:305) *op. cit.* the Configuration School actually encompasses the premises of the other approaches to strategic management, but each in a well-defined context with due consideration of the nature of the organizations.

With the intention of ICT strategy in the DOD being to ensure that the potential utility of ICT can be realised towards the diversified organization as an enterprise, the requirement for alignment of the strategic ICT plan with the business strategy becomes imperative. As such the causal relationship that exists as being mutually influencing between the organization and its diversity of functions and corresponding enabling ICT systems, should not be ignored. This causal relationship should,

[204] Argyris, C., & Schön, D.A. 1978. *Organizational Learning: A Theory of Action Perspective*. Reading, Massachusetts: Addison-Wesley.

however, not be such that the ICT starts to determine the nature and functioning of the organization itself.

The above-mentioned argument is in line with the opinion held by Kruger and Snyman (2002)[205] in considering the work done by Applegate, McFarlen and McKenny (1999:85)[206]. As such they can be quoted as indicating that "to make full use of the opportunities that IT presents, technical specialists must work in close partnership with managers. It is therefore confirmed as appropriate to and confirmed by this research that business drives the requirements and that ICT provides some of the solutions in response to business requirements. ICT should, however, be allowed to influence the way in which the organization might operate.

Given the above-mentioned argument the relationship between the organization, its strategic intention and the way in which it functions will always have a major causal relationship with the approach towards strategic ICT management and the provision of ICT solutions in any organization. The experiences and timeline of the actual research undertaken in the DOD the initial point of departure was the theory provided by Ward and Griffiths (1996) [207]. As such the next aspect to be discussed would focus on strategic ICT management.

3.10 RELATIONSHIP BETWEEN THE STRATEGIC ICT PLANNING PROCESS AND THE NATURE OF THE DIVERSIFIED ORGANIZATION

With the intention of performing a critical interpretive study of the actual strategic ICT planning process as implemented in the DOD requires that it should be soundly based on theory. To this effect the first chapter provided the introduction and was subsequently followed by an elucidation of the environment (context) of the SA DOD. Following the contextual understanding of the diversified environment within which the research took place an overview of the relevant theory was presented. From this the ability to apply this theory to the research undertaken as presented in this thesis, is

[205] Kruger, C.J. & Snyman, M.M.M. 2002. The interdependability between Strategic Management, and the formulation of an Information and Communication Technology Strategy. *South African Journal of Information Management,* 2002, vol.4,2.
[206] Applegate, L.M., McFarlen, W.F. & and McKenny, J.L. 1999. *Corporate information system management: text and cases*. Boston: Irwin/McGraw-Hill.
[207] Ward, J. & Griffiths, P. 1996. *Strategic Planning for Information Systems*. New York: John Wiley and Sons.

heavily dependant upon the ability to align theory and practice in its application according to authors such as Klein and Myers (1999)[208], Behr (1983)[209], Baskerville and Wood-Harper (1998)[210], and Mårtensson and Lee (2004)[211] amongst others. This will be further expanded upon in this session.

3.10.1 Context for the Relationship between the Nature of the Diversified Organization and its Strategic ICT Planning Process

The theory discussed was duly considered before the following context for its application could be presented. With reference to Lederer and Sethi (1988)[212] as quoted by Ward and Griffiths (1996:96)[213] strategic ICT planning is defined as follows:

> *"…the process of deciding the objectives for organisational computing and identifying computer applications which the organisation should implement."*

This definition is further enhanced by Wilson (1989)[214] as quoted by Ward and Griffiths (1996:96) *op. cit.* when strategic ICT planning is described as follows:

> *"An IS strategy brings together the business aims of the company, an understanding of the information needed to support those aims, and the implementation of computer systems to provide that information. It is a plan for the development of systems towards some future vision of the role of IS in the organisation."*

This focus of this research was therefore to ensure that a process of strategic ICT planning can be institutionalised in the DOD that can also ensure alignment of the direct relationship between the business and the information systems that support it.

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[208] Klein, H.K, & Myers, M.D. 1999. A set of principles for conducting and evaluating interpretive field studies in information systems. *MIS Quarterly*, 1999, vol.23, no.1, p.67-94.
[209] Behr, A.L. 1983. *Empirical research methods for human sciences: An introductory text for students of education, psychology and the social sciences*. Pretoria: Butterworths.
[210] Baskerville, R & Wood-Harper, A.T 1998. Diversity ion information systems action research methods. *European Journal of Information Systems*, 1998, vol.7, p.90-107.
[211] Mårtensson, P. & Lee, A.S. 2004. Dialogical Research at Omega Corporation. *MIS Quarterly (Special Edition)*, September 2004, vol.28, no.3, p.507-536.
[212] Lederer, A.L. & Sethi, V. 1988. The implementation of strategic information systems planning methodologies, *MIS Quarterly*, September 1988.
[213] Ward, J. & Griffiths, P. 1996. *Strategic Planning for Information Systems*. New York: John Wiley and Sons.
[214] Wilson, T.D. 1989. The implementation of information system strategies in UK companies: aims and barriers to success. *International Journal of Information Management (9)*. 1989.

As such it has the added implication that the business environment will influence the process with the process also accommodating the nature of the organisation. It is also considered imperative to support the strategic business intention and strategy with appropriate ICT solutions. The ability to align the information, information systems and ICT utilised to enable information management is of utmost importance to ensure performance and compliance. The benefits of this research became two-fold by firstly benefiting the organization in its requirement to institutionalise and appropriate strategic ICT planning process and secondly benefiting the research/learning dimension as it also entrenches this dimension and therefore encapsulates the action/reflection framework necessary for this research dimension.

From the above it was and still can be considered necessary to retain focus on the ability to manage the information that the organization requires, as well as the enabling information system. This requires not only the ability to manage it, but specifically the institutionalisation of management arrangements and mechanisms in the organization. With the objective of sustaining these characteristics and ensuring a strategic perspective towards strategic ICT planning, continuous improvement becomes a strong driver.

One of the underlying issues is therefore that the process must ensure that the allocation of scarce resources within the organization is coherent and balanced to achieve maximum effect through synergies within the organization as a whole. This has the implication of a holistic and systemic approach towards ICT management in the organization.

3.10.2 Conceptual Relationship between the Strategic ICT Planning Process and the Strategic Management Process of a Diversified Organization

As information is considered a strategic resource for an organization it should be managed as such and exerts an influence on the whole organization in its diversity. The fact that ICT enables the corporate information system that in turn supports the business of the enterprise necessitates continuous alignment as presented by authors such as Luftman (1996)[215]. The ability to align ICT solutions with business requirements as a function of strategic planning requires collaboration between the

[215] Luftman, J.N. 1996. *Competing in the Information Age: Strategic Alignment in Practice*. New York: Oxford University Press.

executors of the respective processes – the planners. As such it is a function of strategic direction, policy and control as appropriate to any other resource that is being utilised in the organization. Given that the ICT system has to be managed with due consideration of its life cycle and the ability of the organization to use it appropriately, such collateral systemic aspects have to be addressed to ensure successful life cycle management and utilisation. All these critical functions have to be managed within their multilateral relationships and influences. The combination of information and system within the context of organization therefore implies not only a systems approach towards information management, but also a systemic perspective towards information management and utilisation.

Given the relationship between the strategic planning function and the strategic ICT planning function any framework should be cognisant of the overall business performance and the strategic management function. It therefore follows that the issues that influence the organization will also influence the strategic planning process. The effectiveness of the ability to execute and align the strategic ICT planning process depends upon the level of maturity of the organization in its ability to execute and align the strategic ICT planning process with the strategic business planning process. The maturity of managing the ICT function is presented on a sliding scale by Marchand and Horton (1986)[216]. Given the potential diversity of ICT solutions and the potential varying levels of maturity of the respective semi-autonomous business units of the DOD, institutionalisation of a corporate strategic ICT planning process should be managed within this context. To this end the respective semi-autonomous business units could be functioning in different modes when considering the three eras[217] of ICT utilisation being focused on mechanisation, automation or competitive advantage.

The intention of strategic ICT planning is therefore focused on ensuring that the maturity of the organization in its ability to manage its information can be improved in a manner that is aligned with the continuous improvements and change of the

[216] Marchand, D.A, & Horton, F.W. Jr. 1986. *Profiting from Your Information Resources.* New York: John Wiley & Sons.
[217] Ward, J. & Griffiths, P. 1996. *Strategic Planning for Information Systems*. New York: John Wiley and Sons.

organization from a holistic and systemic perspective as aligned with the strategic context presented by Marchand and Horton (1986)[218].

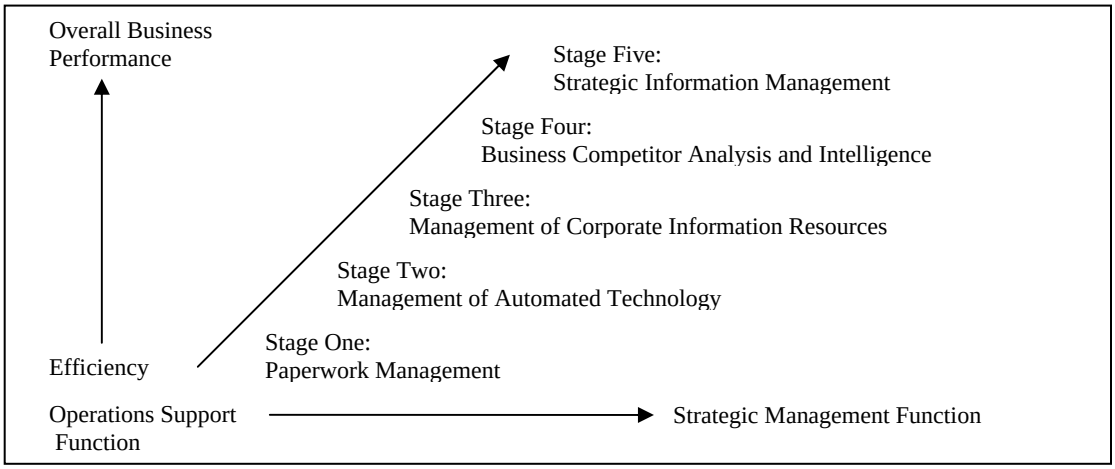

Figure 3.17: Strategic Context of Information as from Marchand, D. A and Horton F. W. Jr. (1986)

Given the context as indicated above Pearce and Robinson (2003)[219] indicate that there are a number of issues that need to be considered during the process of strategising. These revolve around the aspects of managing the environment within which the process of strategising is going to be performed, deciding on the construct and structural arrangements to be utilised during the strategy formulation process.

Given the nature and implications of context as presented by the principle of the hermeneutic circle as described by Klein and Meyers (1999)[220], context becomes more relevant when considering the implication of the requirement for alignment in the diversified organization, given the positions presented by Luftman (1996)[221] and others. According to the position of Luftman it is necessary to establish a stable business strategy for the enterprise which can service as the basis or 'anchor' for all other strategies within an organization. The implication is that it is essential to have an acceptable degree of maturity for at least one of either the business or the ICT strategies within the diversified enterprise.

[218] Marchand, D.A, & Horton, F.W. Jr. 1986. *Profiting from Your Information Resources.* New York: John Wiley & Sons.
[219] Pearce, J.A. & Robinson, R.B. 2003. *Strategic Management: Formulation, Implementation and Control Sited*. New York: McGraw-Hill.
[220] Klein, H.K, & Myers, M.D. 1999. A set of principles for conducting and evaluating interpretive field studies in information systems. *MIS Quarterly*, 1999, vol.23, no.1, p.67-94.
[221] Luftman, J.N. 1996. *Competing in the Information Age: Strategic Alignment in Practice*. New York: Oxford University Press.

A further implication as taken from Luftman (1996) *op. cit.* is that there should be some kind of "method" to ensure that the respective business and ICT strategies can be compared and aligned. Alignment of the two strategies requires collaboration between the two processes to ensure that their resultant strategies are aligned as continuous activity. It is furthermore implied that there should be collaboration between the determination of the strategic ICT planning process and the strategy formulation process by the respective role players to ensure that the ability to align is an integral part of both the strategic business and ICT planning processes. At the very least it implies that the respective strategies cannot be formulated in isolation form each other. This requirement for collaboration and alignment between business and ICT becomes more important when considering the systemic implication of the diversified organization. This should, however, not be done by negating the separation of the responsibilities for strategic management as opposed to functional execution in accordance with the policy and strategic direction. This refers to the separation of duties as relevant to the idea of being 'referee or player' as opposed to being both 'referee and player' within a system of checks and balances.

The focus should be on the realisation of congruency and synergy around the strategic focus of the organization or enterprise. When considering the strategic management process as presented by Pearce and Robinson *op. cit.* as well as Thompson and Strickland (2003)[222] it is clear that there is a high degree of correlation between the basic process as described by both these perspectives. By implication, should one consider other strategic management models, it is clear that there is a large degree of commonality within all the models. The common issues are focused around aspects of strategic intention and ownership that will elicit analysis to provide focus for alignment and action.

With due consideration of the internal and external influences that will impact on or enable the organization to move towards the envisioned state, it should be understood that the more complex an organization, the more complex the environment that requires analysis to ensure that all possible aspects can be appreciated.

