

4th International Critical Management Studies Conference

'Critique and Inclusivity: Opening the Agenda'

4th - 6th July 2005

Judge Institute of Management,
University of Cambridge, Cambridge, UK

Kurt April

University of Cape Town & University of Amsterdam

Marylou Shockley
Oxford University

Stream: SOCIAL NETWORKS

Paper Title: Social Complexity – An Integrating Catalyst for Complementary
Resource Combinations in the South African Assurance Industry

Contact Information:

Dr. Kurt April

Professor in Leadership and Knowledge Management
Graduate School of Business
Breakwater Campus: Greenpoint
University of Cape Town
Private Bag
Rondebosch, 7701
Cape Town, South Africa

Telephone : +27 21 794-0261
Fax : +27 21 794-8938
Email : aprilkur@gsb.uct.ac.za

Dr. Marylou Shockley

Post-Doctoral Researcher
787 Mediterranean Ln
Redwood City
California 94065-1758
United States

Telephone : +1 650 593-3850
Email : mlshock@attglobal.net

Abstract

Much of the business literature on competitive advantage investigates corporate effort at the strategic level and tends to focus on key success factors that sustain advantage. Porter (1980), one of the first researchers to explore within-firm dynamics of how advantage is created, used “value chain” analysis as a tool for inter-functional linkage. Our research contributes to intra-firm exploration, using resource-based theory first conceived by Chamberlain (1933), Selznick (1957) and Penrose (1959). Resource-Based Theory (RBT) introduces the notion that assets can be exploited to create value, not only through inter-functional linkages (as in value chains) but also through idiosyncratic processes, knowledge, and cultural values.

We have extended RBT to include a concept called complementary resource combinations (CRCs). CRCs are not factor inputs (in an economic sense) like tangible and intangible assets; they are complex combinations of assets, people, and processes that firms use to transform somewhat inert resources and assets into unique outputs such as products and services. Through our study of four assurance firms in South Africa, we have developed a “Framework for Sustainability” that shows how these firms use CRCs, especially combined with IT assets, to marketplace advantage.

Because of space requirements, this paper focuses only on one of the firms CRCs, as well as identified enabling social complexity attributes. CRCs exist in a complex web of social interactions and may even depend critically on particular individuals. Our research findings indicated that assets and resources such as IT hardware and software do not per se possess properties of “rarity”; but, it is through idiosyncratic combinations with an array of processes, actions, strategic intentions and programmes within each firm, i.e., CRCs, that enable the firm to build socially complex and unique barriers to imitation that support core capabilities sustaining a firm’s competitive advantage over time.

Key Words

Social networks, strategic competitive advantage, social complexity, resource-based theory

1 Theoretical Framework

1.1 Strategic Focus: Industry Organizational (IO) vs. Resource-Based Theory (RBT) Perspectives

The field of strategy, during the past three decades, has largely been shaped around the Andrews (1971)¹ framework, who defined strategy as the match between what a firm *can* do (organisational strengths and weaknesses) within the universe of what it *might* do (environmental opportunities and threats). However, even though initially the power of Andrew's framework was recognised, managers were given few insights about how to assess either side of the equation systematically. The first important breakthrough came in Porter's (1980) book, in which he discussed his work built on the structure-conduct-performance paradigm of industrial-organisational (IO) economics². The IO view defined competitive advantage as a position of superior performance that a firm achieves through offering products or services at lower prices than other providers, or by offering differentiated products or services for which customers are willing to pay a premium (Lado, Boyd, & Wright, 1992).

Porter revised the traditional IO view (Cho, 1996) with his value-chain framework, by stating that the sources of competitive advantage are not only from the external environment but also from a firm's internal and unique characteristics (the missing link from most IO research at the time, which emphasised industry attractiveness as the primary basis for superior profitability – the implication being that strategic management is concerned primarily with seeking favourable industry environments, locating attractive segments and strategic groups within industries, and moderating competitive pressures by influencing industry structure and competitors behaviour). Yet, empirical investigation has failed to support the link between industry structure and profitability (Grant, 1991). Evidence (Roquebert, Phillips, & Duran, 1993; Rumelt, 1991) suggests that, at best, industry structure accounts for 8-15% of variance in firm performance.

While we agree with most RBT theorists when they claim that IO researchers and practitioners³ overly emphasised the external environment, the writers quoted above who criticise the work of Porter have misunderstood his frameworks⁴. Porter advanced the notion that the secret to strategic success is to understand bargaining power. His frameworks, and hence strategic analyses, were developed as tools for identifying and recognising the negative factors within an industry, and once a firm is able to recognise which of the factors are negative, they would then know how to attack the most negative forces and which parts of their strategy needed to be addressed. As far as this research is concerned, the best, and most relevant, criticism of Porter and the IO school is in regard to the notion of sustainability of competitive advantage. The question left begging is: "So where is the *lasting* advantage?" It can be argued that the value chain, though promising in identifying the mechanisms to sustainability, stopped short of going deeper into the enabling internal characteristics of firms, thus being unable to address the longitudinal problem. By consigning competitive advantage to the imperatives of industry/market structure, these theories apparently overlook the unique firm competencies elicited from internal, idiosyncratic processes such as managerial volition, organisational routines,

¹ Kenneth Andrews (1971) in his classic book : *The Concept of Corporate Strategy*.

² Since Bain's (1956) concept of competition, competition from the IO economics perspective has been determined based on the industry structure in which firms compete.

³ Including Porter's 5-forces framework.

⁴ For instance, Porter never said that firms should get out of certain industries and into the 'right industries,' as asserted by Black & Boal (1994).

reputation and culture, for instance, that are potential sources of sustained competitive advantage.

With the appearance of the concepts of '*distinctive competence*' (Hitt & Ireland, 1985, 1986; Hofer & Schendel, 1978; Snow & Hrebiniak, 1980), '*core competence*' (Hamel & Prahalad, 1989, 1990) and '*competing on capabilities*' (Teece, Pisano, & Shuen, 1991), the academic focus changed from outside to inside the firm. Core competence (Hamel & Prahalad, 1989) was a capability or skill that provided the thread running through a firm's businesses, weaving them together into a coherent whole. Ulrich & Lake (1990) re-emphasised the strategic importance of identifying, managing, and leveraging core competencies rather than focusing only on products and markets in business planning. These approaches emphasised the importance of both skills and collective learning embedded in a firm, and of management's ability to marshal them. This view assumed competitive advantage roots were inside the firm, and current levels of firm's resources constrained the adoption of new strategies. Hamel & Prahalad (1989; 1994) emphasised the importance of "competing for the future" as a neglected dimension of competitive advantage. According to this view, the firm had to not only be concerned with profitability in the present and growth in the medium-term, but also with its future position and source of competitive advantage. This view required explicit strategising about how the firm would compete when its current strategy configuration was either copied or made obsolete.

It has only been during the past decade that the resource-based view (RBV)⁵ of the firm has re-emerged, articulating the dynamic relationships among firm resources, capabilities, and competitive advantage. Early work on RBV⁶ initially came from the works of Chamberlin (1933) who argued for the consideration of a firm's unique assets and capabilities (e.g., technical know-how, reputation, brand awareness, and the ability of managers to work together), Robinson (1933), Penrose (1959) who posited a "broader set of resources," and Selznick (1957). According to Chamberlin, firms' heterogeneous characteristics⁷ create imperfect, monopolistic competition, which leads to time-constrained, superior financial performance (Barney, 1986c). Thus, in order to achieve competitive advantage, firms should have a strategy to develop their idiosyncratic resources. Subsequently, it has attracted attention from additional researchers including: Lippman & Rumelt (1982); Wernerfelt (1984); Barney (1986a; 1986b; 1986c; 1991; 1995); Dierickx & Cool (1989); Conner (1991); Mahoney & Pandian (1992); Lado, Boyd & Wright (1992); Grant (1991; 1995); Peteraf (1993); Amit & Schoemaker (1993); McGrath, MacMillan & Venkatraman (1995); Azzone, Bertele & Rangone (1995); Collis & Montgomery (1995; 1997); Chen (1996); Segal-Horn (1997), Bowman & Faulkner (1997); Potgieter, April & Bishop (2005).

Barney (Barney, 1986c:794) asserted that the Chamberlinian view- and IO economists view of competition were complementary and indicated the same strategic implication (i.e., "firms should implement strategies, including product strategies, which cannot be duplicated by rivals." Andrews' (1971) traditional concept is phrased in terms of the firm's resource position (strengths and weaknesses), whereas most formal economic tools operate on the product-market side⁸. The integration of these two views⁹ is presented by

⁵ The resourcebased view (RBV) of the firm has also been termed resource-based theory (RBT), and these terms are often used interchangeably in the literature, as well as in this document.

⁶ In many ways, the resource-based view (RBV) of the firm is an "old" set of ideas— Ricardo's (1817) analysis of the economic consequences of the "original, unaugmentable, and indestructible gifts of Nature," with its emphasis on land as a critical resource in fixed supply, has many linkages with modern resource-based theory.

⁷ "Firm heterogeneity can represent an important source of competitive advantage for firms" (Barney, 1986c:793).

⁸ Some of the strategy theorists like Lenz (1980), Kotler (1976), and Stevenson (1978) alleged that firms seek strategies which exploit their unique strengths, while avoiding their weaknesses.

the SWOT approach¹⁰ (Learned, Christensen, Andrews, & Guth, 1969; Thompson & Strickland, 1990)

RBV, as opposed to early core competence literature, more accurately defines the assets that can effectively feed into core competencies, and outlines the conditions under which they can be sources of firm value. It addresses some of the most fundamental questions of business-unit strategy: *Why is one firm different from another? Why is one firm more profitable than another? What makes a competitive advantage sustainable?*

The RBV takes the 'core competence' thinking one step further: it posits that competitive advantage can be sustained only if the capabilities creating the advantage are supported by resources that are not easily duplicated by competitors. In other words, firms' resources, or combinations of resources (April, 2002), must raise 'barriers to imitation' (Rumelt, 1984)¹¹. The firm and its resources are the focal level of analysis in RBT (Chen, 1996), and the underlying orientation considers a firm as a unique bundle of linked, idiosyncratic, tangible and intangible assets and resources (April, 2002; Hall, 1992; Penrose, 1959; Wernerfelt, 1984). One of the central notions of RBT¹² is that firms in the same industry compete with heterogeneously¹³ distributed bundles of resources acquired over time (Potgieter, April & Bishop, 2005), because of disparate approaches (April, 2002), because of differing histories of strategic choice and performance (April & Ahmadi-Izadi, 2004) (April, 2004), because firms' management appear to seek asymmetric competitive positions and take on different risk portfolios (April, 2004), because of the various routines it has developed to manage them (April & Ahmadi-Izadi, 2004; Teece et al., 1991; Wernerfelt, 1984), and because of asymmetric capital endowments (April, 2004). The RBV is not about reviewing the attractiveness of entire industries and their profit and growth potential for new entrants, rather it is about what individual firms can do to understand themselves better, and effectively translates that understanding to strategic execution. It gives attention to skills and know-how that firms may take for granted.

