The development and evolution of competencies in a successful enterprise in a competitive industry

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Abstract

The research explores the competencies that lead to firm success, success defined as the attainment of above-average rents over the long-term. The research asserts that to fully understand how companies come to be successful one needs to adopt a complex understanding of performance led by the internal workings of the firm. This involves identifying how different allocation processes might adapt resources to develop unique organisational competencies.

Case study research was the most appropriate methodology to use in studying the internal workings of the firm. The case study focused on a single South African firm and, more specifically, on the competencies within a particular business division. Five competencies were identified and their development and evolution analysed in five historical phases of the organisation.

Key findings are summarised as follows: strong leadership was essential in driving a particular strategy that once it became institutionalised developed into a core competence; one of the precursors to the development of competencies was the leaders' choice of the firm's positioning on the value chain; a collaborative organisational structure was not necessary for the development or evolution of organisational competencies; external sourcing for competencies was unsuccessful when the acquired competencies were foreign to the existing store of competencies in the organisation; institutionalisation, initially required to develop certain competencies, can inert the evolution of competencies due to perceived threats to existing norms and values in the organisation. The research also explored the development of competencies in an isolated environment which affords time to allocate resources and to develop processes in isolation from external market forces to build unique competencies.

The findings contribute to an in-depth understanding of the reasons for the firm's success as well as contributing to an area of strategy theory that is empirically understudied, particularly in the South African case. The research concludes with suggestions for further research to contribute to this important understudied area.

Keywords

Competency theory; competence development; competitive strategy; firm success; resource allocation

Declaration

I declare that this research project is my own work. It is submitted in partial fulfilment of the requirements for the degree of Master of Business Administration at the Gordon Institute of Business Science, University of Pretoria. It has not been submitted before for any degree or examination in any other University. I further declare that I have obtained the necessary authorisation and consent to carry out this research.

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1.1 Introduction

"The global economy has become more open and the sources of invention, innovation and manufacturing are more diverse geographically and organizationally – achieving evolutionary fitness is harder today than it was before the millennium" (Teece, 2007, p. 1321).

In this environment the role of strategic management theory is increasingly important. It should provide firms with managerial prescriptions that enable them to create and sustain value for the organisation.

The research explores the competencies that lead to firm success, defined as the attainment of above-average rents over the long-term. In doing so it distinguishes itself from the positioning school of thought and its accompanying five forces framework espoused by Porter (1980). The positioning school of thought remains one of the most popular strategic management frameworks: there appears to be a consensus that positioning within an industry is important for an organisation. However, this does not explain the demise of organisations that have strictly adhered to Porter's framework or the rise of those organisations that have deliberately chosen to ignore the prescriptions. To fully understand how companies come to be successful one needs to adopt a complex understanding of performance led by the internal workings of the firm. An internal orientation adopts Penrose's (1959) view of the firm as being a bundle of resources, both intangible and tangible, and that through different resource reallocation processes, firms start to take on unique characteristics that set them apart from their competitors.

Case study research was the most appropriate methodology to use in studying the internal workings of the firm. The case study focused on a single South African firm, Dimension Data (DiData), and, more specifically, on the competencies within their Network Integration line of business. Integration is, in itself, a competence of the organisation, out of which much of their future success grew. This competence was investigated along with four other identified competencies: their alliance; client-centric, services; and technology lifecycle management competencies, as well as their technical competence in the language of internet protocol (IP).

A framework was developed from a synthesis of the literature on the resource-based, competence and dynamic capability views of strategic management. In addition, it has

borrowed from a wide range of behavioural and organisational theorists to build a comprehensive framework for the development of competencies. Extensive desktop research was conducted which comprised an analysis of internal firm and business unit documents. In addition, interviews were carried out with key strategic, operational and technical players at the Group and business unit level. The research explored themes identified from the literature review as well as identifying relevant additional themes that emerged in the process of data collection.

1.2 Research scope

As the title states, this is a study of organisational processes that result in the intentional, as well as, unintentional creation and evolution of competencies which enable an organisation to be successful in the long-run. The research explores the development and evolution of competencies through an in-depth analysis of a single successful firm, DiData. More specifically, it describes and analyses the interplay between the formal and conscious design processes and unintentionally created internal processes which lead to firm specific competencies, which in turn allowed the company to achieve above-average rents.

This paper will use the terms capabilities and competencies interchangeably (unless when referring specifically to dynamic capability theory) and defines a competence as the ability of an organisation to do something well in comparison to its competitors in order to achieve above-average rents (see appendix 1 for a comprehensive list of competence definitions from 1942-2008).

The research uses nine themes built from a synthesis of the literature to create a framework in order to facilitate the data collection phases and the analysis but remained open to emergent themes as the research progressed. The themes are: leadership, market orientation, learning and innovation, organisational structure, strategic change, resource allocation processes, evolutionary processes, external sourcing for competencies and institutionalisation.

The study does not aim to provide insight into which types of environments (with respect to volatility and competitiveness) a particular path to competency creation and adaptation is most effective. It assumes that in today's globalised world, industries and markets are dynamic, albeit to varying degrees. In addition, this study will not seek prescriptions on which types of firms (small, medium, large, public or private) the particular path to competency creation or adaptation is most effective.

The research charted the rise of DiData through to the mid-2000s and up to 2010 when they were bought by NTT. The time allotted for the research did not allow the researcher to go into great detail in each of the regional operations, to try and understand the processes by which each of these regional businesses has evolved their competencies, nor into the subsidiaries of the Group (Internet Solutions and Plessey). It takes as its starting point the South African operation, where the organisation was born, and builds up the analysis from this point onwards, using their regional expansion as a means to explain one of the ways in which they developed their integration competence and the competencies that followed.

1.3 Research motivation

This study provides a deeper understanding of the processes or mechanisms by which organisations are able to create value and be successful.

Porter (1991) writes, based on his own research, that due to the complexity of the variables explored in conceptual theories on strategy development statistical testing of theories is difficult and does not always provide clarity (p. 99). He recognises the suitability and, more importantly, the need for case study research in strategy theory. He notes, however, that there appears to be an aversion from academia to this form of research (Porter, 1991, p. 99) leaving a significant gap in our understanding of the competitive success of firms.

A number of theories have been developed for explaining how the internal dynamics of organisations create competitive advantage. These include the resource-based, competence and dynamic capabilities views. Each proposes conceptual motivations for firm success. Yet it is difficult to use them in the formulation of managerial prescriptions. None of them attempt to explain how “valuable, rare, imitable and non-substitutable” (VRIN) resources, or competencies and capabilities come to be realised in practice. In addition, how does a successful firm identify which competency to pursue at a particular point in time to provide the firm with a competitive advantage?

In their seminal work on the theoretical foundations of dynamic capabilities, Teece, Pisano and Shuen (1997) recognised that a tighter theoretical framework together with empirical research are critical for developing our understanding of why and how firms succeed, remain successful or even decline (p. 530). Whilst the propositions put forward in this paper are not specific to dynamic capability theory, the underlying rationale for the research is in keeping with Teece et al. (1997) in seeking to provide insight into firm success and performance.

There appears to be paucity in the strategic management literature of empirical studies based on qualitative research, despite the calls for it from writers in the field (Hitt, Boyd & Li, 2004). This could be because of the relative youth of strategic management within the business discipline; the difficulty of measuring the variables proposed at the theoretical level; and / or the fact that qualitative research is not viewed as favourably as quantitative research within the discipline of strategic management research.

An extensive search of the literature reveals only a handful of case studies in the strategic management field. There are even fewer papers that attempt an analysis of competencies, and none within a South African context. In particular, what is missing is empirical research that provides insight into how firms take that first step in identifying the right competence to pursue, how they develop their competencies and how they adapt them or create new ones in response to new competitive external dynamics.

Langley points out that it is essential that research starts to look at how performance comes to emerge “processually” if we are to understand how and why certain companies succeed (Langley, 2007, p. 272).

As a result of the gap, this paper has sought to add to the practice of fine-grained investigation into the internal workings of the organisation so that strategic management theory can start to provide some answers to the often-elusive question of how great companies succeed in practice.

1.4 Research problem

“While there has been considerable progress in developing frameworks that explain competitive success at any given point in time, our understanding of the dynamic processes by which firms perceive and ultimately attain superior market positions is much less developed” (Porter, 1991, p. 95).

Models developed out of a resource-based view, one of the dominant theories in the field of strategy research, do not provide adequate understandings of the precursors to competitive advantage – the ‘how’. Competency theorists argue that, in addition to the endowment of resources, competencies, or capabilities, are a necessary starting point for success. One therefore needs to learn how these organisational attributes are created and how they evolve. This is best done through a multitude of firm-level case studies.

There is a great desire to understand how firms achieve and sustain competitive advantage and to learn from them. But theories about how firms develop competitive strategy (the plans and actions that firms take to achieve their objectives) and how they

develop competencies are complex. As a result empirical research to support the conceptual work that has advanced the discipline to date has been neglected.

This research aims to step into this space and provide insight into;

- How companies develop their competencies.
- How companies evolve their competencies[1].

It will explore the idea that competencies emerge from the simultaneous focus of leadership, middle management and the operational members of the organisation who share a common understanding of the competence required for success and who actively work toward its development.

The research will identify the competencies of the organisation through the analysis of documentation, corroborated via interviews with senior staff and middle managers. Rather than approaching this as an open-ended question, the research will be guided by existing theories on competencies out of which a number of explanatory themes emerged.

[1] The use of evolution in the research question refers to changes in the competencies and should not be confused with a particular usage of the word evolution in “evolutionary process theory” – see page 21.

2. Literature Review

2.1 Origins of strategic management theory

Two broad schools of thought in strategic management theory, with respect to the attainment of organisational competitive advantage, have emerged over the last three decades and reawakened conversations around some of the earlier individual contributions made by Penrose (1959), Selznick (1948; 1957) and others decades before. In the early 80s the Porterian or positioning theory (Porter, 1980) held sway. This theory maintained that a good strategy involved picking a unique position in an attractive industry, deemed to be so, by an analysis of the five industry-level forces, namely the role of potential entrants, suppliers, buyers, substitutes and rivalry among competitors. The resource-based view (Barney, 1991) was in direct response to the criticisms levelled at Porter's outward-looking strategic and product-positioning view. In particular, the resource-based view regarded the Porterian view as too static, not accounting for the dynamic nature of increasingly complex industry contexts. Further, it did not take into account the role of innovation in an industry or by individual organisations within or external to an industry that could change the context in which organisations operate; and it did not recognise that there were certain tangible and intangible processes and/or endowments of resources within an organisation that made the strategic choices of that organisation path dependent.

The resource-based view called for inward-looking strategic thinking that would shape competition from within by selecting and developing resources to build competitive advantage given the market place and context (Wernerfelt, 1984; Barney, 1991). It suggested that the sources of sustained competitive advantage were the firm resources that were valuable, rare, inimitable and non-substitutable (VRIN), which, when aligned to market context, will provide competitive advantage (Barney, 1991, p. 116). This was a return to the growth theories of the firm, articulated by Penrose's (1959) seminal work, which saw success as an internal construct, based around the development of heterogeneous resources given the context of the market.

In turn, the competence (Selznick, 1957; Penrose, 1959; Prahalad & Hamel, 1990; Sanchez, 1997; 2004) and dynamic capability (Teece et al., 1997; Eisenhardt & Martin, 2000; Zollo & Winter, 2002) theories were born out of criticisms levelled at the resource-based view. While the resource-based view had addressed issues of path dependence and resource heterogeneity that Porterian positioning theory could not, it, too, was too static a theory. VRIN resources were not sufficient to ensure sustained competitive advantage.

Prahalad and Hamel (1990) argued that rather than focusing on resource endowments and allocation, per se, organisations needed to look at what competencies were required to drive resource allocation to make the organisation competitive. The identification of competencies had to happen at group level, would manifest at the business level and be nurtured through collaborative arrangements that would cut across the interests of individual business units. Resource allocation processes and individuals that do not add to the group level competencies are a liability and should be removed. Organisational success will derive from the ability to build competencies that deliver unanticipated products. It is the role of the manager to consolidate diverse corporate-wide technologies and skills and to advance synergistic management to the benefit group-level competencies. They introduce the importance of foresight and agility of the organisation and the role of the manager in reacting to increasingly changing market boundaries (Prahalad & Hamel, 1990, p. 80). Companies must cultivate a competency mindset and look to identify and build on competencies to ensure long-term success through organisational architecture that fosters collaboration, organisational learning and continuous improvement across business units (Prahalad & Hamel, 1990).

The dynamic capability view looked specifically at the types of processes and routines that a firm could employ in the face of rapidly changing external environments to remain competitive (Teece et al., 1997; Eisenhardt & Martin, Zollo & Winter, 2002; Newbert, 2007). Teece et al. (1997) sought to extend Barney's model by proposing that the competitive advantage of the firm rests on distinctive processes, shaped by the firm's asset positions and the evolution of path(s) it has adopted or inherited (p. 509). This seminal work defined a dynamic capability as "the firm's ability to integrate, build, and reconfigure internal and external competencies to address rapidly changing environments" (Teece et al., 1997, p. 516). It is this ability and the path dependent nature of organisational structures and managerial processes that are not easily replicated, that become the source of sustained competitive advantage. Other firms' attempts to replicate best practice, therefore, could be an elusive pursuit due to the embedded nature of positions, paths and processes.

Both views are complementary to one another but are distinct, perhaps, in their epistemology. The competence view emerges out of a synthesis of organisational theory and Schumpeterian *Creative Destruction* while dynamic capability theory engages primarily with intra-firm evolutionary theory. There is, however, cross-over and as much as both have garnered huge support, they have equally attracted huge criticism within the strategic management discipline. The criticism is that both

competencies and dynamic capabilities are difficult to measure, quantify and access and that a dynamic capability, in particular, is too abstract, intangible and varied a construct (with many proposed definitions) to allow for the ease of empirical assessment of the theory (Newbert, 2007, p. 133). It is indeed because of the difficulties in measurement that Newbert (2007) calls for primary data collection techniques to help in our understanding why certain firms attain superior profitability (p. 137).

Ambrosini and Bowman (2009) conclude that the synthesis between the resource-based view, dynamic capabilities view and competence perspective rests in viewing the firm as a bundle of heterogeneous and path-dependent resources which allow a firm to generate sustainable competitive advantage from within the boundaries of the firm (p.31). It is also this definition that has garnered additional criticism – is there a use in a theory that methodologically confines it to the specifics of a firm without being able to generalise beyond it (Newbert, 2008, pp. 745-746)?

Eisenhardt and Winter (2000) set themselves apart from other theorists in the field by arguing that capabilities and the processes that lead to competence creation might exhibit greater homogeneity than resource-based theorists have traditionally thought. Further, they contend that through empirical research, commonalities that are exhibited might provide the basis for 'best practice' within strategic management theory (p. 1106).

In *Strategy is Destiny*, Burgelman (2002) culminates twenty years of case study research on Intel into three conceptual frameworks for use in other firms when analysing and understanding their strategy-making processes (pp. 7-23). These frameworks were created from the research on one firm only. Despite this, the findings and implications of this research have been far-reaching and have helped to shape strategic management theory considerably since then. They are –

1. Dynamic forces driving firm evolution (distinctive competencies of the firm rest in this framework).
2. An evolutionary framework of strategy-making process.
3. A process model of internal corporate venturing.

Burgelman's insights on strategy-making in practice at the firm level have provided valuable insight at the conceptual level for strategic management. Burgelman (2002) argues that distinctive competencies, in terms of decision-making rules and the processes by which decisions are arrived at, are intrinsic to a company's identify and

character and will determine the strategy and evolution of a strategy that a company pursues. They are created over long periods of time, are not easy to change, but it is out of the current stock of underpinning rules and processes that new opportunities will emerge (pp. 9-10).

Sanchez (1997) argues that one of the most important ingredients for the organisation is the role of cognition, the intellectual challenge that befalls the organisation that seeks to develop its competencies, to create and sustain competitive advantage. If one accepts the view that competition based on competitive positioning or the fight for market share of a particular product or service is not enough in today's dynamic world "competition between organizations can therefore be seen as an ongoing contest between managerial cognitions in devising processes for organizational sensemaking, for the development and exercise of a corporate imagination, and for articulating new strategic logics for improving the adaptive capabilities of firms" (Sanchez & Heene, 1997, p. 308).

The challenge, then, is to build an adaptive, innovative and resilient organisation that takes from the market, from previous successes and failures and the insights of key stakeholders, those clues to the strategic requirement for future success. In highly competitive markets, very few organisations have been able to remain at the peak of their performance for long. It is the brushes with failure, as IBM and Apple experienced in the early 90s, as much as the successes of the past, that must be learnt from and leveraged off to create future value.

It is the subjection of resources to certain processes, and not the output itself, that the competence perspective is interested in. The output provides the value to the customer but it is transient – the real value lies in the manipulation of the resources to provide a constant stream of new outputs that are valued by the customer and so create value for the organisation.

2.2 Competence: emergent themes

Wang and Lo (2003), in discussing future avenues of resource-based research write that "the critical nature of the research subject, crossing the boundaries of multiple academic disciplines such as technology and marketing, innovation and change management, strategic management, epistemology and psychology, necessitates a rich and diverse research method for empirical testing" (p. 512).

This extends to research of competencies. Due to its complicated, multidisciplinary nature a number of themes have emerged out of the literature which, when brought together in a broad framework, provide direction for the research process.

2.2.1 Leadership

One of the earliest writers on organisational systems, Barnard (1938), viewed the organisation as a complex system which required a cooperative effort to survive. This cooperative effort was the function of the executive – not management, but leadership – and would come about through a deep understanding of the motivating factors of individuals within the organisation (p. 259). Barnard placed great faith in the leadership's ability to foster creativity as an output of organisational alignment and cooperation and so it was the leader's responsibility to instil a pride and a moral responsibility for the work of the individual. A complex system requires a vision which must be communicated "into terms of concrete action required to effect it – what to do, and when and where to do it" (Barnard, 1938, p. 474).

Selznick (1949; 1957), who posited that competencies were created through a process of institutionalisation, recognised the importance of the leader to nurture (identify and develop) and protect (recognising the inherent value) the distinctive competence.

The development of a firm's competence takes years to create. Recognising that competencies can evolve through unintentional, intraorganisational processes – as evolutionary theory – Burgelman (1991, 1994, 1996, 2002) – would argue – does not preclude the essential role of the leader in formulating new competencies for the firm. Intentional strategy, articulated by the leaders of the organisation, as well as emergent competencies that materialise from the bottom of the organisation, can exist side by side. The leader should act as visionary with the foresight to imagine a new future for the organisation requiring a specific competence. However, the leader, in recognising the evolving nature of the organisation and its environment, must put in place systems and processes to allow for the organisation to naturally evolve in response to the changing external demands on it. Mintzberg (1978) argues that strategy can be viewed as the interplay between a dynamic environment (external demands) and bureaucratic momentum, with leadership mediating between the two forces.

It is through the exercise of indirect influence – in keeping with Barnard's (1938) notion of the executive exercising "observational feeling" (p. 90) – rather than through draconian rules and measurements, that strategy will play out. This demands a weaker locus of control for the leaders of the organisation built on trust of the individual actors

– trust in their ability to determine outcomes which might not have been articulated in the strategy-making process.

For a leader to be able to identify, develop and evolve competencies they need, firstly, to step back from an outdated mode of seeing the firm as providing a product or a service, to one built on competencies. Secondly, in recognising the strategic importance of their competence in the ongoing success of the business they must direct organisational processes which manipulate resources, to the constant refining of competencies and the development of new ones.

Burgelman (2002) warns that a leader's outlook, by the time she reaches the top position, has been shaped by the experiences of the individual to date which places cognitive limits on her world-view (p. 22). A leader's decision-making abilities are, thus, limited by her range of perception due to history (Cyert & March, 1963). Experience shapes who one is and the choices that one makes in the future. In raising awareness of this Burgelman is not asking that one disregards ones experience for future strategic choice, but that one remains alert to the constricting nature of this on one's sense-making abilities. Specifically, leaders need to "encourage internal debate and dissent around strategic arguments, recognise the strategic importance of new internal or external developments, develop deep insight into what the organisation's re-capabilities are and have the strength to follow through on a conviction that may not be widely shared" (Burgelman, 2002, p. 366).

The centrality of the leader in competence theory sets it apart from the resource-based and dynamic capabilities view of the firm. It is the leader's ability to encourage collaboration and communication across the organisation, to help free up individual competencies within the organisation and help create a dialogue around a new future that enables the organisation to stay ahead of its competitors in creating new markets and diving into new industries (Hamel & Prahalad, 1991; 1994). The leader must use their creativity, past experience (both to harness new ideas but also to ensure they do not stay on the same path due to historical precedence) and a deep understanding of their industry, market and customers to develop their cognition of a new future where new markets and industries might emerge, rather than new products or services (Prahalad & Hamel, 1990; Hamel & Prahalad, 1991; 1994).

2.2.2 Market orientation

Wang and Low (2003) argue that the organisation's positioning within the industry determines the competencies that the organisation chooses to pursue – how wide one wishes to view ones industry, limits or expands the scope of this competency choice.

In building a competency one needs to constantly enhance one's competitor and customer knowledge so that the organisation builds an understanding of the possible future needs to be addressed by incumbents in the industry and possible entrants.

The resource-based view and its successor, the competence perspective, argue against relying on positional advantage for competitiveness, as this leaves the organisation vulnerable to new entrants in the industry to upset the balance and take away their position (Burgelman, 2002, p. 20). Rather, develop a competence which can move the organisation naturally from one position in the industry to another over time, as customer needs change.

The initial choice of positioning in the market, however, might provide insight into the original antecedents of competencies in the organisation. Some theorists have argued that market orientation is the precursor to a distinctive competence (Miles & Snow, 1978; Snow & Hrebiniak, 1980; Atuahene-Gima, 2005). In identifying whether the organisation occupies a prospector, defender, analyser or reactor position (Miles & Snow, 1978) one might understand the rationale for the pursuit of a certain competence over another and what affect that historical precedence had on the future development of competencies. Market orientation might be an outcome of the pursuit of a distinctive competence or the precursor to it, but, regardless, it speaks to understanding the dynamics at play within the industry and how the organisation understands its value offering to the customer over time. The market should be regarded as an opportunity and not a threat, understanding its inherent dynamic nature. Intensive customer and competitor knowledge and collaboration at the firm level will enable to the organisation to innovate and use current competencies for future products and services or to adapt current competencies for future advantage.

In recognising the importance of market orientation in the creation of competencies one is arguing for a deep understanding of the customer and competitors in the market so that internal competence deficiencies are identified, market cues are internalised and competencies can either be further developed or new ones identified (Barney & Zajac, 1994, cited in Atuahene-Gima, 2005; Danneels, 2002; 2007). But, one is also arguing for an understanding of the future role that the organisation might occupy in the industry.

An organisation can develop an incredible capacity for a specific competence, but if it has little understanding of the need for that competence in the market and how it is perceived then the competence can become redundant. A process, a product or a service can be regarded as excellent by customers at a point in time but if the

organisation wishes to maintain this, it must ensure that the competence underlying it "is distinctive relative to competitors' competencies and can remain so in the foreseeable future" – identifying the distinctive competencies is an iterative analytical critique by employees and might include customers and suppliers (Gorman & Thomas, 1987, p. 615).

2.2.3 Learning and innovation

Innovation refers to an internal adaptation; the introduction of new methods and processes to create a new offering (a product or service) to customers. It is argued that in order to innovate, the innovator must possess an absorptive capacity (Cohen & Levinthal, 1990) – an ability to recognise the value of new, external information, assimilate it and apply it so that value can be derived from the output. Innovation changes the existing body of knowledge in an organisation and enables the organisation to enhance current competencies or change them entirely. It is through the assimilation of external knowledge that one is able to adapt current processes and skills and start to build new distinctive competencies.