[222] Thompson, A.A. Jr. & Strickland, A.J. III. 2003. *Strategic Management Concepts and Cases*. 13th Ed. New York: McGraw-Hill.

From the requirements of the research approach, methodology and expected results it can be considered necessary to ensure sufficient understanding of the nature of the environment that was addressed during this research. The specific environment is in fact considered to have a significant influence on the ability to define and execute the strategic ICT process itself within the diversified organization. To this end the existing literature as relating to the nature of the diversified organization will also be investigated.

As indicated by Ward and Griffiths (1996:120-121)[223] the attempts to develop corporate IS/IT strategies as opposed to strategic business unit IS/IT strategies are not always successful. From this research the problem is further enhanced as follows:

"*The general approaches to strategic information systems and ICT planning, as they are currently formulated by the various models, are based on the premise that the organisation has a single or simple line (or lines) of business. These approaches do not sufficiently address the implications and complications of the strategic information systems planning function in functionally and / or geographically diversified organisations. Such organisations typically have several lines of business, each of which have their own respective issues and drivers that will influence their ICT solutions due to their peculiar set of circumstances. Thus a more comprehensive strategic ICT planning process seems to be required for diversified organisations that has the ability approach the process from a systemic perspective and therefore takes cognisance of the multitude of influences that will effect the execution of the strategic ICT planning process in diversified organisations. This process must not only address these specific criteria, but must also incorporate a number of disciplines related to strategic ICT planning into a single congruent process appropriate to the context within which it is to be utilised*".

3.10.3 The Problematic Nature of the Simple Approaches to Strategic ICT Planning

Currently with the drive to map ICT solution to business requirements there is a strong movement towards Enterprise Architectures, Enterprise Planning and Enterprise Management Systems. These imply that greater integration of systems and processes are being sought. Solutions must therefore span organizational boundaries

[223] Ward, J. & Griffiths, P. 1996. *Strategic Planning for Information Systems*. New York: John Wiley and Sons.

in multi-company enterprises. Multi-"company" enterprises are made up of semi-autonomous business units, often in diverse industries, geographic regions and countries. Currently the predominant approach to business management is that of empowerment: i.e. local management teams are encouraged and empowered to act according to local circumstances, priorities and opportunities. This necessitates some level of autonomy.

The available IS and ICT strategic models assume that enterprises are hierarchical with central management (i.e. planning, organizing, leadership and control) and that the process comprises of linear top-down direction, and bottom-up response. This approach is clearly in contrast with the reality in the multi-company or diversified enterprise where there is a definite corporate responsibility in addition to managing the business units at strategic level. It is thus confirmed that the diversified organization in fact requires two levels of strategic management, as opposed to one for monolithic organizations, these being a corporate level and a business unit level.

From the discussion regarding process and its implications some inferences can be drawn as specifically relating to the strategic ICT planning process for diversified organizations.

- There should be clear and distinct management structures to support, manage, integrate and align the strategic ICT planning process with due consideration of corporate and SBU strategic ICT planning imperatives.

- There should be a clear and distinct separation between strategists and executors without negating the effect of reality on the strategic ICT planning process and plan.

- The strategic ICT planning process should be managed as such that continuous improvement can be realised regarding the ICT planning process and the strategic ICT plan.

- Specific findings should be made on the management of varying levels of organizational and process maturity to accommodate change related to the respective business requirements for ICT solutions.

- It is necessary to ensure that organizational improvement can be managed congruent with ICT system improvement to prevent dysfunction between the organization and its ICT solutions.

- Strategic ICT planning should be performed in the organization with due consideration of the current implemented ICT baseline.

- Management arrangements should be established that will ensure appropriate representation to realise enterprise related synergy through participation and collaboration.

- It is necessary to ensure that the strategic ICT planning process is institutionalised not only as practice, but as part of the corporate policy framework subject to continuous improvement.

- It is necessary to ensure that the ICT management strategy, the business IS strategies and the IT strategy are appropriately managed at corporate and SBU level.

- Strategic ICT plans must be clear and unambiguous in their intent and direction with an indication of data, application and information infrastructure.

- The principles of change management should be adopted to be adhered to in an effort to realise not only successful planning, but also implementation and improvement.

3.11 THE DISCONNECTION BETWEEN STRATEGIC ICT PLANNING PROCESS AND THE DIVERSIFIED ORGANIZATION

Given the relationship between strategic management and strategic ICT management it is considered appropriate for this research in the opinion of authors on strategic management and strategic ICT management, as well as on research methodology that an appropriate understanding of the nature of the organization within which the function will be performed be provided. It is further accepted that the more complex the organization, the greater the complexity of the planning process. This does not necessarily imply that the actual process would be more complex in its primary actions, but rather that the characteristics of the process would be commensurate with

the complexity and diversified nature of the organization. The complexity is therefore derived from the organization and its structural arrangements and not from the process. The strategic ICT planning process in its application should be cognisant of the complexity of the organization.

The description of a diversified organization provided by Thompson and Strickland (2003:291)[224] infers that there is a specific responsibility towards corporate management that should be performed in relation to the strategic management of the respective strategic and/or semi-autonomous business units. With due consideration of the fact that the best ICT solutions should be provided to the enterprise given the potentially diverse requirements of such organization, the collaboration required for managing such diverse requirements and issues, should be such that synergy can be realised to effect efficiencies and effectiveness. Some assumptions are required to support this synergistic expectation to strategic ICT planning in diversified organizations.

In the first place it is assumed that there is some kind of expectation that corporate strategic intention guides the organization as a whole and this assumption can be expanded upon when concluding that there is a prerequisite participation in the enterprise strategic ICT planning process by all role players and stakeholders within the diversified organization. The third assumption is focused on the issue that there will be appropriate governance to ensure that effective processes can be executed with an acceptable degree of repeatability. Such repeatability is expected to improve the credibility through continuity of the results, especially if there is consistency in the results. The fourth and final assumption is that there will be appropriate management arrangements and mechanisms to ensure that the total systemic implication of strategic ICT planning within the diversified organization can be appropriately addressed.

The avoidance of a corporately orchestrated approach towards ICT management as implicitly required from a holistic systems thinking perspective, can lead to solution differentiation and duplication of effort and solutions. Furthermore it can also be costly and not necessarily focus on nor aligned with or coordinated sufficiently to

[224] Thompson, A.A. Jr. & Strickland, A.J. III. 2003. *Strategic Management Concepts and Cases*. 13th Ed. New York: McGraw-Hill.

deliver appropriate solutions. This risk becomes especially relevant when considering the requirements to realise synergy where the whole diversified organization or enterprise is focused on centrally managed objectives related to the utilisation of ICT to enhance business objectives and imperatives. This is not necessarily always the case for diversified organizations as opposed to single-line-of-business (monolithic) organizations. The inherent risks involved with this approach can be severely exacerbated when longer time frames are planned for as it could result in a continuation of potentially divergent direction for the business units as opposed to a single inclusive corporate direction.

In the opinion of the researcher the problem resides in the fact that general approaches to strategic information systems planning and ICT planning, as currently presented by various models, are based on the premise that the organization has a single or simple line of business. The problem does not necessarily reside in "what" should be done but rather in "how" it should be done.

In the modern era there are strong movements towards Enterprise Architectures, Enterprise Planning and Enterprise Management Systems. These imply that greater integration of systems and processes are being sought. In the past the predominant approach to ICT management in the DOD is that of business-unit level empowerment: i.e. local management teams are encouraged and empowered to act according to local circumstances, priorities and opportunities.

In general the available IS and ICT Strategic models assume that enterprises are hierarchical with central management (i.e. planning, organizing, leadership and control) and that the process is linear top-down direction, bottom-up response. This approach is clearly in contrast with the reality in the multi-company enterprise.

To this end the function of strategic ICT management in the opinion of the researcher requires a firm understanding of the nature and environment of strategic management in diversified organizations in general. This stems directly from the fact that the strategic ICT plan should support, enable and enhance the strategic business plan.

3.11.1 Nature of Strategic Management within Diversified Organizations

There are a number of different approaches towards strategic management as clearly indicated by Mintzberg, *et al.* (1998)[225] and his reference to the respective strategy schools, e.g. the Design School, the Planning School and the Power School. Research in this environment was also done by Martinet (1996)[226], who added by mapping the field into teleologic, sociologic, ideologic and ecologic groups. The correlation between these two schools of thought was identified when Lauriol (1996)[227] mapped the ten schools of Mintzberg into the four divisions of Martinet. These "groupings" may be utilised either as stand alone approaches, or as a combination of approaches. The specific approach or combination of approaches, as selected, is considered to be influenced by the nature of the organization and its environment. One of the primary mechanisms that are constantly being touted as essential to ensure transformation and alignment of any organization and ensure strategic advantage is the utilisation of ICT. The research and results include process transformation as presented by Carr and Johansson (1995)[228], Coombs and Hull (1995)[229], and indicate that the objectives pertaining to re-engineering relate to the ability to support the value creation process of the organization as is the concept behind Porter's (1985)[230] value chain model.

In the opinion of the researcher it is necessary to analyse the processes related to the function which is being transformed to be able to identify the core processes and the supporting processes and therefore the value chain of the enterprise as a whole. This will not only ensure that responsibilities can be clearly identified, but also that the functional relationships with other functions, role players and stakeholders can be identified, taken into consideration and reflected in the transformed organization. The approach to be taken should take cognisance of the context within which the enterprise functions. Coombs and Hull (1995) *op. cit.* present research on issues regarding problems with technology, value adding potential and relationships of

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[225] Mintzberg, H., Ahlstrand, B. and Lampel, J. 1998. *Strategy Safari: A guided tour through the wilds of Strategic Management*. New York: The Free Press.
[226] Martinet, A.C. 1996. Pensée stratégique et rationalités: Un examen épistémologique. *Papier de la récherche, numéro 23.* Lyon, France: Institut d'Administration des Enterprises.
[227] Lauriol, J. 1996. Une analyse des répresentations de la stratégie et de son management dans la production d'ouvrèges de la langue française. Prepared for *La Journée Récherche of AIMS*, for FNEGE, 11 October 1996, France.
[228] Carr, D.K. & Johansson, H.J. 1995. *Best Practices in Reengineering: what works and what doesn't in the reengineering process.* New York: McGraw-Hill.
[229] Coombs, R. & Hull, R. 1995. *The Wider Research Context of Business Process Analysis*. Cromtec: Manchester School of Management.
[230] Porter, M.E. 1985. *Competitive Advantage: Creating and Sustaining Superior Performance*. New York: Free Press.

processes that can be misconstrued as relating to boundary management issues and therefore formal versus informal management processes.

From the afore-mentioned it is clear that the result of changing the working relationships within the transformed organization should also be reflected in the processes and management arrangements and mechanisms. This becomes especially relevant when considering the systemic implications if new ICT solutions support the transformed organization.

The fact that the transformed organization might also change its business focus necessitates a complete revisiting of all strategies. This should manifest as a dynamic iterative process of strategic management that includes strategic ICT planning by the organization. This becomes a serious consideration when considering the opinion of Snyman and Kruger (2004)[231] contending that "*Strategy formulation became an ongoing process, a process of reinventing the organization in order to create the future*" in interpreting the work of Rajogapalan and Spreitzer (1996)[232]. In the diversified organization this in turn necessitates a dynamic re-alignment of the respective strategies which will support the enterprise strategy. It might also necessitate the review of the strategic ICT planning process in diversified organization that forms the basis of this research.

There is usually a correlation between the respective phases of the ICT life cycle management and the allocation of responsibilities to manage the ICT system life cycle. This is manifested in the phenomenon that the ICT system requirements planning (strategy and business plan) is usually separated from the acquisition or the development and procurement responsibility when considering requirements management as opposed to the process of acquisition when considering governance such as the Public Finance Management Act[233] of the RSA and the implications of the RSA Public Service Regulations[234].

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[231] Snyman, M.M.M. & Kruger, C.J. 2004. The interdependency between strategic management and strategic knowledge management. *Journal of Knowledge Management*, 2004, vol.8(1), p.5-9.
[232] Rajopalan, N. & Spreitzer, G. M. 1996. Towards a theory of strategic change: a multi-lens perspective and integrative framework. *Academy of Management Review*, 1996, vol.22(1), p.48-80.
[233] South Africa. Parliament. 1999. *Public Finance Management Act (Act No. 1 of 1999 - as amended).* Pretoria: Government Printers.
[234] South Africa. Department of Public Service and Administration. 2001. *The Public Service Regulations, 2001 (Chapter 1, Part 111 E).* Pretoria: Government Printers.

The responsibility for managing ICT is usually subjected to the same changes as those that influence the organization as a whole. The maturity of an organization, and especially within complex organizations, plays a major role in the manner in which the utilisation of ICT is managed and the corresponding objectives. There could be different levels of maturity for the different business units of the diversified organization as presented by Ward and Griffiths (1996) [235] and these are discussed earlier in this paper.