The theoretical foundation of RBV most certainly has its limitations. According to Grant(1991:115), the implications of RBT for strategic management are unclear for two reasons: (a) the various contributions lack a single integrating framework, and (b) little effort has been made to develop the practical implications of this theory. It does not provide rigorous means for translating "feeder" resources into eventual core competencies. Bowman & Faulkner (1997:34) believe that "although the firm's unique resources help to explain why some firms outperform their rivals, this is only one part of the explanation." They claim that "most contributors to the RBV of the firm recognise this problem, but they either tend to *assume* a resource is valuable and they then focus their attention on problems of other firms copying these resources, or they define valuable resources in rather vague and generalised ways." Bromiley(1993), similarly, notes that RBT requires some concrete definitions of resources that is more insightful than 'anything that leads to performance.' Nonetheless, Bromiley's call for the operationalisation of RBT is well taken, and was one of the objectives of our research.

⁹ Even Porter (1991) recognised that a firm's unique strengths and weakness play an equally important role as the industry structure for strategy implementation in determining competitive advantage.

¹⁰ Strengths, weaknesses, opportunities, and threats.

¹¹ Rumelt(1984) called such impediments to the imitation of what a firm has, or does, 'isolating mechanisms' – the great wall around a sustainable competitive advantage, and the essential theoretical concept for explaining the sustainability of rents in the resourcebased framework.

¹² Made explicit in Wernerfelt's(1984) empirical observations.

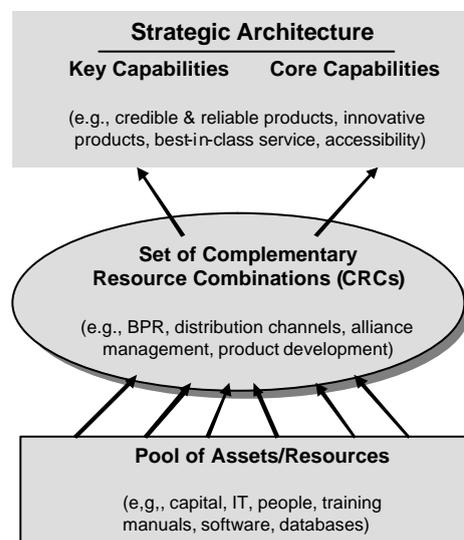
¹³ Peteraf (1993) state that firms hold heterogeneous resource portfolios whether by history, accident, or design – and that this resource heterogeneity is responsible for observed variability in financial returns acrossfirms.

1.2 A Framework for Sustainability

We have developed a RBT-based framework (Figure 1), to explore the dynamics of intra-firm development of sustainable competitive advantage. We define competitive advantage of a firm when, based on its strategic architecture and CRCs, it is able to implement a strategy that generates returns and benefits in excess of those of its current competitors – who simultaneously are implementing strategies, similar or otherwise – because of the perceived value in the marketplace. A firm is said to have a *sustained competitive advantage* when it is implementing a value-creating strategy, which generates returns and benefits at a level not enjoyed by current competitors *and* when these other firms are unable to reach an ‘equilibrium level’ (Hirshliefer, 1980) with the firm enjoying the advantage. In this sense, the definition of sustained competitive advantage adopted here does not imply that it will “last forever,” and does not depend upon the period of time during which a firm enjoys a competitive advantage¹⁴.

‘Resources’ come in many forms, from common factor inputs that are widely available and easily purchased in arms-length transactions, to highly differentiated assets, like brand names, that are developed over many years and are very difficult to replicate. The ‘*pool of organisational resources*’ can be classified into two broad categories: tangible assets or resources, and intangible assets or resources.

Figure 1 Assets combine to make CRCs, that serve as bases for competitive advantage when firms compete on capabilities



Source: Authors

- **Tangible Resources:** Tangible resources, easiest to value, are the only resources that appear on a firm's balance sheet. They include real estate, production facilities, and raw materials, among others. Although tangible

¹⁴ “Empirically, sustained competitive advantage may, on average, last a long period of calendar time. However, it is not this period of calendar time that defines the existence of a sustained competitive advantage, but the inability of current and potential competitors to duplicate that strategy that makes a competitive advantage sustained” (Barney, 1991:103).

assets may be essential to a firm's strategy, because of their standard nature, they rarely are a source of competitive advantage. There are, of course, notable exceptions. The twisted copper telephone and coaxial cable wires that link people's houses to the outside world are now highly prized as the on-ramp to the information superhighway (Collis & Montgomery, 1997). Real estate locations adjacent to popular tourist sites are also one-of-a-kind resources that may support unusual profits.

- **Intangible Resources:** Intangible resources, include such things as technological knowledge, know-how shared among employees, intellectual property and design, trademarks, accumulated learning and/or knowledge, as well as experience. These resources often play important roles in competitive advantage (or disadvantage) and firm value, and also have the important property of not being consumed in usage and can even grow with use, rather than shrink (Collis & Montgomery, 1997; Davenport & Prusak, 1998). Even if the firm can market its intangible resources effectively, it could not disentangle them from the skills and knowledge of its teams, including the managerial team (Nelson & Winter, 1982).

The firm's resources may further exhibit complementarity in deployment (Barnard, 1938). We define a firm's '*set of complementary resource combinations (CRCs)*' as resulting from idiosyncratic combinations of certain resources. Complementarity represents resource value enhancement, and arises when a resource produces greater returns in the presence of another resource than it does alone, e.g., an electronic data interchange (EDI) system that only marginally improves performance under ordinary conditions, but produces sustainable advantages when combined with pre-existing supplier trust (Powell & Dent-Micallef, 1997). CRCs are not factor inputs like tangible and intangible resources; they are complex and dynamic combinations of resources, people, and processes that firms use to transform resource inputs to capability outputs. Thus, CRCs can be viewed as an idiosyncratic configuration of resources, which in turn implies that there will be specific relationships between the resources. Many of these configurations are a blend of 'hard' tangible assets (such as buildings, equipment, people, training manuals) and 'soft' intangible assets (such as how well teams work together and the relationships between the people in those teams, or the internal culture) which cannot simply be recreated by another firm. Finely-honed CRCs can be a source of competitive advantage. They enable a firm to take the same factor inputs as rivals and convert them into products and services, either with greater efficiency in the process or greater quality in the output. While resources are the source of a firm's set of CRCs, CRCs themselves are the main source for capability routines, essential for attaining competitive advantage. Applied to the firm's physical production technology, these 'organisational routines' govern the efficiency of the firm's activities.

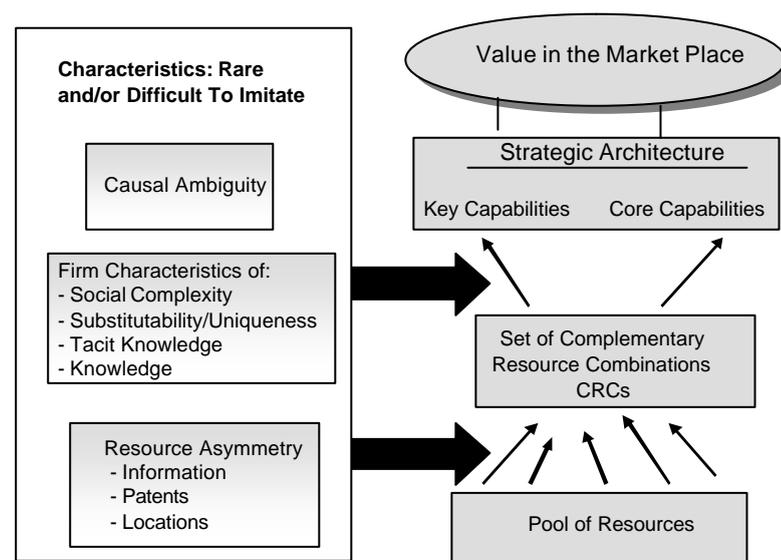
'*Strategic Architecture*' refers to the firm's capabilities when applied in the marketplace. However, these capabilities, depending on their ability to generate returns in an industry and depending on how they are deployed in industry, will be termed 'key capabilities,' and 'core capabilities.' '*Key capabilities*' refer to capabilities that are merely necessary for the firm to be a player in its industry (i.e., 'commodity capabilities'). These include services to support internal customers (human resources, legal, accounting skills and processes, for example) as well as those skills and systems that are conditions for doing business in the firm's industry (Long & Vickers-Koch, 1995). These common firm capabilities can help ensure a firm's survival when they are exploited to create competitive parity in an industry (Barney, 1989b). Under conditions of competitive parity, though no one firm obtains a

competitive advantage, firms do increase their probability of economic survival (April & Cradock, 2000; McKelvey, 1982; Porter, 1980). This is not to say that they cannot make a huge difference in a firm's success, depending on how well they are used. However, they are typically not the capabilities that account for the firm's real competitive advantage in its chosen field. 'Core capabilities,' on the other hand, refer to capabilities that are valuable and rent-producing in the marketplace, and are those capabilities that a firm relies on for its competitive advantage (i.e., 'critical capabilities').

A firm's CRCs serve as the bases for developing both key capabilities and core capabilities, and once bundles of these CRCs are brought to bear on particular value-added tasks (e.g., just-in-time production, design for manufacturing), they serve as the bases for a firm's competitive advantage today, as well as tomorrow's potential competitive advantage. The list of core capabilities includes a set of abilities describing efficiency and effectiveness – faster, more responsive, higher quality, and so forth – that can be found in any one of the firm's activities, from product development, to marketing, to manufacturing. For example, over the last several decades, some Japanese automobile firms have developed a number of outstanding core capabilities (Baldwin & Clark, 1990). The first was in low-cost, 'lean' manufacturing, next in high-quality production, fast product development, and most recently in commoditising previously high-end features. These strategic capabilities – which was of value to the marketplace and rent-producing for the firms – generated important efficiency and deflative advantages, particularly against foreign rivals, and played major roles in the sustained competitiveness of these firms.

The intra-firm dynamics are also defined by characteristics (Figure 2) known as 'imitation barriers' (Williamson, 1979), or 'isolating mechanisms' (Rumelt, 1984), which have been in business for a long time, but which need to be thought through, understood and implemented in new ways. In moving from basic resources, through to CRCs, and eventually to key- and core capabilities, the firm dynamics are shaped by "enablers" that create *rare (among firm competitors) and difficult to imitate capabilities* (Barney, 1991; Reed & DeFillippi, 1990).

Figure 2 Framework of Sustainability



Source: Authors

Resource asymmetry is when the firm may be either “lucky” in acquiring rare resources, or has worked hard to make those resources rare. Examples of “lucky” resources could be the co-optation of a sole raw material source¹⁵, and locations¹⁶. Typically, most assurance firms would not own “lucky” resources, and thus it is rarely a source of competitive advantage. Examples of resources that firms have worked hard at to make rare include: specific information¹⁷, the firm has information that it acquired before its competitors¹⁸, patents and licences¹⁹. Again, assurance firms rarely own patents and licences, and “first-mover information” typically does not provide long-term sustainable competitive advantage in this industry, as competitors, over time, acquire it through broker relationships, bancassurance partnerships and competitive intelligence.