Cognition plays a vital role in competence theory. Integral to the creation and evolution of competencies is a notion of foresight and vision which the leaders of the organisation need to possess and encourage throughout the organisation. Learning and knowledge dissemination are central in this process as it enables the organisation to renew and replace existing dysfunctional or outdated competencies with new ones to fit with the external environment. Cognition (a forward-looking form of intelligence) and experiential wisdom (backward-looking wisdom) create boundaries for an individual which then shape the behaviour and understanding of alternative courses of action for an individual to take at a given time (Gavetti & Levinthal, 2000). Each time there is a fundamental shift in the "fitness landscape" (particularly relevant in high technology industries) a reliance on experiential knowledge to help determine the choice-sets for the organisation can be limiting and it is to an alternative, imagined future that the leaders and other actors in the organisation should turn (Gavetti & Levinthal, 2000, p. 132). Alternatives that are more closely linked to one another are more easily imagined and so to move from a current orientation to a future one where the 'values' of each are similar is a usual outcome of this search process (Gavetti & Levinthal, 2000).

Using a longitudinal cross-case study Keil (2004) was able to build a model to describe how firms develop a competence. The basis of his model is on acquisitive learning, coupled with learning by doing, where the firm relies on internal firm processes which enable adaptation of knowledge in the firm (p. 799). Keil (2004) contends that

organisational structure, initial resource endowments, knowledge articulation and codification and social networks affect learning processes leading to the emergence of a new capability (p. 822). Unlike Prahalad and Hamel (1990) who argue the essential role of the manager in competence identification and development, Keil (2004) argues that managerial intentionality is often countered by initial resource endowments and organisational structure which limit the learning process (p. 822). It is the role of the manager to recognise these inertial forces or path dependencies which might inhibit innovative activities and the development of new competencies.

Leonard-Barton (1992) adopts a knowledge-based view of the firm and sees a company's capabilities residing in four knowledge dimensions; employee knowledge and skills, technical systems, managerial systems and the values and norms associated with embodied and embedded knowledge, knowledge creation and control (p.113). Managers will face a constant paradox; the development of a particular competence via this knowledge set inherently inhibits the development of other innovations as the presiding competence is enhanced (Leonard-Barton, 1992, p.112). Insight into how a successful company makes the right choice at the right time is of particular interest when assessing how competencies are created – possessing a competence in something does not necessarily mean that it is the right competence to provide a competitive advantage. "It is challenging to figure out which experience should be generalized from the extensive situation-specific knowledge that occurs – which experiences should be incorporated into the ongoing routines for the capabilities and which should be forgotten?" (Eisenhardt & Martin, 2000, p. 1116).

Despite Prahalad and Hamel's (1990) contention that competencies are the collected learning in the organisation, learning can be both a hindrance and a help in creating and adapting competencies (Levinthal & March, 1993; Levitt & March, 1988; Kraatz & Zajac, 2001). It is often the successful pursuit of one competence, and the self-reinforcing nature of the learning that occurs in the process, that pushes an organisation to continue to pursue that competence when others might be more appropriate (Levinthal & March, 1993, p. 102). It stands to reason that if one is good at something then one is more likely to continue to hone that competence and develop it than one is to abandon it. The conundrum, then, is how to engage in learning activities that simultaneously improve current competencies yet not at the expense of the pursuit of new ones as this will leave the organisation at a competitive disadvantage down the line.

Zollo and Winter (2002), writing on dynamic capability theory, identify two forms of learning within an organisation – learning by doing (operating routines) and learning through articulation and codification of collective knowledge (a modification of operating routines, identified with dynamic capability) (p. 340). An organisation must blend the knowledge accumulated through past experiences which might direct the current operational functioning of the firm with the wealth of collective knowledge that resides within the firm that will guide the creative adaptation of routines and, thus, future competencies.

Danneels (2008) has attempted to provide some understanding by researching the notion of second-order competence (a skill at learning new tasks) which he believes resides in organisational antecedents which might lend themselves to the notion of "corporate imagination". The antecedents are a willingness to cannibalise existing resources, the encouragement of constructive conflict within the organisation, environmental scanning to seek out trends and new opportunities and resource slack (financial and human) to invest in exploration (Danneels, 2008, pp. 522-526). Dynamic capability theory assumes that one of the competencies of an organisation must be the ability to sense and seize opportunities and to navigate threats to existing competencies – the ability to reconfigure assets to sustain evolutionary fitness is what builds and sustains long-run value. The four antecedents proposed by Danneels (2008) provide some insight into the precursors of a competence – second-order competencies are about learning new tasks which Danneels (2008) would argue sit, primarily, within marketing and research and development.

Andriopoulos and Lewis (2009) argue that given the capability-rigidity paradox organisations need to be built with dual strategies and structures that allow for explorative and exploitative innovation to co-exist. In exploiting current competencies one tends to crowd out competence exploration (March, 1991; Leonard-Barton, 1992). The natural tensions that will arise due to this must be managed by engendering a paradoxical mindset throughout the organisation – discipline and a close focus on profit maximisation must be integrated with a strong focus on using new technology and/or contrarian thinking which allows for innovation to occur (Andriopoulos & Lewis, 2009, p. 708).

2.2.4 Organisational architecture

Chandler (1962) argues that structure naturally follows strategy as growth, often through geographical dispersion, naturally pushes the organisation to diversify and vertically integrate, resulting in functional and multidivisional structures developing

where resource allocation processes take shape. He recognises that strategy can be poorly articulated throughout the organisation and leaders do not always recognise the need for new administrative requirements when they introduce new strategies which hinder the successful implementation of the strategy but this is a failure in the implementation of strategy, not an indication then that strategy follows structure (Chandler, 1962, p. 14).

Strategic growth – resulting from an awareness of the opportunities and needs to employ existing or expanding resources more profitably – often demands a new or refashioned structure to operate efficiently (Chandler, 1962, pp. 15-16). The role of the manager as the enabler in directing strategy, and in the process creating certain competencies, has been identified as key to firm success (Prahalad & Hamel, 1990; Noda & Bower, 1996; Sanchez, 1997, 2004). The architecture must be built by senior management to adapt to rapidly changing external environments which demand a flexible organisational response. Prahalad & Hamel (1990) do not provide a model for the strategic architecture as they argue that it will differ from firm to firm given path dependency and heterogeneity of resources (in keeping with the resource-based view). However, they do argue that an organisation which designs itself around resource allocation priorities to build competencies, rather than product development, and one that consciously articulates this to the entire organisation is one that will thrive (pp. 90-91).

Bower & Gilbert (2005), building on the work of Noda & Bower (1996), argue that “it is the structural context that shapes the patterns of a company’s resource commitments that in turn add up ex-post to be a company’s strategy. Structure shapes strategy.” (p. 33). When looking at how competencies come to be developed within an organisation, it is perhaps a combination of both Chandler (1962) and Bower and Gilbert (2005) which results in an orientation adopted by Burgelman (1991, 1994, 1996, 2002) where strategy is driven from the top-down whilst simultaneously being shaped via the resource allocation processes on the operational floor.

Both strategy and structure, regardless of the directional force, require the contributions of individuals to carry out tasks. Individuals, that Barnard (1938) argues, are driven to act by incentives. Leaders must focus on the fundamental aspect of incentives if they are to successfully organise the personal efforts of the individual into a formal and efficient organisation (Barnard, 1938, p. 139). Prahalad and Hamel (1990) call for a similar focus; senior management must build a strategic architecture that creates incentive schemes for skills and knowledge sharing across strategic business units.

They must communicate, transparently throughout the organisation, the resource allocation processes focused on developing and protecting competencies at the company-wide level. This will motivate individuals to act together in pursuit of the organisational competence, rather than competitively in pursuit of their own product or service line. Collective action will also enable individuals to come together to identify competencies for the future (Prahalad & Hamel, 1990, pp. 11-14).

Once the competencies of the organisation have been identified by the leaders of the organisation, they need to adopt both 'a method of incentive' (for example, money) and 'a method of persuasion', a process of changing subjective attitudes through coercion or rationalisation of opportunity when setting up the structure of the organisation in pursuit of these competencies (Barnard, 1938, pp. 141-153). Reward people for sharing knowledge and resources and for their willingness to collaborate beyond the borders of their singular team or larger business unit. Adopting a strategic architecture which is responsive to external shocks (by applying skills and capabilities to available resources and building self-managing systems through empowered teams) is essential if previously identified competencies are to be protected from obsolescence in time (Sanchez, 1997, 2004).

Henderson and Cockburn (1994), in discussing the importance of research and development in the pharmaceutical industry, argue that it is through the choice of an appropriate architecture, which allows for the integration of knowledge, that component competencies (that is, resources) can be used, integrated effectively and replaced with new ones as they are required (p. 65). The most prominent feature of the architecture must be the ability to access new knowledge external to the organisation and integrate it successfully into the firm – those that adopt an architecture focused on consensus were found to be more productive that a dictatorial structure and style (Henderson & Cockburn, 1994, p. 79.

Atuahene-Gima (2005) and Jansen, Van den Bosch and Volberda (2006) build on Prahalad and Hamel's (1990) support of inter-functional coordination as a means of developing competencies by arguing that it moderates the single-minded focus of individuals or business units on product or service innovation for their specific customer and competitor orientations. This is done by building trust across units which allows for critical assessments of the products and services (in light of the company's competencies) and thus encouraging exploratory and exploitative innovation across units which help in developing new competencies and refining existing ones.

There appears to be a growing consensus that it is out of the operational capabilities (emerging from the organisational structure) that competencies are formed and that it is through the process of linking different key firm resources through the formal and informal organisational processes in the organisation that the competence is created (Teece, 2007; Ray & Ramakrishnan, 2008).

2.2.5 Strategic change

Firms that operate in rapidly changing environments will gain a competence at learning under change and they will do this by interpreting the performance feedback cues of customers, suppliers and other stakeholders (Eisner, 2003). If one accepts that no competence is forever and that organisations must be adept at evolving their competencies over time, an understanding of how an organisation acquires the skills to change or is skilled in change is important.

Gioia and Chittipeddi (1991) define strategic change as actions that "enable the organisation to take advantage of important opportunities or to cope with consequential environmental threats" (p. 433). Companies need to recognise the external and internal stimuli for change and own the capabilities that will allow them to formulate new strategies and roll out the change successfully throughout the organisation to ensure sustained competitive advantage. Recognising that inertia might trap competencies in an organisation, rendering those competencies which provided a competitive advantage in the past as inadequate for sustained competitiveness, is essential.

Lawler and Worley (2006) add that effectiveness of change, realised through organisational design, systems and processes of the organisation, in alignment with strategy and capabilities, must be viewed as an evolving process over time – companies need to transform themselves into ones that are built to change (p. 19). Given the instability of the global environment, companies that look at the environment and seek out ways in which they can fit to the demands of the time, will succeed – change must become 'business as usual' and capabilities must be acquired and enhanced to bring about a competitive advantage (Lawler and Worley, 2006, p. 23). The role of strategic management in competency theory is to design the organisation as an adaptive system (Sanchez, 1997, p. 940).

Systems' thinking, with respect to the design and management of the organisation, encourages one to view the components of the system (individuals, teams, departments, functional groups, processes, et cetera) as interlinked and interdependent. A change in one part of the system will affect other parts by virtue of these interconnectivities. Beer, Voelpel, Leibold and Tekie (2005) suggest that, in

introducing new strategies, alignment takes place at four levels; between environment and strategy, strategy and organisation, organisation and the leadership team and between key people – it is an integrated approach that seeks best fit to the environment and to organisational competencies (p. 446). This strategic fitness process is proposed as a systematic approach to overcoming the resistance to change and its successful implementation – resistance which Beer et al. (2005) contend comes from barriers within the organisation, such as old mental models, overriding personal interests, weak and inefficient communication, defensive routines, et cetera (p. 450).

Selznick (1957), however, guards against change that is adopted without due thought to the historical nature of the organisation's competencies and commitments – this he refers to as "opportunistic adaptation" which can result in weakened and confused competencies emerging which create disharmony in the organisation (p. 144). Once again, this highlights the importance of path dependency in shaping future competencies. Selznick is not arguing against change but rather suggesting that there is an inherent danger in bringing in change without consideration for the context. Gavetti and Levinthal (2000) see the danger as the loss of experiential wisdom that ensues as new cognitive representations are required of individuals – small shifts in cognition are not as costly as experience can be transferred more easily (p. 134). There is a trade-off, therefore, between changing to fit new external landscapes in order to survive and the loss of knowledge that will be experienced in the change.

Burgelman (1994) suggests that organisations must consciously plan to survive through adaptation given the pressures that formal and informal institutions exert on organisations to change and that organisations must not allow the legacies of past successes to cloud their ability to see these institutional forces at play. There is an added complexity that the organisational ecology argument of the 1980s would suggest is at play, and that is that when a company enters a market they have to develop routines and procedures that make their behaviour reliable and accountable to their customers, suppliers, employees, and other stakeholders. These attributes give the company legitimacy but they also inhibit the organisation to change because, in doing so, that legitimacy and reliability could be called into question. Environmental selection, therefore, leads to organisational inertia. (Burgelman, 2002, p.19).

2.2.6 Resource allocation process

The resource allocation process (RAP) provides insight into how competencies that are identified by top management come to be operationalised within the rank and file of the organisation. Questions around why different companies facing similar environments,

who might even adopt similar high-level strategies, come to be differentiated over time can be answered by the multi-level managerial activities at play within different organisations. These activities or processes can include entrepreneurial initiatives of front-line managers and integrating activities of middle managers as they make sense of the corporate context (Noda & Bower, 1996, p. 160).

Noda and Bower (1996) built on the Bower-Burgelman process model (Burgelman, 1983) which built on the process model devised by Bower (1970) by adding that strategy can be both intentional, articulated by leaders in the organisation, and emergent as it actually plays out at lower level activity (the evolutionary perspective). The model shows that there are three resource allocation processes that occur in any organisation – definition, impetus and structural context.

Initially a proposed new strategy is presented at senior levels and justifications around the use of resources to further the new strategy must be given, which are then translated by general managers to operational levels so that new investments and functional activities can be identified to support this new strategy – this is the definition process. The second process is called impetus and speaks to the forces that are at play in turning the proposal into a reality. It is argued that the decision to allocate funding is not made by top managers based on projections of future cash-flows, or other similar financial measurements but that, in practice, it is the track record of the middle-manager who signs off the proposal based on their own risk-return analysis that will push the proposal through – top managers act only as the providers of finance in reality. But, definition and impetus are not independent processes. They are heavily influenced by the structural context of the organisation – the way businesses, functional and general managers are measured and rewarded that provides the context (Bower & Gilbert, 2005, pp. 7-32). As mentioned, it is due to this that Bower & Gilbert (2005) oppose Chandler's (1962) proposition and argue that structural context shapes strategy.

Processes are fundamental to the competence perspective of firms. The competence perspective "analyzes processes in organizations for sense making in a changing environment, for developing new internal resources and capabilities, for accessing new external resources, for defining new organizational goals, and for coordinating available resources and capabilities in the pursuit of an evolving set of strategic goals" (Sanchez, 1997. p 942). The idea of processes assumes a myriad of choices at any given time from which decisions must be made in order to progress the firm. In determining how competencies are developed within the firm one needs to address where the power

rests within the organisation and how top-down initiated strategies and new processes are operationalised and how resource allocation processes might interlink across organisational units.

The role of the middle-manager in driving the strategy of the firm, and as entrepreneur in deciding upon resource allocation processes, is central as are the feedback mechanisms from middle-management to top management so that an alignment exists between definition, impetus and structural context.

The creation of an ambidextrous organisation capable of simultaneously exploring for new innovations and exploiting current resources needs to be managed in practice as well as conceptually, that is, the paradoxical mindset that Andriopoulos and Lewis (2009) call for needs to then play out in reality through the resource allocation processes in the organisation. Danneels (2008) calls for sufficient resource slack in this regard; support at senior levels for the resources required to explore potential new processes, products, et cetera, accompanied by patience for the process of exploration given that the fruits of innovation are not always felt immediately.

2.2.7 Evolutionary process

The analysis of evolutionary processes typically takes place at the organisational or inter-firm level, where it is assumed that an organisation is part of a larger population of organisations facing similar market dynamics. However, one needs to adopt an atypical view of evolutionary theory that focuses on the intraorganisational, dynamic processes that result in a change of strategic direction for the firm unintentionally.

One of the cornerstones of competency theory is that the organisation's environment is dynamic – this refers to the external environment (changing technology, infrastructure, social norms, et cetera) which presses on the internal environment, encouraging adaptation. These changes are not always anticipated and articulated in formal organisational strategies and so there can be a lag between what the external market is demanding from the organisation, what the organisation consciously believes it is offering the market, and what is operationally occurring within the business (Burgelman, 1994). What were competencies in the past can become liabilities in the future unless the organisation is structured to allow for fluid adaptation of processes out of which new competencies can emerge. The balance between resource rigidity and flexibility could provide answers to how competencies evolve without intentional influence. Additionally, there must be a balance between top-down and bottom-up strategic decision-making to allow for emergent strategies to appear.

Mintzberg (1978) refers to strategy as being intended and realised and Burgelman (1991; 1994; 1996; 2002) refers it as being induced and autonomous. Their arguments are similar – within an organisation the road to success lies in a coupling of intentional and emergent strategies in response to the external environment. It is essential that a company allows both forms of strategy to be at play in the organisation so that those who are operationally in control can evolve the strategy implementation quickly when it is at odds with the reality on the ground (Mintzberg & Waters, 1985).

There is an inherent conflict in an organisation between the various decision-makers at different levels within the organisation, who make autonomous decisions, and the formal strategic intent of the organisation. Iterative and disjointed decisions on the ground can result in the emergence of a new strategy (and competence) without it being identified and managed from the senior ranks (Mintzberg, 1978, p. 946).

It is this dual conceptualisation of strategy (which is in pursuit of competencies) that speaks to the dynamic nature of processes. In formulating strategies, managerial practices must push for the renewal and adaptation of existing competencies to fit market requirements. Leadership needs to exercise influence indirectly, controlling the process of strategy but leaving the content to others (Mintzberg & Waters, 1985, p. 264).

Burgelman's (1991) case study research on Intel corroborated this but added that it is through the process of internal experimentation and selection at the operational level that the reorientation of an organisation is successful (p. 239). Once again, experimentation assumes a level of autonomous action free from senior managerial control. This can be a daunting prospect for an organisation, in particular larger organisations, and so it demands a mind-set change in the leaders of the organisation and a confidence in the calibre of the employees down the organisational hierarchy.

Burgelman (1994) argued further to say that successful organisations that are able to match distinctive competencies with the changing industry demands, and in so doing sustain performance, are not restrained or constricted by the legacy of past successes in shaping their response to future requirements. He did not believe that top managers had to possess grand foresight but, rather, that through the internal selection processes which shifts focus on resources as the context shifts, strategies would adapt out of which new competencies would emerge – a dynamic competence is required (Burgelman, 1996, p. 52).

Evolutionary theory (be it at the inter-firm or intra-firm level) limits the role of top management and places great significance on firm choices being an outcome of historical routines and initial conditions, set in place by strategic management practices and structures (Keil, 2004). If a competence has been developed in a firm which did not arise out of strategic intent but rather from scanning the environment to look for possible alternatives, analysing the actions of rivals and customers and incorporating the lessons into the operations of the organisation, then one must look to the internal historical routines and management practices that could have allowed or enabled the competence to emerge unintentionally (Nelson & Winter, 1982; Nelson, 1991, as cited in Holbrook, Cohen, Hounshell & Klepper, 2000, p. 1030).

2.2.8 External sourcing of competencies

Given the tacit nature of competencies and the length of time that a competence can take to be fully developed in an organisation, a shift in organisational competencies might come about more rapidly through the acquisition of, or collaboration with, external firms in which an important competence resides (Oliver, 1997). Competencies are not tradable on the market, as resources are more likely to be, and so alliances are formed for the value-creation inherent in the coupling of resources (Lin, Yang & Arya, 2010).

Eisenhardt and Martin (2000) include alliancing as one of the processes that contribute to a firm's dynamic capability and they find value in the ability that alliances create to alter the existing resource base (p. 1116). This implies that a change in competencies or the enhancement of existing ones does not have to be confined to internal path-dependent adaptation but can be brought into the organisation through acquisition.

Finding the appropriate partner with whom to form an alliance or successfully incorporating acquired businesses into the existing business is, in itself, a competence which Holbrook et al. (2000) believe is made easier the more connected the organisation is to other firms at the "technological frontier" (p. 1032).

In competitive environments that have a high degree of turbulence or unpredictability, most often brought about by technological change, it is difficult for organisations to exploit current competencies or create new ones that would allow for the adaptation of existing resources. Seeking out partners or acquiring companies with the appropriate competencies could help the organisation remain competitive but the unpredictability of the external environment might also make it difficult to realise the potential from the alliance – supportive organisational routines, stable information flows and collaboration are essential if alliances are to provide the expected synergies (Lin et al., 2010).

Karim and Mitchell (2000, cited in Lin et al., 2010) found that organisations that were prepared to look outside of the boundaries of the firm in order to access firms that offered distinctively different competencies were more likely to break free of their path-dependencies and realise path-breaking change. External sourcing helps to expose firms to new technologies, environments and markets in which new competencies could reside, to provide sustained competitive advantage.

The institutional view argues that the motivation for alliances resides in wanting to win recognition and achieve alignment with the environment, which dictates the rules and requirements of organisations if they are to be regarded as legitimate, rather than a motivation to build and absorb distinct resources and competencies to sustain competitive advantage (Oliver, 1997). These views, however, are not mutually exclusive as legitimacy or reputation can be viewed as a valuable asset to the firm (Lin et al., 2010, p. 929).

2.2.9 Institutionalisation

Selznick (1949; 1957) argued that it is through a process of institutionalisation that competencies come about in an organisation – this process takes time as formal and informal social structures shape the way in which the organisation does particular tasks and ascribes values and norms to them. Acquiring hegemonic status as a competence is a lengthy process. It could be argued that it is through interplay of all of the constructs already identified that the institutionalisation process starts to take place.

Selznick (1957) spoke of driving a company-wide focus when he wrote on the institutionalisation of an organisation. Through institutionalisation, which must be monitored and driven by leaders in the organisation, company-specific competencies emerge which are built into the DNA of the organisation such that they cannot be altered or mimicked by other organisations overnight (Selznick, 1957, cited in Selznick, 1996, p. 271). It is in the pattern of organisational interaction and adaptation, in response to internal and external environments that the answers can be found as to how competencies become institutionalised in the organisation (Selznick, 1996).

Selznick contends that the development of competencies through institutionalisation results in unique firms that are difficult to imitate. The institutionalisation process, however, exists at two levels – that of the firm with the external world and that of the firm internally (often as a result of the external pressures). DiMaggio and Powell (1983), however, are of the opinion that there is a far greater degree of organisational similarity (specifically within the same industry) due to the existence of institutional isomorphism; coercive, mimetic and normative (p. 147). Adaptation may not come

about due to conscious, organisation-wide focus on competencies that set the organisation apart from their competitors but due to mandates by institutional regulation, by uncertainty in the environment which causes firms to seek out and mimic firms perceived as more successful and legitimate and by the professionalization of the industry through formal education and professional networks that span the boundaries of firms (DiMaggio & Powell, 1983).

Institutional theory, at the individual, firm or interfirm level, examines the extent to which firm behaviour is “compliant, habitual, reflective, unreflective and socially defined” (Oliver, 1997, p. 699). Understanding how firms might choose to differentiate and, in so doing, build their unique competencies, in light of these pressures extends on the resource-based view considerably which does not speak to the social context of decision-making. Organisations that seek to develop distinctive competencies or built-in capacities would need to be aware that in accumulating resources in pursuit of these competencies there exists the threat of these identified isomorphic forces which could shift the organisation from the original company-wide focus and, in so doing, erode the superior competitive position that the competence is meant to provide.

The process of institutionalisation argued to be necessary to develop resources into distinctive competencies, can also result in a rigidity to change. Values are ascribed to the resources and resultant competence (beyond their usefulness) and so in the perceived existence of a threat to the resources, via a strategic change, organisations can anticipate the possibility of strong opposition which can arise internally and externally with key stakeholders (Selznick, 1957; Leonard-Barton, 1992; Galunic & Rodan 1998).