From a business management perspective as indicated before, the general focus of effort is placed on the primary objective of the respective organizations and their positioning within the market and industry. In terms of managing ICT solutions this has the implication that depending on the approach of the organization the planning could change from simply procuring, towards ICT planning, and finally strategising, aligned with the enterprise strategy. This is in line with the opinion of authors such as Luftman (1996)[236] when discussing ICT and business alignment. This effort should be focused on the attainment and the sustainment of competitive advantage.

Given the scarcity of resources it follows that the right mix of resource allocation across the enterprise should be based on leveraging the optimum potential utility towards realising such competitive advantage. This is applicable to all functions and structures of an organization. The researcher considered this as being especially applicable to the environment of information and information management due to the previously decentralised nature of the function and the resultant disparate ICT solutions. Due to the fact that information permeates throughout the organization, an integrated or at least a coordinated enterprise ICT system is of utmost importance as confirmed by authors such as Ward and Griffiths (1996) *op. cit*.

Forthcoming from the requirement for strategic planning for the enterprise and of information, and the supporting or enabling information system, the problem can be further elucidated.

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[235] Ward, J. & Griffiths, P. 1996. *Strategic Planning for Information Systems*. New York: John Wiley and Sons.
[236] Luftman, J.N. 1996. *Competing in the Information Age: Strategic Alignment in Practice*. New York: Oxford University Press.

In the consideration of the researcher the essential issues revolved around the aspects pertaining to the strategic ICT management environment and the strategic ICT planning process, including alignment of the ICT strategy across business units and with corporate strategy. The requirement for congruency and establishing synergism as a continuous process, is also considered as essential, and thus forms the focus of this research.

The process of management is generally described by authors such Thompson and Strickland (2003)[237] and many others as being centred on the activities of planning, organizing, leading and controlling. These activities relate to management in general and can also be applied to the process of strategic ICT management as confirmed by Ward and Griffiths (1996) *op. cit.* A strong correlation therefore exists between the process of general management and the process of strategic ICT management, even though the focus is different. The relationship becomes even stronger when considering that ICT enables business as the potential utility of ICT is unlocked.

When considering Enterprise Architecture Planning as a methodology as presented by authors such as Spewak and Hill (1992)[238] its appropriateness for both strategic business and strategic ICT management becomes apparent. This is due the fact that it creates architectural baselines at strategic level, at business level and for the ICT solutions that can be utilised as corporate planning baselines. The ability to define functional processes in accordance with the corporate value chain as presented by Porter (1985)[239] brings the organization into context as a system of systems with its different processes and its implication for ICT solutions. This perspective allows for ICT system optimisation given the requirement for corporate solutions and unique ICT requirements as relevant to the respective business units.

The fact that there are different processes and influences that interact within the organization necessitates a systemic approach towards strategic ICT planning in diversified organizations. These influences become all the more prominent in a diversified organization and have an even greater potential business and technological

[237] Thompson, A.A. Jr. & Strickland, A.J. III. 2003. *Strategic Management Concepts and Cases*. 13th Ed. New York: McGraw-Hill.
[238] Spewak, S.H. & Hill, S.C. 1992. *Developing a Blueprint for Data, Applications, and Technology: Enterprise Architecture Planning*. New York: John Wiley & Son.
[239] Porter, M.E. 1985. *Competitive Advantage: Creating and Sustaining Superior Performance*. New York: Free Press.

risk for optimisation due to the increased complexity of the diversified organization and its propensity for duplication and differentiation of ICT solutions.

Given the demand of the whole organization on potentially scarce resources and the ability to corporately coordinate ICT management with corporate management within the construct of the corporate value chain, the objectives should reflect both corporate and business unit objectives. This is in line with the requirement for collaboration and participation between respective functions within the diversified organization as presented by authors such as Thompson and Strickland (2003)[240] and Pearce and Robinson (2003)[241].

When considering the nature of organizations as presented by Mintzberg *et al.* (1998)[242] and the potential for different management paradigms, the approach for strategic business management at corporate and business unit level can be carried through to the strategic management of ICT. From a corporate perspective such issues might be uniquely or transversely related to the diversified nature of the business. This further enhances the requirement for alignment as presented by for instance Luftman (1996)[243].

The nature of performance and compliance for ICT solutions from a corporate perspective, have the added implication that issues such as economies of scale and return on investment become increasingly serious. Centralisation and/or decentralisation should therefore be managed with due consideration of the fact that unique and corporate solutions might still be subjected to issues related to standardisation, interoperability and interconnectivity. From an effectiveness and efficiency perspective this still requires the elimination of duplicate ICT solutions, ICT systems management and ICT system utilisation within a diversified organization.

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[240] Thompson, A.A. Jr. & Strickland, A.J. III. 2003. *Strategic Management Concepts and Cases*. 13th Ed. New York: McGraw-Hill.
[241] Pearce, J.A. & Robinson, R.B. 2003. *Strategic Management: Formulation, Implementation and Control Sited*. New York: McGraw-Hill.
[242] Mintzberg, H., Ahlstrand, B. and Lampel, J. 1998. *Strategy Safari: A guided tour through the wilds of Strategic Management*. New York: The Free Press.
[243] Luftman, J.N. 1996. *Competing in the Information Age: Strategic Alignment in Practice*. New York: Oxford University Press.

The systemic approach in its holistic systems management implication cannot be divorced from the necessity to provide corporate strategic direction that can be further enhanced as appropriate to the respective business units and then executed as either a corporate function or a decentralised function. As such technology solutions cannot be addressed without cognisance of the social implication of the ICT solutions. Ignoring these social and systemic implications might result in conflict and dysfunctioning within the organization and the ICT function with due consideration of the organization as a social system as confirmed by Giddens (1984)[244] and authors such as Baskerville and Wood-Harper (1998)[245]. From this the inherent functioning of the enterprise and its parts as well as its interaction with society, makes the utilisation of a "natural science" approach for strategic ICT planning in diversified organizations inappropriate.

3.11.2 Leading Issues to Guide this Research as from the Nature of Complex Organizations

With due consideration of the research problem and the organizational complexity and imperatives of the DOD issues that relate to the establishment and institutionalisation of an appropriate strategic ICT planning process refer to the establishment of appropriate management structures and arrangements and the ability to ensure alignment throughout the enterprise with due consideration of uniqueness and corporate solutions.

3.11.3 Considerations Relevant to this Research

Given the perspective that strategic management in essence has the focus of change management and that this research relates to the establishment of an appropriate strategic ICT planning process for the DOD as a diversified organization, some very explicit considerations can be deduced from the information presented thus far.

As a basic point of departure it is concluded that the existing theory regarding strategic information management and strategic information systems management was generally insufficiently defined and utilised to guide the strategic management of

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[244] Giddens, A. 1984. *The Constitution of Society: Outline of the Theory of Structuration*, Cambridge, MA: Polity Press.
[245] Baskerville, R & Wood-Harper, A.T 1998. Diversity ion information systems action research methods. *European Journal of Information Systems*, 1998, vol.7, p.90-107.

information and information systems in a diversified organization. In general, as confirmed by Ward and Griffiths (1996), corporate institutionalisation or rather the lack thereof is usually due to a lack of understanding of the issues and influences involved. With the characteristic of institutionalising and appropriate strategic ICT planning process as part of strategic corporate management, the ability to institutionalise such a process as a change management imperative hinges strongly on the theory regarding change management, advocated by for instance, Lewin (1951)[246], Bjorkman (1989)[247], Pearce and Robinson (2003)[248], Lewis, Goodman and Fandt (1998)[249] and Kotter (1995)[250]. As such the institutionalisation of an appropriate strategic ICT planning process throughout the entire organization should be done with clear recognition of the requirements for managing change.

The theory regarding alignment as provided by Luftman (1996)[251] and Chorn (2004)[252] indicates that there should be alignment within business, between business and the ICT environment and within the ICT environment. This has the implication that cognisance be appropriately taken of unique issues peculiar to diversified organizations. From this the work done during the normal process of continuous improvement and alignment within the ever-changing environment can be based on theory as applicable to the ICT industry in general as potentially representative of the diversified organization.

From an interpretation of literature it should not simplistically be accepted that the realisation of improvement objectives being relevant to a true learning organization as discussed by Mintzberg *et al.* (1998)[253] in their definition of the "*learning school*", would be automatic. This is due to the potentially different maturity levels within the

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[246] Lewin, K. 1951. *Field Theory in Social Science*. New York: Harper & Row.
[247] Bjorkman, I. 1989. Factors Influencing Processes or Radical Change in Organisational Belief Systems. *Scandinavian Journal of Management*, 1989, vol.5,4, p.251-271.
[248] Pearce, J.A. & Robinson, R.B. 2003. *Strategic Management: Formulation, Implementation and Control Sited*. New York: McGraw-Hill.
[249] Lewis, P.S., Goodman, S.H. & Fandt, P.M. 1998. *Management: Challenges in the 21st Century, 2nd Edition*. Cincinnati, Ohio: South-Western College Publishing.
[250] Kotter, J.P. 1995. Leading Change: why transformation efforts fail, *Harvard Business Review*, March-April 1995, p.9-67.
[251] Luftman, J.N. 1996. *Competing in the Information Age: Strategic Alignment in Practice*. New York: Oxford University Press.
[252] Chorn, N. 2004. *Strategic Alignment: How to Manage Business Leadership, The commercial Environment and Organisational Culture for Strategic Success*. Maryborough, Vic: McPherson Printing Group.
[253] Mintzberg, H., Ahlstrand, B. and Lampel, J. 1998. *Strategy Safari: A guided tour through the wilds of Strategic Management*. New York: The Free Press.

organization and the fact that institutionalisation has to be done through the innovative utilisation of knowledge and experience when referring to the opinion of Weyrich (1998)[254]. As such there should be a deliberate process of managing the change in the organization to the point where knowledge can be shared with due consideration of the organizational context and structure/capacity. This further necessitates the imperative for structure and the ability to manage the function within the strategic intention of continuous improvement. External perceptions, expectations and influences, and not necessarily the expectations of the organization, are usually focused upon irrespective of the nature of the organization. This is a characteristic of either a mechanisation or automation approach as opposed to a competitive advantage approach for ICT management.

Addressing these issues of functional ICT knowledge sharing throughout the organization once again places great emphasis on the structural arrangements required to institutionalise the process that includes social acceptance (institutionalisation as part of organizational culture) in support of strategic objectives. This is particularly applicable to the information management responsibility and its participation at all levels of activity and responsibility in the organization. Non-participation could cause extensive problems that need to be resolved regarding services and information systems delivery and support. This is further exacerbated when considering the implications of the statement made by Galliers and Land (1987:901)[255] when they indicate that "*…methods must take account of the nature of the subject and the complexity of the real world*" as opposed to merely proceeding from existing perceptions and expectations.

The ability to get people to collaborate and share towards a common corporate objective as opposed to merely focusing on their own immediate business requirements becomes problematic when considering the findings of Checkland and Scholes (1990:18)[256] and their "Soft Systems Methodology" approach. The complexity of this issue and its related complexity related to structural requirements are equally appropriate to the institutionalisation of solutions towards information and

[254] Weyrich, C. 1998. The meaning of innovation. *Electronic News, 44 (2206)*, 1998. p.8-9.
[255] Galliers, R.D. & Land, F.F. 1987. Choosing appropriate information systems research methodologies. *Communications of ACM*, 1987, vol.30(11), p.900-902.
[256] Checkland, P.B. & Scholes, J. 1990. *Soft Systems Methodology in Action*. Chichester, England: John Wiley & Sons.

information systems management in an organization, and IT as an enabler. This should be viewed within the context that there is a distinct difference between data, information and knowledge and the management thereof as presented by, for example, Stair and Reynolds (1999)[257], Drucker (1989)[258] and other authors such as Orna (1998)[259] and Laudon and Laudon (2004)[260]. This primarily relates to people and the way in which they collaborate or can be made to collaborate towards common or corporate objectives.

To this day conflict is being experienced with the definition, acceptance and execution of the roles and responsibilities of the users and the solution providers for information and information systems in a diversified organization as indicated by Ward and Griffiths (1996)[261]. This in spite of the fact that the importance of information as a decision support "mechanism" was already clearly defined as far back as 1971 by Gorry and Scott-Morton (1971)[262] as appropriate to most organizations in its ability to support operational and tactical decisions.

3.11.4 Systemic Problems and Barriers in Information Systems Planning

According to Galliers, Merali and Spearing (1994)[263] from a survey that they conducted in 1992, one of the highest ranking issues for both IS and non-IS managers is "improving IS strategic planning". From this it can be concluded that there should be a formalised strategic ICT planning process that is subject to continuous improvement and appropriate to the whole diversified organization.