Social complexity is when the source of advantage is known, but the method of replicating the advantage is unclear, e.g., corporate culture (Barney, 1986b; Teece, 1987; Winter, 1987), the interpersonal relations among managers or employees in a firm (Hambrick, 1987) or trust between management and employees (Amit & Schoemaker, 1993). These CRCs exist in a complex web of social interactions and may even depend critically on particular individuals. Social resource combinations (SRCs) (Potgieter, April & Bishop, 2005) depend upon large numbers of people or teams engaged in coordinated action such that few individuals, if any, have sufficient breadth of knowledge to grasp the overall phenomenon (April, 2002; Barney, 1991; Reed & DeFillippi, 1990). Although physical²⁰ and financial resources²¹ may produce a temporary advantage for a firm, they often can be readily acquired on factor markets by competitors or new entrants. Conversely, a unique path through history (*time compression diseconomies*) may enable a firm to obtain unusual resources and valuable resource combinations over a long period of time and in a given context, and may depend on the history of the use of resources in an extremely complex path-dependent process (*resource path dependency*) – thereby making it difficult to be easily acquired, or imitated by competitors. Path dependency within a firm is contingent upon preceding levels of learning, investment, and resource stocks, managerial choice and decision, organisational infrastructure, and development activity (April & Ahmadi-Izadi, 2004; Barney, 1991; Dierickx & Cool, 1989). Once a particular unique time in history passes, firms that do not have space- and time-dependent resources cannot obtain them, and these resources are imperfectly imitable.” Competitors cannot just go out and buy these CRCs instantaneously – instead, they must be built over time in ways that are difficult to accelerate, through learning, experience, firm-specific knowledge, or trained proficiency in certain skill sets. Would-be imitators are thwarted by the difficulty of discovering and repeating the developmental process and by the considerable lag involved. The longer lasting a CRC is (*durability*), the more “rungs” it adds to its path dependency, and hence, the more difficult it becomes for competitors to imitate it (April, 2002). CRCs must therefore be durable, and must be *difficult to substitute* (Segal-Horn, 1997). According to Black & Boal (1994), substitutability rests on the continuation of imperfect factor markets, the costs involved in the recreation of specific combinations, or the cost of finding a new combination of resources that will enable the firm to compete for the same product market (i.e., a new path with new requirements).

¹⁵ The firm, e.g., De Beers, exclusively owns a raw material, e.g., diamonds, that gives it an advantage.

¹⁶ The firm owns prime real estate that gives it a competitive advantage, e.g., a hotel that owns land on the waters-edge of a beachfront development.

¹⁷ The firm has private information that is difficult for its competitors to acquire, e.g., Coca-Cola and its secret formula.

¹⁸ Firms, e.g., Amazon.com and Lands-End, which have acquired relevant information on customers, such as demographic data, behavioural information, customer likes and dislikes, etc., before its competitors.

¹⁹ The firm, e.g., biotech firm or medical research facility, owns patents or licences that give it an advantage.

²⁰ For example, computer hardware, software, networks, etc.

²¹ For example, access to capital.

Knowledge resource combinations (KRCs), defined here, are skill-based and people-intensive, and many now argue that knowledge²², particularly *tacit knowledge*, is strategically the most significant resource of the firm (Davenport & Prusak, 1998; Gorelick, Milton, & April, 2004; Grant, 1991, 1996a, 1996b; Quinn, 1992; Schendel, 1996; Spender, 1996; Toffler, 1990). *Tacit knowledge* is when the knowledge of the firm routines cannot be fully articulated by employees in the competitive firm, cannot be written down or specified, and is embedded in the interactive routines, rituals and behaviours of individuals and groups within their firms (April & Ahmadi-Izadi, 2004). Such CRCs, SCRs and KRCs are intangible, based upon learning-by-doing that are accumulated through experience and refined in practice, and often also are immobile and thus bound to the firm (Itami, 1987; Polanyi, 1962).

Causal ambiguity refers to uncertainty and imperfect understanding regarding the causes of capability differences among firms, and typically its competitors are not sure which CRCs, enabling capabilities are earning the rents through outperforming other firms. Competitors are thwarted because it is impossible to disentangle (Barney, 1991; Demsetz, 1973) either what the valuable resource combinations are that serve as bases for a firm's core capabilities, or how to re-create it, and imitating firms cannot know the actions they should take in order to duplicate the strategies of firms with sustained competitive advantages. Peteraf (1993) stresses that such uncertainty, coupled with non-recoverable costs, may limit imitative activity – thus preserving the condition of heterogeneity. Collis & Montgomery (1995:120) makes the point that "if a {capability} is inimitable, then any profit stream it generates is more likely to be sustainable."

Although the terminology has varied, resource-based approaches to the theory of sustained competitive advantage point to the characteristics (above) which are likely to be particularly important determinants of the sustainability of competitive advantage for a firm, and extends strategic thinking into HR management and organisational behaviour, financial management, organisational development and infrastructure, R&D and technology development and implementation, and so on.

2 Study Design

2.1 Case Study Using a Chain of Evidence Approach

The study of firms in the South African assurance industry was designed to explore the intra-firm dynamics of competitive advantage, using the "Framework for Sustainability." This industry is characterised by its heavy investment in IT, and this was one of the primary reasons for selecting this sector as a research venue. For this paper, the focus will be on the discussion of how firms create idiosyncratic CRCs that supports its strategic architecture. More specifically, it will focus on those rare, sustainability enabling characteristics enabled by social complexity. Again, this focus represents only a part of the findings gleaned from the research project on SA assurance firms.

To protect the anonymity of the firms, African animal names were given to each company. As shown in Table 1, the top four firms combined market share represented 91% of the total SA assurance market. The case study method of exploration was used to investigate the intra-firm dynamics. These firms offer a wide range of products which include life insurance, banking, investment services, medical and auto insurance to both retail and

²² Knowledge, claims futurist Toffler (1990), is now the basis of power and wealth creation.

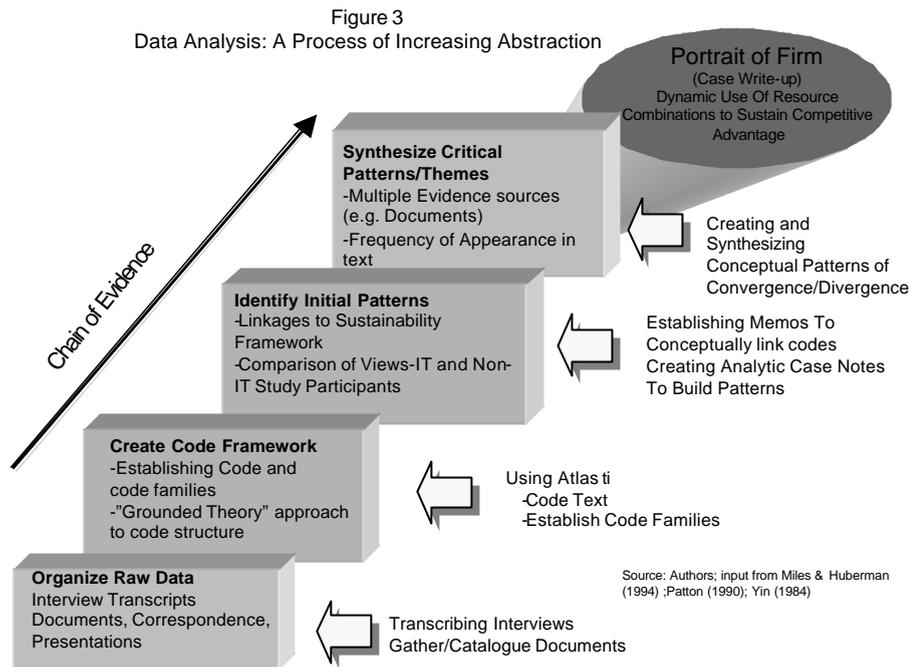
wholesale clients. The unit of analysis established for this investigation was the life insurance subsidiaries in these firms with particular, but not exclusive, focus on IT resources.

Table 1 – Summary Of Market Share & On-Balance Sheet Assets For South African Firms Included In This Research							
Firms Included in Research	Market Share-Retail New Business %				On-Balance Sheet Assets		
Note: Each Firm Given an African Animal Name	Low Income	Middle Income	High Income	Total	Total Assets Dec, 1999 ZAR(000)	% of Total Industry	
• Buffalo	30-35	35-40	20-25	30	225,633,494	38	
• Cheetah	10-15	30-35	15-20	20	170,947,818	29	
• Leopard	0-5	5-10	30-35	15	68,656,758	12	
• Giraffe	1-2	5-10	15-20	12	68,751,008	12	
• Rhino	25-30	10-15	0-5	7	16,379,768	3	
• Elephant*	–	--	--	--	28,575,505	5	

* Merger. No statistics available on market share. Asset base estimate after merger.
Source: Symeonidis (2001); PCAS (2003)

The design structure of the research project was based upon using semi-structured questions and documents analysis. Because this research was exploring “uncharted waters” in which frameworks for understanding how resource bundles are acted upon within a firm to create CRCs that eventually form its strategic architecture, these qualitative tools were felt to be the most effective means gathering data (Eisenhardt, 1989; Shockley, 2003). Among the four top, a total of 45, 90 minute (on average) interviews were conducted with managers. Both internal and external documents about the firms and the industry were used as sources of corroborating evidence.

Adopting the principle in grounded theory (Corbin, 1986; Strauss & Corbin, 1997), a “chain of evidence” (Yin, 1984) was designed which eventually led to a portrait of each firm (Figure 3). The goal of the data analysis process was to ensure “reliability” such that each level of abstraction (interpretation) could be linked to either interview or document evidence (Corbin, 1986; Glaser & Strauss, 1967; Miles & Huberman, 1994; Strauss & Corbin, 1997; Yin, 1984). The reliability of these portraits was also important to support the cross-case analysis in which patterns of convergence and divergence among the four firms could be developed on the basis of evidence (Miles & Huberman, 1994).



In addition, a “bottoms-up” view was obtained with evidence gathered from a short questionnaire and focus groups discussions held with 178 staff employees in the four firms. The intent was to provide some cross-validation and triangulation of the evidence gathered through the interviews and documents analysis. The data analysis was also enhanced using tools such as ATLAS.ti²³. This software program improved the rigour of the research by creating a means of linking the “Framework for Sustainability” attributes through a coding structure to the interview data itself.

3 Analysis: An In-Depth Look at a SA Assurance Firm

This section addresses the heart of the research, i.e., how does IT, combined with other resources, enable competitive advantage and why do these combined resources sustain advantage. Although significantly more CRCs were identified during the initial phases of analysis for each firm, only those CRCs whose impacts on the strategic architecture of the firm were identified most frequently by interviewees were investigated in more detail. More specifically, the criteria for selecting those CRCs, as potentially unique in creating strategic advantage, were as follows:

- *IT-based*: Many of the CRCs were identified as being enabled by IT.

²³ The use of these coding programs are not without its controversy (Miles & Huberman, 1994; Weitzman, 2000) Some researchers feel that computer-mediated analysis destroys the sense of the ‘whole story,’ and may promote mechanistic superficiality in coding (Charmaz, 2000) Another view is that, while these programs cannot substitute for the reflective thinking by a researcher, it does save time, provides a means of looking across interview transcripts quickly for cross-comparisons, and assists in collaborative coding efforts (Weitzman, 2000) What these researchers found was that Atlas ti also provides additional benefits – all output is automatically time stamped, the files can be easily accessed by others, and the data handling of over two thousand pages of transcription, generated by this research, became manageable.

- *Frequently discussed themes among interviewees:* These seven CRCs were discussed not only by senior leaders, but also other management and line employees within the profit centres.
- *Defined as performance-based resource combinations:* CRCs that were perceived by those interviewed as crucial in creating both market and shareowner value.