Jansen et al. (2006) found that the connectedness of the social networks within a firm is instrumental in limiting or encouraging divergent thinking – the more dense the social networks, the less the divergent thinking and the better it is for exploitative innovation as one can rely on shared experiences to bring about best performance whilst the less dense the networks the better it is for explorative innovation so that ‘deviant’ behaviour is not limited in the pursuit of alternative practices (p. 1670). Social networks, therefore, need to be set up to allow for both forms of innovation to occur simultaneously (Andriopoulos & Lewis, 2009).

One needs to build an organisational culture that facilitates the absorptive capacity of the organisation through innovation, risk-taking and the sharing of knowledge so that the strategic advantage that a competency might once have offered the firm is not eroded as customer values change and as employees leave the organisation, taking

with them their valuable capabilities (Berghman, Matthyssens & Vandenbempt, 2006, p. 970). However, one must also heed Selznick's (1957) warning against opportunistic adaptation which results in a confused and disorientated organisational culture.

2.3 Conclusion

The nine themes emerged out of the extant literature and cover such vast bodies of literature as resource-based theory, organisational theory, behavioural economies, evolutionary economics and institutional theory, amongst others. Together they form a far more inclusive framework on how competencies are developed in an organisation than any one theme might provide on its own. The themes and their related propositions are;

Table 1: Nine-themed framework and associated propositions

Theme	Proposition	Literature
Leadership	Top management must be adept at identifying and articulating and driving the development of the competencies so that group-level strategy formulation and resource allocation is directed at enhancing these competencies at all levels in the organisation. The style of leadership and engagement with the business unit leaders in the organisation will play a role in the creation of an organisation that is able to evolve the competencies to stay relevant with the changing external environment.	Barnard, 1938; Cyert & March, 1963; Mintzberg, 1978; Mintzberg & Waters, 1985; Prahalad & Hamel, 1990; Hamel & Prahalad, 1991, 1994; Burgelman, 2002
Market orientation	Competencies need to be built with a deep understanding of customer needs (now and future) and competitor competencies. Deep market knowledge provides cues as to whether current competencies are still providing value to the customer or whether they need to be adapted to stay relevant.	Miles & Snow, 1978; Snow & Hrebiniak, 1980; Gorman & Thomas, 1997; Wang & Low, 2003; Atuahene-Gima, 2005
Learning and innovation	Innovation and knowledge accumulation and dissemination enhance competencies and change existing ones by introducing new processes, skills and corporate imaginations into the organisation. Leaders need to recognise the limitations that experience places on imagination and so encourage creative pursuits whilst simultaneously pursuing exploitation of existing competencies.	Cohen & Levinthal, 1990; Leonard-Barton, 1992; Levinthal & March, 1993; Gavetti & Levinthal, 2000; Zollo & Winter, 2002; Keil, 2004; Danneels, 2008; Andriopoulos & Lewis, 2009
Organisational architecture	Competencies are nurtured at the group-level, but manifest at the business unit level. Top management needs to create incentives to promote cross-functional and business unit collaboration to enhance competencies. Management must allocate resources to enhance long-term organisational competencies, and not solely to create short-term product or service wins.	Barnard, 1938; Chandler, 1962; Prahalad & Hamel, 1990; Henderson & Cockburn, 1994; Sanchez, 1997, 2004; Athuahene-Gine, 2005; Jansen, Van den Bosch and Volberda, 2006

Strategic change	Competencies are eroded over time as the external environment changes; organisations must, therefore, be built as adaptive systems that seek constant evolutionary fitness with the environment, recognising that in changing, experiential wisdom can be lost. The path dependent nature of competencies results in new competencies being created that are closely related to existing ones.	Selznick, 1957; Gavetti & Levinthal, 2000; Burgelman,1994, 2002; Beer, Voelpel, Leibold and Tekie, 2005; Lawler and Worley, 2006
Resource allocation process	Competencies are built through the allocation of resources at the business unit level. The role of middle-management in selecting which resources to use and the processes to adopt will shape the competence development. Feedback mechanisms from middle-management to top management are essential to drive alignment of the competencies, beyond the limitations of products and services.	Bower, 1970; Burgelman, 1983; Noda & Bower, 1996; Bower & Gilbert, 2005; Danneels, 2008
Evolutionary process	Competencies might die and others might emerge, unintentionally through the interplay of processes and management practices that reallocate resources as the external environment shifts. The organisation needs to develop an entrepreneurial middle management which readily responds to external cues to shift the allocation process.	Burgelman, 1991, 1994, 1996, 2002; Mintzberg, 1978; Mintzberg & Waters, 1985; Keil, 2004
External sourcing of competencies	Competencies can be enhanced and/or altered through careful selection and management of alliances with partners. This process, if successful, is a vehicle to competence development and evolution but can manifest as a competence in its own right.	Oliver, 1997; Eisenhardt & Martin, 2000; Holbrook, Cohen, Hounshell & Klepper, 2000; Lin, Yang, Arya 2010
Institutionalisation	Competencies are created and enhanced by shaping the culture of the organisation. Informal social networks together with the values and norms of the organisations which are shaped by top leaders and enhanced through human resource practices develop certain competencies which are entrenched over time.	Selznick, 1957; DiMaggio & Powell, 1983, 1991; Oliver, 1997; Jansen, Van den Bosch & Volberda, 2006;

This paper will adopt Prahalad & Hamel's (1990) three character tests to identify the competencies within the firm and within the chosen business unit;

- It must provide potential access to a wide variety of markets,
- It should make a significant contribution to the perceived customer benefits of the end product, and
- It should be difficult for competitors to imitate.

(Prahalad & Hamel, 1990, p. 84).

Once the competencies have been identified within the organisation, the proposed framework will provide the lens through which to investigate the development and

evolution of competencies in successful organisations. If it can be found that competencies are created by the interplay of these distinct themes, then a successful organisation might be one that manages each of the key areas successfully, creating a balance and alignment across them (Sanchez, 2004).

Different themes might appear to be more relevant in one organisation than in another or more appropriate at different maturity levels in the life cycle of a business. Resource flexibility might be difficult in the early days of an organisation's life given the stresses that are placed on resources during the growth phase, cognitive flexibility could come with the maturity and experience of the senior managers, et cetera. The literature, for the most part, is in agreement that the path dependencies of organisations will make it unusual for exact replicas to emerge from case to case.

3. Restatement of research questions

"Sometimes we simply have to keep our eyes open and look carefully at individual cases – not in the hope of proving anything, but rather in the hope of learning something!" (Eysenck, 1976, cited in Flyvbjerg, 2011, p. 303).

This study will adopt the use of a single case design of a highly successful firm, within a competitive industry, to investigate how competencies are created and how they evolve over time in order to sustain competitive advantage. It will adopt the use of a framework, developed out a synthesis of the literature on competencies, to explore;

- Leadership – the role of entrepreneurial leadership and cognition in identifying competencies to pursue and the articulation and formalisation of this strategy through the organisation.
- Market orientation – an understanding of competitors' offerings to the market, current and future needs of customers and an understanding of the changing relevance of organisational competencies to the customer over time.
- Learning and innovation – the formal and informal mechanisms by which new knowledge and skills are circulated within the organisation and incorporated from outside the firm to develop organisational competencies and the willingness of leaders to commit resources to new initiatives in the pursuit of new competencies.
- Organisational architecture – the role of formal organisational structures and incentives around information and resource sharing to foster competence development and collaboration, beyond the functional requirements of products and services.
- Strategic change – the impact that major strategic change may have on the role of competencies within the organisation and the ability of the organisation to adapt to the externally imposed change successfully.
- Resource allocation process – The resource allocation choices that middle and operational managers make within their functional units and the feedback mechanisms between these managers and top leaders to affect competencies.
- Evolutionary process – the unintended strategy and resultant competencies that emerge out of intraorganisational processes which shift the focus of the organisation to new endeavours.
- External sourcing of competencies – seeking out new competencies (and so evolving the current store of organisational competencies) through strategic acquisitions and alliances.

- Institutionalisation – the role that firm culture plays in shaping and evolving competencies.

A restatement of the broad research questions –

- How are competencies developed by the firm?
- How are competencies evolved in the firm over time?

4. Research methodology

4.1 Proposed research method

Langley (2007) writes that “if certain features of strategic organization are associated with performance, then let us look back to see how those features came to emerge *processually*. This requires investment into historical studies of organizations and the tracing of the processes by which they arrived at their favourable or unfavourable positions.” (pp. 273-274).

The theory of competencies and how they are created in successful organisations is complex and little understood. The proposed exploratory research method lends itself well to understanding these complex phenomena (Saunders & Lewis, 2012, p. 110).

4.1.1 Rationale for proposed method

Case study research is the preferred method when asking ‘how or why’ a phenomenon has occurred, where the investigator has little or no control over events and where the focus is on contemporary phenomenon within a real-life context (Yin, 2008, p. 2).

The case study approach is the best vehicle for investigating the proposed research, given that the research requires investigating the complex interplay of a range of variables within a firm, without, at the outset, having a clear idea of how these variables will interplay. Whilst the research was directed by specific propositions, these are to help guide the process of research rather than being rigidly adhered to in the data collection and analysis phase.

If competencies are unique to a firm (Barney, 1991; Teece et al, 1997, 2007; Zollo & Winter, 2002) one cannot compare the path to the development of a particular competence within a particular firm against that same competence - and its development - in another firm unless at the very granular firm level through in-depth case study analysis.

The research presented a single, nested case study. The research identified and then tracked core competencies of the organisation, seeking to discover how they were developed and how they may have changed over time to enable the organisation to sustain its competitive advantage over an extended period. The case study research was exploratory in nature, in that one did not know, at the outset, the exact variables that would impact on competencies but the intention was to shed light on the characteristics of competencies and what a firm, adept at creating and sustaining performance, looks like in practice.

4.1.2 Boundaries of the research

It is essential to stipulate the boundaries of the case so that depth and intensity of the research, which is necessary in this chosen method, does not blur with that which is contextual to the case (Cousin, 2005; Yin, 2008; Flyvbjerg, 2011). Specific time boundaries, defining the beginning and end of the case, were stipulated and taken into account in data collection and write-up of the findings. This, coupled with the scope of the data collection (separating out 'data on the case' from 'data on the context') was articulated prior to starting the data collection phase. This was addressed by the extensive literature review and identified themes and framework as well as rigorous collection of documentary data prior to the interview phase – see phased approach below.

4.1.3 Research process

The data collection took the form of a three phase qualitative study, as outlined below;

- *Phase 1:* Four weeks of secondary research, over the internet. No contact was made, at this stage, with the company. The desktop research included annual company reports available in the public domain, press articles, industry and competitor reports which provided information on the firm, the information technology industry and the social and political contexts of the periods through which the firm developed. This context for the case was then used to corroborate and augment evidence from other sources, in particular the interviews. (Yin, 2008, p. 103).

This helped to propose two or three competencies for further research in the next phases of research. This initial phase also helped to identify some of themes from the literature that were emerging from analysis of the secondary data. It helped to build the skeleton of the story. Most importantly, though, this phase of the research was instrumental in providing the researcher with initial information on the industry and company history (traversing three decades, from the early 1980s to the turn of the century and through to today). A basic understanding of modern-day networking and data communication had to be mastered to ensure that in the reporting and analytical stage of the write-up, the research was not led-astray or clouded by contextual information to the case.

- *Phase 2:* Roughly one week of documentary research was conducted. This research comprised an examination of presentations, organisational charts and strategy documents made available to the researcher. This provided additional information on the history of the company and on aspects of the external environment

which shaped choices (Yin, 2008, p. 106). This phase also provided evidence and insight into the organisation's resource allocation processes, organisational architecture, leadership and management styles. Lastly, it provided further information for identifying the core competencies of the organisation. One key informant interview was conducted to help identify the relevant individuals in the organisation to approach for interviews and to corroborate some of the findings in the research.

- *Phase 3:* This phase took the form of customised interviews with both past and present key players in the organisation (directors of strategic business units, operational heads and founding members of the organisation). Twelve in-depth, semi-structured interviews were undertaken. Interviews add a layer of data that formal (edited and, thus, often censored) documents do not and they provide for a richer analysis. Processes are often contested and evolve in disjointed ways – interviews often provide insight on these processes that formal documentation cannot. See appendix 2 and 3 for the definition of the research problem given to the respondents in advance of the interviews and the interview guide that was used during the interview. The question were not posed to the respondents but were used as prompts and guidance as the exploratory interview progressed.

Table 2: List of respondents

Name	Title
Jeremy Ord	Chairman and founding member of Dimension Data
Brett Dawson	Chief Executive Officer of Dimension Data
Bruce Watson	Group Executive Global Cisco Alliance
Etienne Reinecke	Chief Technology Officer and Global Head of Network Integration
Steve Joubert	Group Executive, Head of Global Solutions
Rob Lopez	Managing Director Group Services
Connie de Lange	Group Executive Marketing
Derek Wilcocks	Managing Director, Dimension Data, Middle East Africa
Alan Claughan	Chief Propeller Head of Dimension Data, Middle East Africa
Glad Dibetso	Client Director
Richard Came	Former Group Marketing and Strategy Director of Dimension Data
Michelle Atkins	External consultant to Dimension Data

Yin (2008) suggests that interviews should be guided conversations rather than structured queries, where the questions must be guided by the case study propositions yet not allowing for bias to form in the manner in which the line of inquiry is received; ultimately, the researcher is being driven by a desire to learn the facts of the matter but gain insight from their opinions of the events at the same time (p. 107).

4.2 Proposed population and unit of analysis

Flyvbjerg (2011) writes that "the decisive factor in defining a study as a case study is the choice of the individual unit of study and the setting of its boundaries" (p. 301).

The population is all firms that have exhibited above–average rents for a sustained period of ten or more years (it is the seeking of a general trend of success rather than one-off highs and lows that determines this period). The population and universe are unknown as one does not have access to a full list of all companies that fall into these criteria.

The unit of analysis is the firm. It is the complex phenomena associated with the creation of competencies within a firm that this research seeks to better understand.

4.3 Sample

The firm researched was DiData. DiData is a South African organisation that was formed in 1982, and today, is a global company operating in 51 countries in five regions, with over 14,000 employees (see appendix 4 for key events and achievements in the organisation 1982-2010). Its initial focus was network technology but in 1994 the company expanded into the software and services sector and expanded beyond South Africa and Africa's borders, with an initial foray into Asia.

The company was listed on the Johannesburg Stock Exchange (JSE) in 1987 and went through an aggressive global expansion and acquisition phase until 2000 when it listed on the London Stock Exchange (LSE). This was followed by another period of acquisitions before it started to feel the negative effects of the IT slump in the early 2000s and a period of consolidation and change started to take place. In 2005 DiData introduced their Profitable Growth Strategy which they attribute to the turnaround and success of the company since its introduction.

In 2010 Nippon Telegraph and Telephone Corporation (NTT), one of the largest global telecommunications service providers bought DiData for approximately GBP 2.1 billion. They were subsequently delisted from the LSE and JSE.

This firm was selected for the following reasons;

- It offered an excellent case study of the issues under review because it is a highly successful South African firm that has survived in a rapidly changing and innovative industry for over 30 years, operating in the global arena, across product and service lines to existing and new customers.

- It has experienced periods of great growth and great decline over this period which have precipitated the need for a number of transformations over this period which had the potential to provide the researcher with insights into the changing nature of 'success' of a firm over time.
- It was partly a pragmatic choice – the researcher had a contact with an employee at the company who was able to get access to the Chairman to request that the research be conducted on them.

4.4 Data collection and data analysis

Case study research neither implies a particular type of evidence, qualitative or quantitative, nor does it prescribe a particular data collection method. This research, however, has chosen to primarily collect and analyse qualitative data for the reasons provided above. This data collection method was complimented by a simple Likert scale questionnaire (based on the nine themes of the proposed framework) given to the twelve respondents. The researcher chose to keep away from proposing means, modes or summating the scales for some form of quantitative analysis – the pool of respondents was too small and the relative importance of the respondent's choices between the nine propositions was not defined.

However, the purpose of the survey was to ascertain –

a. Did the respondent regard networking to be the company's competence?
b. If not, what were the alternatives proposed and was there significance in the divergent views?
c. Did they regard any of the nine themes to be present in the organisation and instrumental in developing the company's competence (as they saw it)?
d. Was there significant discord amongst the respondents' answers or did synergies exist in their understanding of how they developed their competence?
e. Did the researcher's perspective, formed in the collection, reporting and analytical phases, and the respondents' perspectives concur? If agreement was reached, this would increase the internal validity of the emerging theory.

In case study research, it is essential that the data collection and data analysis phases are iterative and conjoined processes so that data is constantly mined for new insights that could steer the researcher into new directions in the field (Cousin, 2005; Yin, 2008; Flyvbjerg, 2011; Saunders & Lewis, 2012). Given the lack of propositions in the literature to date on competence creation and the dearth of similar case studies in the strategic management field, this process was of even greater importance.

4.4.1 Data collection phase

The multi-data collection methods are proposed in Table 3. As stated, data was collected through a nested case study which included interview data, an analysis of public firm and industry documents and internal strategy documents and annual reports. The use of multiple collection methods allowed for the triangulation of the data and helped in asserting the reliability of narratives and/or themes that emerge (Saunders & Lewis, 2012, p. 122).

Table 3. Data collection methods

Data Collection Phase	***Aim of Phase***	***Data Collection Method***	***Sampling Technique***	***Sample Size***
1. Pre-field	Provided context to the firm and provided the researcher with public data in advance of the interviews. This helped in the early identification of possible competencies within the firm and business units and contextual information for the researcher on the industry and industry dynamics.	Desktop research	Purposive (Saunders & Lewis, 2012)	14 annual financial reports; 50-plus industry, company & competitor reports; 35-plus press articles
2. In-field document review	Began the process of identifying respondents for phase 3; provided greater clarity on the organisation and provided further information with which to identify/isolate the organisational competencies.	Key informant interview; Documentary research	Purposive (Saunders & Lewis, 2012)	1 interview; 10 strategy presentations; 12 organisational charts
3. In-field interviews	Face-to-face interviews with the founding member, senior managers, divisional heads and operational heads, to provide insight into how the competencies have been developed and what role strategy (intended or emergent) has played.	In-depth, interviews (Saunders & Lewis, 2012)	Purposive (Saunders & Lewis, 2012)	12

The data collection phase was directed by a broad set of propositions and questions that arose out of the nine themes identified from the literature. These nine themes and the emerging propositions formed the framework for the research process and gave direction to the case study research process where little was known at the outset about the antecedents of competencies in firms.

There is a tension to be managed between providing structure through the establishment of propositions and questions in advance of going to field – to provide structure to an otherwise broad and overwhelming process – and allowing the

exploration and emergence of rival and/or complementary themes to emerge through an open frame of mind (Cousin, 2005, p. 423).

4.4.2 Data analysis phase

Yin (2008) suggests that the role of theory development prior to the conduct of data collection aids the analysis phase as the theory serves as the blueprint for the study (p. 36). In light of this data analysis was structured around the themes proposed in the scope of this study. Different analytic techniques were employed for the different phases given the rationale for each collection phase –

Phase 1 and 2: Content analysis; thematic analysis

Phase 3: Narrative explanation building and thematic analysis

"To "explain" a phenomenon is to stipulate a presumed set of causal links about it, or "how" or "why" something happened. The causal links may be complex and difficult to measure in any precise manner" (Yin, 2008, p. 141).

The use of the narrative form to build the explanation is common in case study analysis with the explanations reflecting theoretical propositions, hence the use of the framework to guide the analysis. Content and thematic analysis, together with narrative explanation building, helped to build an explanation about the case. Given the complex nature of competence development and strategic processes these multiple analytic processes were employed simultaneously.

At the same time as the research relied on the nine themes from the literature to understand the processes within the firm that might have led to competence development, any rival explanations that emerged in the course of the research are addressed in the analysis phase.

In examining rival or commingled rival explanations, the rigour of the researcher's empirical thinking is tested and the fair treatment of the evidence to produce compelling analytic conclusions is enhanced (Yin, 2008, p. 130). With this in mind, the research attempted to probe the respondents on a number of alternative themes, once the contrasting perspective made itself known – for example, innovation and competence development in a protected environment.

4.5 Data validity and reliability

Flyvbjerg (2011) addresses the main concerns raised in academia with regards to case study methodology. These concern data validity, given the possible bias of the researcher who enters the case with her own pre-conceived notions and propositions;

the lack of statistical data to be verified through 'scientific means'; and the lack of the 'generalisability' of the findings. Flyvbjerg (2011) dispels these misunderstandings by calling into question whether any data can be said to be void of researcher bias and that the rigour in the iterative nature of collection and analysis, running side by side, helps to question the researcher's pre-conceived ideas (p. 309).

In selecting respondents and collecting data as well as in trying to make sense of the data by seeking causal links between events the researcher was cognisant of subject selection and ambiguity in the narratives that emerged (Saunders & Lewis, 2012, p. 127).

The research followed Yin's (2008) recommendations on collecting case study evidence in order to aid in the validity and reliability of the analysis that will follow –

- Multiple sources of evidence, converging on the same facts or findings;
- Case study database (formal assembly of evidence distinct from the final case study report);
- Chain of evidence (explicit links among the questions asked, the data collected and the conclusions drawn.

Incorporating these principles into the case study increased its quality (and so its reliability) substantially (Yin, 2008, pp. 114-124).

4.6 Potential research limitations

South Africa is known for its wealth of internationally successful organisations, many of which grew out of isolation that sanctions imposed. If time and access would allow it, longitudinal case study research on some of the top performing South African companies like SABMiller, Naspers or Discovery might start to unearth new insights into the processes and the building of competencies which enabled their performance. Multiple case study analysis of competitors and the individual path dependent strategies that each firm chose in its lifetime could provide additional insights.

These studies might provide some insight into the way forward for the private sector in South Africa as it seeks to manage the onslaught of globalisation, increased competitive landscapes and inherently dynamic nature of the context of industries. However, given the time and resources limitations, this form of longitudinal or cross-case analysis was not possible.

One of the biggest limitations of the study was in gaining access to strategy documents and archival records. Permission was granted by the chairman of DiData to undertake

the research and more than 15 hours were spent with senior strategic individuals and founding members of the organisation which was invaluable. The finished research report will be offered to DiData and assurances of the treatment of internal strategy documents as confidential was given to further aid the buy-in to the study.

Early on in the research the following limitations were experienced –

a. Absence of a formal company knowledge management system: strategy documents and minutes from key meetings are housed on key individuals' desktops and guarded quite proprietarily. This is with the exception of the Chief Technology Officer and former head of the Network Integration LoB who generously offered his strategic documents and presentations, dating back to 2002, to the research process.

b. Limited time and absence of sampling criteria for the archives: DiData gave access to the electronic index of their archives. Each index (numbering thousands of lines, in some cases) was carefully read and scrutinised to establish some form of logical criterion for filtering a sample of the archives. However, no logical criterion, given the way the documents have been indexed, was found. Short of going through every file in the archive, which the time allocated for the masters' report did not allow, an in-depth analysis of the entire archive had to be abandoned.

The research does not pretend or propose to cover every possible variable in the creation of competencies. More time in field will be required to precisely identify how complex processes, such as organisational learning, developed over time. However, the researcher is confident that key themes have been identified.

5. Documentation of the research case

This chapter will document the findings of the research on DiData in two distinct phases. Firstly, it will describe the competencies in the organisation and provide a rationale for why these were identified. Secondly, it will provide a linear history covering five distinct phases of the organisation, with the bias on the development of the company's competencies, from its inception to shortly before being bought by NTT in 2010. It is vital for the reader to have an understanding of the internal machinations of the organisation if they are to interrogate the analysis and proposed framework in the following chapter.

The in-depth analysis and a return to the nine-themed framework outlined above will only follow in the chapter six.