From a study performed by Lederer and Mendelow (1988)[264] and presented by Ward and Griffiths (1996:98) *op. cit.* it was found that one of the most important reasons for

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[257] Stair, R.M. & Reynolds, G.W. 1999. *Principles of Information Systems*. 4th Ed. Cambridge, MA: International Thompson Publishing.
[258] Drucker, P.F. 1989. *The New Realities*. New York: Harper and Row.
[259] Orna, E. 1998. *Practical Information Policies*. 2nd ed. Aldershot: Gower.
[260] Laudon, K.C. & Laudon, J.P. 2004. *Management Information Systems. (5th ed)*. New Jersey, Upper Saddle River: Pearson Education.
[261] Ward, J. & Griffiths, P. 1996. *Strategic Planning for Information Systems*. New York: John Wiley and Sons.
[262] Gorry, G.M. & Scott-Morton, M.S. 1971. A Framework for Management Information Systems. *Sloan Management Review*, Fall 1971.
[263] Galliers, R.D., Merali, Y. & Spearing, L. 1994. Coping with Information Technology? How British executives perceive the key information systems management issues in the mid 1990s, *Journal of Information Technology*, 1994, vol.9(3).
[264] Lederer, A.L. & Mendelow, A.L. 1988. Convincing top management of the strategic potential of information systems. *MIS Quarterly*, December 1988.

not developing effective strategic IS plans was an inability to obtain top management commitment. The reasons for not obtaining top management commitment were primarily ascribed to the following reasons concluded from their study.

- Top management lacked the awareness of the potential impact and strategic advantages of IS/IT.
- They perceived a credibility gap between the perception of the IT industry on the ease of delivering claimed benefits and the actual difficulty of delivery.
- Top management do not view information as a strategic resource until they are found without it.
- Despite the difficulty of expressing all the IS benefits in economic terms, top management insists on financial justification for their investment.
- Top management has become, especially during the 1990s, focused on short-term action that is not conducive to long-term strategic planning and the equally long lead time required to realise their benefits.

The above reasons once again serve to demonstrate the necessity of managing all the functional and structural implications of strategic ICT planning to ensure that the necessary strategic collaboration and alignment can be realised to sustain the strategic intent of the diversified organization.

From the study done by Wilson in 1989 *op. cit.* it was indicated that there were some additional reasons for not developing and implementing an effective strategic ICT plan that results in the ability to draw the conclusion that diversity should be managed with due consideration of the nature of the diversified organization and the ability to manage the enterprise in a well-coordinated and orchestrated manner.

From a survey conducted by the Kobler Unit in 1990[265] questions were raised regarding the ability to realise effectiveness and efficiency in ICT solutions and its management. This is primarily due to the potential scarcity of resources and the allocation to corporate requirements within the enterprise that will require corporate

[265] Kobler Unit. 1990. *Regaining Control of IT Investments – A handbook for Senior UK Management, Imperial College*, London.

direction and coordination without negating the uniqueness of the semi-autonomous business units to realise strategic objectives within appropriate rules of scale.

According to Lederer and Sethi (1989)[266] the problems that enhance a potential ability to institutionalise an appropriate strategic planning process in any organization has to do with an inability to involve top management to the point where the imperative for change and institutionalisation is driven from the top down and executed throughout the whole enterprise. This has the implication that there should be a clear and unambiguous plan and/or methodology to manage the strategic ICT planning process.

Earl (1993)[267] further contributed towards the list of problems encountered with the institutionalisation of strategic ICT planning when indicating the imperative for collaboration and participation of all role players and stakeholders with sufficient consensus and acceptance of the strategic ICT methodology and plan. All of these are related to a clear and distinct differentiation between the roles of the respective hierarchical levels of the enterprise – including the corporate and business unit level.

3.12 IMPLICATIONS OF LEADING ISSUES THAT GUIDED THIS RESEARCH

Given the requirement for contextual understanding of the characteristics of institutionalising a strategic ICT planning process in a diversified organization such as the DOD the researcher considered it necessary to summarise the interpretation of theory presented to this point. Given the complexity and therefore diversity of theory appropriate to this study the potential exists that it could become disjunctive and even disconnected. For effective institutionalisation the strategic management process should therefore be cognisant of the following:

- Strategic Management that involves the planning, directing, organizing and controlling of a company's strategy-related decisions and actions.
- Strategy that usually manifests as large-scale, future-orientated plans for interaction with the competitive environment to achieve company objectives – thus the game plan, providing a framework, not the detail.

[266] Lederer, A.L. & Sethi, V. 1989. Pitfalls in planning, *Datamation*, 1 June 1989.
[267] Earl, M.J. 1993. Approaches to strategic information system planning: experience in 21 UK Companies, *MIS Quarterly 17(1)*, 1993.

- A strategy thus provides/reflects a company's awareness of how, when, and where it should compete; against whom it should compete; and for what purpose it should compete.

When considering the fact that strategic management has the intention of improving the competitive advantage of an organization, and indeed producing a sustainable, competitive advantage, then Thompson and Strickland (2003:55)[268] indicate that there are three facets linked to crafting the strategy. These are:

- *Deciding what products/service attributes (lower cost and prices, a better product, a wider product line, superior customer service, emphasis on a particular market niche) offer the best chance to win a competitive edge.*

- *Developing expertise, resource strengths, and competitive capabilities that set the company apart from rivals.*

- *Trying to insulate the business as much as possible from the actions of rivals or threatening competitive developments.*

3.12.1 Dimensions of Strategic Decisions

With due recognition of the characteristics of strategy as an 'instrument' of managing change, Thompson and Strickland (2003) identified the following characteristics as being pertinent to strategic decisions. These are considered to be appropriate to this study by the researcher, due to its potential to contribute towards the necessity for management arrangements and mechanisms that can facilitate collaboration and participation as essential elements for the institutionalisation of a strategic ICT planning process.

- Strategic Issues require Top-Management Decisions. They have the broad top-level perspective and manage resource allocation.

- Strategic Issues require large amounts of the firm's resources. Typically resources are considered as being finance, material, HR and information. These are sourced from either visible resources or from resources based outside the

[268] Thompson, A.A. Jr. & Strickland, A.J. III. 2003. *Strategic Management Concepts and Cases*. 13th Ed. New York: McGraw-Hill.

organization and result in commitments, either internal (for using, and producing) or external (to redeem).

- Strategic Issues often affect the Firm's long-term Prosperity. Strategic decisions cover a period of five years or longer. Resources and the resourcing process are committed.

- Strategic Issues are often future orientated. Based on forecast and not empirical knowledge.

- Strategic Issues usually have Multi-functional or Multi-business Consequences. Decisions might involve a number of Strategic Business Units (SBUs), being sources of resources or customers and clients.

- Strategic Issues require considering the Firm's External Environment. All business forms exist in an open system, and are thus effected by or affect their environment. Some of these conditions might be beyond their control.

3.12.2 Levels of Strategy as Related to Capability

With due consideration of the interpretation presented to this point strategy management is not confined to specific organizational levels or functions within the organization. From a diversified organization perspective cognisance should be taken of the corporate or strategy level that has a strong focus on the long-term direction of the company, whereas the business strategy level has a strong focus on the strategic business units. At functional strategy level the focus is placed on annual objectives with short-term strategies focused on implementing the business strategies in support of the corporate strategies.

The strategies that direct an organization can be considered within a context which indicates the relationship between the resource management system, the support capability within an organization and the primary capability of the organization in support of the strategic objectives of the organization. Cognisance should also be taken of the hierarchical levels which are relevant to the management of the resource management systems. To this end the following presentation can be made as appropriate to a diversified organization.

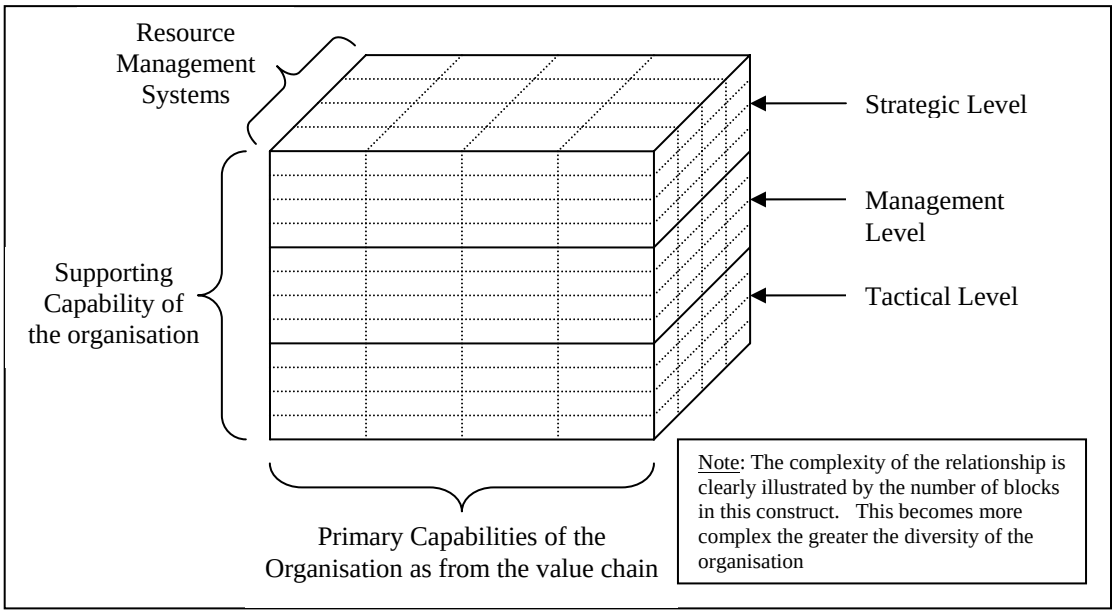

Figure 3.18: Relationship between Organizational Capabilities, Resource Management Systems and Management Levels in Organizations as considered appropriate to this research by the researcher

The above-mentioned relationship manifests itself in an orientation towards strategic management as a process which has the intention of addressing all the relevant issues which will impact on the creation of balance within resource allocation, planning and utilisation. It is, however, imperative that these relationships within the organization, including the responsibility of the executive for strategic management include all components of such an organization. This becomes all the more relevant when considering the intricacies of diversified organizations. The fact of the matter is that there are so many more variables that require consideration during the process of strategy formation, formulation and alignment.

The above implication from a business perspective is also applicable to strategic ICT planning. The focus on resource systems and the process of strategy formation, formulation and alignment is necessary to be performed within a contextual definition of function to ensure understanding of that function. This relationship as contextually appropriate to corporate strategic ICT management can be presented as follows:

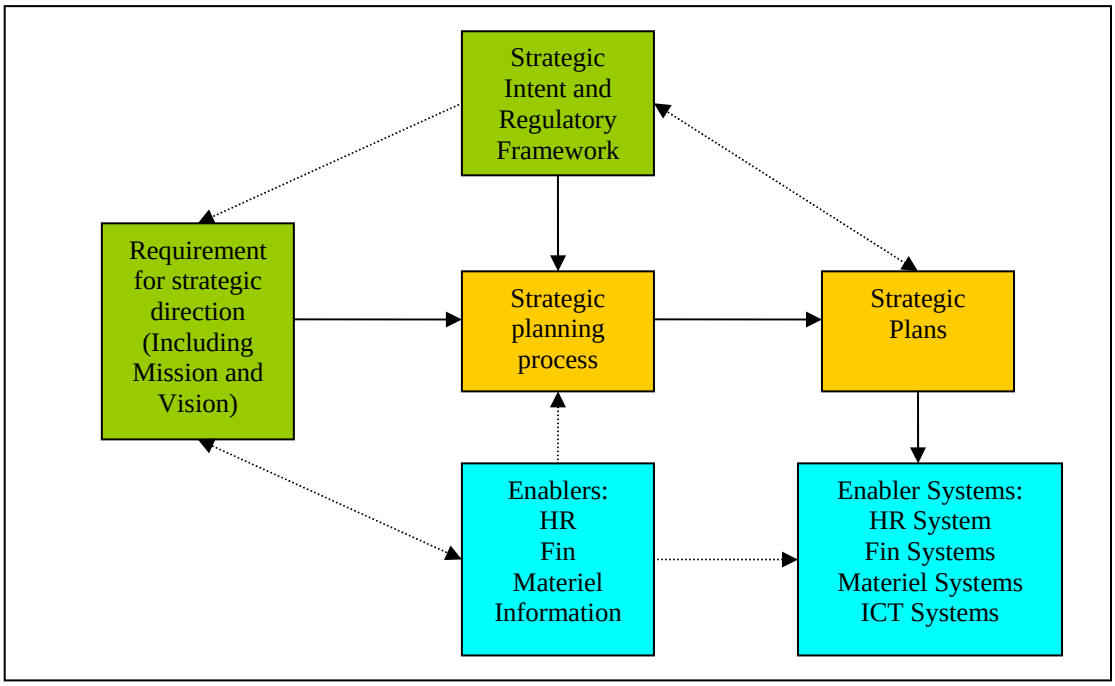

Figure 3.19: Relationship of Strategising Functions as considered appropriate to strategic ICT planning by the researcher

3.12.3 Formality in Strategic Management

According to Mintzberg *et al.* (1998)[269] organizations have the characteristic that there are varying degrees of formality or bureaucratic behaviour which can be noted. These ranges form the entrepreneurial mode, with single individuals deciding everything, to the planning mode where there is participation and collaboration. The planning mode is usually more suited to for complex organizations, whilst medium-sized organizations usually display an adaptive mode. In diversified organizations it can therefore be expected that there could be different approaches to strategic management that are commensurate to the organizational maturity and the nature of its business. These were found to have an impact on the ability to institutionalise a strategic ICT planning process as a corporate activity within the DOD.