Referring to the Framework for Sustainability, both social complexity and uniqueness attributes formed the catalytic energy which moulded CRCs into strategic capabilities which defined a firm's strategic architecture. In this paper only social complexity attributes will be discussed. Social complexity attributes are those "rareness" qualities that are accomplished through the attitudes, behaviours and actions of people. It is important to note that interdependence among the CRCs make it unfeasible to establish a "causative" conceptual framework, in which social complexity attributes deterministically act upon CRCs to drive sustainable advantage. The analysis presented in this paper will discuss one of the four cases originally studied, presenting a partial portrait of the firm's internal dynamics to create its unique strategic architecture. A summary of the analysis of the 3 other firms are shown in Appendix tables 1 through 3; these firms were named Cheetah, Giraffe and Leopard.

3.1 Buffalo

Buffalo is the largest assurance firm in South Africa with a market share of 38% and a significant presence in all retail market segments (Table 1). With demutualisation in 1998-9,²⁴ Buffalo re-structured the company, establishing South Africa as a fully separate subsidiary with the global headquarters established in London and its stock trading on the London Stock Exchange. The analysis of Buffalo focuses on its South African subsidiary. Table 2 summarises the firm's significant CRCs and social complexity attributes.

3.1.1 CRC Analysis – Buffalo

When analysing its CRCs, the evidence suggested that many of them were forged through firm's attention to its marketplace. Buffalo had structurally established a strong, centralised marketing group at the SA corporate level which had the responsibility for establishing overall market direction, managing the corporate brand, and collaborating with the BUs to sponsor market research to support the development of new products to meet customer needs. The firm was willing to invest heavily in marketing research to maintain its product superiority; as its MD of the Unit Trust Business Unit suggested: "*We pride ourselves on being product initiators ... we view our products as building blocks*" so that other products in the Buffalo SA family could use "*our*" products to cross-sell other products. To this end, Buffalo took advantage of its large customer base as not only a means of potentially selling other products, but also as a means of undertaking customer surveys to determine what new products may have fit the needs profile of their various market segments. To support its leadership in product development, interviewees at Buffalo strongly felt that IT competence was vital to maintaining its product marketing

²⁴ In SA, the demutualisation trend started among the large assurance firms, and this restructuring created the benefits of unlocking the market value of the firm's equity, thus enabling these firms to participate in bancassurance (full banking and insurance markets). Mutual-based firms were member-based; while demutualised firms were share-owner based. Demutualisation also helped firms like Buffalo to establish a presence worldwide in order to maintain its competitive viability – a global trend in the financial services, insurance industries.

Table 2: Summary of Analysis – Significant CRCs and Social Complexity Attributes – Buffalo	
CRC-Impacting Strategic Architecture	Social Complexity Attributes
<ul style="list-style-type: none"> ● Creating a reputation for market leadership in product development. ● Deploying a ubiquitous distribution network selling to all retail market segments from high income to low income groups. ● Designing cross-selling capabilities through market based alliances with other firms, capitalising on synergies with complementary products. ● Highlighting and investing in business-aligned IT as a key lever to organic growth and efficiency ● Establishing an expectation of employees co-create bottom line success and, therefore, are motivated to consider careers rather than jobs at Buffalo SA. ● Institutionalising a Program Office to support large business-sponsored projects ● Institutionalising Corporate Governance through closely linked vertical integration of codes of conduct and values of integrity. ● Using outsourcing partnerships as a means of developing more efficient maintenance of “backroom” IT functions. 	<p>The “Buffalo Way” Culture—a commitment to integrating multiple stakeholders through the integration of 4 core values (integrity, commitment, growth and passion)</p> <p>Enablers:</p> <ul style="list-style-type: none"> ● Employees’ bottom-line focus seen as investments (such as those) ● Shared culture acted as catalyst to create complementary market approach across BUs <p>Challenges:</p> <ul style="list-style-type: none"> ● Changes in environment required vigilance among employees to continuously adjust ● Requirement for careful balancing of both complementary and, often, disparate needs of stakeholders <p>Senior Leadership engaged in “direction setting” with heavy reliance on integrated processes, formal committees, and teamwork to govern daily action and project implementation</p> <p>Enablers:</p> <ul style="list-style-type: none"> ● A “federated” approach to organisational structure with Plc strategy, processes, governance principles and formal committee structures provided the needed vertical integration for implementation success ● Some degree of autonomy was given to Groups with BUs primarily based in the UK, SA, and USA <p>Challenges:</p> <ul style="list-style-type: none"> ● Maintaining the proper balance of centralisation to obtain Buffalo Plc synergies and decentralisation to encourage innovation with rapid response to local markets ● Facilitating knowledge sharing (e.g., IT applications) among widely dispersed global BUs ● Establishing enriched discussions on business issues through the representation and input of relevant stakeholders <p>Employees valued for longer career contributions to teamwork and collaboration</p> <p>Enablers:</p> <ul style="list-style-type: none"> ● Low turnover, with employees heavily invested into the Buffalo Way and culture ● High likelihood of maintaining governance principles since turnover was low ● Employees encouraged to focus on the success of the business, rather than looking for their next job ● High likelihood of retaining accumulated levels of knowledge and experience within the business <p>Constraints:</p> <ul style="list-style-type: none"> ● Low turnover may have caused complacency and negative path dependent behaviour ● Commitments to employees may have created difficulties with re-structuring to improve the bottom-line.
Source: Authors	

dominance in SA. Its IT product platforms allowed the firm to provide highly flexible linked-products, such as investment products wrapped with life insurance. When compared to its competitors, Buffalo's distribution network was unrivalled in terms of breadth and depth of access to the market. For example, Buffalo had 48% more agents and 40% more broker relationships than its next largest competitor, Cheetah. This distribution network had bolstered a highly effective market strategy to be the foremost bancassurance provider in SA.

With a complex distribution channel arrangement, Buffalo had managed to successfully address and keep channel conflicts from becoming a major obstacle. The BUs and marketing department had achieved this through carefully balancing the incentives to, and roles of, the largest channels – direct sales- and agent/broker-networks. IT also played a role in distribution, by providing - and direct sales-networks with the ability to access customer information. Through IT, Buffalo was able to maintain agent-network loyalty and keep the sales force-network efficient by making access convenient and reliable.

This dominant market share position across all retail segments had created a critical secondary advantage of a large customer base from which to cross-sell other insurance, banking, investment and related products. Some of these “related” products had created network-alliances with outside firms. For example, marketing and other firm-based literature had highlighted “wellness” awareness by packaging healthcare insurance products with gym membership discounts, and investment products linked with popular boutique unit trust firms. A key to exploiting product bundling as a market strategy had required Buffalo to develop more sophisticated data warehousing applications that enabled cross-selling of insurance and investment products across BUs. Buffalo and its competitors recognised the marketing advantage of linking, or bundling, insurance products with investment and banking products. Each firm was competing to be “the one-stop shop” for clients, especially in the upper- and middle-income segments.

The assurance industry in SA, like the banking industry, was highly dependent on IT (KPMG, 2004; Symeonidis, 2001; UBS-Warburg, 2001). Buffalo was no exception. Within both the Annual Reports at the Plc level, and the Social Responsibility Reports at the SA level, the role of IT was highlighted as being an integral part of meeting Buffalo's long-term strategic objectives for growth. For example, from a market perspective, the 2000 Buffalo Annual Report stated that: “*We invest heavily in new technology to deliver lower cost, new generation products. The result is a range of world class products that meet customers' needs....*” One BU-placed HR manager felt that IT, throughout Buffalo SA, was highly influential in not only supporting the firm's direction, but also shaping the structure, process, and employee behaviour. In other words, IT had much more influence at the senior level of the business than did the HR function. Although BUs had some discretion on IT spending, the sheer size of many projects required that a business case be presented to the Buffalo SA IT committee, composed of the firm's senior managers, for approval. The primary criteria for accepting or rejecting large projects was whether or not it met the internal hurdle “ROIR²⁵”, which varied over time as the risk and capital costs changed for the firm. Another criteria was implementation risk. Buffalo had adopted the concept established by extensive research in IT that multi-year projects had exponentially more risk, and that prototyping and modularised project implementation mitigated implementation risk²⁶. Buffalo's Program Office's role was mainly coordinative and facilitative. The Program Office maintained a database of all projects. This not only gave

²⁵ Return On Investment Rate.

²⁶ Research by Feeny (1997) that to successfully exploit the business benefits of IT; he uses the metaphor “dolphin, not whales” to illustrate the need to prototype and modularise large projects. Sauer(1993) has studied why large multi-year projects fail, and has come to similar conclusions.

anyone interested in a particular project a status report, but also facilitated cross-BU sharing so all business managers had the ability to see projects as they developed and determined if they wanted to adopt the same IT infrastructure. The firm was assessed to have a significantly higher overall expense to revenue ratio than its other SA competitors. As a result, all costs, including those expended on IT, had been scrutinised to improve shareowner value. One of the strategies used by Buffalo had been to find partners that were willing to share the risk of developing large infrastructure projects. Buffalo SA had learned through failed projects that “off the shelf” applications, rather than “in house” developed applications for administrative backroom functions, were much more cost-effective to implement. Because it had assessed its IT maintenance costs to be high, Buffalo had pursued strategic alliances as a means of driving efficiency. For example, Buffalo accrued a large maintenance cost for supporting its large legacy systems. Much of this IT costs were employee salaries. Because of its commitment to its employees’ careers, Buffalo SA had been reluctant to implement transformation plans that called for large-scale employee redundancies. To solve this problem, the firm had outsourced its entire mainframe asset and IT staff infrastructure to an outside alliance partner, Global IT Outsourcer. As one interviewee indicated, *“Specifically, in our scenario, where we have outsourced our infrastructure to an external provider ... that relationship is critical. It is governed by a contract, but the contract is not enough – you need a relationship”*.

As stakeholders in the business, Buffalo regarded its employees as “co-creators,” not just “implementers.” As stated in the 2000 Annual Report, and reinforced by other documents, through cultural transformation with active employee participation Buffalo *“...aims to harness our employees’ energy within our overall business strategy and to ensure that the virtuous circle of satisfied customer needs, shareholder value, return to the community and employee development is completed.”* As one of the largest employers in SA, Buffalo’s senior management team recognised that maintaining a committed, passionate workforce was extremely challenging since the firm still supported the “career” concept, in which employees were encouraged to establish a career path within the firm (even it was between different BUs). However, by 1999, it had begun recruiting leaders externally to bring in “fresh ideas.” As an “equal opportunity employer,” Buffalo supported the SA EE plan; it prided itself in having 40% of its operating profits under the senior leadership of Black and female executives. Since 40% of its employees were union represented, many of these benefits had come through negotiated settlements with its unions. In addition, Buffalo had supported a variety of “leading-edge” HR practices such as balanced scorecard arrangements, and 360⁰ feedback programmes as part of employee evaluations, on a BU rather than firm-wide basis. Buffalo also had invested heavily in training. It maintained a Buffalo Business School through which a “blended learning” approach used e-learning, short courses, and interactive workshops as a means of training. The interview evidence also confirmed many of these HR policies outlined in documents.

The evidence indicated that social complexity was an important catalyst in forging its CRCs to enable Buffalo to more effectively meet the challenges of its market place. Employees at Buffalo SA supported the overall cultural transformation that had taken place in the firm, and had participated in designing the four commitments – they were particularly cognisant of the firm’s need to have a unifying culture that engaged all employees to share a common market approach toward customers. However, the complexity of implementing cultural transformation to a “less bureaucratic,” flattened organisation, with autonomous BUs and self-managed teams was complex, and often less than perfect. Employees interviewed also spoke of maintaining integrity as the most important, yet most challenging cultural value to maintain, because it required employees to make judgements between the interests of customers and those of shareholders.