5.1. Identification of Dimension Data's competencies

DiData is a global company with 51 offices around the world. They have been successful in many different areas and have suffered great losses and times of difficulty over the years too, primarily in the early 2000s (which will be covered in detail). They are active in many different technologies and have in their sights the Cloud as the next major technology move in communications. Examination of the company website, marketing material produced for public consumption, annual financial reports and online news articles and reports on DiData and its competitors, available in the public domain, have resulted in the research identifying integration as one of DiData's competencies, bolstered by the following organisational competencies which arose at different points in the evolution of the organisation –

- Client-centric, services competence.
- Alliance competence.
- Technical networking competence in the Internet Protocol (IP).
- Technology life cycle management competence.

Whilst DiData might have started out with a network offering, selling products and services in this space, networking and integration for DiData is far broader than just a product or service offering and goes beyond their Network Integration business unit. DiData has been able to provide a total solution to complex and, often disparate, internal requirements of global customers which have arisen over time as more and more communication has moved to the network and online. Their ability to connect businesses and facilitate communication for their customers became their differentiator – it is to this that the report refers when speaking of integration. This competence has

not been static over time as the components of it have had to change over time to remain relevant.

This integration competence has technical and human competencies underpinning it. The human competence played out in their key vendor and client relationships which they drove through a single-minded focus on "getting the job done" for the client. They gained access to the best products and related services available on the market and by staying as close to the customer as possible to anticipate their future needs. However, their approach to the client and the skills required to maintain this client-centric competence had to evolve over time as the clients' requirements changed and as the underlying technologies of the network changed over time. This drove different resource allocation priorities at DiData over time. This also had an effect on the way in which they managed their key vendor alliances in this space.

The convergence of voice, video and data communications onto the standardised language of the IP enabled them to further build their business. They had built up a technical competence in the IP in the preceding years, having recognised that the world would move away from the fragmented proprietary protocols to a more standardised approach. So, it was this technical competence in the IP which enabled them to move seamlessly into new product and service spaces and build up huge businesses in a relative short space of time after the Dotcom crash in the early 2000s.

Their networking offering was a general organisational competence which transcended any formal business division and had driven their entry into new markets over time. In 2003 it was formally expressed in a new division called the Network Integration LoB.

In 2005, DiData reinforced the importance of their networking heritage, the fundamental importance of the IP and their focus on integration – *"Our competency is our skill in connecting businesses, their customers, partners and suppliers over local and wide area networks... Building on this knowledge based enables us to move into several other technology competencies that have a critical reliance on the network and critically, that speak the same language, that of the IP*" (Dimension Data, 2005, Annual Report, p. 10).

Integration in the field of computing is the practice of bringing together different subsystems to function together seamlessly as one. This integration competence has evolved over time.

- Their competence in the IP, which had driven the growth of their initial networking business, led them into voice and video and their understanding of the

network environment enabled them to move into security and data storage – adjacent product markets which further developed their integration competence.

- Customers want a total solution and the network is at the heart of all IT communication and integration. The benefits of the network product and services were strategically chosen and were driven by their strong client-centric culture and their global logistics (in the provision of products and services) capability.

- DiData's integration competence has been built through a myriad of strong partnerships with global players over time, from an emerging market into developed markets, relying on proprietary systems to enhance their global footprint, which came about through acquisitions. These key areas make it difficult to imitate.

5.1.1. Findings of the survey

A conceptual framework was created from the literature prior to conducting any pre-field or in-field data collection. The nine-themed framework considered leadership, market orientation, learning and innovation, organisational architecture, strategic change, resource allocation processes, evolutionary processes, alliances and institutionalisation, as potential antecedents for the development and evolution of organisational competencies.

The literature on organisational competencies has not been able to, as yet, develop a model upon which practitioners can draw when seeking to develop key competencies which are VRIN compliant in their organisation for success. There exist multiple propositions on how companies might create success but none which speak to the processes involved in developing VRIN compliant competencies, specifically. In pulling together the literature into a coherent framework it provided a clear, direction in the collection phase, when *in situ* at DiData, and it forms the basis for the thematic reporting and, later, analysis of the case. As mentioned above a basic five-point Likert scale questionnaire was created from the nine-themed framework and administered to respondents (see appendix 5 for the questionnaire and responses). They were also requested to confirm what they regarded to be the organisations' top three competencies.

Patterns emerged in the respondents answers that corroborated some of the broad themes that emerge out of the analysis of the interview transcripts and secondary data.

With the exception of a few of the respondents interviewed, there was general agreement that what had driven the growth of DiData and what is the underlying competence of the organisation to this day is integration. This deep understanding and

constant focus on the integration of their clients' environments (and, ultimately, their strong competence in the technology of IP) drove their value-offering to their clients and eventually drove the development of their additional LoBs in the late 90s and early 2000s. However, respondents also highlighted the additional non-technical competencies of the organisation which underpin their success, highlighting client-centricity and their alliance capabilities as core. A few respondents regarded networking to be an historical competence which might now have been surpassed by their new competence in managed services, but it can be argued that this is more a service offering than a competence. Despite providing each respondent with the definition of a competence that would be used in the interview, and the criteria by which to identify one (in terms of Prahalad and Hamel's (1990) three criteria), there was some confusion at times with the terminology which led to mixed results in the survey.

Leadership, market orientation, organisational adaptability (strategic change) and institutionalisation emerged particularly strongly out of the questionnaire. These key themes will be discussed in some detail below as well as in chapter six where the addition of new emergent themes will also be discussed.

5.2. Narrative history of Dimension Data

The proceeding narrative is derived from key informant interviews with founder members, senior executives, external consultants, a senior technician, who has been with the business since the 1980s and a client-facing specialist at DiData, together with an analysis of annual financial reports dating back to 1996, organisational charts from inception to 1997, internal strategic documents specific to the Network Integration LoB and additional documents available in the public domain, both on the industry and the organisation. The report will cover the organisation from 1982 to 2010.

5.2.1. Evolution of Dimension Data as a network integrator

5.2.1.1. From genesis to the early-90s

DiData was formed in South Africa in 1982 by Werner Sievers, a young Telecommunications graduate from the University of Johannesburg (Witwatersrand Technikon, as it was then called), later joined by Richard Kevin Hamilton and Peter Neale. Sievers had held jobs at Telkom and Eskom (where the country's first packet-switched network was being implemented) before moving into the private sector, working for Grinaker Data Systems. Jeremy Ord, a graduate from the University of the Witwatersrand (Wits), had worked with Sievers at Grinaker before taking up a position at Olivetti Business Systems as the National Sales Manager. Whilst at Olivetti he was approached by Sievers to join the young start-up, Didata, as the Sales Director. DiData

at the time was focusing on wide area networking (WAN) but they had a few products in the local area networking (LAN) space and were looking to enhance this side of the business (B. Watson, personal communication, August 30, 2012).

Eighteen months after joining DiData, Ord approached two school friends with whom he had also studied at Wits – Richard Came and Doc (Bruce) Watson. Came and Watson had both worked at Arthur Andersen Consulting (now Accenture) employed as technical programmers. They had built up a basic, core technical knowledge during their early stint there which helped them get by later in client-facing roles. Came left it Arthur Andersen to form a software business which, by his own admission, was not taking off in any meaningful way. Watson explains that they were entrepreneurs who were looking for something to get stuck into – they even looked into the liquor trade but decided against it. Instead they formed Causeway Communications – a networking company focused on LAN. DiData, looking to enhance their LAN offering, provided finance to Causeway, for a 25 percent share in the company. Causeway was later split in half, and the remaining company, Lattice, continued whilst eventually Causeway Communication was merged into DiData as the technologies converged.

DiData was formed during the apartheid era when globally imposed sanctions essentially created a protected environment in many industries, including the information technology (IT) industry (J. Ord, personal communication, August 27, 2012). But, it was also a time when data communications were rapidly developing and there were few, if no, manuals available to guide companies in this fast-growing field. Weekends for the technicians, in the early days were spent working on new products that had just been flown in to the country to try and figure them out and see what benefit could be derived out of them for their clients. There was no internet, as one knows it today, or certifications on specific products to help the technicians figure out the new products (A. Claughan, personal communication, September 3, 2012). It was also in these early days that Sievers is said to have recognised the potential for the convergence of data and voice communications in the early 80s, which would prove to be correct in time (Barker, 2011, para. 5).

In the early 1980s there was one communication service provider in South Africa – Telkom. Ord explains that as South Africa was under sanctions there was no real threat of foreign competition. If a company wished to purchase a device to enable communication between two points, Telkom supplied the line and the devices. Purchase agreements were fairly ominous due to the lengthy agreements which in

some instances bound the customer to 14 years with Telkom (J. Ord, personal communication, August 27, 2012).

At this time the birth of the modern personal computer (PC) was radically altering the communication space and with IBM dominating the PC market, there was a move in the United states to provide devices that would convert the asynchronous language of the prime computer and digital computer into bisynchronous communication. This was the method of encoding data for transmission between devices in IBM mainframe environments.

DiData recognised that there was an opportunity in the South African market to get dissimilar devices to communicate with the IBM mainframe, which was the most popular PC being bought in South Africa. They were already in the networking space and, so, through the use of in-house technical skills they started to write their own software to enable the PC to communicate with the IBM mainframe (J. Ord, personal communication, August 27, 2012). This was their primary target market at the time. The dominance of the IBM mainframe in the IT landscape provided a space for greater innovations to occur around IBM, which had a monopoly in the mainframe and adjacent applications and technology layers, and to offer these innovations to potential clients with the unique selling point being to reduce costs and, by virtue, reduce the over-reliance on one supplier.

In addition, they recognised the need for devices that would transport information by disassembling and reassembling data, by packetizing it over an asynchronous network. They started to manufacture their own products in this space and go after larger clients who required the transportation of asynchronous data. In addition, they manufactured their own networking devices that would enable clients to do different things with the straight line service being offered by Telkom, all around the network.

Ord argues that these innovations were unheard of in South Africa (J. Ord, personal communication, August 27, 2012). LANs would follow in time to enable PCs to be connected and the traditional computer model dependent on the mainframe and multiple PCs and multiple printers, for example, could be reduced. The primary focus was on building the network infrastructure and growing it to deliver greater capacity and leveraging, in a more shared way, the resources that drove up costs. DiData acted as consultants at this stage but the further development of LAN offered opportunities for a different form of technology and expertise in the technology.

In 1986 discussions about listing on the JSE ensued. Sievers was bought out at this time and Causeway was incorporated into the group so that the listed entity of DiData would have in its repertoire the LAN, WAN and a cabling arm to link the two. Ord took over the company at the end of 1986.

In an online article (Barker, 2011, para 9), Sievers explains that –

"At the time, DiData wasn't a core technology company; it was a very good, very capable, and very smart systems integration house that took technologies from … all over the world … and integrated these systems to meet the requirements of local customers, among them government departments, banks and industrial enterprises. That was great … but I wanted to get into core technology; I wanted to be part of developing something from scratch."

With many different protocols in the market their core business model was around sourcing the technology and then having the capability, and the engineers to redesign it properly, deploy it and then support and manage it for their clients. Claughan, a senior technician at DiData, who has been with the organisation since joining Watson and Came at Causeway, contends that one of their earliest successes, was in finding the best technology manufacturer overseas and as the market there moved, DiData readied themselves by finding out exactly what they needed to learn in order to take over a particular product in the market in South Africa. This changed somewhat with the distribution of Cisco who drove which products DiData had to be competent in, which then expanded their portfolio, but the identification of new products to add to their portfolio still remains a key ingredient in networking. (A. Claughan, personal communication, September 3, 2012).

The isolation that ensued due to sanctions meant that DiData, and other local competitors, were forced to develop their own understanding of the technology without the support from the outside world (R. Came, personal communication, September 6, 2012). This drove innovative practices around solutions to technical problems that arose in this fairly new IT space. It also drove their approach to marketing as they were unable to piggy-back off the well-known US brands in the space to secure contracts. The geographic isolation helped, in part, to protect them against vendors appointing additional distributors in the market and eventually entering the market when the product resale reached a critical mass, as had been the practice of vendors in other parts of the world.

IT was a high growth industry where clients were fairly uneducated about the new wave of technologies that were coming to the market. DiData was able to set their own prices in the market, without the vendors knowing the exact pricing model being used, and they were able to position the products and mix them across vendors without their knowledge, due to South Africa's isolation. Margins, therefore, were high and DiData was able to use this period of isolation and a fairly uneducated client-based to hide their own technical deficiencies and to build additional technical competencies, often on the job. Came contends that they had the time to devote to understanding the technology and investing in finding the answers to the client's unique needs, without relying on some support staff in the United Kingdom or United States, as was the case with many other resellers around the world at that time.

The networking business emerged, around which many of their subsequent businesses would later grow and their competence in the integration of complex technologies and businesses started to develop.

5.2.1.2. Leadership and recruitment practices in the early years

"We expect you to work hard, but also enjoy yourself; work hard, play hard, achieve." (J. Ord, personal communication, August 27, 2012)

DiData's founding members articulated their desire to lead the way in the development of data communications and networking and set about enhancing their technical expertise in networking to provide innovative and alternative offerings to potential clients. Technical ability was prized and all new recruits were identified for their technical proficiencies rather than their business or sales acumen. In effect, DiData was a consultancy rather than a core technology company, but their technical competencies had to lie in understanding the products and enhancing them for local client requirements.

In the early days of DiData, every single employee was handpicked rather than relying on an employment agency to find the right candidates. DiData targeted the best engineers they could find and convinced them to come and work with what was, at that time, a fairly unknown entity. Employees were chosen for their strong technical understanding in networking and the networking products and their ability to integrate these products into their clients' environments. Employees were recruited in this way until the late 1980s when the business started to grow rapidly. Ord was very involved in recruitment, he vetted everyone, and everyone who was client-facing had to show themselves to be ready and able to go out in the market to sell and represent the company – sales people were generally trained by the technical people.

In the late 1980s, Ord recognised the need to bring certain business skills into the firm that would complement the technical skills that had been developed by this stage. This was not always understood or appreciated by the technicians in the business – when a non-technical appointee, a former lawyer, was brought into the business to head up the Gauteng region the technical people resisted what they saw as a move from technical leadership to a more business, strategic style of leadership (J. Ord, personal communication, August 27, 2012)

The founders of DiData recognised, early on, that in addition to developing technical expertise they needed to focus on key areas;

1. Developing key strategic relationships with the senior management of their client-base, the people running the businesses.
2. Employing senior people in the organisation who understood the technology and who had a keen eye on the markets, to look at the emerging technologies and to try and position DiData for the future, such as Came and Ettienne Reinecke.

In the early days of networking there were very few standards or standardised practices. Technology waves were entering the market at speed as the PC, network communication and the internet took hold. Gauging where the market was going to go, anticipating market moves and the rise of new companies to partner with was critical. Came was tasked with this critical function as Marketing Director, although the role was more strategic in nature than strict marketing. He was widely acknowledged for being the visionary of DiData in the 80s and 90s, able to spot new technologies and trends, speaking to techies around the world and spending hours on the phone to international specialists to bring these lessons back into the business to help drive future strategic initiatives.

Reinecke was another key individual within the organisation. Reinecke originally joined the organisation in 1991 and was appointed Chief Technology Officer in 1998 and Group Executive of Network Integration in 2003. He was instrumental in refocusing the business back on their competence in the network at the height of DiData's troubled times after the global IT slump. He was also instrumental in the development of their technology life cycle management competence that would follow as the network integration market matured. Another of DiData's core competencies, that of anticipating future market trends and understanding the next technology wave, has tended to rest on the shoulders of a few key individuals who were either with the organisation from its inception or have remained with the organisation for lengthy periods (D. Wilcocks, personal communication, September 17, 2012).

DiData's ascendency in the networking space accelerated due to their early identification of Cisco as the vendor of choice and Ord's success in convincing Cisco to allow DiData to be their exclusive partner in South Africa in the boom years of the early 1990s. They correctly identified that the next technology wave would be around the convergence of communication – voice, video and data – and the standardisation onto one protocol, that of the IP. This was pivotal in the future success of the organisation.

DiData was structured, partly consciously but also partly incidentally, as a response to the leadership style of Ord and the entrepreneurial persuasion of the founding members. It was a highly un-bureaucratic organisation at management level with the focus being on teamwork and getting the job done. The entrepreneurial spirit of the founder and founding members and the intentional decision to keep in place the founders and management teams of many of the companies that they acquired around the world, encouraged this entrepreneurial spirit in the senior management layer well into the early 2000s.

Core product innovation was primarily in the technology layer and rested with the original equipment manufacturers. The leaders of the organisation had taken a decision not to operate in this space in the value chain, choosing rather to use products to leverage their clients' environments. Due to this they tended to follow best-practice set by Cisco and Microsoft, for the network products and software. That being said, innovations were encouraged in the specialisation of the products for individual clients' requirements and integration in their environments. DiData chose to focus on systems integration from the get-go and chose to integrate the best technologies from around the world to meet their specific client requirements to simplify and drive down the clients' costs.

DiData is a highly competitive organisation. This competitiveness dates back to the early days of the organisation and was experienced at all levels – at senior management level, in the sales team but, as importantly amongst the technicians where the emphasis on keeping the customer happy at all costs drove innovations and accolades.

"You can tell the guys, relative to their peers, who the superstars were because there was such a premium placed on success and such an odour placed on failure. It was quite a meritocracy in terms of if someone was screwing up, it was quite a harsh sort of environment in that respect, they knew it, it was very, very obvious to them and they were probably told very bluntly but they also just realised that they weren't as popular

as the guy who was cracking it and so they would either develop their own competencies, or ask for help, or hook in with the competent guys and the technical guys" (R. Came, personal communication, September 6, 2012).

5.2.1.1. Building the client-centric culture

Ord and his senior team consciously aligned themselves with industries and firms that they recognised would have a greater need for IT and data communication as this global trend continued. The financial sector was an obvious choice for them given the nature of the industry – it was information intensive and relied on this intelligence to offer a service to their customers. They also approached large conglomerates that were not necessarily information-intensive but had widespread distribution networks, production needs and lots of offices which required connectivity. DiData provided an instant picture of what was going on in their businesses rather than having to wait for piecemeal information from the business units. Each client was carefully selected and studied in order to provide the requisite products and services. The client offering from early on was how to simplify and reduce costs for the client. There were many different protocols and technologies on the market but DiData would source the best and then redesign it for their clients' needs – technical skills were essential resources in the early days and this supported their client-centric focus.

This sales and client-centric focus was to become an enduring culture of DiData South Africa. It has, however, proven difficult to replicate in their other regional operations (with the exception of their Australian operations were the original owners were South African). In the case of South Africa, DiData drew on their social capital in the form of informal networks such as school and university ties) and their understanding of the local business culture to build initial client relations.

But their success in building client relations was more about more than this. The understanding that "the customer is always right" permeated the rank and file of the organisation and drove the high standards and zeal to get the deal, and perform on the job to keep the customer happy.

5.2.2. Rapid growth of the 1990s

The end of apartheid radically altered the competitive landscape in South Africa. Towards the end of the 1980s, communication channels with the external world were opening up with the result that convincing vendors to award distributorships and agencies to South African companies was becoming easier. The South African market had been a closed environment. The main competitor was still Telkom, and Telsapp

(formerly Altech who partnered with Telkom) and a few smaller players. DiData had been forced to develop their own technologies and sales and marketing approaches to serve their clients, but with the reality of global competition entering the market, DiData realised that they had to be able to compete on a global scale.

5.2.2.1. Alliancing through partnerships

Partnerships with key vendors in the networking and later, software and communications space, would prove invaluable to their success. The management of strategic partnerships with Cisco and, later, Microsoft, in particular, was paramount. DiData's alliance strategy grew out of their appreciation that, in each of the technology market segments in which they could potentially compete, it would be impossible for them to own the entire supply chain –

"…we can't own the whole supply chain. We have chosen the piece we want to compete in and we will partner for the technology piece. So our job is to understand a client's needs and then source the most appropriate technology and build our own services that then integrate and work in a client's environment" (B. Dawson, personal communication, August 30, 2012).

Since the early days of the organisation, key individuals (the likes of Came and Reinecke) would seek out the two or three key players in each technology market segment with whom to partner. Their vendor strategy thereafter was to partner with each of the dominant vendors in the segment. The result was two-fold; they would make themselves indispensable to the vendor in that particular technology and offer a global reach for their products, and they would be able to confidently state to their clients that they offered the best in the market.

In the late 1980s, recognising Cisco's future potential dominance in the network product (switches and routers) space, informal discussions were held between Ord and John Chambers at Cisco – now the Chief Executive Officer (CEO) but, at the time, heading sales and marketing for Cisco – about becoming their South African agent.

Chambers informally agreed that once certain apartheid laws were repealed and Nelson Mandela was released from prison, they would officially partner with DiData. Chambers kept to his word and, in 1991, the DiData-Cisco partnership began. At the time, Cisco was an unlisted company (listing in 1990) and was not the only potential vendor with which DiData could partner. Prior to signing with Cisco, they were in partnership with a company called Wellfleet, a competitor to Cisco in those days, but with the arrival of Cisco as the global giant it made sense for DiData to partner with

them. Their decision to approach Cisco to be their exclusive agent would prove to be one of the major strategic decisions in DiData's journey.

Cisco, which originated in 1984 in the United States, is the world's largest manufacturer of routers and data switches. Traditionally, Cisco partners with companies around the world to provide full network solutions which require extensive consulting, integration services, software applications, network and system management services and software control. They control the design and manufacture of their products, but they rely on their close partnerships with companies situated in local regions to provide full and integrated, network solutions. This strategy of horizontal integration had contributed to their dominance in the manufacture of routers, although by the late 1990s they had started to enter local markets as competitors. This was an attempt to gain a foothold in the telecoms industry with the advent of new networking equipment capable of switching voice and data communications (Morgridge & Heskett, 2000, p. 1)

These global partnerships, where Cisco provided the products and the regional partner provided the network integration resources, methods and procedures, meant that by the late 1990s Cisco lacked these competencies and relied on their partners, like DiData, to provide this to the end-user in each regional area. It was at this time that Cisco, recognising their weakness in this area, started to look to purchase companies that had originally been partners, to grow this competency in providing services (Morgridge & Heskett, 2000, p. 15). This was another turning point in the relationship with DiData and Cisco which was nurtured quiet delicately over the years as DiData and Cisco pursued an expansionary global acquisition path at much the same time. The two companies were no longer in a purely collaborative partnership, but in an increasingly competitive one.

One of DiData's strategies was to ensure that their technical proficiencies with their vendor partners' products would rival, not only their competitors', but their vendors' too. DiData made it a priority to be globally certified on new technologies to an advanced level. This was as a result of recognising the future requirements for engineering competencies to support the installation of networks; the potential for bottlenecks in the future network development; and responding to pressures from vendors for high levels of certification. The focus on certifications initially developed in the 90s; by the late 2000s, DiData would hold the most certificates of any reseller in the market, globally.

"…we prided ourselves on the intellectual property of our technical guys. And we invested massive amounts of money on sending our technical guys overseas for training so that the service we could offer would be far and above anybody else in the

market place, particularly in SA in those early days. So, at one stage, to give you an idea, we have more Cisco certified engineers than Cisco had themselves!" (B. Watson, personal communication, August 30, 2012).

DiData was not only focused on driving sales and the bottom line (which they recognised meant leveraging technical skills) but there was an intrinsic pride in the service that they could offer to their clients, as evidenced by this constant pursuit of certification, .

5.2.2.2. Acquisitions – the successes and failures

The 90s and early 2000s were a period of geographical expansion for DiData as they focused, primarily, on purchasing companies within the network integration space around the world. The strategy was to buy presence and skills in a particular market, seeking out the number one or two players in networking in a region, companies who were already distributing networking products. Whilst DiData tended to keep the top management in place in the companies that they acquired, they brought with them their South African understanding of the technology, the people and their methodology. In scaling these existing businesses and focusing on improving their sales offering through their product and service mix, growth was to be achieved. The intention was not to buy new competencies in these markets but to bring the existing South African competencies to them. The Australian acquisition of Com Tech fitted this bill and, in addition, the organisation was seen as having like-minded people at the helm and a similar culture (it was run by South Africans at the time of the purchase). In Asia, Europe and North America, they looked to buy presence in these very competitive markets – again, seeking out the number one or two in networking, often specifically the number one or two Cisco resellers.