3.12.4 The Strategy Makers

Strategy is a continuous process which takes place within an organization and has in accordance with the nature of the organization, varying degrees of complexity. The fact of the matter is that the process is executed by people in the final instance and is usually supported by some form of technology. Thus the combination of technology

[269] Mintzberg, H., Ahlstrand, B. and Lampel, J. 1998. *Strategy Safari: A guided tour through the wilds of Strategic Management*. New York: The Free Press.

and people to perform a process can be construed as the strategic management of a planning system. The people, working in teams, who are responsible for strategic planning in complex organizations such as diversified organizations, according to Mintzberg, Ahlstrand and Lampel (1998) *op. cit.* usually function in teams that ideally consist of representatives from all three levels of the company with top management providing the direction, middle management the implementability and lower management the actual implementation. The CEO was originally considered as the primary direction giver. This opinion is not necessarily shared by Beer, Eisenstat, and Spector (1990)[270], who for instance, argued that "*change should not be a top-down process*" and suggested that "*the most successful transformations and strategies should start at the periphery of the organization, and be led by general managers, not the CEOs*". In the case of this research it was found that given the hierarchical nature of the DOD and specifically the military milieu, a top-down approach prevailed.

3.12.5 Benefits of Strategic Management

When organizations start to require strategic planning in a coordinated manner due to its complexity, as is the case with diversified organizations, more formal collaborative and complimentary strategising becomes a necessity. This is due to the interpretation that strategy formulation activities enhance the whole firm's ability to prevent problems and provide continuity between planning and execution, with control traditionally being seen as part of strategic planning. In addition to this implication group-based strategic decisions require a wider consultative base and could thus provide better alternatives through the involvement of employees in the strategy process that in turn improves motivation by improved understanding of the productivity versus reward relationship. Gaps and overlaps in activities among individuals and groups are reduced as participation in strategy formulation clarifies differences in roles which enhance the ability to reduce resistance to change. This adds to the incentive for appropriate strategic ICT management arrangements and mechanisms.

3.12.6 Relationship between the Business System and the ICT System

[270] Beer, M., Eisenstat, R. A. & Spector, B. 1990. Why change programs don't produce change. *Harvard Business Review*, November – December 1990, p.158-166.

Should the relationship between business systems management and resource systems management in support of the higher order business system be investigated, the following representation can be made of the interaction. The model indicates that there are definite dimensions that need to be considered during the strategic planning process for resources management. When extrapolating the model over the systems management life cycle as presented by Sage and Rouse (1999)[271] the requirement for planning and control, to ensure that the required performance is realised, becomes apparent. Control is an essential function to ensure that deviations can be detected from the influences which will require consideration during re-planning.

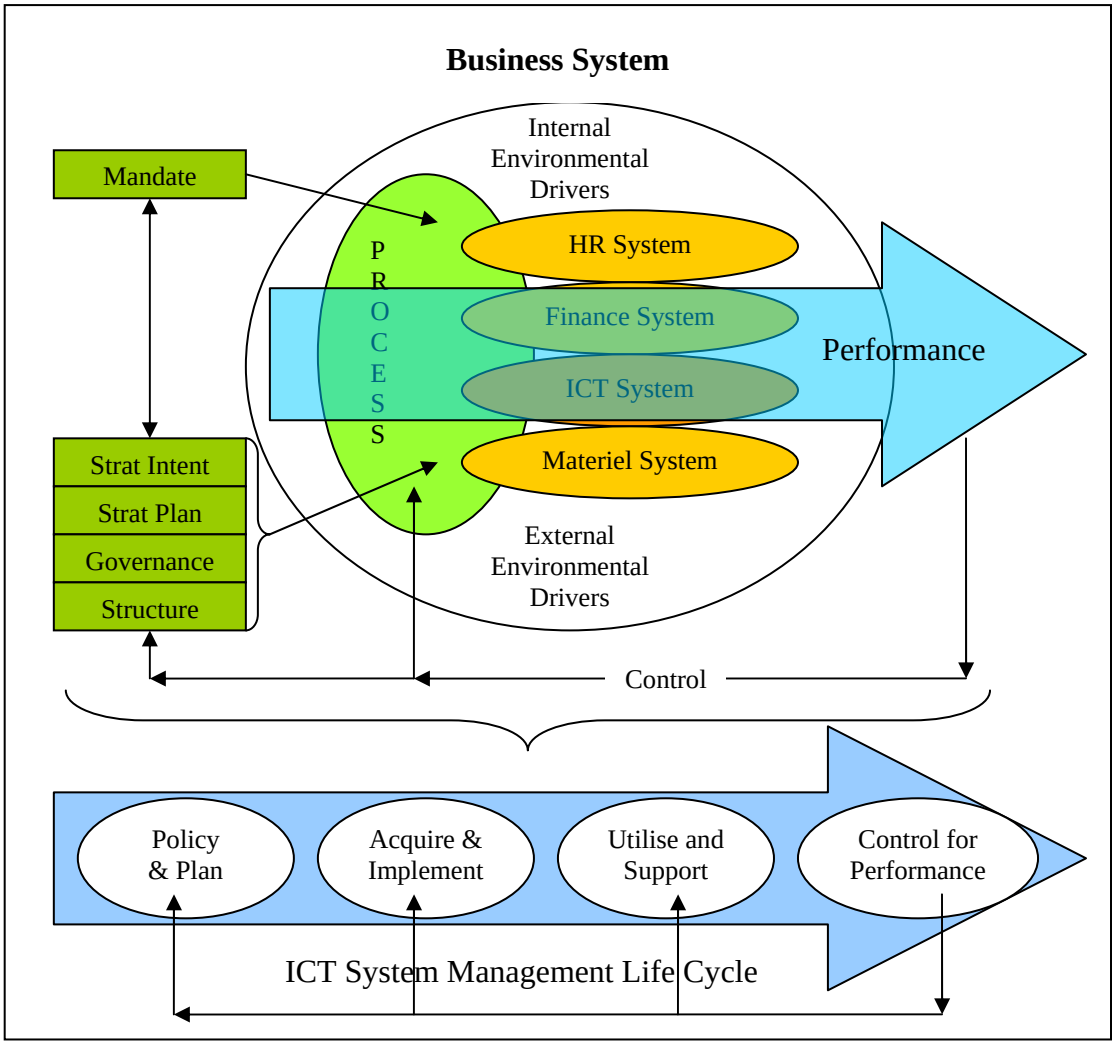

Figure 3.20: Relationship between the Business System and the ICT System Management Life Cycle as interpreted by the researcher

When considering the influences that will impact on the process of strategic ICT planning as forthcoming from strategic business planning, then the area of impact can

[271] Sage, A.P. & Rouse, W.B. 1999. *Handbook of Systems Engineering and Management*, New York: John Wiley and Sons.

be demonstrated graphically as indicated below. These influences will impact on all activities pertaining to the process of strategic ICT planning in diversified organizations. This model will be progressively improved and expanded upon throughout this literature study to be concluded in the full proposed model.

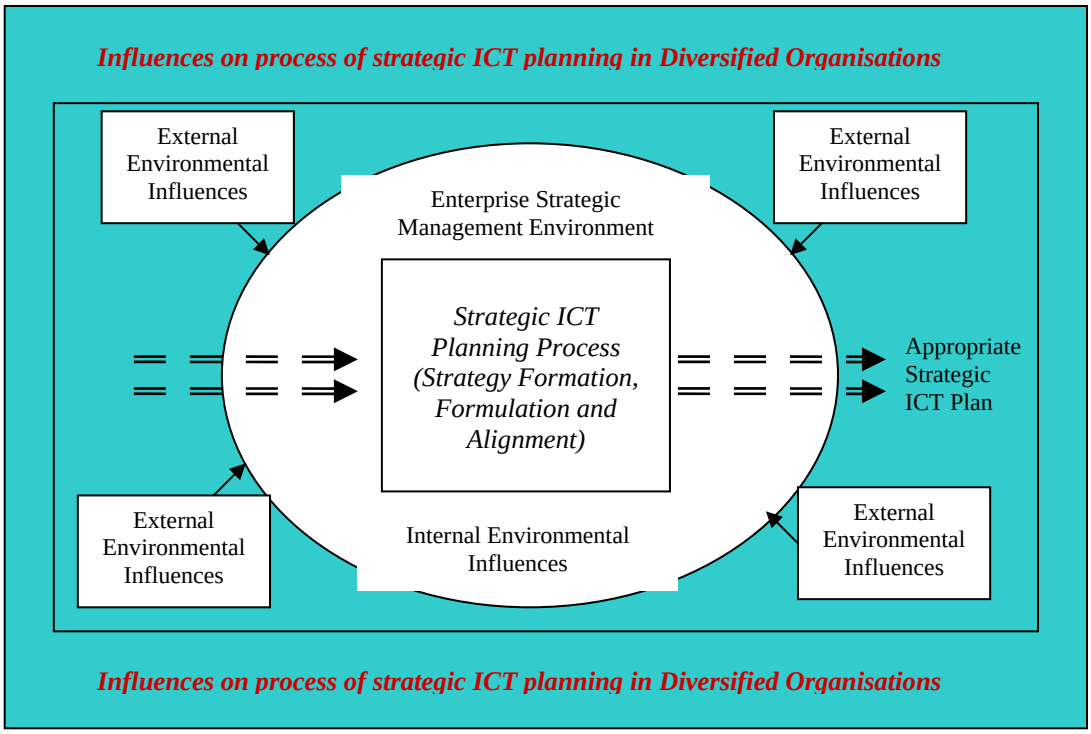

Figure 3.21: Contextual Definition of Strategic ICT Planning Process in Diversified Organizations

3.12.7 Setting and Managing Strategic ICT Objectives for the Diversified Organization

The setting of strategic ICT objectives for the diversified organization from the literature should address the total organization. This includes setting corporate objectives that are focused at grand strategy level and as such has the implication of being overarching in nature as indicated before. These objectives can be specific as relevant to the uniqueness of the respective individual business units, or more generic in nature as transversally appropriate to most or all of the business units. Those corporate objectives which might be more specific in nature were found during this research to tend to revolve around the line functions of the respective business units, whilst the more generic objectives would be centred on the supporting functions and would in all possibility have a strong potential to realise savings or effect improvements by applying rules of scale.

3.12.8 Activities that Constitute the Setting of Strategic ICT Objectives for the Diversified Organization

The primary activities related to the setting of strategic ICT objectives for the diversified organization focus on an interpretation of the environmental aspects and characteristics that impact on the diversified organization in its total diversity. The ability to formulate scenarios that are relevant and appropriate to both corporate strategic intent and business unit strategic intent and then to ensure alignment between these perspectives becomes the focus of strategic management that includes ICT management and planning.

Internal Environmental Analysis has the imperative to understand the organization in its functioning and can be adequately supported and enhanced through the utilisation of an EAP approach. Such architectures provide a firm baseline for planning and evaluation of not only the enterprise as a business, but ensure that the same definition can be utilised towards appropriate ICT solutions. An appropriate strategic ICT planning methodology and supporting tools should be appropriate to the nature of the line of business, with due consideration of common or transverse functions.

External Environmental Analysis has the following activities which can be ascribed to the setting of strategic objectives.

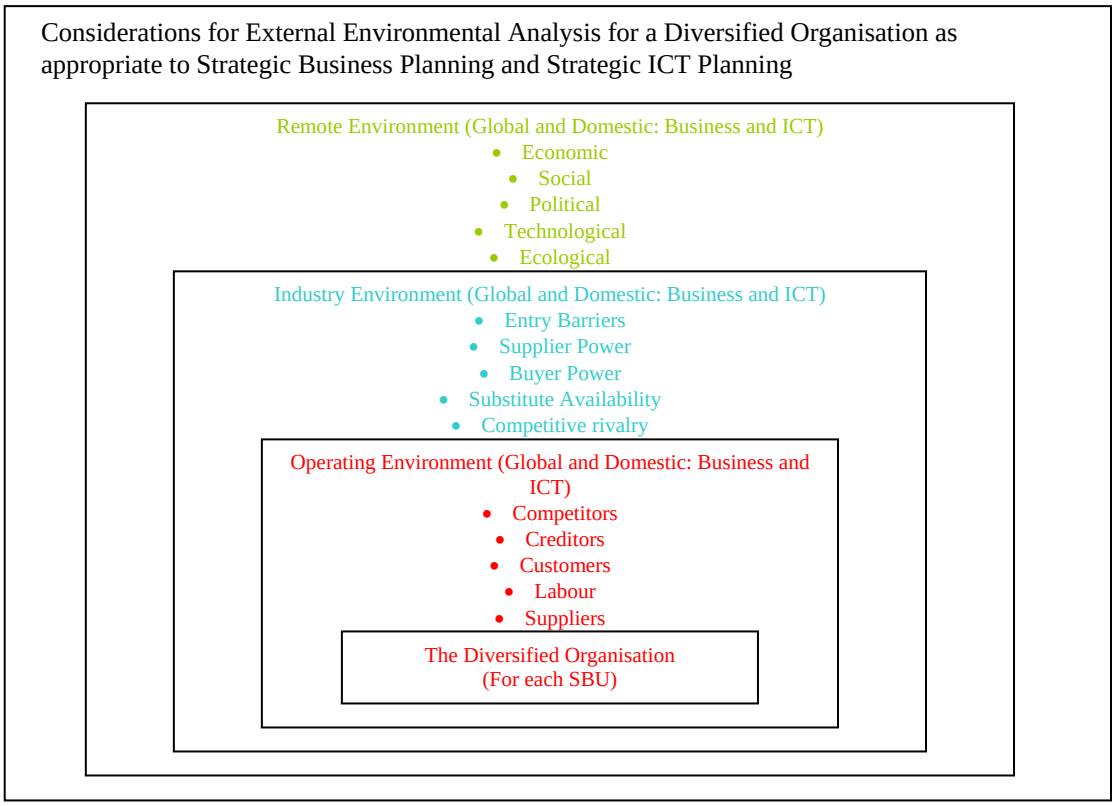

Figure 3.22: The External Environment as Appropriate to Strategic Business and Strategic ICT Planning as adapted from Pearce and Robinson (2003:57)

Due cognisance should be taken of the potential cross impact of the competitive forces operating in the market as already mentioned in the research. These cross-impact implications can lead to drivers (imperatives) for change in the ICT solutions as derived from the ability to sustain ICT solutions given the requirement for shorter planning cycles as a result of the half-life of certain technologies.