Corporate governance, for example, reinforced the concept of integrity as the foundation upon which Buffalo conducted business.

3.1.2 Social Complexity Attributes - Buffalo

Social Complexity attributes were also identified through the analysis of the evidence for Buffalo. Though both the evidence gathered through the interviews as well as the “bottoms up” staff questionnaires and focus groups, social complexity attributes were shown to be not only enablers but constraints to the formation of resource bundles or CRCs. For this reason, an analytic assessment framework was established to indicate the degree to which social complexity “enable,” “challenge,” and/or “constrain” those resource combinations that drive a firm’s capabilities to meet the demands of its marketplace. The evidence also indicated that interdependency of the CRCs themselves as well as the impact of other uniqueness attributes made it impossible within the structure of the evidence to determine “discrete causal linkages” between specific CRCs and these social complexity attributes. What was found was that these attributes impacted multiple CRCs, but so did other uniqueness attributes. It was beyond the scope of this study to statistically determine either the weight or frequency of these social complexity attributes on various CRCs. The three social complexity attributes, based upon evidence, had the most influence on the shaping of many CRCs at Buffalo SA.

- **The Buffalo Way.** “Siyakhula²⁷” was the means of referring to its cultural values of integrity, commitment to customers, growth of employees and passion for excellence. Employees at Buffalo SA supported the overall cultural transformation that had taken place in the firm, and had participated in designing the four value commitments – they were particularly cognisant of the firm’s need to have a unifying culture that engaged all employees to share a common market approach toward customers. However, the complexity of implementing cultural transformation to a “less bureaucratic,” flattened organisation, with autonomous BUs and self-managed teams was complex, and often less than perfect. One employee said, *It {transformation} doesn’t just happen once off, you’ve got to build it into the culture – that’s a culture {that} continuously renews itself ... I mean, in any transformation process the first thing one needs to do is allow the catharsis of the feelings, one allows the openness, the honesty and we really got that.* Employees interviewed also spoke of maintaining integrity as the most important, yet most challenging cultural value to maintain, because it required employees to make judgements between the interests of customers and those of shareholders. Corporate governance, for example, reinforced the concept of integrity as the foundation upon which Buffalo conducted business. As summarized in Table 2, a culturally complex social attribute can enable the creation of “rare,” set of CRCs; however, they also present challenges such as continuous perpetuation of change, and a trust in employees making the right choices when balancing seemingly disparate stakeholder demands.
- **Direction setting by Senior Leadership relying on integrated processes, formal committees, and teamwork.** Because of its size and global reach, the senior leadership style was characterised by its heavy reliance on not only cultural values, but a “federated” organisational structure with fairly autonomous BUs²⁸. As a result, senior

²⁷ “Siyakhula” which in Xhosa means “we are growing.”

²⁸ In the debate on centralised versus decentralised organisational structures, Hodgkinson (1996), developed a third alternative called a “federal structure” which takes advantage of the employee participation found in decentralised structural options and the efficiencies established through common practices and processes found in centralised options.

leaders had specialised in strategy-setting, with the delegation of implementation to BUs to manage specific market segments and product clusters. One of the senior HR managers felt that the challenge, or potentially a constraint for the senior management team at the Plc and Group level was maintaining the appropriate balance of control and structure to stay connected to the business. Business unit leaders had operational autonomy to manage their respective organisations to achieve negotiated financial targets. Outside of the BU, governance overview was achieved through committees, such as the Strategic Project Management committee that approved large infrastructure investments. The business planning process also maintained alignment of BUs with the overall direction of the firm. In addition, key functional alignment was achieved through a formal structure of standing committees that met weekly. For example, the marketing committees met to minimise channel conflict, and the IT program office met regularly to share project successes and review major inter-business infrastructure milestones. One interviewee observed, *“I think in a Group like Buffalo, where we have a combination of centralised and decentralised, it’s difficult to get all the ducks to fly in a row ...”* As this employee observed, this leadership attribute not only presented a means of successfully leading a large global group like Buffalo, but also a challenge. Evidence in the bottom’s up focus group discussions revealed that staff employees were close to their own bosses; however, they felt that since demutualising the firm, corporate leaders seemed distant and not connected to needs of South Africa.

- ***Employees valued for longer career contributions to teamwork and collaboration.*** Employees were valued for their long-term career contributions to teamwork and collaboration. This attribute complemented the Buffalo Way and the leadership style attributes of the firm, in that employees were valued for their accumulated experiential knowledge that they brought to any team. As stated earlier, one of the Buffalo SA’s CRCs was the expectation established by senior leadership of employee’s roles as co-creators of the bottom-line. This social complexity attribute demonstrated not only the commitment to “co-creation”, but how it had been institutionalised in the firm. For example, Buffalo had launched several initiatives during 2001-3 to reinforce the participatory nature of its workplace culture, which valued diversity and respect for all employees irrespective of ethnicity, gender, or age. In addition to its commitment to diversity, Buffalo’s investment in people, through development and training, were acknowledged by several interviewees. This commitment to long-term careers, and employability, for employees had the advantage of retaining the focus and loyalty to the business – employees therefore focused on their current work responsibilities and teamwork, rather than searching for their next job. However, there were constraints as well. Long-term employees could have become complacent, and rely on old patterns of behaviour to solve problems which may have required a fresh approach. As indicated earlier, Buffalo had begun to bring in new leadership and had encouraged its employees to transfer knowledge and insights within the firm to keep their minds and perspectives “unfrozen” to new ideas and solutions²⁹. As a result, interviewees were comfortable with the new direction, were encouraged by the possibility of more movement within the firm, and felt that the new recruits added a healthy dimension to the long-term success of the firm. Like most global players, Buffalo faces an uncertain future in its ability to retain its unspoken contract of career employment. Buffalo’s HR strategies may have come into conflict with its commitments to shareowners. For example, Buffalo had outsourced its mainframe assets and employees to resolve the need to improve bottom-line efficiency, without making IT staff with mainframe experience redundant. In the future, when faced with similar choices, Buffalo may need to re-define its commitment to its employees.

²⁹ Unfreezing is a concept identified by Kurt Lewin (Gold, 1999) as the basis upon which individuals and groups change.

4 Findings: How CRCs Enable Firms to Build Sustainability

The findings in this section was based upon the cross analysis of the four cases. However, most of the examples, but not all, will highlight the findings of Buffalo discussed above. Although the research provided a broader spectrum of insights, this section focuses only on those findings related to CRCs.

4.1 CRCs are more than Assets

The evidence suggests that the qualities of rarity are embedded within CRCs, not assets or resources themselves. In fact, this research has revealed that it is the combinatorial aspects of resources that create CRCs, and it is when these CRCs are impacted by socially complex, unique, path dependent and knowledge catalysts from which barriers to imitation are created – barriers to imitation are therefore the complex sum of these. For example, Buffalo created a highly integrated channel that: (1) supported all market segments in SA; (2) effectively used marketplace intelligence to customise products for each market segment; (3) was supported by a sophisticated client database to enable cross-selling of products; and (4) provided multi-access points of contact for customer account maintenance, that included on-line access as well as call centres. The “assets and resources,” i.e., its products, IT infrastructure to sales support, and the broker incentive plans themselves, have in effect been “wrapped” with unique and socially complex people action and processes to establish its barriers to imitation.

4.2 CRCs are Inward Focused, while Core Capabilities are Outward Focused

The “inwardness” of CRCs make them less detectable by competitors and therefore helps strengthen the firm’s barriers to competitive erosion, unlike the firms capabilities which are deployed in the marketplace daily. What has been insightful is how the dynamics of CRCs are impacted as a firm’s competitive coherence between its strategic intent (declared strategies) become intentionally or unintentionally disengaged from its “applied” strategic action through its key- and core capabilities. Buffalo, for example, recognised that its redefinition of its cultural underpinnings, to meet the challenges of a “new South Africa,” required many of its processes and way its employee “did things” to be completely revamped. As a result, the senior leadership of the firm committed itself to a multi-year investment to train all employees on the firm’s new values under “Siyakhula.” From an outward-facing perspective, industry watchers and competitors see new core capabilities being built around inclusion that demonstrates its commitment towards equal opportunities and its socially-responsive balanced-scorecard approach. Internally this has also meant deploying IT in new ways, in conjunction with helping employees unlearn previous mental sets (with tension as to how to hang on to corporate memory³⁰ that is useful, e.g., how to get things done in certain ways, who to work with in firm networks, where information and knowledge is stored, etc.) and redesigning business processes. As shown in the focus

³⁰ Organisational memory provides information that reduces transaction costs, contributes to effective and efficient decision-making, and is a basis for power within organizations (Croasdel, 2001). Walsh & Ungson (1991) and Prahalad & Hamel (1990) posit some advantages of cultivating organizational memories: honing of core competencies, increased organizational learning, increased autonomy, integration of organizational actors, lower transaction costs, and management’s ability to consolidate corporate-wide technologies and production skills into competencies that empower individuals and businesses to adapt quickly to changing opportunities.

groups, incongruities and tensions are created as CRCs are redesigned or destroyed, since it leaves lots of uncertainty – and success becomes dependent on the employees, managers' and firm's ability to navigate such uncertainty over a time-based journey. In the case of Buffalo, as well as Cheetah, this was further complicated by the fact that many employees were themselves feeling disenfranchised as new Black employees and leaders with “fresh ideas” were brought into the firm, in order to address the need for transformation. When new workers challenge old assumptions and introduce new world views, the knowledge and experience of former employees is equally important in understanding the context and circumstances that contribute to organisational memory (Croasdell, 2001) – if new Black workers or new leaders are seen as hostile or too much of a challenge to dominant worldviews, it could result in social inefficiencies that will ultimately impact the important value-building, socially complexity aspects of new CRCs. Hence marketplace, societal and political change appears to be driving CRC development more than technological change.

4.3 CRCs are Socially Shaped

Within the firm, there are both tacit and explicit forces at work. CRCs by their nature are not “isolated” within the firm, but are themselves “acted upon” by socially complex forces. The evidence gathered through this case analysis saw these forces at work. For example, Buffalo had launched several initiatives to create a knowledge management capability. It found, through “trial and error,” that not only did its processes need to be retuned to gather competitive intelligence, but its employees needed to be trained to understand how to develop external networks to gather marketplace intelligence. In addition, IT-enabled database infrastructures were needed to accumulate and distribute this knowledge. Currently, Buffalo acknowledges, after nearly four years, it still does not have its knowledge management values fully integrated into its CRC subsystems. Another example of social shaping is Buffalo's challenges to develop a shared culture between itself and its bancassurance partner, due to the inherent cultural differences creating socially complex negotiations (even though technologically, the integration was more than adequate). Buffalo's senior management found that the discontinuities outweighed the anticipated synergies, and therefore, in frustration, in 2002 launched its own bank internally.

CRCs are institutionalised and are part of the firm's taken-for-granted reality, which is the accretion of decisions made over time and events in the firm's history (Kimberly, 1987; Leonard-Barton, 1992; Pettigrew, 1979; Tucker, Singh, & Meinhard, 1990). Employees are always going to interpret their individual and organisational roles (Giddens, 1984) in response to environmental conditions and to the information at hand, and managerial systems evolve over time and are the accumulated responses to employees' interpretations. The lesson for firms is that they put in place CRCs and social complexity catalysts in the “time and space given” (half-lives of which are continuously shortening), and purposefully manage the social complexity catalysts, otherwise they will find it extremely hard, maybe impossible, to obtain them in the near future. What is going to be evident in the marketplace, and has already been evident in the SA marketplace, are incumbents which do not have the necessary CRCs for competing in a changed local and global environment acquiring start-ups, merging and creating alliances with firms that do have them, in-sourcing with partners and vendors, hiving off departments and starting “garage incubators” to develop these resource combinations, and putting the necessary resources (highly competent people, capital, new knowledge-management-aligned IT systems, etc.) in place in order to quickly grow these CRCs – unfortunately, social

complexity by its very nature is a time-based and often frustrating process, since trust, respect, teams, shared understanding, belief in others, etc. are not overnight inventions³¹.