Much of the discipline that DiData exhibited in their acquisitions, versus their competitors at the time, was in acquiring companies within the core networking space. However, a major error in their acquisition strategy was the acquisition of Proxicom in the United States in 2001 for $378m in cash, surpassing Compaq Computer Corp's offer. The impetus was on diversifying their client offering away from the straight product resell and network infrastructure development. Unlike in the other acquisitions, where the management structure was largely kept intact after acquisition, the management at Proxicom did not have a long-term view of their involvement with the company. In addition, the individual technical competencies that could be found in a networking technician, which could be fairly easily transferred to many of their

additional units underpinned by the IP, were fundamentally different to the software developer found at Proxicom.

5.2.2.3. Development of a global integrative offering

The late-1990s heralded DiData's acquisitions stage as they broadened their scope and started to look globally for new acquisitions. This would require a new approach, a consistent model of service delivery and products and a consistent message to their clients so that the DiData service offering that one could get in South Africa matched that on offer in their Singaporean or in Australian companies.

In 2000, the company implemented a unique and globally standardised Managed Services and Operations offering with their proprietary Global Services Operating Architecture (GSOA), providing clients with 24x7 remote network monitoring and maintenance service in Africa, Asia, Australia and the United Kingdom. This enabled them to provide a service (both in terms of the product sales but also the additional services offering) across geographic boundaries to their clients who, themselves, operated globally. Ord writes in his 1999 Chairman's Report –

"*The key requirement for the transfer of electronic information, which is crucial to all businesses today, is a robust and reliable communications infrastructure. This, combined with our early identification of the growing trend towards the convergence of voice, data and video technologies, has resulted in the Group aggressively focusing on communications services. A productised, valued-added, expertise-based (networked) services model has been developed in South Africa over the past 18 months. This highly evolved model includes a range of high-end networking services unmatched by any of the Group's potential competitors*" (Dimension Data, 1999, p. 8).

DiData argued that what set them apart was their global footprint supported by their ability to provide an integrative service to multinational corporations (MNCs) around the world. They started to allocate resources to bolster their services competence and alliance competence as the world became more globalised. Those niche and regionally focused competitors would not be able to offer the increasingly global customer the same dedicated global service offering. This proprietary architecture would not just service the client better but it would service the entire supply chain better and further entrench their vendor partnerships. This was a focus on cooperation between the companies in the supply chain to provide a better integrated solution to DiData's end-customer, but it would also enhance the internal communication between different regional units within the Group to enhance skills' sharing.

"In short, GSOA is about everything we do and it forms the backbone of our ability to deliver world-class solutions worldwide. Its strong acceptance by the market has required the upgrading of our own skills base...The decision to develop GSOA was visionary, and far ahead of its time when it was first mooted. Originally it was greeted as an online management tool, but now it is recognised as a key enabler in the development of global intelligent networks and full business solutions" (Dimension Data, 2001, p. 9).

Whilst the system was originally conceived as a generic one to enable seamless supply through the supply chain from the vendors, it has become highly focused on Cisco and on simplifying their myriad of offerings and configurations which are then integrated into DiData's system. This was a unique approach to managing a powerful vendor and set them apart from Cisco's other major partners, IBM, HP, Orange Business Systems, *et cetera.* DiData's optimisation of their systems to integrate into Cisco's further cemented their relationship with this vendor and ultimately drove efficiencies within DiData and, most importantly, to their clients. Their alliance competence and their client-centric, services competence were linked by virtue of their position in the value chain.

Wilcocks contends that DiData was better at managing Cisco's own systems and addressing the data shortcomings (lack of customer and product data in the field) than Cisco were. Their offering to Cisco was enhanced by their intimate knowledge of each and every maintenance contract and product out there which elicited annuity income and which required renewal year on year and this proprietary architecture cemented this. Cisco has tried to bridge this gap more recently but it is argued that because DiData's sole focus is on the service offering to the customer, they are highly specialised and so they build systems that are better equipped for this than Cisco, whose original focus was on the technology and not the service offering (D. Wilcocks, personal communication, September 17, 2012).

The development of this global architecture would also enable them to enhance the pure network distributors that they acquired around the world into systems integrators almost overnight. The integration competence of the Group, led by the South African operations and enhanced by this proprietary system, was then transferred to these newly acquired companies.

5.2.3. Listing, the Dotcom crash and Dimension Data's survival, 1999-2005

5.2.3.1. Dimension Data moves into the application layer

In the late 1990s, as the strategic focus of the organisation shifted to a services model and a focus on the application layer as the company branched out into software, the original core network unit, later the network integration LoB, lost some momentum.

Towards the end of the 1990s and into the early 2000s, DiData began to sell to their clients the notion of the network and the application layer co-existing i.e. selling to them not only their extended managed services but incorporating into their offering their ability to run applications over the network for their customers (for example, SAP and Oracle) and charge them for the usage.

"Our focus is now clearly on the IT industry's highest growth sectors: communications networking infrastructure and electronic commerce software applications.

*We believe that the success of our strategy is dependent on the Group continuing to sharpen its focus on its areas of greatest competence: communications infrastructure and e-commerce software applications." (*Dimension Data, 1999, p. 8).

This notion of the convergence of the network and the application layer, in anticipation of future customer needs, drove the creation of their four global lines of business – namely, Customer Interactive Solutions, Service Provider Solutions, Multi-Channel Infrastructure Solutions and Application Integration.

"Dimension Data recognised early that the application and network technology layers were going to converge and started to build capability through acquisitions in its regions, taking advantage of this opportunity from the mid 90s" (Dimension Data, 2002, p.7).

Their acquisition of Proxicom provided them with what they saw as the engine that the company was looking for in the application-integration space. At the time of acquisition, Came noted "*We see a pretty clear picture that the end objective is to be the first of the new generation of integration companies that has both the network-integration and application-integration skills."* (eWeek, 2001, para. 9).

However, the purchase of Proxicom would later turn out to be a failure. This was, in part, due to organisation-specific shortcomings that had not been apparent at the point of purchase when Proxicom had presented a greater value-offering than was to play out in time. It was also because DiData's identification of the potential future yields in the converged network and application layers, which were cutting edge at the time, had

not materialised. The market was not yet spending on infrastructure and services in the way that would encourage the further development of the converged network – software and network infrastructure and communication products were still being bought separately. With the Dotcom crash happening concurrently, DiData was forced to regroup, rethink their strategy and return to the aspect of the business upon which they had built their earlier success – the network and their competence in integration around the language of IP.

The learning that the organisation took from this movement away from the core business was summed up by Dawson –

"...you have got to focus your business on what is the core and then expand from that core in logical, bite size chunks that your people can get their mind around and that you can expand your people base to be able to execute on that strategy. (B. Dawson, personal communication, August 30, 2012).

5.2.3.2. Data communication moves to IP

Towards the end of the 1990s the data communications market moved to the language of IP. DiData is said to have anticipated this trend as far back as when Sievers was working in the operation. The products were going to IP, the Cisco portfolio started to transfer to IP, vendor trends were moving to IP and DiData was one of the first companies getting the mainframe onto IP.

"...we seek to expand our offering, by following our clients and by following largely the competence around the internet protocol, the IP. Because we thought if we really understood that, that is the core of networking today... we started believing that this new language called IP, which wasn't the language of the initial networking, we thought that things would move to this thing called the IP" (B. Dawson, personal communication, August 30, 2012).

IP was, essentially, a standards-based approach for IT that started to emerge in the 1990s. DiData was determined to adopt it, to build and exploit their networking offering around this change from proprietary models to this new standardised user approach. The two messages from the market that they chose to follow were that the network was standardising and that IP would be the standardised language, which they would need to build a unique understanding of in order to further develop their integration competence.

When the troubles hit in the early 2000s Dawson refocused the organisation on IP and its future potential beyond the traditional network. Changes at Cisco signalled a move

into new spaces like voice and video, which relied on this standardised IP and which DiData could seamlessly move into given their competence in the IP: the move from a network engineer to a telephony engineer was conceptually close enough. Dawson and Watson recall that it was at this point that strategy started to return to an understanding of their competence in IP and in communication and integration.

This natural flow from the IP into new product and service lines has driven their strategy from the early 2000s through to 2010. The realisation that they could use their deep understanding of the language of IP drove the creation of new LoBs that remain to this day.

"…there is a technology competence that we had in IP, and that immediately spawned adjacent markets that we saw, that telephony was no longer going to be run on a separate platform, it was going to convert to IP and your network and telephony platform would be one. We would see video going to the same, so what you have seen is all of these major application areas converging to IP, and as they converged they moved into our sweet spot because we technically had IP capability. That is the technical story and that is a big part of our success in the adjacent lines of business, to find those next big areas" (S. Joubert, personal communication, August 31, 2012).

5.2.3.3. Leadership change ushers in a new focus and culture

At the same time there was a change of senior management with the appointment of Brett Dawson, a Chartered Accountant by training, as the CEO in 2004. Dawson had been instrumental in his former position as Chief Operating Officer in the development of the new strategy, which was to be rolled out over the next few years. A more process-oriented and structured leadership style ensued with a Chartered Account at the helm.

"…application layer overlaying with a networking layer, it was too far ahead of its time; it is happening now, but it was just too far ahead of its time. So there has to be a conscious decision to say okay guys let's go back to what we understand best and let's forget about this thought around application layer, and go back to basic networking. And that is what we did." (J. Ord, personal communication, August 27, 2012)

The organisation became less entrepreneurial and instinctive in nature as it had been under the leadership of the founding members and throughout the growth years of the 90s. The resource slack of the previous few decades, due to their phenomenal growth, had allowed for a more innovative, federal system with lots of smaller entities reporting into the global head office. The focus now shifted to cost containment, understanding

and articulating the new networking market and the competencies that DiData would now have to scale up in services and solutions to be able to pitch a far more complex product and associated service value proposition. The message from the leadership of the organisation was no longer in pushing the boundaries of their networking products and innovating out to the e-commerce, application space, but in running a business in a mature market with different client requirements.

Annual financial reports once again highlighted DiData's competence in network integration, but the language being used had changed to a focus on efficiencies rather than innovation in the space –

"It all comes back to the network... One constant in the ever changing world of technology is the strategic importance of the communications network. Discovering faster, easier and less costly ways of connecting people to each other and information is of paramount importance to worldwide businesses. Network integration remains the core of our business model." (Dimension Data, 2004, p. 2).

The huge margins that had been experienced in the 90s enabled the organisation to drive innovation through the business and allowed for an entrepreneurial environment built more on risk-taking than cost containment. With margins on Cisco products of up to 40% there was resource slack in the organisation which enabled this. As the early 2000s dawned and DiData was in dire straits with the failed Proxicom purchase and the general IT bust, the business model changed. It was now focused more on cost containment and incentive models changed to refocus individual attention on righting the business and driving sales in the core networking space, both in product and, now increasingly, in services around the network. The requisite slack for innovation and risk-taking was simply not available to individuals anymore.

That being said, Dawson needed to create growth in newly created LoBs that were removed from the original data communication space (which at that point made up 80% of the business). Dawson argues that the burning platform that the Dotcom crash and the failure of Proxicom created accelerated the internal adoption of his new global strategy with its refined LoBs. This would grow out of their underlying competence in the IP which was being rapidly adopted in new communication technology spaces. This refined and focused strategy had its critics –

"There is no doubt that having this sort of structure or the six lines of business has been very successful for the business, but the discipline that has come with that has created an organization that I think is highly optimized for a particular set of

circumstances of the market, and it is very difficult at grassroots level to flex. So it is very dependent at having these prescient people at the top, to see the future and make the right decisions. And of course if they make a mistake it can really hurt the organization… So I would say DiData is quite highly optimized for a particular market." (D Wilcocks, personal communication, September 17, 2012).

Many in DiData, however, still see the company as the entrepreneurial one that epitomised its earlier years –

"You talk to guys at DIDATA and they say, 'we're an entrepreneurial company, and you say, this company is 30 years old, you're hardly an entrepreneur and you haven't got the latitude to go out and start a new division'. We found new divisions, new companies, had been started by subsidiaries and we only found out six months later because they didn't tell us but we said, 'if it's making money, you're a hero', if [he] screwed up it was the opposite"...whereas now, even if it was successful, the right thing to do is say we can't have that sort of person just doing their own thing. (R. Came, personal communication, September 6, 2012).

5.2.3.4. Development of new lines of business

The 2002/03 strategy documents and internal discussions at DiData began to formalise the idea of converged communications – converged networks in terms of the integration of wired and wireless networks and converged clients (from telephony into data, *et cetera*). It was proposed that LoBs be created around the pursuance of adjacent technologies and markets and broadened out from the current structure which treated the majority of the business as 'network integration'.

"The underlying technology "megatrends" of the connected society, smart networked objects and semantic connectivity are combining with the trends of globalization and the need for greater transparency and accountability to force enterprises to transform their businesses to respond more effectively to time-based competition. The falling cost of computing power and network bandwidth will make it possible, if not mandatory, to connect almost anything. When everything is a node on the network, few activities (business or social) will remain unaffected and entire industries will be transformed." (Dimension Data, 2005 Sales Conference Presentation on Advanced Connectivity, Slide 7 Notes)

The convergence, or standardisation, of major application areas (like telephony or video) onto the same platform as the original network, that of the IP, meant that DiData was positioned extremely well to take advantage of this. The four LoB structure was

repealed in 2004, when Brett Dawson reorganised the business around the six lines of business that remain in place today. DiData was forced to return to what they understood best and were known for most, integration and networking. From their original core they picked obvious adjacent solutions where their technical competencies would enable them to scale relatively quickly (like in telephony) and where their current client-base would be early-adopters of this converged technology. They drove aggressive short-term targets to build these new businesses.

The convergence in the technologies was also driving shifts in the vendor battlefields as the industries started to overlap. DiData had to forge new relationships with new partners and extend relationships with old partners now also moving into the voice and business application space (like Cisco, 3Com and Microsoft). The creation of these new LoBs, however, was not a conceptual leap for engineers or sales people given the underlying tenets of communication, integration and the importance of the IP.

"Our competency is our skill in connecting businesses, their customers, partners and suppliers over local and wide area networks. We have developed this networking expertise over the past 20 years... Building on this knowledge base and strength, our business has expanded into several other technology competencies that have a critical reliance on the network. Our networking heritage differentiates us." (Dimension Data, 2005, 10).

The emphasis in the annual reports also turned to repositioning the enterprise business with a services-led value proposition.

5.2.3.5. Driving competition in the business

The early days of internal collaboration to get to grips with the products and gain the technical proficiencies to adapt them to the client's requirements were difficult to continue as the organisation grew. The practicalities of such practices became unmanageable in a large organisation and recruitment practices and broader human resource management were changed in order to fall in line with accepted best practice of global enterprises.

By the early 2000s, sales people were calling for advanced selling techniques over a greater understanding of the technology and technical people became even more focused on their niche product areas. The transfer of knowledge and the deep technical understanding that had underpinned the business as a whole started to migrate into functional specialisations in sales and technologies in niche areas. This specialisation was, in part, in response to the increasing complexities in the technologies being

brought to market. It was also, partly, due to the federated approach, of small, well-run and autonomous business units with someone strong at the helm that had been encouraged by senior management since the early days of DiData. The federated responsibilities were encouraged not only in the existing businesses but in the acquired businesses too, where, more often than not, the founder or management team remained in situ to carry on running the business. This structure was also, in part, a response to the increasingly aggressive sales targets, the pressure to achieve constant growth and eventually, the migration of the sales mix to include higher margin services. These required a new skill in advanced selling which was different from the original days where one was selling technology innovations around product re-engineering and network infrastructure development, which required deep technical knowledge.

An incredibly competitive environment was created –

"The nature of the remuneration, particularly in the share options, the penalty for missing target, there were some relatively middle management guys who lost 3m bucks in a year just because they missed their budget by a couple of percent so that kind of fostered a 'I'm going to have to make a plan, box a bit clever here and do my own thing'. And I think because everyone else was in the same boat they'd sort of tolerate any sort of divergences within limit, go out and screw up a few things as long as you make the bottom number at the end of the year." (R. Came, personal communication, September 6, 2012).

5.2.3.6. Internal collaboration versus competition

From inception to today, DiData's offering has been on connecting their clients, simplifying their business environments and reducing costs by offering a total solution to their clients' disparate internal requirements. However, in practice, for some of the multinationals and global clients who have huge internal IT departments, specialisation, rather than standardisation, remains king, despite what the heads of these large multinationals might claim;

"So what is very important to understand when you are dealing with them is that they want to go to that specialist in that line of business and then that one; they don't want somebody coming to tell them this is what the whole thing should look like, they want to do that for themselves. Technology people battle with that. Technology people always want another feature or 'I am a little bit different' or 'can you add this?' and that is where relationships become very important." (D. Wilcocks, personal communication, September 17, 2012).

In effect, the individual buying behaviour of the global client-base for integrated products, services and solutions, continued to enable DiData to grow, even with the threat of a commoditised product, greater competition and cross-over of roles in the enterprise and services space. Business units became highly incentivised around their direct responsibilities. This business units focus encouraged the employee (be it the technical or sales employee) to provide the best offering to the client in that particular space, given the buying patterns and internal machinations of their customer. The divisional structure of the six Lines of Business (LoB) which was introduced in 2004 to refocus the global business and the regional autonomy that has traditionally been given to middle management throughout the organisation, further drove the technical and sales specialisation around a specific business unit rather than collaboratively, across units and drove the sales culture within the organisation. Collaboration in this sort of environment, across LoBs and even within LoBs is, therefore, very hard to inculcate. The divisional structure reflected how the clients were buying – for inputs rather than outcomes – and how the vendors were selling, and continue to do so today. DiData was highly optimised to reflect the vendor and client's requirements. But, this meant that their competence in integration of their clients' environments, therefore, was not mirrored by their own internal organisational integration.

5.2.3.7. Changing nature of their Cisco alliance

Today, DiData is Cisco's biggest partner in the world for product resale. However, the competitive space in all markets started to become murkier with the convergence of communication. The boundary between the product and the service offering (it was the service offering which DiData brought to the market with their intellectual capital and solutions) is not as clear as it was in the early 90s. IBM, HP, Cisco, DiData, Microsoft, *et cetera*, can compete in the same space for the global service contracts. In terms of their partnerships with Cisco, they started to compete with them for some clients whilst collaborating with them as product and service resellers. Part of their success as the market converged and the supply chain started to constrict, was their competence in managing an increasingly complex alliance with giants, such as Cisco, and being able to co-exist both as competitors and collaborators in this relationship. The intricacies of their client service-relationships and the competence that they have developed in managing these highly complex client needs (both in terms of after-care service but also in adapting the technologies to the specific client requirements) have provided them with a competitive advantage over both new resellers and solutions providers but also over the vendors and, in particular, Cisco. The development of their proprietary architecture provided them with an exhaustive knowledge of the whereabouts of the

millions of vendor's product in markets around the world and, to some extent, made them invaluable to Cisco, even as they started to migrate into DiData's section of the supply chain. These various strategies have maintained their vendor alliance competence even as the strategy of Cisco has changed over time.

5.2.4. Commoditisation of traditional business, 2002-2012

The pivotal role that the network and integration played in the business, in its inception, as well as in driving the growth of new business units closely related to the network, was deeply understood in the business –

"Culturally it was what all the young, upcoming leaders in the business aspired to be involved in, wanted to run, they always drove the heart of the company's culture, the people who best epitomized the company and what it stood for typically were in the networking business." (D. Wilcocks, personal communication, September 17, 2012).

But the network integration business and the competencies that underpinned it evolved as the client's needs became more sophisticated and the margins from the product-side of the business diminished with the natural commoditisation of the products over time. By the early 2000s, the sales mix had to change from purely product-led to services-led, where the margins were higher and where the potential for future growth and innovation were expected to emanate. This strategic refocus was not always understood, especially where technicians and sales people had been focused on, primarily, Cisco product innovation and reselling for so many years. Connie de Lange, the then Head of Services Marketing, recounts an interaction with an employee at a US Sales Meeting in the early 2000s who had been selling networking kit for 15-odd years with previous companies that they had acquired, trying to explain the strategic importance of services to the business;

"And they would just look at me totally blank and they would say 'I put my sons through university on the backs of Cisco technology and you want me to sell services, I don't think so' and then they would just walk away, how do you get a leopard to change it spots when you've got this very emotive deep-seated, love of something because you've been successful for 15 years doing the same thing and you've had all these great opportunities, you've bought your vacation home, you've sent your kids to school, you've bought your Mercedes because you've sold this technology and now you want me to change?" (C. de Lange, personal communication, September 17, 2012).

And while there was resistance from some of the technical people to move from a product-oriented to services-oriented business around the network because of this

emotional association with the technology, amongst other things, there was a disconnect with the sales people who were becoming disillusioned as they made less and less margin from selling the products, which started to permeate the broader organisation.

In response to falling margins and a deepening disillusionment with a revenue model based primarily on product margins, DiData instigated a complete overhaul of their networking business. This involved developing ideas on how to reposition the products and the minds of those who were selling them but also, how to create a services business around the networking products, primarily Cisco. The initiative was intended to articulate to the organisation that networking was still DiData's core but through a gradual process to redefine the organisation's alliance and client-centric competencies as services-oriented. To remain relevant, their competence in integration had to be underpinned by individuals that understood how to provide a solution to the customer driven by a service-offering. The DNA and the culture of the organisation had to change to be less product-focused and more service-oriented. Wilcocks explains that this attitude could be summed up as, *"I am here to sell a box and I will attach 7% of the box's price as an insurance premium and that is what I call service"* (D. Wilcocks, personal communication, September 17, 2012). It took five to six years for people to understand that what they were selling was a service, and attached to it was the bit of technology that had previously been so prized.

That being said, given the different market shares of their networking operations in different parts of the world, this emphasis on selling a networking service rather than the product and adjacent advanced technologies in networking has differed from region to region (see appendix 6 and 7). In the US, Australia and parts of Europe, where their market share of Cisco's products is around less than 10%, any advances in product sales leads to huge gains in revenues. This not the case in South Africa where DiData has approximately 35% of the Cisco's market and so revenues have to be driven by a slightly different strategy which presents greater complexity DiData's global networking strategy and in terms of their integration competence. It means that their competence in integration in South Africa requires different skills and resource allocation priorities than in some of their other territories which are still focused primarily on networking as a product offering, rightly or wrongly.

Driving scale in a mature market is much harder than driving growth in an exciting segment, but this brought a realisation that different skills and a different culture might need to be brought into the business to enhance the new face of networking.

5.2.5. Birth of new businesses in network integration, 2004-2010

5.2.5.1. Technology life cycle management

With the Dotcom crash behind them and significant revenues being derived from the new LoBs, the company's primary focus, once-again, shifted away from their taken-for-granted offering in networking. In 2006, recognising that the Network Integration LoB needed to be restructured and repositioned both in the formal communication in the organisation, but also in terms of the informal communication that tended to see the newer divisions as more appealing, Reinecke took on the responsibility of the LoB and the creation of the new strategy.

"…we did all the right things in the early days, but we actually didn't evolve the business model and the market has changed, and our approach hasn't changed. The actual technology has commoditized and your margins are under pressure, you have to manage the business differently. And we didn't do that. We didn't have that maturity in our management to say wait a minute, we have businesses in different cycle of investment, and there are new businesses that are actually in that start-up mode and it is cool, it is new story, early adoptive. We are really good at that stuff; but when it gets to now that we have scale, we sort of take our eye off the ball. And we don't look at the life cycle of that technology." (E. Reinecke, personal communication, September 3, 2012)

DiData had to develop new competencies within their broader integration competence that would enable them sell a commoditised product in a far more competitive landscape which required scale and efficiencies. Strategy documents at that time started to ask whether DiData had lost their 'edge' in their core business and what they were doing about the changing technologies and applications of the network. A priority list was drawn up which included, amongst others, expanding the managed services model which DiData had successfully rolled out in their adjacent LoBs to the Network Integration LoB and scaling it globally and focusing on innovations around the network. DiData's differentiation in the space was reiterated –

*"Today the cross integration is what differentiates DiData – the understanding and leverage of technology inter-dependencies. Few companies can truly do this. Traditional resellers can maybe build a network – that requires network skills only – but to build a platform that delivers leverage, protects existing investments and provides a flexible architecture to deploy current and future converged applications on, requires a much wider technology understanding." (*Dimension Data, 2006, Slide 12 Notes).