The result of these ‘competitive force’ assumptions can be reflected within the following considerations which can impact on the respective scenarios which can deal with business considerations such as rules of scale, centralisation or decentralisation of ICT systems and responsibilities, standardisation or unique solutions, integration or stand-alone solutions and even with consideration of reaction or compliance to governance. The degree of application or influence of the afore-mentioned will be determined by the nature of the strategic business unit as appropriate to its line function, management style and organizational culture and relationships within the enterprise or diversified organization. The stakeholder analysis will play a big role in making these determinations.

The considerations will necessitate the standardisation of an appropriate strategic ICT planning process and could be considered to have a high degree of correlation with the drivers that necessitate strategic planning in multi-domestic industries and global companies that are akin to diversified organizations. These, according to Pearce and Robinson (2003:107)[272], revolve around the ability to address *"the increased scope of the global management task, the increased globalisation of firms, the information explosion, the increase in global competition, the rapid development in technology* and *the fact that strategic management planning breeds managerial confidence."*

The contextual application of these implications to strategic ICT planning in diversified organizations can be managed at group level and business unit level as appropriate and presented in the "Management Structures for the Strategic ICT Planning Process in Diversified Organizations" above.

The requirement for continuous alignment necessitates that alignment between the business strategies and the ICT strategies at corporate and at business unit level should run in parallel and be dynamically interactive between corporate management and business unit management functions.

The process described above can be graphically presented as follows:

[272] Pearce, J.A. & Robinson, R.B. 2003. *Strategic Management: Formulation, Implementation and Control Sited*. New York: McGraw-Hill.

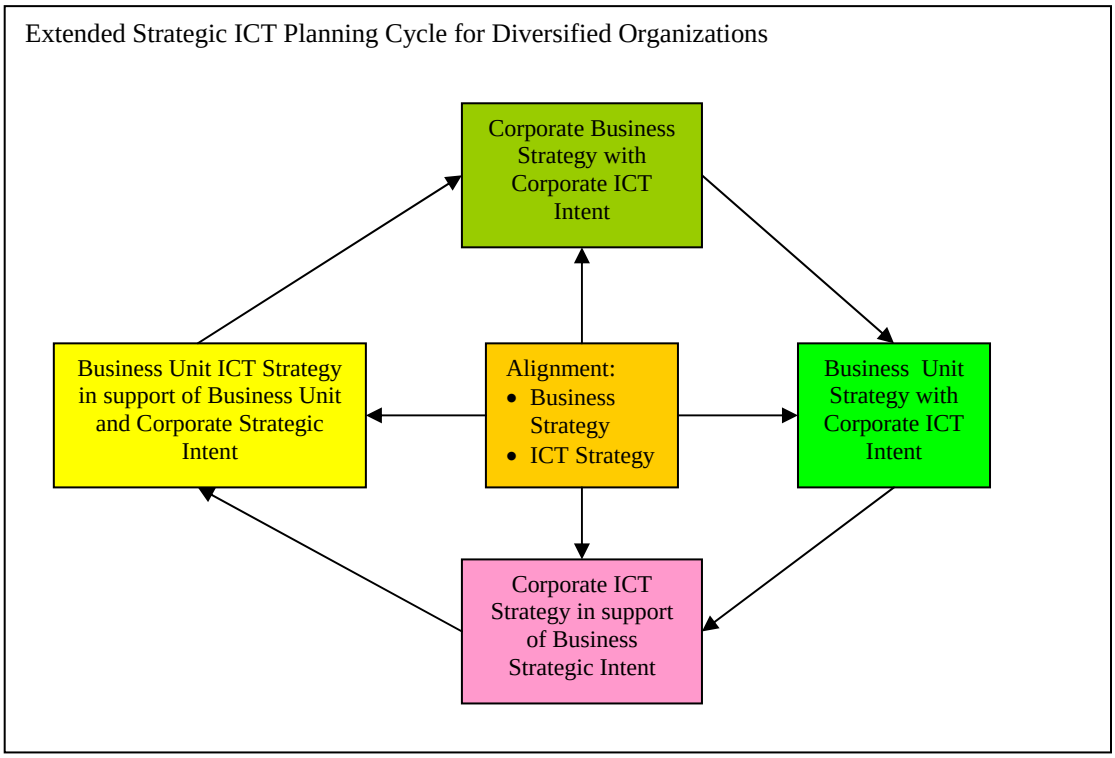

Figure 3.23: Extended Enterprise ICT Planning Model Indicating Primary Planning Cycles as adapted by the researcher from Luftman (1996)

To ensure that there is a formalised process by means of which alignment can be effected in a dynamically iterative process which not only supports the objectives of integration and coordination, but also the requirements to ensure alignment between business objectives and the ICT objectives, the following framework can be utilised as deduced from Luftman (1996)[273]. This clearly depends, however, upon the conscious evaluation and decision stemming from the nature of the respective business units, on the '*anchor domain*', the '*pivot domain'* and the '*impact domain'*.

The alignment exercise will result in the improved transparency, participation and collaboration with a clear understanding of both common or transverse issues and unique requirements and solutions. It will as a fundamental issue also ensure that there is greater alignment between business and ICT.

3.13 A CONCEPTUAL FRAMEWORK AS INTERPRETED FROM LITERATURE TO GUIDE THE INSTITUTIONALISATION OF THE STRATEGIC ICT PLANNING PROCESS IN THE DOD AS A DIVERSIFIED ORGANIZATION

[273] Luftman, J.N. 1996. *Competing in the Information Age: Strategic Alignment in Practice*. New York: Oxford University Press.

The establishment of a framework to guide the actual action research should be such that it conforms to the requirements of the research methodology to ensure its appropriateness as science and in its practical application when considering the opinions of Baskerville and Myers (2004)[274].

3.13.1 Prerequisites for Corporate ICT Management Structures

In accordance with the definition of strategic leadership as presented before strategic leadership input is considered to be a prerequisite for the formulation of the ICT strategic direction and policy. As such these activities should ensure that corporate and business unit management at least work from the same basic point of departure.

According to authors such as Pearce and Robinson (2003)[275] with the focus of strategic leadership as part of strategic management focusing on the ability to manage the strategic intent of the organization whilst at the same time managing appropriate capacity within an acceptable organizational culture is as appropriate to strategic ICT management as it is to business management. As such the strategic intention should be clarified and reflected in both the strategy and its strategic business plans that will guide execution. With the essence of strategic management, and therefore also strategic planning, being centred on the ability to manage change as indicated during the analysis of theory both strategic intention and appropriate capacity has to be addressed with the expectation and intention to ensure structured change.

From authors as far back as Chandler (1962)[276] the ability to institutionalise the relationship between business and its enabling structure within the diversified organization requires a defined relationship that is commensurate with the priorities of the organization as relevant to the nature of the enterprise's value chain. This is appropriate to considering business from a corporate and from a business unit level. It is imperative that strategic management understands not only the relationship as it currently functions, but also the nature of the changes in these relationships which are to be effected over time.

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[274] Baskerville, R & Myers, M.D. 2004. Special Issue on Action Research in Information Systems: Making IS Relevant to Practice – *Foreword: MIS Quarterly*, September 2004, vol.28(3), p.329-335.
[275] Pearce, J.A. & Robinson, R.B. 2003. *Strategic Management: Formulation, Implementation and Control Sited*. New York: McGraw-Hill.
[276] Chandler, A.D., Jr. 1962 *Strategy and Structure: Chapters in the History of Industrial Enterprise*. Cambridge, Massachusetts: MIT Press.

According to authors such as Ward and Griffiths (1996)[277] and Kruger and Snyman (2002)[278], a clear understanding is to be established of the role that ICT solutions will play in this diversified organization and the fact that there is a direct correlation between the nature of structure and the business. This must be facilitated by the vision and mission and it contributes towards economies of scale and shared value/utility within the diversified organization.

The ability to manage change has the added implication that it requires management to define and sustain the strategic culture of the diversified organization. Due to the differentiated and diversified nature of the organization it is accepted that each business unit including corporate level, will have its own organizational culture and management culture which is commensurate with the nature of its function. This can cause severe conflict if the required (desired) management styles and organizational cultures are not managed actively. It is deemed inappropriate to simplistically enforce a single culture upon the diversified organization as it might stifle innovation and continuous improvement. This is a further driver of alignment and change management. It also has a significant impact on the management structures and responsibilities. The responsibility of "orchestrating" the respective cultures as appropriate to the diversified organization is the task of top management. This does not imply that there should not be an overarching corporate culture which can represent the commonality that exists.

Given the imperative to manage change according to Lewin (1947)[279] and others, the capacity to manage such change will ensure that the change can be managed as the ability to define and sustain the diversified and differentiated skills of the diversified organization addressing this activity. The respective value chains of the diversified organization and the functions or tasks to be performed can be utilised to define those functions which can be managed corporately or transversely throughout the organization. It provides the opportunity to also identify those functions which are unique not only to the diversified organization as a whole, but also within the diversified organization. The vision and mission can now provide direction for the

[277] Ward, J. & Griffiths, P. 1996. *Strategic Planning for Information Systems*. New York: John Wiley and Sons.
[278] Kruger, C.J. & Snyman, M.M.M. 2002. The interdependability between Strategic Management, and the formulation of an Information and Communication Technology Strategy. *South African Journal of Information Management*, 2002, vol.4,2.
[279] Lewin, K. 1947. Frontiers in group dynamics II. *Human Relations*, 1947, Issue 2, p.143-153.

realisation of economies of scale and sustainment of the competitive advantage or the diversified organization. It should be considered that competitive advantage is an objective of primarily the lines of business that are orchestrated or corporately managed at corporate level.

3.13.2 Characteristics, Roles and Responsibilities that would Influence Structural Arrangements in the DOD as Appropriate ICT Planning Process

According to authors such as Thompson and Strickland (2003)[280] and Ward and Griffiths (1996)[281], the requirement to manage the ICT function as a collaborative activity between corporate management and business unit level management should ensure that the "What" and the "How" can be realised though the execution of the strategy. To this extent all relevant role players and stakeholders at corporate and business unit level must be part of the process. This does not imply that corporate management and business unit management can establish separate yet appropriate structures in accordance with their respective mandates. In managing diversity it brings the opportunity to be more representative and informed across a wider range of skills and therefore functions. This can strengthen the diversified organization. The principles of delegation and performance management with consciously considered centralised coordination and integration becomes more and more pertinent for the diversified organization. All of this has the implication that it requires the dynamically iterative process that shuttles between the corporate and business unit level of the organization. It also creates interaction between the business strategy and the ICT strategy within the organization. This is appropriate to an aligned organization as well as for each respective business unit.

3.13.3 Mechanisms or Enablers Appropriate to the Formulation of the ICT Vision and Mission for Diversified Organizations

With due consideration of the fact the enterprise is a complex organization that might be comprised of a number of different line functions, or products and even an international distribution of functions, it becomes necessary to manage the

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[280] Thompson, A.A. Jr. & Strickland, A.J. III. 2003. *Strategic Management Concepts and Cases*. 13th Ed. New York: McGraw-Hill.
[281] Ward, J. & Griffiths, P. 1996. *Strategic Planning for Information Systems*. New York: John Wiley and Sons.

forthcoming complexity and volume of data required to support the planning process. This necessitates the utilisation of standardised management mechanisms, methodologies and even planning tools to support and enable the planning process. This is not only considered appropriate to the function of strategic business planning, but also for strategic ICT planning.

The nature of *Enterprise Architecture Planning* (EAP) as presented by Spewak and Hill (1992)[282] and others, lends itself to this purpose. It is, however, considered necessary that the utilisation thereof be a conscious decision with due consideration of the requirement for such an approach. If the organizational complexity does not warrant the utilisation of such an approach then it should be avoided. The decision to utilise such an approach should, however, be based on the same considerations to be utilised for organizational development and for ICT solutions. This is due to the fact that an EAP approach has the characteristics of function which require the allocation of responsibility, commensurate structure and resources with the consideration of full systems management and total life cycle management. This is due to the fact that the Enterprise Architectures describe the enterprise as a system, which is to be kept under full configuration management if it is required to support strategic change management by ensuring appropriate and approved architecture baselines. As such it has the implication that not only the methodology, but also the enabling integrated EAP toolset should be addressed as part of the strategic ICT planning process.