4.4 Organisational Readiness Enables CRCs to Retain Rarity Properties

One of the characteristics shown by the evidence is that CRCs are subject to change as new CRCs emerge and old CRCs are re-combined, altered or abandoned. It is the firm's absorptive capacity³² to understand what, and how, CRCs are to change that keeps its core capabilities relevant, and competitively coherent, to the market. The case evidence demonstrate how these top firms first acquire environmental knowledge and provide feedback between CRCs and core capabilities, and this new inside knowledge is then evaluated, integrated and utilised commercially. Therefore, the wisdom to know when and how to tweak their CRCs to stay ahead of very competent competitors requires a more comprehensive knowledge of the external environment and, more importantly, internal "combinatorial learning," i.e., the learning ability to assess what CRCs should remain in place (if still adding value – and can either lead to parity and hence key capabilities or are distinctive and hence core capabilities), which ones to change and redesign (if it can still add value in a new form as either key- or core capabilities), and which ones to destroy (if eroding value and hence can lead to destructive/irrelevant capabilities). The evidence from this research shows that when successful firms have competitively coherent core capabilities, they are effective in sustaining advantage. Buffalo and Leopard, at the time of the research for instance, were increasing their combinational learning absorptive capacities by creating new knowledge-based CRCs to assess their cluster of existing CRCs, i.e., to determine which CRCs, and how these CRCs, should change or not change, or what new ones should be developed. In addition, they effectively used benchmarking and knowledge management systems and practices to facilitate their learning abilities.

Absorptive capacity is an important moderating factor for firms in assimilating new knowledge. It may enable or restrict the level and range of "exploration adaptations" (Lewin, Long, & Caroll, 1999) and therefore the necessary 'dynamic agility' required of firms. Financial services firms confronted with changing knowledge- and competitive environments should aim to constantly reconfigure their component knowledge³³ (April & Cradock, 2000; Van den Bosch et al., 1999). The types of component knowledge can be distinguished from the case research data: (a) knowledge related to internal relationships within the firm, (b) knowledge related to products and services, (c) knowledge related to business processes, (d) knowledge related to business units, (e) knowledge related to specific projects and project implementations, (f) knowledge related to customers, (g) knowledge related to networks, such as alliances/partners, vendors, suppliers, etc., and (h) knowledge related to the marketplace.

³¹ According to Teece (2000), organisational knowledge is embedded in organisational processes, procedures, routines and structures. Such knowledge cannot be moved into an organisation without the transfer of clusters of individuals with established patterns of working together. This is most frequently accomplished through personal relations or through alliances, joint ventures, mergers and acquisitions of BUs.

³² In addition to *tacit knowledge*, firms need to understand their specific *knowledge absorptive capacities*, which closely relates to its ability to reconfigure and grow existing knowledge, for integration and utilisation – this ability is labelled by Cohen and Levinthal (1990) as a firm's absorptive capacity, and stems from the premise that a firm needs prior related knowledge to absorb and use new knowledge.

³³ Van den Bosch, Volberda & de Boer (1999) suggest that component knowledge can reside within the firm itself, within the firm's traditional knowledge environment, and within knowledge environments that have yet to be explored (more fully sometimes) – both inside and outside of the firm. Cohen & Levinthal (1990) inform us that outside sources of knowledge are critical to the innovation process in general.

According to Van den Bosch, Volberda & de Boer (1999:52): “Reconfiguring existing component knowledge builds on the distinction made by Henderson & Clarke (1990) between four types of innovations: incremental, modular, architectural and radical innovation.” This research has not evidenced any radical innovations in the four firms. Managers therefore have to make, and have made, choices about the type of innovation they want to implement, which has consequences on the sorts of knowledge reconfiguration and new knowledge configurations that would be possible, as well as the future knowledge absorption capacity of the firm.

In summary, new knowledge is therefore the product of a firm's combinatorial learning processes to generate new applications from existing knowledge components (Kogut & Zander, 1996). The knowledge reconfiguration and new knowledge configuration consequently serve as platforms for producing adapted, and new, CRCs – and thus affect the way in which a particular firm is able to compete. The challenge to create new knowledge configurations within the firm implies that the absorption of different types of new component knowledge becomes a critical ability to master for a firm's management and leadership. As shown in the discussion on social shaping of CRCs, firms like Buffalo continue to struggle in implementing the restructuring of its absorptive capacity.

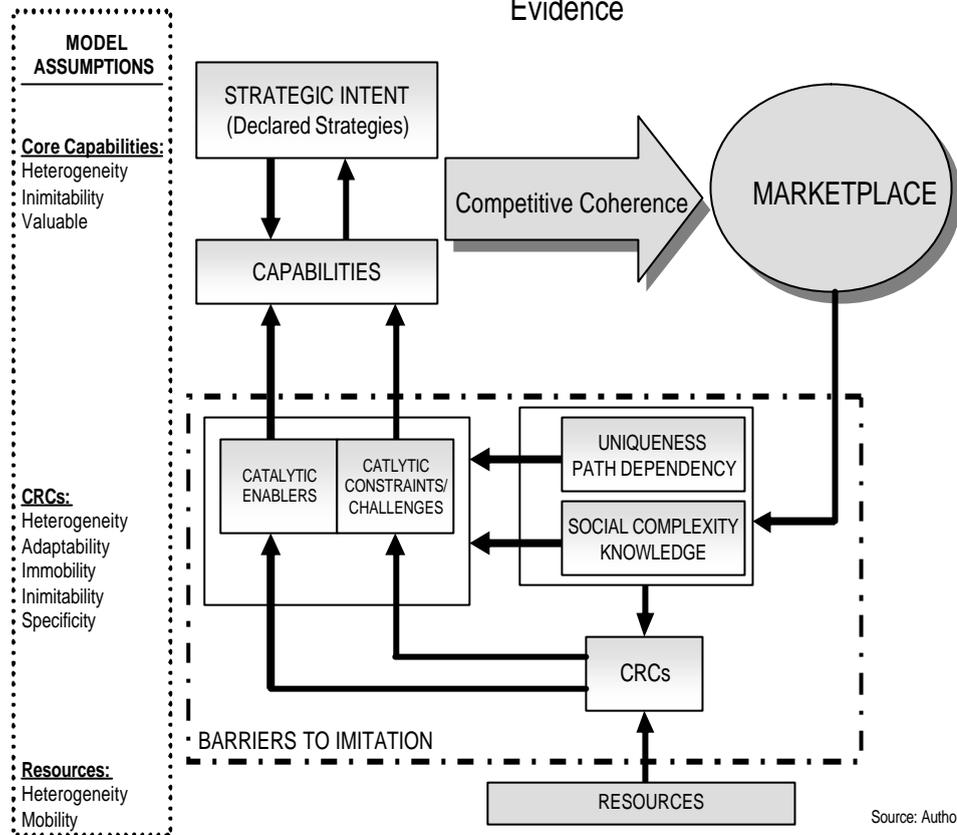
5 Conclusion: Toward a Richer Understanding of How CRCs Create Sustainability

This notion of an ever changing universe in which firms operate is depicted in a modified view of the Framework for Sustainability in Figure 4. Again, the research evidence helped the authors see a more expanded view of the framework; however, only those modifications to CRCs with the role played by complexity attributes are shown. The research evidence suggests that the catalytic characteristics of social complexity attributes can enable, constrain, or present challenges to within firm dynamics of creating capabilities.

Traditional micro-economic theory portrays the firm as essentially a combination of stocks and flows, suggesting that through factors of production managers decide best how to compete. Understanding what happens within “the Black Box” (Rosenberg, 1994) of the firm has been advanced by the concepts of Nelson & Winter (1982) through the metaphor of evolutionary economics (Hodgson & Knudsen, 2004; Norgaard, 1994; Winter, 1971). What this research has done to probe deeper into what goes on in the firm to sustain competitive advantage, using RBT.

The evidence provided by the study of the four top firms in the personal financial services industry suggests a richer set of dynamics that combines to create sustainable advantage. The metaphor which best describes this complex phenomenon is what astronomers call star nurseries (firms) in which *matter* (assets, people, patents, manuals, policies and materials) are acted upon by *catalytic forces and energy factors* (social complexities and uniquenesses) to create *stars* (CRCs) that make up the *galaxy* (the firm itself with its core and key capabilities), and that organises into *multiple galaxies* (marketplace of competitors). Because the nursery from which stars are born, and the forces from which nurseries are created, are never static, the star nursery within the galaxy is never stable. Its very components of sustainability are undergoing through *universe forces* (marketplace and environment) renewing cycles of erosion, maintenance and creation.

Figure 4 New Framework for Sustainability-Modified for CRC Evidence



The metaphor, of course, describes the complex relationships within a firm; however it lacks the interjection of “intent;” that is, the notions of vision, control, managerial decision and action. Yet, it does capture what seems to be going within on in a galaxy system. The notion of management action is shown on the interplay between declared strategies and its capabilities of the firm. The degree to which there is competitive coherence determines how successful a firm’s capabilities will produce market place advantage. There was significant evidence gathered on these dynamics, but they are beyond the scope of this paper. Suffice to say, the authors found evidence to indicate that there is a closed loop that exists as companies – especially those engaged in extensive benchmarking – begin to develop means of absorbing market place intelligence to redefine its arsenal of CRCs.

The Framework for Sustainability is only a starting point of understanding how firms create advantage, particular through socially complex processes. We hope to actively pursue this area with further, longitudinal research to understand if this framework can be applied to other industries.