Reinecke introduced a new notion of technology life cycle management and category renewal into the division, with services built around the technologies that were coming to the end of their life cycle, and going to the client with an offer to manage the risks associated with this. The industry had matured but nobody had developed a life cycle approach to these ageing assets as the organisation had no experiential learning in this regard. They learnt how to manage their client offering in the mature phase of the product life cycle and to seek out potential high-growth markets within the overall low growth market of networking.

"We were probably the first to get up there and say we are going to look at this from a maturity model perspective, and help our clients – not necessarily replace it but manage their risk, do their financial planning and get them into the habit of actually keeping things covered. Now we still do this today and I think it has become a bit of a benchmark." (E. Reinecke, personal communication, September 3, 2012).

These, and other, innovations were based on category renewals rather than brand new technologies which was an innovative organisational process for the organisation. DiData had traditionally been very good at riding new technology waves and experiencing company growth in line with the growth in the external market, rather than discovering innovations in mature markets. However, in this sunset phase of the technology life cycle, they started to look to existing clients to extract new value through category renewals.

Driven by Reinecke, the network integration LoB identified three category renewal opportunities – investing in the evolution and growth of wireless, developing a total life cycle approach to ageing assets (assessment of the client's whole network, the risks, the future requirements, how to replace products that are at the end of their life cycle at the vendors with new ones as economically as possible, *et cetera)* and, lastly, data centre networking. This was not originally an area that they were interested in given the dominance of IBM and other giants, but they took the principles of networking (essentially the internet) to the data centre to make it more resilient to imminent disruptions to the old technologies in the centre. This business started in 2009 and took 18 months to become a $100m business. Without introducing any new technologies they were able to create revenue streams which would more than quadruple in three years.

They developed a competence in technology life cycle management which further bolstered their services competence as they could go back to existing clients with an offer to extract additional value out of existing technologies. However, such a

competence required new skills and an innovative approach to existing technologies that had to be taught to engineers and client-facing sales people. Attracting resources back to this, now-mature, LoB was not always easy as it was not seen as appealing as the newer and faster-growing market segments. In addition, it required a different kind of management skill –

"We have to invest and manage them differently and also now bring in more business managers to say 'your challenge is not to go and manage networking as a technology business; we wanted a general manager that understood scale, that understood client satisfaction, that understood service models, profitability. And so it became a place where good GMs wanted to work, which is exactly what we wanted" (E. Reinecke, personal communication, September 3, 2012).

The strategic plans that were put in place were far more prescriptive and detailed with regards to the execution and roll-out of the operations than usual for DiData. The prevailing wisdom was that in order to educate people at multiple levels across their global network integration business units about this new approach they required the regional management's buy-in and ownership of the process. The general managers that they started to appoint were challenged to manage a mature business in a mature segment which is commoditised. Not only was the approach to the technology different, but so was the approach to the management and service model and this innovation slowly started to attract attention back to networking. This competence can now be applied to other segments of IT as they move into their maturity phase.

5.3. Conclusion

From inception to just after listing on the LSE, DiData was amongst the global leaders in network integration. They rebuilt themselves around their competence in the standardised communication language of the IP (and the product markets that grew from this) after the Dotcom crash. They exhibited strong leadership to build the Cisco alliance, used Cisco products to push aggressive growth and built a client-centric culture in the organization with an all-consuming focus on "getting the job done" for the client. The recognition that the client of the future would require global solutions, drove them to extend a global footprint from their emerging market base, and this organisational orientation was further developed by innovations around their proprietary operating system which strengthened their position with their clients and with their vendors, in particular, with Cisco. This further cemented their services competence and their alliance competence. A select few senior individuals in the organization kept a close eye on the new technologies coming onto the market to ensure that DiData

continued to target the number one and two partners in those technologies in order to continue to offer the best solution to their customers and stay ahead of their competitors.

With the commoditisation of network technology over time and the entrance of new global players in product distribution and services, as well as the vendors moving into the services space, DiData had to rethink their offering to the clients. Their initial competence in integration which was built on their technical customisation of vendor products to meet specific client needs and their strong local client-relationships, evolved through their flexible, in-country business model and their global operations capabilities both in procurement and in managed services. This evolution, however, has not occurred uniformly in all of their regional divisions due to different market conditions and inertial forces at play internally (at the management and operational level).

Even with the emergence of cheaper products in this space from global players (Huawei, for example) who have the global logistical capabilities to match DiData, the client's continued lack of discipline to purchase a completely standardised product has meant that their strong client relationships and their delivery of these highly specialised products and services have been their point of difference. This has prevented these cheaper vendors and resellers from copying their more generic integration competence in the sale and maintenance of networking products.

5.3.1. Competence development in the historical phases of the case

5.3.1.1. Phase 1 – Development of integration and client-centric, services competencies

The original isolation of the South African business afforded them time to build up a strong understanding of the technologies, the competitive environment and the potential future global environment of their clients without the pressure of competition leading them to copy rather than develop their own skills and processes. Ord and his executives created the client-centric focus that would develop into a services competence that remains with them today. This was built out of a focus on sales, technical proficiencies and delivery, driven by Ord from day one to "get the job done". This speaks, once again, to the intrinsic pride that was cultivated in the organisation in the quality of the products and the services they were bringing to their client, not just in the revenues that were being derived.

5.3.1.2. Phase 2 – Development of alliance competence

In clearly identifying and articulating where DiData would sit on the networking value chain, the necessity for strong vendor relationships became essential. The identification of Cisco as the imminent player in networking with whom to partner and the successful management of that relationship from the 90s through to the present-day, further cemented their client-centric focus as they were able to provide the best technology to their clients on the market. This ability to identify the right partner and appropriately nurture these complex relationships became a core competence in its own right. The development of proprietary global services operating architecture in the late 90s and into the 2000s has cemented the service to their global clients and the management of their vendor partners and helped them to manage the potential liability of their reliance on Cisco. DiData is still reliant on the vendor's products but they lead with their competence in the IP and their complex managed services model, underpinning by the GSOA which puts them in a stronger position as vendors move into DiData's traditional space as competitors.

5.3.1.3. Phase 3 – Recognition of IP competence

IP is a core competence of the organisation. The global standardisation of communication onto the IP helped them to identify future adjacent product and service markets that would provide new revenue streams to the organisation and extend their offering to their clients. Their failed attempt to get into the network application layer, far removed from the competencies in the core business, meant that they only capitalised on the IP trend after they exited their US venture and the Dotcom crash had occurred. They then used this disruptive technology (IP), in which they had built up an existing competence, to attack established markets like telephony.

5.3.1.4. Phase 4 – Evolution of integration competence

Traditionally the main revenues in the business had been derived out of the products. Knowing which technology to use and integrating it into the client's environment was the backbone of their early integration competence. However, as the products became commoditised, falling revenues signalled a need to change the organisation's strategy into a sophisticated managed services offering which evolved their integration competence. This evolution, however, has been not been uniformly experienced in all of their regional areas.

5.3.1.5. Phase 5 – Development of technology life cycle management competence

Falling margins in the network integration division forced DiData to rethink their business model in this traditional area. It was the recognition that they were operating

in the mature phase of the product life cycle in networking that forced individual leaders to introduce a new strategy into the business to manage this. Existing skills in the technology were transferrable, but new sales and management skills and understanding of the client offering had to be introduced into the business to manage these category renewals as this approach to the client's environment was foreign to the organisation. It was an insight into how to manage the product lifecycle to extract value that DiData had not earlier anticipated. This has developed into a core competence in technology life cycle management. This learning can now be transferred to new business divisions, and even new industry segments, for future revenue gains.

Analysis of results

6.1 Introduction

The purpose of this chapter is to discuss the results of the research in light of the two research questions posed, guided by the framework outlined in conclusion to the literature review. In addition, the analysis will discuss new themes that emerged in the data collection phase which are not covered in the literature review, but which shed light on the development and evolution of competencies in DiData.

It is important to remember that the competence perspective seeks to understand the subjection of resources to certain processes. Competencies involve the collective learning in the organisation, especially how to co-ordinate diverse production skills and integrate multiple streams of technologies (Prahalad and Hamel, 1990, p. 4). 'Skill' is in the individual, but collective learning, and doing something well repetitively as an organisation, is a 'competence'.

This, in itself, is a complex, interweaving of organisation-specific choices, norms and patterns of behaviour, and the constant interplay with the organisation and its external environment. It is not the role of this analysis to provide a normative model for application in practice within other organisations. As has been articulated in the literature review, the aim of the research is to open up the black box of the organisation to provide a case-specific explanation of how the development of competencies, which is often nebulously theorised, played out in practice. What led to this organisation's success or constrained it and what role did different practices play in the choice-sets during its journey? The real value lies in understanding the changes in the allocation of resources within the organisation which have provided a constant stream of new outputs that have been valued by their customers and so create value for the organisation.

Due to the sheer size of the organization, the difficulty in accessing internal documentation that might speak to the Network Integration LoB, and the focus of the research primarily on senior executives in the organization (the time allocated for the research necessitated this focus), the research was limited in its ability to uncover substantial findings in the following –

1. The role of intra-organizational or inter-departmental processes as they influenced the development of the business unit competencies, and their feedback effect on group-level competencies.

2. The allocation of resources at the middle managerial and operational level and how this allocation has impacted the organisation's competencies.

3. Sufficient data on evolutionary process theory as it may have played out in the organisation to develop, unintentionally, the organisation's competencies.

4. Detailed regional differences in the competence development process.

6.2 Research questions: How are competencies developed and how do they evolve?

It is difficult, and not always useful, to separate out the two research questions and answer them as if they are clearly delineated for each identified competence, as these two processes are intimately related. The analysis below, therefore, does not separate out development and evolution for each competence but rather uses the nine-themed research framework to present and analyse the findings.

6.3.1. Leadership

From early on in the organisation's history DiData's founding members recognised and articulated that what they could offer to their clients was not just a robust integrated environment with clever products. They recognised the future role that data communication would play in their clients' environments and that internet usage was going to have a fundamental affect on everyone's lives. Integration at that point was around the products, but conceptually it was more than that – it was about simplifying complex environments and driving down costs to create efficiencies through enhanced communication.

The development and evolution of their competencies has not been precipitated by a change in leadership styles. In fact, the organisation has had only one major change in leadership styles in almost 30 years, with the appointment of Dawson in 2004.

The alliance competence, had, at that point, already started to evolve into managing a more competitive relationship with their key vendor. It did take a new CEO to usher in a simplified strategy and recognition of the new competitive environment in which the organisation was operating. It was at this juncture that the organisation recognised that the market had already moved – to their technical competence in the IP.

At first leaders and individual employees in the organisation were appointed from within, with deep operational experience of the company. As the industry matured and the client's requirements evolved, they started to seek out more generic management capabilities that were foreign to the organisation, but that were able to view the market

thought a different lens in order to manage these new demands. The organisation was originally led by individuals who allowed a large degree of freedom (right from the regional management to the individual employee) as long as the targets were met and the customers were satisfied. This style of leadership relates to Barnard's (1938) notion of leading through the exertion of observational feeling, which shows a deep trust in the individual employee to simply get the job done even if it strays from the formal strategy-process.

Barnard (1938) calls for leadership to navigate through a complex system with a vision that could be communicated into actionable terms to help individuals know what to do when and where. The decision by Ord and his executive team to develop key strategic relations with clients, to position themselves clearly on the value chain and to build key strategic partnerships to protect this were key influences in the later development of their competencies. They used the isolation of sanctions as an opportunity to innovate, test and create around the products in the client's environment, always with an eye on building a competitive organisation at a global level.

Prahalad and Hamel (1990) argue that for a leader to be able to identify, develop and evolve competencies they need to be able to step back from an outdated mode of seeing the firm as providing a product or a service, to one built on competencies. In the late 1990s, at the same time as they were focused on, and committing resources to, the development of a new capability in the application layer that was foreign to the organisation, there was a seismic shift occurring in the industry within their original competence area of integration as the product became commoditised. It took them years to articulate this in formal strategy. In many of their regional markets, this shift has still not occurred given inertial forces of individuals in the regional units whose commitments to the original notion of a network integration offering did not enable them to accept the new reality around a services offering.

There is much criticism in the literature of leaders that limit the boundaries of organisations in tough times, in particular, in dynamic environments. By removing innovative and entrepreneurial management practices, one stifles the future opportunities that they might bring in response to complex environments which can be unpredictable (Mintzberg & Waters, 1985, p. 263). However, as the organisation grew, routine processes were introduced to help manage the intricacies of a large, global organisation. This did reign in some of the individual freedoms and entrepreneurial nature of the organisation that had characterised it in its former years and led to the departure of certain individuals that had been integral, up to that point, in driving the

organisation's strategy. Burgelman (2002) opines that leaders need to "develop deep insight into what the organisations re-capabilities are and have the strength to follow through on a conviction that may not be widely shared" (p. 368) which appears to have been one of Dawson's main contributions to the organisation.

Much of the academic literature on organisational competencies and, broader, on organisational success, highlights the pivotal role that the leader of organisations must play in the identification, articulation and development of competencies in order to drive their development in the organisation. However, it does not appear that when the organisation started there was a conscious desire to build *unique organisational competencies*. They were clear in wanting to develop a superior brand through their superior product knowledge and their ability to take complex waves of technology coming into the market and simplify their clients' environments, to ultimately reduce the costs and drive efficiencies. There was an understanding that they were playing in a new space that would come to define a new era of communication and that they wanted to be leaders in this field. There was an understanding that they were playing in a new space that would come to define a new era of communication and that they wanted to be leaders in this field. However, there was not an articulation of the development of competencies until much later. This happened after Dawson took over as CEO, the Dotcom crash and after they exited their operations in the network application layer. The internal language started to focus on the opportunities that the IP language could offer them as they tried to rebuild the organisation. Dawson argues that the burning platform presented a pivotal moment to redefine what DiData was good at and how this would translate to their customers in new products and services.

Conclusion

The case suggests that competencies can be developed without formal articulation by leadership of the organisations initial pursuit of the competencies. However, strong leadership might be essential in driving a particular strategy that once it becomes institutionalised develops into a core competence. There is no evidence to suggest a particular leadership style is required to develop competencies as they have shown the development and evolution of their competencies under a more structured style and an earlier entrepreneurial style of leadership.

6.3.2. Market orientation

Theorists argue that market orientation or positioning is the precursor to a distinctive competence (Miles & Snow, 1978; Snow & Hrebiniak, 1980; Atuahene-Gima, 2005) and that the organisation's original positioning within the industry determines the competencies that the organisation chooses to pursue (Wang & Low, 2003). DiData

decided within their first five years what role they would play within the IT industry, and specifically within networking and communications, that of intermediary, with strong relationships with the vendors, on whose products they would rely, and even stronger client relationships that would bind the client not simply to the product but to their unique understanding of the product in each client's environment. There was no formal articulation of the competencies that the organisation wished to pursue, but there was a cognisance of the boundaries of the organisation within the industry supply chain. With this in mind, they set about committing resources to their technical proficiencies, and building strong relations with their clients, gaining an intimate knowledge of nature of each of their client's environments to ensure that their product knowledge and the infrastructure that they built was more than just a network but one that delivered leverage to the overall business. They were incredibly effective and their success until the late 1990s was driven off the back of excellent margins in, primarily, Cisco technology (a vendor they had successfully allied with prior to the explosion of the market) and in the successful integration of these technologies into their clients' environments.

Wang and Low (2003) argue that the scope of the competency choice of an organisation is limited or expands depending on how wide one wishes to view ones industry. With the emergence of the standard IP, the IT and telecommunications industries, which had been two very distinct industries, suddenly amalgamated. DiData was able to extend the boundaries of their industry to include new customers, but also to extend their integration capabilities to existing customers. That being said, DiData did not change their position in the supply chain – they were still intermediaries, selling products, solutions and services to existing and new clients.

The fundamental change, however, came from their main vendor partner, Cisco, who started to occupy two positions in the value chain – that of an original equipment manufacturer, requiring a channel partner in territories around the world, and that of competitor to DiData in the additional services offering to the end-client. DiData recognised this potential threat to their competitive position in the value chain and effectively introduced new resources and priorities into the business; their proprietary services architecture optimised to the Cisco environment and highly focused on providing superior logistical and procurement capabilities was superior to what Cisco could offer to their clients and the continual up-skilling of their technicians to rival Cisco's technical capabilities ensured their competitiveness. In addition, at a senior executive level they successfully balanced a relationship that was simultaneously competitive and collaborative. The executives recognised the dynamics at play in the

broader industry and ultimately understood the evolving nature of their value offering to the client such that competition from their main partner actually led to innovations in the organisation which further developed their integration competence as well as their client-centric competence.

The leadership of DiData also possessed the foresight to recognise that their global expansion would not only serve to provide them with new markets and new growth opportunities in the product resale business, but it would give them a competitive edge over niche and regionally focused competitors who would be unable to offer the future global client the global service that they would require which would maintain the relevance of their integration competence (further underpinned by their GSOA) as the world globalised.

Perhaps one of the criticisms of the organisation has been that anticipating future market trends and understanding the next technology wave has tended to rest on the shoulders of a few key individuals in the organisation who immersed themselves in the technologies and who were very connected at the technological frontier. Many of their choices have been successful, but their exploratory innovation in the anticipated network application layer was not.

Leonard-Barton (1992) argues that competencies can become dysfunctional when they inhibit innovation, referred to as core rigidities (p.111). The organisation can avoid this negative rigidity effect by directing resources to the effective development of new projects and product innovations, for future competence development, whilst simultaneously exploiting current competencies (Leonard-Barton, 1992). Given the strength of the existing business at the time, primarily around product resale and integration, a huge amount of resources were thrown at this anticipated new trend in the network application layer and developing a new competitive position in this anticipated market. When this market did not materialise, the organisation retreated to their core understanding of their competitive position and their customer offering built on their existing store of human and technical resources and their existing competencies. It is not clear how an organisation that has gone through such a painful experience, might develop, once again, their appetite for exploratory innovation out of which new competencies could potentially emerge.

Conclusion

One of the precursors to the development of competencies was the leaders' choice of the firm's positioning on the value chain, as this guided their approach to customers and competitors in the market. This suggests that whilst an organisation might not

signal its intention to create competencies, due to this positioning it informs future strategy which, in turn, drives the development of competencies. The case also suggests that an organisation that is focused on its future potential competitors and the future demands of its customers will commit resources in response to the anticipated shifts and, in so doing, organisational competencies will evolve.

6.3.3. Learning and innovation

Learning and innovation played a pivotal role in the genesis of the organisation, and pushed them to find new ways and methods to apply unknown technologies to their clients' environments. This was a highly entrepreneurial organisation. The early development of their services competence and the foundations for what was to become their integration competence developed out of this innovation and learning in the client's environment.

The isolation that sanctions imposed on the South African market at a time when great innovation was happening in the global IT arena, with few standards to guide best practice, allowed for a protective bubble to develop: experimentation and learning by doing became an accepted means by which technicians learnt their craft. This is in keeping with Keil's (2004) conceptual model of how firms develop a competence; the organisational structure had little hierarchy, entrepreneurship and innovation at the level of the technician were encouraged and one saw the beginnings of close social networks developing. These networks were developing internally between technicians, but also externally with the client, at both the executive level and at the level of the technicians and the sales people who were encouraged to spend as much time in the client's environment as possible. It provided them with time to adapt resources (human skills and technologies) to develop processes and, finally, practices, without the outside influence of the vendors or global competitors.

In addition, and in keeping with Cohen and Levinthal's (1990) concept of absorptive capacity, led by Ord and his senior executives, there was a conscious appreciation of the fundamental shifts that were starting to take shape in the communication landscape and that, despite isolation, this organisation would be at the forefront of this technological shift. Through the assimilation of external knowledge into the organisation, coupled with this learning by doing, the foundations of their integration and client-centric competencies were built. This was also to stand them in good stead later when the IP rose to prominence as they had started to build their detailed knowledge of this language when looking to innovate away from IBM in the early days of the organisation. This earlier innovation would help in to build their technical

competence in the IP and leverage off it once Dawson articulated this to the organisation after the Dotcom crash (admittedly, they were late in recognising its prominence given their focus on the application layer and e-commerce opportunities).

“Cognitive representations have been shown to be a critical determinant of managerial choice and action, in particular, a firm’s choice of strategy is often a by-product of actors’ representation of the problem space” (Simon, 1991, cited in Gavetti & Levinthal, 2000, p. 113). Innovation around the GSOA would evolve their alliance competence. The leaders of DiData predicted that the future competitive landscape was one in which their key vendor would move to being a key competitor. This saw them later dedicate vast amounts of resources in developing this proprietary services system, building it to be optimised to their biggest partner, Cisco, and training their employees globally. This innovation not only evolved their alliance competence, but their integration competence too. It served both to connect their partners and offer a truly global service to their clients, but it also developed the organisation into an integrated global organisation with employees that could communicate directly online.

However, learning and innovation has taken different forms at different phases in the organisation’s journey. The organisation today does not appear to have a structured learning capability which encourages internal sharing of knowledge. Rather, the organization has always encouraged some individuals at high level to develop good insight into the market and determine strategy based on this and encouraged learning and innovation in niche areas. As the organisation grew, it did not consciously develop a competitive intelligence capability, which would become institutionalised in the organisation. Once again, due to the focus on niche product areas, niche client requirements and an aversion to a truly standardised product and service offering, replicability and best practice were not easily developed. The internal sharing of knowledge appears to have had little to do with the evolution of their competencies as the organisation grew and became more bureaucratised.

Jansen, Van den Bosch and Volberda (2006) argue that ambidextrous organisations develop exploratory and exploitative innovation simultaneously in different organisational units, dependent on the competitive environment in which the unit exists. The necessity to find growth in what was considered one of the sunset areas of the business – that of network integration – forced senior executives to consider new approaches to old technologies and existing clients. This was counter to anything that the organisation had done before. By exploiting their technical competence in the IP and introducing new approaches to existing technologies they were able to innovate

and ultimately developed a new competence in technology life cycle management. This required completely different skills sets in management, and resource allocation priorities which had to be brought into the business from outside. Whilst there had to be a mind-set shift in the approach to the technology, the existing knowledge of the technology could be exploited.

Exploratory innovation has, perhaps, not been as successful in the organisation as they entered the 21st century. However, the exploitative innovation that occurred within the network integration LoB, as Reinecke introduced his new business model for management in a mature market introduced a new form of institutional learning that they can now apply to other technologies as the technology reaches the mature phase of its life cycle.

Conclusion

The research showed that the earliest competencies were created by the careful selection of external knowledge into the organisation which was then adapted through a learning-by-doing process in the clients environments. Early learning without external influence and in close proximity to the client can build unique allocation processes that develop into unique competencies. In addition, the product (or service) life cycle can signal the need for a fundamental shift in the business model and the approach to existing resources in the business. This, in turn, will require the introduction of new human resource skills and resource allocation priorities into the organisation and, in introducing these disruptions, new competencies can be developed.

6.3.4. Organisational architecture

Chandler (1962) contends that structure follows strategy as growth (and attainment of future growth) pushes the organisation to diversify. This results in functional and multidivisional structures developing where resource allocation processes take shape. One sees this play out in DiData.

The original DiData comprised of lots of smaller satellite companies that provided specialist offerings (all to service the network) which when combined provided a comprehensive overall networking solution. Integration of these specialist areas defined DiData's approach from the very beginning. This structure remained even when these companies were incorporated into the organisation and divisional units centred on functional specialisations were formed. The changes in divisions and LoBs in the years prior to 2004 seem to reflect an expanding and rapidly changing organisation that was trying to adapt to the rapid changes in the external environment to maintain currency. The changes were difficult to interpret and anticipate and so the

organisational structure appeared quite fluid. However, what did not change was their focus on functional specialisation to reflect the way in which the client was buying.