As a synthesised interpretation by the researcher from the above the requirement for *formalised management mechanisms* is such that it should reflect the construct of the diversified organization and should ensure collaboration of all strategic ICT management responsibility areas. It is considered advisable that the mechanisms should focus on the ability to manage the ICT solutions as a total ICT systems management system and process that addresses the total system and the total life cycle. An approach that addresses a clear allocation of responsibility within the principles as derived from the rules of scale, with due consideration of uniqueness can enhance this approach and should also recognise the respective mandates as appropriate to corporate management and business unit management. The possibility of a matrix management relationship should not be ignored as ignoring it could lead to

[282] Spewak, S.H. & Hill, S.C. 1992. *Developing a Blueprint for Data, Applications, and Technology: Enterprise Architecture Planning*. New York: John Wiley & Son.

"stove-pipe" solutions. It is considered that the maturity of the organization and its cultural diversity will play a large role in the constitution of management mechanisms and the institutionalisation of tools and methodologies.

3.13.4 Alignment of Corporate Business Strategy and Policy with Strategic ICT Planning and Policy

It is necessary that the process of alignment be appropriately applied as a basic process to ensure that there are standardised information elements for purposes of comparison and thus alignment. In view of the fact that the mission and visions are appropriate to and strongly focused on the line of business, but provides the high level context and construct for rules of scale as well as the management thereof, it is essential that mission and vision alignment takes place. Such alignment will not only provide definition of the commonalities, but will also serve to institutionalise uniqueness. As per the deductions and conclusions noted resultant from this research, the dynamically iterative nature of strategic ICT planning is a part of overall strategic business planning that can be presented in the following diagram. A point of departure to develop a construct which will contribute towards alignment could be to approach it from the issues analysed as referenced from Porter's (1979)[283] construct of competitive market forces. Determining those specific issues that could be utilised to focus alignment is considered to be outside the paradigm of this research, but could provide a basis for further research.

When considering that in accordance with the early approaches presented by Ward and Griffiths from the research and findings of people such as Gibson and Nolan (1974)[284], Anthony (1965)[285] King and Kraemer (1984)[286], Wiseman (1985)[287] and Friedman (1994)[288], as well as Ward and Griffiths' interpretation of the work

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[283] Porter, M.E. 1979. How Competitive Forces Shape Strategy, *Harvard Business Review* (*57:2),* March-April 1979, p.137-45.
[284] Gibson, C. F. & Nolan, R. L. 1974. Managing the four stages of EDP growth. *Harvard Business Review (52),* January/February 1974, p.76-88.
[285] Anthony, R.N. 1965. *Planning and Control: A Framework for Analysis*, Cambridge, MA: Harvard University Press.
[286] King, J.L. & Kraemer, K.L. 1984. Evolution and organizational information systems: and assessment of Nolan's stage model, *Communications of the ACM*, 1984. vol.27(5).
[287] Wiseman, C. 1985. *Strategy and Computers*, Homewood, IL: Dow Jones-Irwin.
[288] Friedman, A. 1994. The stages model and the phases of the IS field. *Journal of Information Technology*, 1994. vol.9, p.137-148.

published in the EDP Analyser[289], where the emphasis is being placed on the movement from computer or DP management to information (systems) management with due consideration of the roles and functions as presented below.

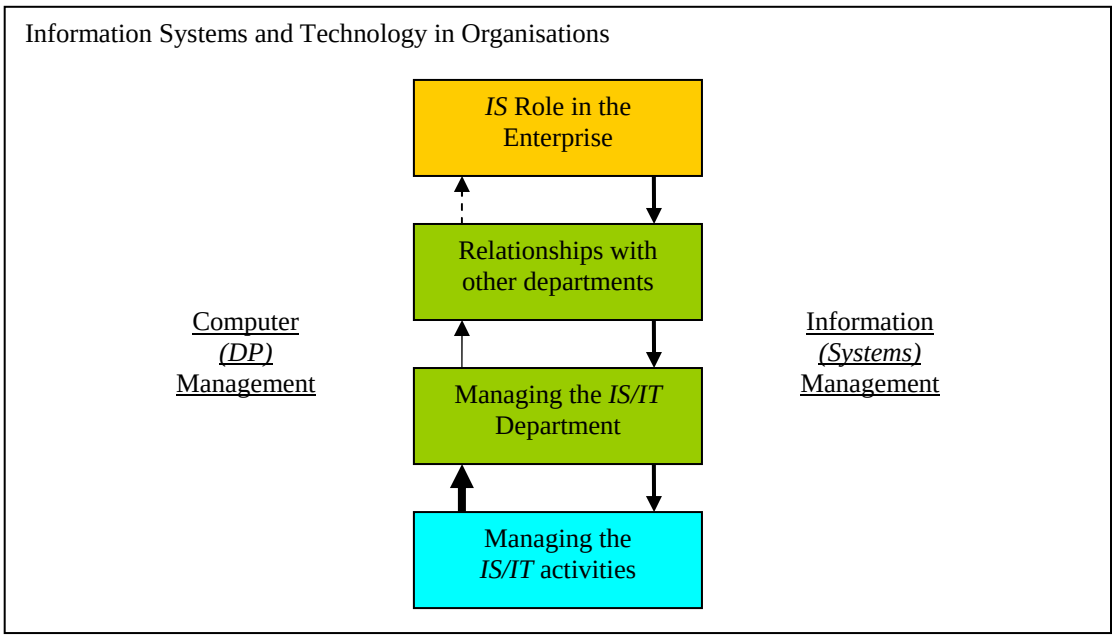

Figure 3.24: Transition between computer and information management: relationships and emphasis as from Ward and Griffiths (1996:6)

Given the nature of the diversified organization it is considered important in the opinion of this researcher that clear cognisance of the complexity of the organizational environment should be taken to ensure that the problem is not simplistically tackled from a process perspective alone, but with full consideration of the organizational complexities and the requirement for collaboration. This is in enhancement of the work done by Ward and Griffiths (1996)[290] where the organization is constantly represented as a single monolithic entity.

[289] United States of America. EDP Analyser. 1984. *Transition between computer and information management: relationships and emphasis*. USA: EDP Analyser, June 1984, vol.22, no.6,
[290] Ward, J. & Griffiths, P. 1996. *Strategic Planning for Information Systems*. New York: John Wiley and Sons.

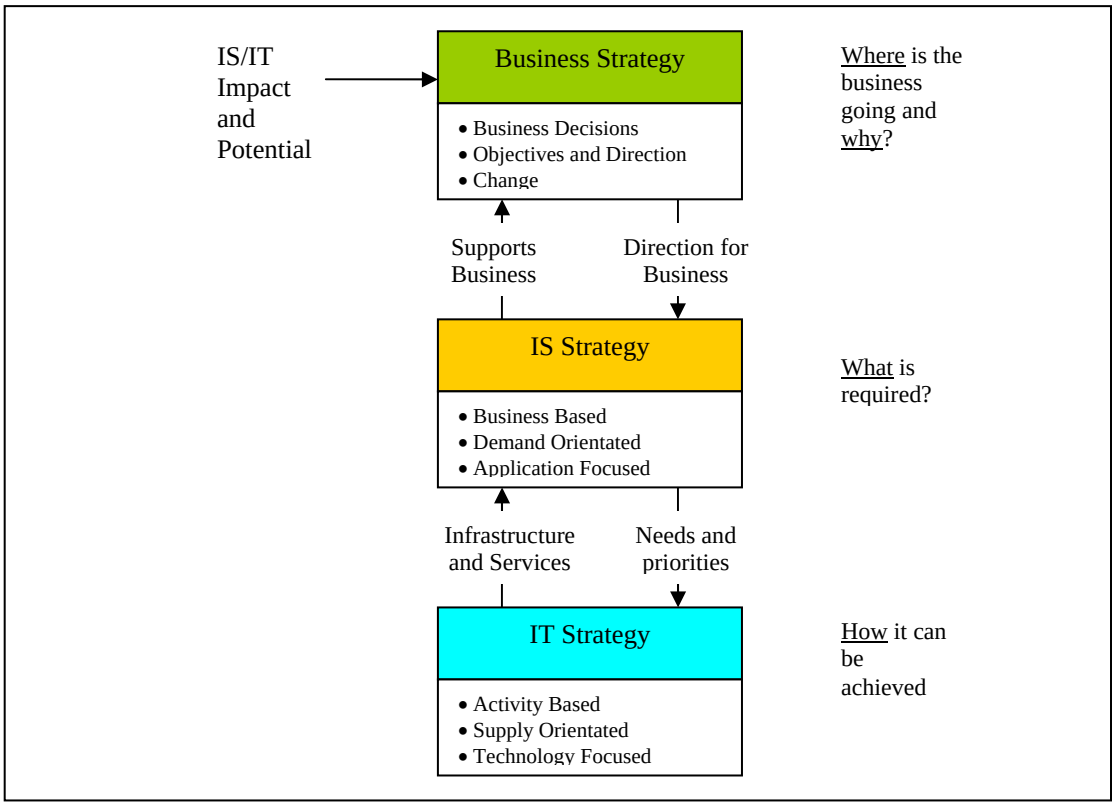

Figure 3.25: The relationship between business, IS and IT Strategies from Ward and Griffiths (1996:31)

The focus or emphasis is on the fact that there is a direct relationship and requirement for collaboration between business management and information systems management. This should be reflected in the organizational arrangements and structures.

3.13.5 Contextual Focus for Alignment for extended Strategic ICT Planning Model

With full consideration of the contributions made by authors on strategic management, change management, functional ICT management and on research methodology as discussed previously, the strategic management context of ICT can be synthesised. This is done with full consideration of the necessity to ensure alignment that can be managed as a requirement for both business strategy and ICT strategy. As such it can serve to guide specific structural arrangements as a generic interpretation. Deviation and tailoring of this model can then be managed in accordance with the specific characteristics of the organization and specifically this research. To this end the following as interpreted can serve to guide structural arrangements as appropriate to strategic management and planning functions for the DOD.

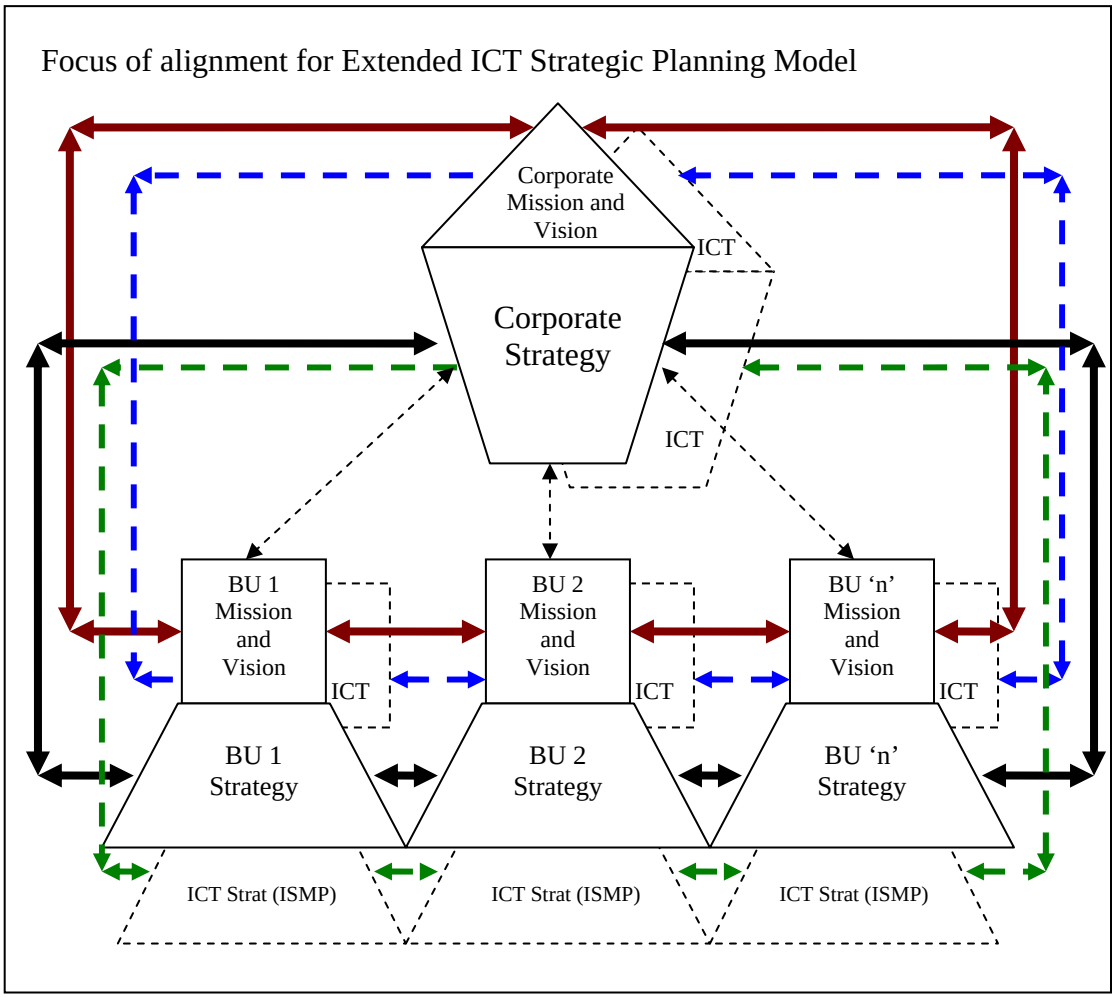

Figure 3.26: Integrated and Aligned Strategic ICT Management Model as interpreted by the researcher from existing theory

The deduced presentation has the implication that it indicates the collaboration of specific functional and structural arrangements as appropriate to both strategic business management and ICT management. It has the added implication that alignment is not a 'stand-alone' endeavour, but is an integral part of both business management and ICT management and should be performed as part of the integrated and continuous strategic management process. It furthermore indicates that there is a strong continuous and dynamically iterative interaction between corporate management and business unit level management.