Appendix 1: Summaries of Analysis – Cheetah, Giraffe, and Leopard

Appendix Table 1: Summary of Analysis – Significant CRCs and Social Complexity Attributes – Cheetah	
CRC-Impacting Strategic Architecture	Social Complexity Attributes
<ul style="list-style-type: none"> ● Creating and maintaining effective channels to reach middle-market ● Designing a business unit structure which is highly autonomous, with BUs measured on bottom-line efficiency ● Establishing smaller corporate functions like IT and HR to reduce staff costs and embed these functions in the BUs ● Exploiting IT to drive efficiency within the business ● Exploiting e-commerce to drive channel efficiency and create a stronger client relationship ● Implementing a business process re-engineering (BPR) process to drive cost out of the business ● Using outsource initiatives to achieve efficiency 	<p>Culture in transformation from “White Afrikaner” to “multi-ethnic” value system</p> <p>Enablers:</p> <ul style="list-style-type: none"> ● Recognised that present culture had to be changed to remain relevant in the new South Africa ● Understood that ethnic diversity was a “make or break” issue <p>Challenges:</p> <ul style="list-style-type: none"> ● Changed a successful culture, that had been in existence for 80 years, took time, and could potentially be painful for employees ● Cultural transformation required wisdom in selecting which values to retain, and which ones to discard; required training investment <p>Leadership focus on management and administration with backgrounds in finance or actuarial functions</p> <p>Enablers:</p> <ul style="list-style-type: none"> ● Financial and actuarial functions important areas of expertise in bancassurance firms ● Leaders, through experience, had good discipline in operational efficiency and bottom-line focus <p>Challenges:</p> <ul style="list-style-type: none"> ● Developed and recruited new leaders from outside industry <p>Constraints:</p> <ul style="list-style-type: none"> ● Transformation required leadership – not management – to set vision and inspire employees to change <p>Financial control with emphasis on cost a consistent cultural value</p> <p>Enablers:</p> <ul style="list-style-type: none"> ● Established credibility with customers, of keeping overheads low ● Scale and cost control identified by investment analysts as important competitive consideration <p>Challenges:</p> <ul style="list-style-type: none"> ● Knowing which costs to eliminate <p>Constraints:</p> <ul style="list-style-type: none"> ● Over-reliance on efficiencies may have created “false economies”, i.e., not investing for future growth ● BU structure itself potential cause of duplication and built-in cost <p>Employee Empowerment with both responsibility and accountability</p> <p>Enablers:</p> <ul style="list-style-type: none"> ● Empowered employees could see how they contributed to BU operational success ● Employees worked with minimum direction <p>Challenges:</p> <ul style="list-style-type: none"> ● Trained and motivated employees to take on the empowerment mantel ● Recruited and developed leaders from other ethnic groups, without loosing the loyalty of current workforce
Source: Authors	

Appendix Table 2: Summary of Analysis – Significant CRCs and Social Complexity Attributes – Giraffe	
CRC-Impacting Strategic Architecture	Social Complexity Attributes
<ul style="list-style-type: none"> ● Aligning IT to business profit centre needs ● Designing channel flexibility to cost-effectively to deliver standard (not customised products) to the high- and middle market customers ● Embedding innovation culturally and structurally into the organisation ● Establishing business efficiency through automation ● Exploiting IT with client-centric applications developed in-house; with infrastructure and other non-critical applications managed through vendor alliances ● Maintaining a loosely-coupled, de-centralised managerial structure with emphasis on profitability ● Maintaining a loosely-coupled HR direction with profit centres accountable for both the strategic and compliance responsibilities 	<p>Empowerment/Egalitarianism: stories of employees making a difference Enable:</p> <ul style="list-style-type: none"> ● Employees' confidence reinforced to become more self-directed; took risks because no reprisals ● Worked in ad-hoc teams to address issues; and implemented projects rather than reliance on processes <p>Challenge:</p> <ul style="list-style-type: none"> ● Maintaining consistent leadership approach where "talk" matched "walk" <p>Reinforcing a cultural value that people make a difference to HR practices, i.e., reward systems</p> <p>Recruited, Retained, and Recognised the "right" people Enable:</p> <ul style="list-style-type: none"> ● Clearly delineated criteria for success factors among employees ● Closely linked recognition to success ● Highly visible acknowledgement of successful employees with "rich" reward schemes <p>Potential Constraint:</p> <ul style="list-style-type: none"> ● Alignment in HR approach on social complexity attributes – i.e., egalitarianism and teamwork vs. elite recognition programs <p>Challenge: Long-term sustainability of CRCs, i.e., scalability as firm grows</p> <p>Leadership: flat structure with few senior leaders who were charismatic and directive Enable:</p> <ul style="list-style-type: none"> ● Rapid direction setting at senior level ● Healthy debate to determine options before making decisions <p>Potential Constraint:</p> <ul style="list-style-type: none"> ● Charismatic leadership depended on "personality", not structure or process <p>Challenge: Scalability as Giraffe expands</p> <p>Informal working relationships required multi-skilled employees Enable:</p> <ul style="list-style-type: none"> ● Interactive cross-functional teams to work on a multi-task basis; firm not reliant on "one person, one task" principle ● All team members had a common purpose; i.e., business needs <p>Challenge:</p> <ul style="list-style-type: none"> ● Assuring common values were maintained throughout all profit centres <p>Teamwork and sharing across BUs continues as a senior management expectation</p>
Source: Authors	

Appendix Table 3: Summary of Analysis– Significant CRCs and Social Complexity Attributes – Leopard	
CRC-Impacting Strategic Architecture	Social Complexity Attributes
<ul style="list-style-type: none"> • Segmenting and tightening distribution capacity • Enabling efficiencies through governance structures and measures that continuously seek alignment of IT functions with business needs • Developing human resource processes that enables a dynamic culture to support the business framework. • Building customer-led processing capability, through IT-enabled analysis, lead generation, and supporting of agents and brokers. • Aligning of business processes and human resource processes, through appropriate structures • Designing IT infrastructure and automated business process efficiencies through widened, but structured, project management focus. • Using a risk-sharing, outsourcing partnership model, as opposed to only focusing on cost-saving and good deals 	<p>Knowledge-sharing culture that was trend-aware, and sought synergies across functions & disciplines</p> <p>Enablers:</p> <ul style="list-style-type: none"> • Purposefully created knowledge and learning culture; benchmarking intelligence that allowed technological prowess and first-mover advantages • Recruitment aligned to current and future business/skills needs; retention good because employees feel they are growing and expanding their networks <p>Challenges:</p> <ul style="list-style-type: none"> • Managed social/professional networks individually, instead of corporately • Shifted employees from dominant task-orientation positions, to knowledge sharing behaviours <p>Constraints:</p> <ul style="list-style-type: none"> • No skills in social/professional network analysis as a business process • Not moving individual knowledge to corporate knowledge assets <p>3-Tiered approach using map for the development of employee potential</p> <p>Enablers:</p> <ul style="list-style-type: none"> • Created an environment in which employees take responsibility for their careers; rewarding employees for the right behaviours • IT enabled competency mapping – people placed in jobs to match their competencies; people-knowledge embedded in systems and processes • Intermediary training focused on relationship building with clients <p>Challenges:</p> <ul style="list-style-type: none"> • Employee willingness to engage in continuous learning and career-upgrading; over time, employees may have become “comfortable” in jobs; reward systems may be reason for employees’ changed behaviours • Erosion of relationships as sales people were shifted out of engagement positions with brokers (as a result of automation) • Multi-ethnic composition of high growth middle-market requires employee composition changes to improve business/client identity and relationships; may not be changing fast enough for the market. <p>Formalised inter-functional collaboration; required transformation of senior leadership from entrepreneurial to shared vision mindset</p> <p>Enablers:</p> <ul style="list-style-type: none"> • Set appropriate values on which employees could rally; Employees given clear signal from sr. leadership that they mattered and could participate • Employees incented to work collaboratively; through consulting with others; institutionalised multi-functional sharing; broad participation of all employees, making them co-responsible for creating the desired future • Sr. Leadership shift to strategic focus, not only day-to-day operational view <p>Challenges:</p> <ul style="list-style-type: none"> • Shift from entrepreneur-led (led from the top) organisation to knowledge worker-led organisation (shared-leadership); firm may have lost its entrepreneurial edge with former entrepreneurial “stars” not feeling valued • Selling the business case for team-based, broad-band approaches to all management; e.g. allowing employees to work from anywhere not just Johannesburg. • Creating a robust succession pool of previously disadvantaged individuals and a pool with individuals with strategic skills • Corporate memory, embedded in processes and systems; difficult shift in leadership style (can they unlearn their previous behaviours) • Balancing the old and new ways of working in a way that is constructive for the firm (not just a step-change); employees not used to taking responsibility (speed of empowerment)

Source: Authors

References

- Amit, R., & Schoemaker, P. J. H. (1993). Strategic Assets and Organizational Rent. *Strategic Management Journal*, 14(1), 33-46.
- Andrews, K. (1971). *The Concept of Corporate Strategy*. Homewood, IL: Irwin.
- April, K. (2004). A Resource-Based View of the Firm: Integrating the Role of IT as a Strategic Resource (Unpublished PhD Dissertation, Graduate School of Business, University of Cape Town, Cape Town, August 2004, pp. 1-549).
- April, K. (2002). Guidelines for Developing a K-Strategy. *Journal of Knowledge Management*, 6(5), 445-456.
- April, K., & Ahmadi-Izadi, F. (2004). *Knowledge Management Praxis*. Kenwyn: Juta Academic.
- April, K., & Cradock, J. (2000). *e or b e@ten: E-Business Redefining the Corporate Landscape in South Africa*. Durban: Butterworths.
- Azzone, G., Bertele, U., & Rangone, A. (1995). Measuring Resources for Supporting Resource-Based Competition. *Management Decision*, 33(9), 57-62.
- Bain, J. (1956). *Barriers to New Competition*. Cambridge, MA: Harvard University Press.
- Baldwin, C. Y., & Clark, K. B. (1990). *Capabilities, Time Horizons and Investment: New Perspectives on Capital Budgeting* (Mimeograph). Cambridge, MA: Harvard Business Review.
- Barnard, C. I. (1938). *The Functions of the Executive*. Cambridge, MA: Harvard University Press.
- Barney, J. B. (1986a). Organizational Culture: Can It be a Source of Sustained Competitive Advantage? *Academy of Management Review*, 11(3), 656-665.
- Barney, J. B. (1986b). Strategic Factor Markets: Expectations, Luck and Business Strategy. *Management Science*, 32(10), 1231-1241.
- Barney, J. B. (1986c). Types of Competition and the Theory of Strategy: Toward an Integrative Framework. *Academy of Management Review*, 11(4), 791-800.
- Barney, J. B. (1989b). *The Context of Strategic Planning and the Economic Performance of Firms* (Working Paper No. 88-004). College Station, TX: Texas A&M, Department of Management.
- Barney, J. B. (1991). Firm Resources and Sustained Competitive Advantage. *Journal of Management*, 17(1), 99-120.
- Barney, J. B. (1995). Looking Inside for Competitive Advantage. *Academy of Management Executive*, 9(4), 49-61.
- Black, J. A., & Boal, K. B. (1994). Strategic Resources: Traits, Configurations, and Paths of Sustainable Competitive Advantage. *Strategic Management Journal*, 15(5), 131-148.
- Bowman, C., & Faulkner, D. O. (1997). *Competitive Strategy and Corporate Strategy*. London: Richard D. Irwin Books.
- Bromiley, P. (1993). Public Communications in Business Policy and Strategy.
- Chamberlin, E. H. (1933). *The Theory of Monopolistic Competition: A Re-Oriented of the Theory of Value*. New York: Wiley.
- Charmaz, K. (2000). Grounded Theory: Objectivist and Constructivist Methods. In N. K. Denzin & Y. S. Lincoln (Eds.), *Handbook of Qualitative Research* (Second ed., pp. 509-535). Thousand Oaks: Sage Publications, Inc.