Prahalad and Hamel (1990) write, “Core competence is communication, involvement and a deep commitment to working across organisational boundaries... The skills that together constitute core competence must coalesce around individuals whose efforts are not so narrowly focused that they cannot recognise the opportunities for blending their functional expertise with those of others in new and interesting ways” (p. 82). If one accepts this argument, then DiData’s integration competence, where they provided a holistic, integrated solution to the customer, made up of a complex set of niche technical capabilities and service offerings, would suggest that DiData itself was structured in such a way as to support communication and collaboration. However, despite the client calling for an integrated solution, their inability to purchase the solution in this way, opting rather to have a multitude of different IT personnel purchasing from DiData at functional levels, meant that DiData chose to structure the organisation in the way that spoke to this behaviour. Despite knowing that they had to conceptually sell on a final integrated output, in practice they had to sell on inputs. Looking at it from a distance they covered a broad spectrum of products and did all of them very well, in little silos. As much as it may not suit Prahalad and Hamel’s (1990) view on how a business should be structured to nurture and build competencies, the silo approach with niche specialisation and the sales focus on functional areas was in response to how the clients were buying and how the vendors were selling their products and despite the lack of internal collaboration the organisation was still able to develop this competence (although at the time of the research, there are calls internally for a new approach to their organisational structure as the client’s demands have changed).

Barnard (1938) calls for leaders to recognise the fundamental aspect of incentives to combine the individual efforts of employees into an efficient organisation and certainly in DiData, incentives, based primarily on aggressive sales targets, have played a significant part in the competitive nature of individuals in the organisation and the culture of getting the job done. Specifically, Prahalad and Hamel (1990) call for the implementation by senior management of incentive schemes that encourage knowledge and skills sharing across business units and that drive resource allocation processes to develop and protect competencies at the group-level. This articulation and pursuit of organisational competencies will counter individual competitive product or service line pursuits that act against the large competence of the organisation and through this collective action competencies for the future will be identified (Prahalad

and Hamel, 1990, pp. 89-91). In practice this brings with it problems, in particular in a high-tech, fast-moving industry, with intense external competition and with a customer-base that is largely buying based on individual products and services rather than a total competence offering. If the customer has not yet migrated to a more mature or holistic understanding of the offering that the company can bring them, the sales and technical focus will remain niche and specialized. This then creates the silo mentality which much of the literature (Prahalad and Hamel, 1990, Atuhanene-Gima, 2005, Jansen et al., 2006) warns against as it stifles broader exploration to develop potential new competencies.

Conclusion

The research highlights a paradox – internal collaboration does not appear to have been necessary for the development of competencies in this organisation, rather there exists internal competition amongst business units for the clients' resources and structures that reflect functional specialisation to match the way in which individuals at the client were buying. Despite this they have been able to develop very strong competencies with an integrated total solution which is what the client, ultimately, requires. It is not clear from the data how this was achieved but it does call into question one of the contributions made to the area of competence development by Prahalad and Hamel (1990) which calls for organisational collaboration across functional units to develop competencies. It would require additional fieldwork to see how these business units interacted and competed in practice to unearth the paradox in the organisation.

6.3.5. Strategic change

Gioia and Chittipeddi (1991) define strategic changes as actions that "enable the organisation to take advantage of important opportunities or to cope with consequential environmental threats" (p. 433). Competency theory is particularly interested in the response that organisations make to changing external markets, often unanticipated, and how they evolve their competencies to remain relevant in this dynamic environment.

Disruptive change in the communications space has impacted on this organisation three times; firstly, the introduction of electronic data communication, transmitted between devices that led to the creation of the original networks, secondly the birth of the modern PC which encouraged more advanced network infrastructure aimed at radically reducing the costs of communication and delivering greater capacity and, thirdly the standardisation of communication protocols onto the language of the internet so that alternative communication channels (like telephony and video) were now viable

business opportunities for firms operating in the traditional networking space servicing data communication.

The organisation grew out of the first two disruptions. It was the leaders identification of the impact of these disruptions on the landscape (specifically in potential clients who were data-dependent) that drove their early strategy. Eisner (2003) argues that firms that operate in rapidly changing environments will gain a competence at learning under change and will do this by interpreting the performance cues of those with whom they interact. The organisation in its earliest guise developed this learning competence and applied it in developing their early integration competence. However, it does not appear that this capability was institutionalised into the organisation, as later attempts to learn and adapt to external market changes were less successful or took longer to occur.

The third disruption played into their current store of competencies, in particular that of their technical competence in the IP, but they were slow to acknowledge the potential growth opportunities that this convergence offered the organisation. This was because they were anticipating, at a similar time, a change to the network, moving into the application layer and were committing a huge amount of resources to this new strategy. DiData anticipated an impending disruptive change that never materialised and which cost the organisation dearly. Selznick (1957) warns about bringing in opportunistic adaptation without considering the context. It appears that this has been their greatest organisational learning to date; a lesson which has carefully navigated their strategy since: they have entered new product and service lines that are much closer aligned to their historical competencies.

Gavetti and Levinthal (2000) argue that cognitive representations are outcomes of efforts at sensemaking with respect to prior experiences. The search for alternative cognitive representations may be prompted by poor performance outcomes (pp. 134-135). When Dawson took over as CEO in 2004, the organisation was close to closure. Despite the obvious failure of Proxicom and the network application layer it took new leadership under Dawson to exit these businesses and define a new strategy around their technical competence in the IP, creating six defined LoBs that exist to this day. This strategic change mirrored the shift at Cisco into these adjacent solutions based on the IP. Adaptation, as DiMaggio and Powell (1983) argue, may not have come about due to a conscious, organisation-wide focus on their core competencies or a search for alternative cognitive representations, but due to the uncertainties in the environment which caused them to seek out and mimic the change in strategy at Cisco (perceived, perhaps, as more successful and legitimate).

The final major change has been in adapting their networking offering from one that was product-based to one based on managed services and, in so doing, evolving their integration competence. This internal change was brought about by the external changes to the network products as they became commoditised and due to the demands of the client's environments and their increasingly sophisticated needs. But these external market forces were understood, or experienced, differently from one regional division to the next due. The organisation has been unable to evolve their competencies in all of their regional operations to respond to these external market cues and so performance suffers in these areas.

It is certainly not clear that the organisation has been built as one receptive to and competent in organisational change, able to adapt their strategy and their capabilities to the constant changes in the external environment. Success in this regard, in all of their regional divisions, would help make them more robust and able to adapt their current store of competencies, globally, to engage with new environmental pressures.

Conclusion

The case seems to suggest that an organisation that wishes to institute strategic change in response to changing external dynamics might be more successful in this endeavour if they go after competencies that are closely related to existing ones. This makes use of existing stores of knowledge and experience in the business and does not demand the inclusion of resources and competencies into the organisational fabric that are entirely foreign to the existing culture. In addition, the different way in which their competencies evolved across the regional divisions suggests that if the impetus for the change is understood differently in different regional divisions the organisations will experience inertia to the change which will inert the competence evolution.

6.3.6. Resource allocation process

The proposition is that competencies are built through the allocation of resources at the business unit level, but which then manifest at the organisational level. It is not only through formal strategy communicated to the organisation that competencies can develop, but also through the resource selection processes occurring at the level of the middle-management level where strategy is argued to actually take shape that one will see competencies develop and evolve. In order to understand how this played out in practice in DiData, data collection would have to focus on how individuals understood executive strategy, how they applied it in their business units, how the structural context affected the implementation of new strategies into the business and the resource-allocation decisions that were taken at middle-management that truly drove strategy.

Given that the methodology was limited to document reviews and interviews with, mostly, senior executives (due to the limited time available for the MBA research report) it was not possible to collect sufficient data on processes playing out at middle-management in response to formal strategy and the feedback cues to the executive level. For this to be properly studied it would require lengthy time engaging with personnel at multiple layers. This, however, remains an important area for further investigation.

6.3.7. Evolutionary process

Burgelman's years of study on Intel's move from a "memory" company to a "microprocesser" company provided insight into the intraorganisational, inertial forces that can cause a company's competence to evolve over time in response to external selection pressures. This highlighted the unintended consequences that a few, informal directives from senior management, which had become de rigueur in the organisation (although not formally documented), could have on the future development of a company's competence, to enhance its survival. Intel's move into semi-conductors and out of Dynamic Random Access Memory (DRAM) was precipitated on the ground far in advance of corporate strategy articulating the company's exit out of the one market and into the other.

Once again, due to the chosen methodology and the limitations of the interviews and the reviewed documents, the data did not elicit insight into the processes playing out on the "shop floor" in response to strategic management practices or informal directives that may have resulted in competencies emerging. This would also require lengthy time in the organisation which was not afforded in this research. This, too, remains an important area for further investigation.

6.3.8. External sourcing of competencies

DiData has had significant success in their acquisition strategy as they grew their global footprint. However, for the most part, their acquisition strategy has not been based on the competence sourcing but rather acquiring individual skills, immediate presence in the market and taking out competitors by introducing their unique understanding of the technologies to the existing product resale business to develop an integrative offering.

Oliver (1997) suggests that buying competencies (through acquisition or collaboration) might be the best way to add an important new competency to an organisation's repertoire, to support a new strategy, given the lengthy period involved in developed a core competence. However, DiData's most costly error and the lesson which appears

to act as a constant reminder to the leaders of the organisation when formulating new strategies or looking to acquire new businesses, is when they "bought for competencies" in the application space in the United States.

Lin et al. (2010) recognise the dangers of acquiring for competencies, in particular in unpredictable and turbulent environments, often brought about by technological change. In the case of DiData, institutional pressures (those of the stock market and the financial analysts and investors) and an anticipation of a technological change in the market drove the organisation to move into the application layer which would require building new skills in application development from the ground up in the existing organisation, or buying a sizeable operation to allow for immediate operations in this space. Oliver (1997) writes that the motivation for alliances resides in wanting to win recognition and achieve alignment with the institutional environment which dictates the rules and requirements of the organisation if it is to remain legitimate, and that it is this desire for legitimacy that drives competence acquisition rather than the genuine desire to build competencies from within to sustain competitive advantage. It is not clear if it was a genuine desire to build new competencies to remain competitive or if senior executives gave in to institutional pressures at the time of listing. Either way, this new strategy would prove detrimental to the organisation.

Karim and Mitchell (2000) contend that looking beyond the cognitive boundaries of the firm and acquiring firms with distinctly different competencies allows the firm to break free of path-dependencies, to adopt real change and new technologies. However, if the motivation for the acquisition is based on pressures of legitimacy and reputation and if the company that has been acquired contains human and technical resources which are foreign to the organisation, the acquisition could be detrimental to the organisation. The organisation found that they had committed huge resources to an area of the market in which they have little knowledge, no prior learnings and in which the required competence resided so far from their existing competencies that it could not be successfully integrated into the business.

Conclusion

Despite the obvious time and resources that are initially saved by gaining a competence through acquisition, the case highlights that external sourcing of competencies does not necessarily result in the successful evolution of existing stores of competencies. This may be due to due to the fundamental differences in the underlying resources (the human skills and the technologies), the internal processes and cultures between the organisation and the acquisition which are not easily

assimilated Perhaps, with abundant resource slack to allow for the slow integration of the acquired competence into the business, external sourcing for competencies can be successful but this is not what was found in the case.

6.3.9. Institutionalisation

Oliver (1997) argues that firms that choose to differentiate in light of interfirm level, institutional pressures, will build their unique competencies to assume a superior competitive position. The organisation, in its earliest form, was risk-prone and drove their strategic agenda at a time when the local South African market for communication services was monopolised by a large single player who set out the fairly punitive parameters for market participation. Innovation against this backdrop was not the norm and yet it was aggressively pursued by DiData and was one of the factors for their earliest success.

Selznick (1949; 1957) argues for the effect of formal and informal social structures on the development of organisational competencies. He argues for driving a company-wide focus if an organisation wishes to institutionalise a competence and build it into the DNA of the organisation. The entrepreneurial disposition of the founding members was transferred to the organisation. Individuals were given the latitude to innovate around the products and sales people were encouraged to find creative ways to best serve each customer's unique requirements. Putting the client at the centre of the organisation was a priority from the early days of the organisation. Senior executives built lastly relationships with their key clients. Employees were encouraged to spend a huge amount of time in the client's environment to really understand the customer's business. They built a fun-loving brand where wining and dining the client was acceptable.

Burgelman, Christensen and Wheelwright (2004) write that "culture is a powerful management tool... as it enables employees to act autonomously and yet causes them to act consistently." DiData developed a highly skilled and professional workforce with a commitment to the vendors' products and to innovations around them. Technicians were handpicked by Ord and his colleagues and trained the sales people before they were allowed to approach the client. Technicians were the Gods of the organisation. The leaders of the organisation encouraged their workforce to engage on an individual level with their counterparts at the vendors to further develop their product knowledge and to drive innovations to better serve the customer. Technicians had to be certified to the highest level of vendors' products, which drove an intrinsic pride in the organisations' technical competencies and was instrumental in developing their early

integration competence as well as their alliance competence (as this played out strategically, not just at the executive level but at the level of the technicians in each organisation). Through these processes value became assigned to the technicians and to the technologies and began to define the organisation.

However, as they expanded globally through acquisitions, driving this culture and creating the close-knit relationships between senior executives at DiData and senior executives at major clients, has not been as easy and so their client-centric competence was not uniformly created in all regions.

"*Professionally we have the best high level relationships in South Africa around the world, and it is one of the biggest single issues that I think that this group still faces, is how do we develop the same level of relationships with senior management in other parts of the world, because we just don't do it as effectively as we do in this country."* (J. Ord, personal communication, August 27, 2012).

A major wave to hit the organisation was in managed services, as products became commoditised. This required the introduction of sales and marketing skills into the organisation to push a new managed services offering. The strategic focus shifted away from the all-consuming focus on the technologies and innovations around the products, to a longer-term service offering to manage their client's environment. This did not resonate with the technicians in the organisation and to some of the salespeople who had derived great recompense out of the products.

The earlier process of institutionalisation which is argued to be necessary to develop resources into distinctive competencies resulted in a rigidity to change when the technicians and salespeople, skilled in selling the products, perceived a threat to their existence or value in the organisation. Selznick (1957) warns that leaders of organisations need to anticipate the possibility of this opposition at moments of strategic change. Unfortunately, the leaders of the organisation did not anticipate it. They failed to recognise the emotional attachment to the products that caused certain regional units to resist this shift in focus. They also failed to recognise that, where the region was further removed from the global head office situated in South Africa, there could exist an even greater inertia to change due to cultural differences between the regional unit and the Group.

Conclusion

The case highlights the role of the leader in driving a company-wide focus to develop formal and informal social structures which then attribute value to certain resources

and processes in the organisation which become institutionalised and develop into organisational competencies. The case gives evidence of the rigidity that institutionalisation, initially required to develop certain competencies, can exert on competence evolution due to perceived threats on the existing norms and values in the organisation.

6.3 Emergent themes

Two key themes emerged which were not originally covered in the literature review and which did not inform the framework for the initial research, but they were relevant to understand the development of competencies in DiData. They provide an interesting avenue for future research on competence development –

- Competence developing in an emerging market space
- Competence development in a protective incubator

Both of these are addressed below with the introduction of new literature to provide a conceptual understanding of the findings.

6.6.1. Inherent competence of emerging market multinationals

"Having grown our business out of developing markets into developed markets, Dimension Data is often the partner of choice for global and multinational clients...Our differentiation is not merely in our footprint, but in our ability to provide local, in-country expertise and delivery capabilities that few competitors can match" (Dimension Data, 2007, p. 12).

Guillén and García-Canal (2009) address the different patterns by which new multinational enterprises (MNEs) from emerging countries have followed completely different patterns of international expansion than the traditional developed world approach which dominated the global economy during much of the post-World War II era. There are many international networking companies (IBM, HP, Orange Network, *et cetera*) that operate on a global stage as competitors to DiData. In many ways, DiData is led to innovate in new technology areas by the networking products that enter the market from their major partner, Cisco, who has vendor relationships with all of them. Isomorphism in the networking space, particularly as intermediates in the value chain, could have reduced the differentiation between DiData and their competitors. As markets mature and innovations become less differentiable, as customers seek out greater standardisation of their networking products, DiData should be cognisant of these isomorphic pressures as they accumulate resources to enhance their competencies. However, what has always set DiData apart from their competitors and

might guard against some of these isomorphic pressures is that they grew out of an emerging market to provide a global integration competence to international clients who wanted a provider with this nuanced understanding of these emerging (or developing) markets.

Guillén and García-Canal (2009) contend that the "new" MNE has a number of unique features which sets them apart from their competitors; the accelerated pace of internationalisation in an attempt to close the gap between market reach and the global presence of developed country MNEs and an ability to deal with the liability and competitive disadvantage that stem from being latecomers lacking the resources and capabilities of established MNEs from the most advanced countries. Although, as has been shown above, this lateness curtailed only the organisation's physical expansion rather than the intellectual expansion and accumulation of resources required to compete effectively. The new MNE is used to unstable political and social environments (often with weak institutions) and so develops a capability to work within these constraints and their adaptability is high because of their rapid expansion which forces them to adapt fast (Guillén and García-Canal, 2009, pp. 26-27). This speaks directly to the early years of DiData and their rapid development of networking within the small, heavily monopolised IT environment of the 80s and early 90s and their aggressive expansionary path in the mid to late 90s which further drove their growth and developed their various competencies on a global scale.

Guillén and García-Canal (2009) speak of the intangible assets of the new MNE, most notably for this case, the early adaptation and adoption of technologies developed by someone else but implemented in the home space, product innovation, institutional entrepreneurial ability and networking skills (that of cooperative relationship-building) in developing markets (pp. 30-32). These intangible assets were developed in DiData in their foundational years and drove the development of their early competencies.

Further research comparing similar companies' competence development in a particular industry, from an emerging market and developed market perspective could provide an interesting new approach to competence development which tries to uncover any inherent differences in developing or emerging market companies and developed ones.

Conclusion

The case highlights how an emerging market company can develop unique organisational competencies due to their institutional environment, distinct from that of a developed market company. Institutional voids in the environment will encourage the

organisation to develop entrepreneurial approaches to resource accumulation out of which the earliest competencies will develop.

6.6.2. Competence development in protective incubators

"Conventional wisdom, founded on solid empirical research, refutes the infant industry argument for protection ... [but] protection might foster the development of competitive competencies, contingent on other factors being present" (Klein & Wocke, 2009, p. 342). Given that DiData emerged out of the sanctions era of the 80s and the end of apartheid in the early 90s, during a period of rapid technological change in the external global environment, one would imagine that whatever competence they had developed in network integration would have been so localised to the South African client environment as to be rendered uncompetitive when applied outside of this environment. Rather, DiData overcame the institutional voids in their home market (inefficient regulatory environment, limited formal market information, limited knowledge accumulation due to the isolation) and this formed the basis for international expansion (Klein & Wocke, p. 343). These also kept multinationals away (both the aggressive vendors, with potential price-setting tactics and strong opinions on the product placement, and competitive resellers in data communication) which allowed DiData to come to terms with new technology, new ways of imagining the clients' space and forging the close networks that would stand them in good stead for the next 20-odd years.

During this period the organisation developed their knowledge-intensive resources with idiosyncrasies that created the "causal ambiguity" of the organisation that would make replication difficult (Peteraf, 1993). They acquired human and technical skills in isolation and created unique processes and allocation priorities to service the market, without the support from external influences (which exist in a truly competitive environment) and this led to a robust integration and client-centric competence that has been very difficult for outsiders to imitate. Interestingly, given that they have not been able to replicate this genesis in all of their regional operations (where they bought existing companies in order to enter the market) their integration competence as well as their client-centric competence is not nearly as robust in some regional divisions.

There are many arguments against protectionism of infant industries given its propensity to encourage uncompetitive practices, however, DiData developed their integration competence in this protective bubble with a keen eye on the external market conditions and readying themselves for entry in the global networking space when the political situation would allow it, to ensure that their competence matched that of their

future potential global competitors. It did not limit their understanding of the global competitive environment but rather gave them the time to accumulate their resources as idiosyncratic to the organisation and innovate without external pressures.

Organisations that are able to develop their competencies in an isolated environment might be more innovative in the development of their competencies precisely because of this isolation which forces them to innovate to overcome voids in the environment. They will also be free from competitive pressures that might disrupt the focus of the organisation from the development of unique competencies, brought about by unique resource allocation processes and practices.

Conclusion

The case suggests that an organisation whose genesis is in a protected and isolated environment, at a time of rapid technological change in the global environment, will be afforded the time to amass resources and adopt processes to provide unique solutions to the market in a fairly uncompetitive space, which will develop into organisational competencies. The continued success of these competencies, once isolation ends, appears to be due to leaders developing them with a view to re-entry into the global competitive environment when isolation ends; human and technical skills and future strategies are then more robust in the competitive space when it arrives.

7. Conclusion and recommendations

7.1. Introduction

The academic discipline of strategic management lacks a critical body of empirical research which provides insight on firm success and competitiveness. In addition, there does not appear to be any such research in this field in the South African case. The choice of methodology in this research paper tackled both of these voids. Illuminating the internal workings of the firm from a Penrosian perspective went a step further. The research opened up the black-box of firm success, and more specifically, that of a firm's competence development and the evolution of competencies in response to changes in the external environment.

The research set out to develop an understanding of the complex intra-organisational allocation processes and prioritisations that shape bundles of firm resources to form unique organisational competencies. The research set itself apart from strategic management theory which looks at the positioning of a company's products and services in the market as the means to differentiate and gain superior profits. The intention was to provide case-specific insight into the competence development in a firm that might add to the current dearth of empirical research available in the resource-based and, more specifically, the competence field, and to provide some illumination to practitioners. It also attempted to unearth the processes by which competencies evolve in response to changing external market pressures. In the complex and, increasingly, competitive world in which organisations are born, succeed and, often, fail, there is a need for strategic management theory that can provide guidance on best practice in the pursuit of this organisational success.

7.2. Research contributions

The research successfully contributed the following;

1. It answered the call of major theorists in the field to undertake case study research which does the hard work of tracing competence development and change in practice.
2. One of the first achievements of this research was reached prior to going to field: it entailed creating a framework for analysing how competencies develop and evolve from a distillation of a vast body of literature. This literature spanned a wide range of relevant theories that adopted an internal orientation of the firm and it included behavioural and organisational theories too. The literature on competencies does not currently provide a decisive framework or model that

might speak to how competencies are developed or might evolve. This framework had to be created in order to guide data collection and analysis. The contribution of this phase of the research was to distil a set of conceptual propositions from the disparate literature for empirical testing. The framework consisted of nine themes and associated propositions that extended beyond strategic management theory.

3. It provided a fair degree of in-depth insight into the nature and development of competencies in a particular firm, which contributed to its long-term success.
4. The final paper, thus, added to the body of knowledge about how competencies have developed in practice and, in turn, contributes to and improves theory development on how firms develop competencies and evolve them to maintain competitive advantage. This might inform the kinds of processes that leaders and / or practitioners need to take into account in their firms.