When considering the complexity of the diversified organization and the opinion presented by authors such as Ward and Griffiths regarding strategic ICT management in diversified organizations, it becomes apparent that the process is not necessarily the problem, but it is the number of iterations thereof as well as the requirement for continuous alignment which causes the challenge. The volume of activities and the

repetitive nature of executing the process as well as the number of entities involved are a direct result of the complexity of the organization. It is thus concluded by the author/researcher that the greater the diversity of the enterprise, the greater the complexity of executing the strategic ICT planning process.

When considering the implication of the respective organizational cultures on the execution of the strategic ICT planning process, and the fact that the process is in essence focused on defining and managing the change required to sustain the competitive nature of the enterprise across its diversity, the necessity for the utilisation of supporting or enabling tools becomes a necessity. This becomes the primary driver for the utilisation of an EAP approach and supporting methodology and toolset within complex or diversified organization. The inverse can also be stated, namely that the less complex the organization, the lower the necessity for the utilisation of supporting enterprise-orientated methods and tools. The specific tools and methods to be utilised can form the basis for further research. These tools can in all possibility be such that it comprises an integrated EAP toolset which covers the process from strategy to systems development and life cycle support.

3.13.6 Organizational Structures Appropriate to Strategic ICT Planning and Management in the Diversified Organization.

With due consideration of the above-mentioned process and contextual influences which are appropriate and relevant to the strategic ICT planning framework and the strategic ICT planning process the management structures that are to be utilised can be managed around the deduced yet generic management structures presented below.

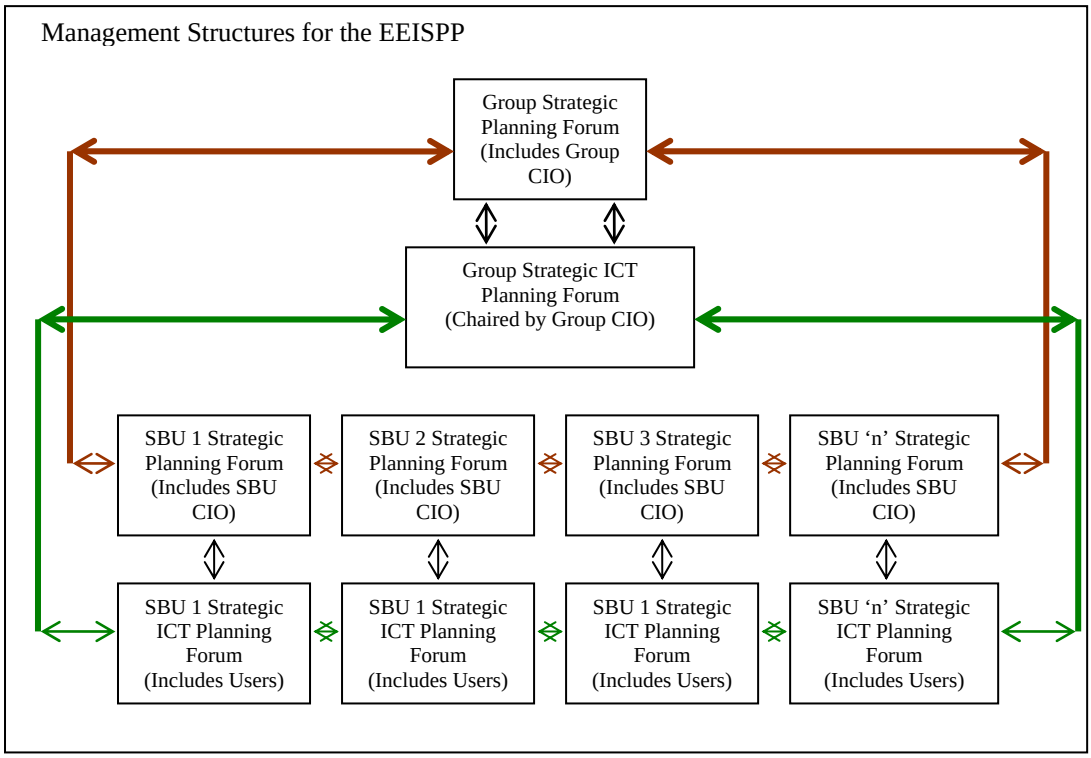

Figure 3.27: Management structures to manage the Enhanced Enterprise ICT Strategic Planning Process for Diversified Organizations

It is considered imperative by this researcher that the requirements for integration and system optimisation within the constraints of total systems management be realised through managed collaboration with a clear and unambiguous distinction of roles and responsibilities as interpreted from existing theory.

As such there should be a duly mandated corporate management mechanism charged with the responsibility of managing the enterprise in its entire value chain as a system. The Corporate CIO forms part of this forum and it has the distinct responsibility to manage corporate ICT strategic intention, corporate ICT policy, the strategic management of resources and structure in accordance with approved strategic business plans and to exercise corporate risk, performance and compliance management of the ICT function.

There should also be an operations-orientated forum at business unit level that is charged with the overall responsibility of managing the ICT system within and throughout the diversified organization. This forum is representative of ICT functionaries as appropriate to Information Management, Information and Communication Systems Management and ICT Management. This forum also has

functional user representatives as members to ensure collaboration and alignment of ICT solutions to information management requirements.

The respective strategic business units (SBU) Strategic Management forums have the responsibility and mandate to manage the respective business units as semi-autonomous entities, with clear consideration of corporate guidance. The “CIO” of the semi-autonomous business unit form part of this mechanism. In support of the strategic management of the SBU as managed by the SBU Strategic Management forum, the SBU Strategic ICT Planning (“Management”) forum is charged with the overall responsibility of managing the ICT function of the SBU. This forum is representative of ICT functionaries as appropriate to Information Management, Information and Communication Systems Management and ICT Management. This forum also has functional user representatives to ensure collaboration and alignment of ICT solutions to information management requirements.

The Strategic ICT Management mechanisms have the obligation to ensure alignment of the ICT strategy at business unit level with the business strategy. The Group Strategic ICT Planning mechanism has the responsibility to coordinate, integrate and align the respective ICT strategies with each other and with corporate direction. The Group CIO has the responsibility to manage the ICT function at enterprise level as an integral part of enterprise strategic management. The flow of activities between business unit level and group level has a dynamically iterative nature to ensure constant alignment throughout the strategic ICT planning process as appropriate to a diversified organization.

The enabling specialist planning methodologies and toolsets to support the strategic ICT planning process should be managed in accordance with the standard ICT systems life cycle management process as appropriate to support the process. The same consideration that functional requirements will drive the ICT solutions to support this function should apply as for any other function.

3.13.7 Summary of Influences

In summary the following are relevant to the process of strategic ICT planning in diversified organizations to guide the institutionalisation of the strategic ICT planning process for the DOD. It should not only be applied to the institutionalisation of the

strategic ICT planning process, but also to the institutionalisation of the management arrangements and mechanisms. To this end the change management should be effected towards the institutionalisation of the function within the DOD. Given this intention there are definite aspects that could be expected to contribute towards the contextual definition and management of the DOD ICT strategy.

From the above it is considered necessary to provide a clear understanding of the organizational dynamics and configurations as relevant to diversified organizations involved in strategy formation, formulation and alignment. The intention to increase the organizational dynamics and cohesion given the differentiated nature of ICT management as defined by Whitley (1984)[291], when he describes it as being essentially pluralistic with "very limited intellectual and organizational cohesion or standardisation of methods".

It can also be expected that the process of institutionalisation of an appropriate strategic ICT management (planning) process could be seen as a transition between archetypes and strategic and structural change as quantum rather than incremental as expanded upon by Miller and Friesen (1984)[292] and Miller (1990)[293] and also Kruger and Snyman (2002)[294]. This is considered to be equally applicable to the activity of strategic ICT planning in an organization. The strategic management of ICT can in all probability be expected to follow the same cycle as the organizational change when applied to the DOD.

When considering the implication of strategic ICT management in diversified organization it can be expected that there would be a strong causal relationship between the organization and its functioning and the type of ICT solutions and its functioning within such an ever-changing organization.

In a situation where there are diversified or semi-autonomous business units with diversified lines-of-business, the requirement for collaboration or integration becomes

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[291] Whitley, R. 1984. *The Intellectual and Social Organization of the Sciences*. Oxford: Clarendon Press.
[292] Miller, D. & Friesen, P.H. 1984. *Organizations: A Quantum View*. Englewood, New Jersey: Prentice Hall.
[293] Miller, D. 1990. *The Icarus Paradox*. New York: Harper Business.
[294] Kruger, C.J. & Snyman, M.M.M. 2002. The interdependability between Strategic Management, and the formulation of an Information and Communication Technology Strategy. *South African Journal of Information Management*, 2002, vol.4,2.

all the more imperative. There should be a strong causal relationship between the business strategy and the Strategic ICT plan of the diversified organization consisting of the whole of its semi-autonomous business units.

The strong correlation between the process to be followed for strategic business planning and the process to be used for strategic ICT planning in diversified organizations could be expected to have characteristics where strategic decisions for ICT planning in diversified organizations are pertinent to requiring decision by top management regarding strategic issues such as resource allocation and providing a broad top-level perspective. Typically resources are considered as relevant to finance, material, HR and information. These are sourced from either visibly within or outside the organization and could inevitably result in commitments, either internal (for using, and producing) or external (to redeem).As such these issues often affect the organization's long-term prosperity and as such should be addressed within an appropriate time frame. The ability to influence the long term requires forecast and not necessarily empirical knowledge.

Overall strategic issues usually have multi-functional or multi-business consequences in as much as it involves a number of Strategic Business Units (SBU's), being sources of resources or customers and/or clients. In its interaction with its external environment all business forms exist in an open system, and are thus effected by, or effect their environment with some conditions being beyond their control. As such a strategy is not confined to specific organizational levels or functions and it can be considered necessary to ensure that the interaction within and between the respective levels of the diversified organization is managed dynamically.

The more complex the organization, the more prescriptive the process can be expected to be, whilst still accommodating the diversity of content as required from strategic ICT planning. Such content will be commensurate with the diversified nature of the core business of the diversified business units and the respective value chains, within the context and construct of the corporate value chain.

The corporate ICT strategy of a diversified organization can therefore be expected to be performed as a complimentary and collaborative effort by representatives of the respective semi-autonomous business units of the diversified corporation. The

primary functionary for this process would be at corporate level with full participation of top management of the diversified business units. The nature of the strategic ICT planning process is such that it should be executed as a dynamic and iterative process within and throughout the corporation.

3.13.8 Utilisation of Influences

These influences as defined will be used to identify those aspects which will impact on the process in its formulation, the actual utilisation of the process to formulate the strategic ICT plan and the alignment of such a plan with the business strategy. The basic premise is that there should be a high degree of correlation between the strategic planning process as appropriate to business strategy formation, formulation and alignment and the process used for strategic ICT planning. This is to be viewed within the construct of a diversified organization and its unique complexities.

3.14 CRITICAL ISSUES THAT WILL ENSURE SUCCESSFUL STRATEGIC ICT PLANNING IN A DIVERSIFIED ORGANIZATION

In final summary of the issues that will affect the ability of the diversified organization to ensure that its ICT strategy is aligned with its business strategy the following critical issues are concluded:

- Systemic Relationship between the Diversified Organization and the Strategic ICT Planning Process
- Systemic Issues that will elucidate the Connect/Disconnect issue between the Diversified Organization and the Strategic ICT Planning Process
- Critical Success Factors for Strategic ICT Planning in a Diversified Organization
- Framework for Strategic ICT Planning in Diversified Organizations

3.15 CONCLUSION

To elucidate the implications of these issues as interpreted from existing theory, whilst at the same time ensuring that the results of this research can be scientifically substantiated, it is necessary that an appropriate methodology be followed to ensure

that the results of this research can be considered appropriate. To this end the following chapter will provide insight into what is considered as an appropriate research approach and methodology to ensure the reusability of this research.