7.3. Research findings

The research found that many of the propositions were relevant in explaining the development and evolution of competencies in DiData. However, the case of DiData also raised interesting findings which suggest that some theories, such as those around internal collaboration and the critical role this plays in competency development, may need greater nuancing. The findings of this case were;

1. Competencies can be developed without formal articulation by leadership of the organisation's initial pursuit of the competencies. However, strong leadership might be essential in driving a particular strategy that, once it becomes institutionalised, develops into a core competence.
2. Whilst an organisation might not signal its intention to create competencies, the choice of positioning in the market guides their approach to customers and competitors in the market and it is this market orientation that might drive the successful development of competencies.
3. Early learning without external influence and in close proximity to the client can build unique allocation processes which can then develop into unique competencies.
4. Internal collaboration does not appear to have been necessary for the development of competencies in this organisation.
5. Competencies might be more easily created when strategic change brings about an adaptation to the existing use of resources. If the impetus for strategic change is understood differently in different regional divisions the global

organisation might experience inertia to the change which will inert the competence evolution

6. Despite the obvious time and resources that are initially saved by gaining a competence through acquisition, the case highlights that external sourcing of competencies does not necessarily result in the successful evolution of existing stores of competencies.
7. The institutionalisation process is shown to be instrumental in the adaptation of organisational processes into competencies over time. Institutionalisation, however, might cause competencies to inert due to perceived threats on the existing norms and values in the organisation.
8. An emerging market company might develop unique organisational competencies due to their institutional environment, distinct from that of a developed market company.
9. Organisations that are able to develop their competencies in an isolated environment might be more innovative in the development of their competencies precisely because of this isolation which forces them to innovate to overcome institutional voids in the environment. This isolation frees them from isomorphic pressures in resource accumulation and allocation.

7.4. Key shortcomings of the research and areas for future research

This research was not going to be able to provide answers to the theoretical debate within competency theory on whether or not, as Eisenhardt and Martin (2000) would argue, competencies can be copied from one firm to another. Future research might be able to tackle this issue by researching the organisation's competitors over the years in networking and systems integration, to see if their exists any replicability between the firms and, if so, how this then explains one firm's superior performance over another's in the industry. The apartheid era and the sanctions that ensued created a protected and isolated environment, out of which many successful South African-grown organisations emerged. It would be very interesting to carry out additional case-study research on some of these organisations to further test the notion of competence development in a protected environment to see whether isolation is a necessary antecedent for competence development. For practitioners this might provide little comfort.

Given the intricacies of the research methodology and the field of study, the time to research in-field must be extended in order to document the allocation priorities all the way down the chain of command and to elicit insight into the processes playing out on

the “shop floor” in response to strategic management practices or informal directives that may have resulted in competencies emerging. A return to this case could also focus on the dissemination of strategic processes and priorities as they played out in different business units and as they were received in different regional units with different relationships to the Group Executives with their origins in South Africa.

7.5. Understanding the implications and recommendations

The research does not aim to be representative. However, the findings of this research contribute to an in-depth understanding of the reasons for this particular firms’ success as well as contributing to an area of strategy theory that is empirically understudied, particularly in the South African case.

As explained in the introductory chapter of this paper, it is argued that a multitude of firm-level case studies is required to develop an understanding of the dynamic processes at play in the attainment of firm success. Strategy theory might then be able to suggest best practice to practitioners for the development of competitive advantage and long-term firm success.

It is the hope of this paper that future research endeavours in this field might adopt the case-study methodology and, possibly, the framework that was created in this research when going into field to determine the precursors to success of firms and so add to the much-needed empirical research in this area of strategy theory.

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Appendices

Appendix 1. Chronological sequence of competence definitions

Date	Contributor	Definition
1942	Schumpeter	To survive a firm must innovate. Large organizations, rich with various resources, will be more likely to survive such external threats due to their greater capacity for innovative and imitative change ie: these resources act as facilitators for change.
1957	Selznick	[Distinctive competence] … an organization's peculiar adaptation to its own special purposes and programs. It is the role of organizational leaders to identify, nurture and protect this competence and the unique resources that underlie it.
1957	Selznick	It is the role of organizational leaders to identify, nurture and protect this competence and the unique resources that underlie it.
1984	Wernerfelt	Resources, like capabilities, consist of assets that influence implementation, and proper fit with resources results in effective competitive strategy.
1990	Prahalad & Hamel	Competencies are the collective learning in the organization, especially how to coordinate diverse production skills and integrate multiple streams of technologies.
1992	Hall	Distinctive competencies are the capabilities the organization possesses that set it apart from its competitors. [Skills or competencies are] the know-how of employees and other stakeholders and the collective aptitudes.
1992	Leonard-Barton	Competence is a complex knowledge system that includes employee skills and learning, and the technological, managerial and value systems of the firm
1992	Nelson & Winter	In their routine-based view of organizational evolution, historically accumulated resources play a fundamental role in predicting firm response and performance under changed market conditions. Path dependence severely limits the range of responses that firms can employ when confronted by environmental turbulence and, thus, affects the evolution of firms and industries. Firms with greater resources face a less narrow and idiosyncratic menu of options.
1994	Bogner & Thomas	Competencies are firm-specific skills and cognitive traits directed towards the attainment of the highest possible levels of customer satisfaction vis-à-vis competitors. Competence is comprised of three fundamental components: shared value systems, recipes and routines, and tacit understanding of interaction
1994	Hamel & Heene	Competence are skills that enable a firm to deliver fundamental customer benefits by enabling the firm to establish, enhance, upgrade and utilize proprietary access to those resources that lead to a stream of sustainable competitive advantages.
1996	Barney	Organizational culture could also be a fundamental source of competencies and sustained competitive advantages.
1996	Lei, Hitt & Bettis	A firm's competence(s) is defined as a set of problem defining and problem-solving insights that fosters the development of idiosyncratic strategic growth alternatives.
1996	Sanchez, Heene & Thomas	[Competence is] the ability to sustain the coordinated deployment of assets in a way that helps a firm achieve its goal.

1997	Gorman & Thomas	Competencies are value-adding combinations of resources and capabilities. In this definition a competence is a more valuable source of competitive advantage than either a capability or a resource, since competencies are more difficult for competitors to detect or copy.
1997	Sanchez & Heene	Competence, …, is the ability of an organization to sustain coordinated deployments of resources in ways that promise to help that organization achieve its goals.
1997	Teece, Pisano, & Shuen	Organizational routines/competencies: When firm-specific assets are assembled in integrated clusters spanning individuals and groups so that they enable distinctive activities to be performed, these activities constitute organizational routines and processes.
1997	Teece, Pisano, & Shuen	Dynamic capability is the firm's ability to integrate, build and reconfigure internal and external competencies to address rapidly changing environments. We define those competencies that define a firm's fundamental business as core [competencies]. The term 'dynamic' refers to the capacity to renew competencies so as to achieve congruence with the changing business environment.
1998	Dosi, Giovanni & Teece	…a firm's distinctive competence needs to be understood as a reflection of distinctive organizational capabilities to coordinate and to learn. Posed differently, a distinctive competence is a differentiated set of skills, complementary assets, and organization routines which together allow a firm to coordinate a particular set of activities in a way that provides the basis for competitive advantage, in a particular market or markets.
2000	Eisenhardt & Martin	Dynamic capabilities are the organisational and strategic routines by which firms achieve new resource configurations as markets emerge, collide, split , evolve and die.
2000	Winter	Organisational routines which manipulate firm resources are important to a firm's competitive advantage.
2003	Wang & Lo	Competencies are a complex combination of processes, routines, technologies and individual skills. There are three broad types of competencies which contribute in different ways to the competence of the firm - technological, marketing and integrative (which reflects the degree of fitness between technological and marketing).
2008	Ray & Ramakrishnan	Competence is a combination of firm-specific resources, each resource being under the state of sufficiency, which are glued together by various relevant organizational processes, routines, and bonding mechanisms, towards achieving specific organizational objective(s).
2003	Wang & Lo	Build and upgrade competencies through organizational learning, innovative ability and strategic flexibility
2004	Sanchez	Competencies are manifest in specific activities and processes at different levels within organizations. Identifies five competence modes within the org.
2008	Danneels	A first-order competence is a skill at performing a particular task, whereas a second-order competence is a skill at learning new tasks. Compared to first-order competencies, second-order competencies sit at a higher level; they are not specific to a certain domain of knowledge and skill, but rather refer to the ability to learn new domains.

Appendix 2. Description of research given to respondents

Research Title: The development and evolution of competencies in a successful enterprise in a competitive industry

My research is about understanding –

a) What is Dimension Data's competence/s?
b) What drove the development of the competence/s?

The definition of competence used in this research is –

- The ability of an organisation to do something well in comparison to its competitors in order to achieve above-average profits.
- A company's competence is associated with its performance.
- It is assumed that the development of that competence has led to the success of the business, providing it with a competitive advantage.

Certain criteria must be met for a competence to be regarded as such. It must –

- Provide potential access to a wide variety of markets;
- Make a significant contribution to the perceived customer benefits of the end product; and
- Be difficult for competitors to imitate.

Appendix 3. Questionnaire guide used by researcher

Interview Guidelines

Ask the respondent to sign the consent form to authorise the interview and the use of the findings. Explain that you would like to record. Give them the description of the research. Propose to them that the initial exploratory interview and reading of their annual financial reports and other documents, available in the public domain, lead one to believe that integration is one of their competencies, as per the definition, historically and still today. Would they be comfortable with this assessment and can they identify anything else at this juncture? Probe them further and ask why they believe it to be so.

Interview Prompts

1. Leadership

- Can you explain to me how you built your heritage in integration – from the early days of the organisation to today?
- What were the processes involved in setting up this competence? In terms of recruitment practices, resource allocation decisions, skills development, strategic direction, innovation, the alliances that you sought out, etc?
- Have there been inflection points in the development of the network integration capability over the years, where the focus has shifted off it and then returned? If so, why?
- Did you identify integration as a competence in the early days of the organisation? Was it articulated to managers and, the priority of it to the business made clear? If so, how?
- If so, why or how did you identify it as key to your future success? Or anticipate the future importance of communication integration in the evolution of the industry?

2. Market orientation

- What strategy does the marketing department employ to gather information about customers and competitors?
- How instrumental was marketing in the development of networking – ie: relative to other things, how important was the knowledge of what competitors were doing and the potential future needs of customers in the development of networking?

- How did you gather this information? Did it inform the strategic choices that you made along the way?
- How is customer and competitor information shared in the organisation – both in the NI LoB and company-wide?

3. Learning and Innovation

- Does the organisation follow industry best practice or are there unique practises that may speak to the development of competencies?
- What underpins there competencies – design, configuration, deployment, relationships, *et cetera*? How were these developed and how have they been kept current?
- Is there a conscious strategy to seek continual learning and innovation and the sharing of knowledge in the organisation, in the development of networking and the NI LoB?
- What is the role of R&D at DD – the Global Alliance Strategy and Global Research and Development Initiative with leading tech vendors?

4. Organisational architecture

- Are there incentives to collaborate and share knowledge across units or are they incentivised to focus on their LoBs rather than the collective DD?
- What effect does that have on the currency of network integration as the backbone of the organisation?
- Have you attempted to collaborate across functional/technical expertise in various areas at any point as you've developed your competencies?
- Is there significant competition across units? How does this play out?
- Is there an organisation-wide understanding of the importance of networking to the business – if so, why do you think so, how does this manifest?
- Did/do your recruitment practices support the development of your competencies – ie: do you recruit especially for technicians (and others) who will enhance your competencies?

5. Strategic change

- Did their competence in integration spawn new competencies in other areas – was it intentional or unintentional?
- Did these new competencies shift the focus away from NI and was this problematic?

- If intentional, was there a clear company-wide strategy that articulated which additional competencies the business wished to develop and how this would occur?
- Was there any resistance to this – moving away from a focus on networking to pursue other avenues?
- Was there a period in the organisation when network integration was not regarded as core?

6. Evolutionary process

- Does the group-level understanding of their competencies and the LoB's understanding of their divisional competence align?
- Has the LoB developed competencies through certain processes that were not intentionally put in place?
- How do strategic management practices play out in the organisation?

7. External sourcing of competencies

- What is it about DD's approach (versus those of competitors or even those in other industries who might have approached an alliance strategy to develop or enhance a competence) that has enabled you to be successful and, through the success, further develop the business?
- Did you identify alliances and acquisitions as key to building your competencies?
- Would you say that DD acquires for new competencies or as a means to build on existing ones and scale?

8. Institutionalisation

- Do you think the network integration, alliancing, *et cetera,* are taken for granted competencies in the organisation? Do you think that is a good or a bad thing?

Competence Framework

- Show them the survey and explain how it was created from the framework which developed out of the literature review. Ask them to consider the propositions in the survey and fill it out.
- Ask them to identify the top three drivers out of the nine themes.

Appendix 4. Dimension Data timeline of events and achievements

1982:

- Sievers, and later Ord, found a network integration company in South Africa, which merges with a company owned by two former schoolmates (Bruce Watson and Richard Came).
- Revenues of R300,000 (approximately $230k at that time).

1987:

- Listing on JSE at 150 cents a share and raised R7.5m
- Revenues of R17.4m.
- Stock market crash, 3 months later, share price goes to 80c.
- Share price recovers to R1.15.

1994:

- DD SA becomes a Cisco Gold Partner.
- DD expands into Software and Services sectors.

1995-1997: Expansion into Asia Pacific Region

1998-2000: Expansion into Northern Hemisphere

1999:

- Dimension Data becomes the world's largest independent networking services company – main competitors: AT&T Solutions and IBM.
- South African networking business records revenue growth of 40%

2000:

- Dimension Data lists on the London Stock Exchange on 19 July – raises $1.25bn (all reports converted to dollars).
- Enters FTSE at 42nd position on 18 September.
- Establishment of Protocol division – a venture capital fund (seen as incubator more than venture capital fund).
- Dimension Data becomes one of the first network and e-business services organisations to achieve Cisco Gold Partner Certifications on five continents.
- Dimension Data launches its unique and globally standardised Managed Services offerings, using its proprietary Global Services Operating Architecture.
- Rebranding of the regional business units under the Dimension Data brand.

2001:

- Acquire Proxicom for $478m

- Operating profit of $ but net loss of $
- Group structure changed – Lines of Business no longer around specific technology offerings but focused on Connectivity Services and Integration Services as a 'go-to-market' strategy, around four global Lines of Business, namely Customer Interactive Solutions, Service Provider Solutions, Multi-Channel Infrastructure Solutions and Application Integration.
- Brett Dawson appointed Group COO
- Appointment of global and regional sales and services directors.

2002:

- Revenues exceed US $2bn
- Cost reductions of 11% largely due to the 19.6% (2,478) reduction in headcount.
- Share price drops to 13.75p and ends the year on 16p
- Launch and global rollout of the 'DD Way', a performance-based realignment and transformation programme focused on improving the Group's competitive positioning and financial performance.

2003:

- Revenues exceed US $2bn
- Refocus of the business on driving improved market penetration of the networking integration business and a re-emphasis on its strategic importance.
- Creation of five LoBs – Network Integration, Application Integration, Platform Solutions, Customer Interactive Solutions and Security Solutions.
- Sharpe decline in revenues in the US due to decline in IT spending from primary financial services customer base – need to drive improved penetration in this space in network penetration.
- DD recognises the strategic importance of products in their solutions offering but target to grow their services offering to more than 50% of turnover in the medium term.

2004:

- Jeremy Ord appointed Group Executive Chairman
- Brett Dawson appointed Group CEO
- Recognition that the network is now mainstream but its strategic importance is increasing as it expands beyond communications to providing creative solutions that allow isolated technology investments to be exploited throughout the entire company.
- Sales of Proxicom (the US-based web design and Internet consulting business)
- All communications – voice, video, data – have converged onto a common network that speaks the language of IP – the Internet Protocol.

- Network Integration represents 58% of the Group's total revenue.

2005:

- Dimension Data named Cisco Global Partner of the Year
- Dimension Data holds 540 Microsoft certifications across some 210 technical employees
- Dimension Data amalgamates UK and Continental Europe to form one region known as Dimension Data Europe.
- 20 year networking heritage - Dimension Data's core competency is their skill in connecting businesses, their customers, partners and suppliers over local and wide area networks. This enables them to move into several other technology competencies that have a critical reliance on the network.
- Revenues in the Network Integration LoB up 7%

2006:

- Revenues exceed US $3bn
- Network Integration represents 49% of the Group's total revenue and shows revenue growth of 13.6%.
- Dimension Data is named Cisco Global IPC Partner of the Year.
- Dimension Data has more than 1,100 Microsoft certifications, including 450 Microsoft-certified Engineers (MCSE).

2007:

- Dimension Data opens representative offices in the United Arab Emirates and Saudi Arabia, expanding its operations to form the Middle East & Africa region.
- Dimension Data wins the Cisco Partner of the Year Award for the second time.
- Dimension Data Middle East & Africa named Top ICT Company in Africa.

2008:

- Revenues exceed US $4bn
- Dimension Data is positioned as a Challenger in Gartner's Magic Quadrant for Managed and Professional Network Service Providers.
- Dimension Data has won eight Microsoft Global Partner of the Year Awards over the past four years unequalled by any of Microsoft's 400,000 partners worldwide.
- Dimension Data is a Cisco Gold Partner in 29 countries and wins 20 awards including three global awards, at the Cisco Partner Summit.
- Dimension Data named McAfee Global Partner of the Year.

2009:

- Dimension Data signs Global Gold Partner Agreement with Check Point.

- Dimension Data has 75-100 Consulting employees; 311 ITIL certifications; 300 CCIEs; and 450 MCSEs with over 1 400 Microsoft certifications.

2010:

- Revenues exceed $4.7bn
- October, Nippon Telegraph and Telephone Corporation (NTT), a global telecommunications service provider, acquires 100% of Dimension Data for approximately R24bn all-cash deal.
- Dimension Data is delisted from the Johannesburg and London Stock Exchanges.
- Network Integration represents 48% of the Group's total revenue.
- Dimension Data becomes one of four organisations worldwide to achieve Cisco Global Certification.
- In the year, 2400 employees acquired more than 8500 technical certifications across 46 different vendors.
- Gartner recognises Dimension Data in the Challengers Quadrant for Communications Outsourcing and Professional Services Magic Quadrant, Worldwide.

Sources:

- Dimension Data Website
www.dimensiondata.com/rgn/za/AboutUs/History/Pages/Home.aspx
- Dimension Data Annual Reports
http://www.dimensiondata.com/AboutUs/FinancialPerformance/HistoricalResults/Pages/Home.aspx
- Researcher's own findings in the course of the interviews

Appendix 5. Survey administered to Dimension Data respondents

THE ENABLERS OF CORE COMPETENCIES IN A SUCCESSFUL ORGANISATION

Indicate the relative importance you place on each of the 9 "enablers" below, in the development of DD's primary core competence in networking.

	Strongly agree	Agree	Neither agree or disagree	Disagree	Strongly disagree
Leadership *The leadership of the organisation exhibited foresight in identifing, articulating & actively driving the core competence.*	100%				
Market orientation *An understanding of current & future customer needs, driven by exhaustive market knowledge (of both customers & competitors) helped create the core competence and was instrumental in driving the development of new ones in the organisation.*	44.4%	44.4%		11.1%	
Learning and innovation *The core competence/s was built out of innovative processes and practices AND an employee willingness to share knowledge & skills throughout the organisation.*	11.1%	55.6%	11.1%	22.2%	
Organisational architecture *Top management incentivises individuals and business units to collaborate across units to develop the core competence over the pursuit of individual products or service lines.*		44.4%	33.3%	22.2%	
Organisational adaptability *The organisation has been able to readily adapt its core competence in response to the changing dynamics of the external competitive environment.*	44.4%	55.6%			
Resource allocation process *The operational & middle managers in the organisation are instrumental in identifying new competences & committing resources to their development.*	11.1%	55.6%	22.2%		11.1%
Evolutionary process *Core competences have arisen unintentionally as the middle & operational managers respond to external market cues & shift the allocation of resources in response.*		33.3%	55.6%	11.1%	
External sourcing for competencies *Core competences were developed through the selection & management of alliances with key partners & the acquisitions of businesses with competences similar to the organisation.*	44.4%	44.4%		11.1%	
Institutionalisation *The core competence/s are valued internally and seen as integral to the organisation's historical success AND they are regarded as identifiable characteristics of the organisation.*	44.4%	44.4%	11.1%		

Percentage represents the cummulative answers from the respondents to each proposition

Appendix 6. Turnover by region and by product versus service 2002-2009***

		2002	% of Total	2003	% of Total	2004	% of Total	2005	% of Total	2006	% of Total	2007	% of Total	2008	% of Total	2009	% of Total
Product	MEA*	101 654	34.7%	138 333	37.9%	150 417	33.8%	167 118	34.3%	183 855	28.1%	225 943	26.6%	297 267	29.7%	266 676	27.7%
	Asia	250 148	61.8%	202 268	61.5%	225 165	62.2%	296 406	65.0%	310 018	64.3%	374 834	64.5%	488 409	66.0%	353 752	60.5%
	Australia	284 166	77.9%	291 616	76.6%	375 556	78.1%	470 878	78.7%	526 032	79.6%	607 266	76.7%	731 352	75.1%	644 746	75.4%
	Europe	236 229	65.5%	252 647	66.1%	291 043	66.3%	395 609	56.9%	415 552	56.6%	593 387	61.8%	676 599	60.4%	577 621	57.6%
	UK**	80 060	41.3%	69 399	33.7%	87 046	39.9%										
	US	367 049	72.9%	254 323	73.5%	327 789	78.6%	302 463	74.9%	418 078	78.4%	440 272	75.9%	536 385	78.1%	377 123	71.4%
	Other			3 344	55.5%	4 932	88.0%	4 762	95.6%	3 296	90.1%						
		1 319 306	**62.2%**	**1 211 930**	**60.2%**	**1 461 948**	**61.7%**	**1 637 236**	**61.9%**	**1 856 831**	**60.5%**	**2 241 702**	**59.6%**	**2 730 012**	**60.4%**	**2 219 918**	**56.4%**
Services	MEA*	191 212	65.3%	227 095	62.1%	294 755	66.2%	319 698	65.7%	470 014	71.9%	623 295	73.4%	703 405	70.3%	697 674	72.3%
	Asia	154 760	38.2%	126 457	38.5%	137 115	37.8%	159 571	35.0%	172 139	35.7%	205 995	35.5%	251 878	34.0%	231 192	39.5%
	Australia	80 443	22.1%	88 910	23.4%	105 522	21.9%	127 725	21.3%	134 553	20.4%	184 186	23.3%	242 683	24.9%	210 312	24.6%
	Europe	124 545	34.5%	129 476	33.9%	147 798	33.7%	300 243	43.1%	319 163	43.4%	367 435	38.2%	443 967	39.6%	424 380	42.4%
	UK**	113 592	58.7%	136 519	66.3%	131 214	60.1%										
	US	136 704	27.1%	91 728	26.5%	89 022	21.4%	101 402	25.1%	114 899	21.6%	139 610	24.1%	150 008	21.9%	151 054	28.6%
	Other			2 680	44.5%	670	12.0%	217	4.4%	363	9.9%						
		801 256	**37.8%**	**802 865**	**39.8%**	**906 096**	**38.3%**	**1 008 856**	**38.1%**	**1 211 131**	**39.5%**	**1 520 521**	**40.4%**	**1 791 941**	**39.6%**	**1 714 612**	**43.6%**
Total P & S		**2 120 562**		**2 014 795**		**2 368 044**		**2 646 092**		**3 067 962**		**3 762 223**		**4 521 953**		**3 934 530**	

* Africa division becomes Middle East Africa (MEA) in 2007
** UK incorporated into Europe figures from 2005
** Annual Reports only begin to show breakdown of Product v Service Revenues from 2002-2009

Appendix 7. Operating margins by region 1999-2009

	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
MEA*	19.1%	20.6%	15.4%	6.8%	1.5%	6.2%	8.7%	7.6%	8.3%	8.8%	8.8%
Asia	9.6%	9.8%	8.6%	4.2%	0.7%	1.9%	3.8%	5.4%	6.3%	6.1%	8.7%
Australia	4.2%	5.5%	4.1%	2.8%	3.3%	2.9%	3.1%	2.9%	3.7%	4.1%	4.7%
Europe		8.3%	6.9%	5.2%	1.6%	1.7%	1.0%	0.2%	0.9%	2.0%	3.2%
UK**	10.8%	9.7%	10.8%	4.5%	5.3%	5.8%					
US		7.4%	3.0%	-1.8%	-4.9%	1.1%	1.9%	1.9%	3.0%	2.9%	1.0%

* Africa division becomes Middle East Africa (MEA) in 2007
** UK incorporated into Europe figures from 2005