- Chen, M.-J. (1996). Competitor Analysis and Interfirm Rivalry: Toward a Theoretical Integration. *Academy of Management Review*, 21(1), 100-134.
- Cho, W. (1996). *A Case Study: Creating and Sustaining Competitive Advantage through an Information Technology Application in the Lodging Industry*. Unpublished Ph. D., Virginia Polytechnic Institute and State University.
- Cohen, W. M., & Levinthal, D. A. (1990). Absorptive Capacity: A New Perspective on Learning and Innovation. *Administrative Science Quarterly*, 35(1), 128-152.
- Collis, D. J., & Montgomery, C. A. (1995). Competing on Resources: Strategy in the 1990's. *Harvard Business Review*, 118-128.
- Collis, D. J., & Montgomery, C. A. (1997). *Corporate Strategy: Resources and the Scope of the Firm*. Irwin: McGraw-Hill Companies, Inc.
- Conner, K. R. (1991). A Historical Comparison of Resource-Based Theory and Five Schools of Thought Within Industrial Organization Economics: Do We Have a New Theory of the Firm. *Journal of Management*, 17(1), 121-154.
- Corbin, J. (1986). Coding, Writing Memos, and Diagramming. In W. C. Chenitz (Ed.), *From Practice to Grounded Theory* (pp. 102-120). Menlo Park: Addison-Wesley Publishing Company.
- Croasdell, D. T. (2001). IT's Role in Organisational Memory and Learning. *Information and Systems Management*, 18(1), 8-11.
- Davenport, T. H., & Prusak, L. (1998). *Working Knowledge: How Organizations Manage What They Know*. Boston, MA: Harvard Business School Press.
- Demsetz, H. (1973). Industry Structure, Market Rivalry and Public Policy. *Journal of Law and Economics*, 16(1), 1-9.
- Dierickx, I., & Cool, K. (1989). Asset Stock Accumulation and Sustainability of Competitive Advantage. *Management Science*, 35(12), 1504-1511.
- Eisenhardt, K. M. (1989). Building Theories from Case Study Research. *MIS Quarterly*, 14(4), 532-550.
- Feeny, D. F. (1997). Introduction--Information Management: Lasting Ideas within Turbulent Technology. In L. P. Willcocks & D. F. Feeny & G. Islei (Eds.), *Managing IT as a Strategic Resource* (pp. xvii-xviii). London: The McGraw-Hill Companies.
- Giddens, A. (1984). *The Constitution of Society: Outline of the Theory of Structuration*. Cambridge, UK: Polity Press.
- Glaser, B. G., & Strauss, A. L. (1967). *The Discovery of Grounded Theory: Strategies for Qualitative Research*. Chicago: Aldine Publishing Company.
- Gold, M. (Ed.). (1999). *The Complete Social Scientist: A Kurt Lewin Reader*. Washington D.C.: American Psychological Association.
- Gorelick, C., Milton, N., & April, K. (2004). *Performance Through Learning: Knowledge Management in Practice*. Burlington, MA: Elsevier Butterworth-Heinemann.
- Grant, R. M. (1991). The Resource-Based Theory of Competitive Advantage: Implications for Strategy Formulation. *California Management Review*, 33(3), 114-135.
- Grant, R. M. (1995). *Contemporary Strategy Analysis: Concepts Techniques Applications* (2nd ed.). Oxford UK: Blackwell Publishers Ltd.
- Grant, R. M. (1996a). *Contemporary Strategy Analysis: Concepts, Techniques, Applications* (Second ed.). Oxford, UK: Blackwell Publishers, Ltd.
- Grant, R. M. (1996b). Toward a Knowledge-Based Theory of the Firm. *Strategic Management Journal*, 17, 109-122.

- Hall, R. (1992). The Strategic Analysis of Intangible Resources. *Strategic Management Journal*, 13(2), 135-144.
- Hambrick, D. (1987). Top Management Teams: Key to Strategic Success. *California Management Review*, 30(1), 88-108.
- Hamel, G., & Prahalad, C. K. (1989). Strategic Intent. *Harvard Business Review*, 67(3), 63-77.
- Hamel, G., & Prahalad, C. K. (1990). The Core Competency of the Corporation. *Harvard Business Review*, 68(3), 79-91.
- Hamel, G., & Prahalad, C. K. (1994). *Competing for the Future*. Boston: Harvard Business School Press.
- Henderson, R. M., & Clark, K. B. (1990). Architecture Innovation: The Reconfiguration of Existing Product Technologies and the Failure of Established Firms. *Administrative Science Quarterly*, 35(1), 9-30.
- Hirshliefer, J. (1980). *Price Theory and Applications* (Second ed.). Englewood Cliffs, NJ: Prentice-Hall.
- Hitt, M. A., & Ireland, R. D. (1985). Corporate Distinctive Competence, Strategy, Industry and Performance. *Strategic Management Journal*, 6(3), 273-293.
- Hitt, M. A., & Ireland, R. D. (1986). Relationships among Corporate Distinctive Competencies: Diversification Strategy, Corporate Structure and Performance. *Journal of Management Studies*, 23, 401-416.
- Hodgkinson, S. L. (Ed.). (1996). *The Role of the Corporate IT Function in the Federal Organization IT Organization*. Oxford: Oxford University Press.
- Hodgson, G. M., & Knudsen, T. (2004). The Firm as an Interactor: Firms as Vehicles for Habits and Routines. *Journal of Evolutionary Economics*, 14(281-307).
- Hofer, C. W., & Schendel, D. (1978). *Strategy Formulation: Analytic Concepts*. St. Paul, MN: West.
- Itami, H. (1987). *Mobilizing Invisible Assets*. Cambridge, MA: Harvard University Press.
- Kimberly, J. R. (1987). The Study of Organizations: Toward a Biological Perspective. In J. W. Lorsch (Ed.), *Handbook of Organizational Behavior* (pp. 223-237). Englewood Cliffs, N.J.: Prentice-Hall.
- Kogut, B., & Zander, U. (1996). What Firms Do? Coordination, Identity and Learning. *Organization Science*, 7(5), 502-518.
- Kotler, P. (1976). *Marketing Management: Analyses, Planning, Control*. Englewood Cliffs, NJ: Prentice-Hall.
- KPMG. (2004). *The South African Insurance Industry: 2003 Survey*. Parktown, Guateng.
- Lado, A. A., Boyd, N. G., & Wright, P. (1992). A Competency-Based Model of Sustainable Competitive Advantage: Toward a Conceptual Integration. *Journal of Management*, 18(1), 77-91.
- Learned, E. P., Christensen, C. R., Andrews, K. E., & Guth, W. D. (1969). *Business Policy: Text and Cases*. Homewood, IL.: Irwin.
- Lenz, R. T. (1980). Strategic Capability: A Concept and Framework for Analysis. *Academy of Management Review*, 5(2), 225-234.
- Leonard-Barton, D. (1992). Core Capabilities and Core Rigidities: A Paradox in Managing New Product Development. *Strategic Management Journal*, 13(5), 111-125.
- Lewin, A. Y., Long, C. P., & Caroll, T. N. (1999). The Coevolution of New Organizational Forms. *Organization Science*, 10, 535-550.

- Lippman, S. A., & Rumelt, R. P. (1982). Uncertain Imitability: An Analysis of Inter-firm Differences in Efficiency Under Competition. *The Bell Journal of Economics*, 13(2), 418-438.
- Long, C., & Vickers-Koch, M. (1995). Using Core Capabilities to Create Competitive Advantage. *Organizational Dynamics*, 24(1), 7-22.
- Mahoney, J., & Pandian, J. (1992). The Resource-Based View within the Conversation of Strategic Management. *Strategic Management Journal*, 13(5), 363-380.
- McGrath, R., MacMillan, I. C., & Venkatraman, S. (1995). Defining and Developing Competence: A Strategy Process Paradigm. *Strategic Management Journal*, 16(4), 251-275.
- McKelvey, W. (1982). *Organizational Systematics: Taxonomy, Evolution, and Classification*. Los Angeles: University of California Press.
- Miles, M. B., & Huberman, M. A. (1994). *Qualitative Data Analysis* (Second ed.). Thousand Oaks: Sage.
- Nelson, R., & Winter, S. (1982). *An Evolutionary Theory of Economic Change*. Cambridge, MA: The Belknap Press.
- Norgaard, R. (1994). *Development Betrayed: The End of Progress and a Co-Evolutionary Revisioning of the Future*. London: Routledge.
- PCAS. (2003). *Towards a Ten Year Review: Synthesis Report on Implementation of Government Programmes: Policy Coordination and Advisory Services Discussion Document*, The Presidency, SA National Government GCIS.
- Penrose, E. (1959). *The Theory of the Growth of the Firm*. New York: John Wiley.
- Peteraf, M. A. (1993). The Cornerstones of Competitive Advantage : A Resource-Based View. *Strategic Management Journal*, 14(3), 179-191.
- Pettigrew, A. (1979). On Studying Organizational Cultures. *Administrative Science Quarterly*, 24(4), 570-558.
- Polanyi, M. (1962). *Personal Knowledge: Towards a Post-Critical Philosophy*. Chicago: University of Chicago Press.
- Porter, M. E. (1980). *Competitive Strategy: Techniques for Analyzing Industries and Competitors*. New York: Free Press.
- Porter, M. E. (1991). Towards a Dynamic Theory of Strategy. *Strategic Management Journal*, 12, 95-117.
- Potgieter, A., April, K. and Bishop, J. (2005), 'Complex Adaptive Enterprises,' in M. Khosrow-Pour (Ed.), *Encyclopedia of Information Science and Technology*, Volume 1, Hershey, PA: Idea Group Inc., pp. 475-480.
- Powell, T. C., & Dent-Micallef, A. (1997). Information Technology as Competitive Advantage: The Role of Human, Business, and Technology Resources. *Strategic Management Journal*, 18(5), 375-405.
- Prahalad, C. K., & Hamel, G. (1990). The Core Competence of the Corporation. *Harvard Business Review*, 68(3), 79-91.
- Quinn, J. B. (1992). *Intelligent Enterprise: A Knowledge and Service Based Paradigm for Industry*. New York: The Free Press.
- Reed, R., & DeFillippi, R. J. (1990). Causal Ambiguity, Barriers to Imitation, and Sustainable Competitive Advantage. *Academy of Management Review*, 15(1), 88-102.
- Ricardo, M. (1817). *Principals of Political Economy and Taxation*. London: Murray.
- Robinson, J. V. (1933). *The Economics of Imperfect Competition*. London: MacMillan.

- Roquebert, J., Phillips, R., & Duran, C. (1993). *How Much Does Strategic Management Matter?* Paper presented at the National Academy of Management Meeting, Atlanta, GA.
- Rosenberg, N. (1994). *Explaining the Black Box*. Cambridge: Cambridge University Press.
- Rumelt, R. P. (1984). Toward a Strategic Theory of the Firm. In R. Lamb (Ed.), *Competitive Strategic Management* (pp. 556-570). Englewood Cliffs, NJ: Prentice Hall.
- Rumelt, R. P. (1991). How Much Does Industry Matter? *Strategic Management Journal*, 12(3), 167-185.
- Sauer, C. (1993). *Why Information Systems Fail: A Case Study Approach*. Henley-on-Thames: Alfred Waller Ltd.
- Schendel, D. (1996). Editor's Introduction to the 1996 Winter Special Issue. *Strategic Management Journal*, 17, 1-4.
- Segal-Horn, S. (1997). *Competing with Capabilities*. Milton Keynes.
- Selznick, P. (1957). *Leadership in Administration*. New York: Harper & Row Publishers, Inc.
- Shockley, M. L. (2003). *Understanding the Use of the Internet by Teachers: A Comparative Study of Teachers' Experiences in California, England, and Singapore*. Oxford University, Oxford.
- Snow, C. C., & Hrebiniak, L. G. (1980). Strategy, Distinctive Competence, and Organizational Performance. *Administrative Science Quarterly*, 25(2), 317-336.
- Spender, J. C. (1996). Making Knowledge the Basis of a Dynamic Theory of the Firm. *Strategic Management Journal*, 17, 45-62.
- Stevenson, H. H. (1978). Defining Corporate Strengths and Weaknesses. *Sloan Management Review*, 17(3), 51-68.
- Strauss, A., & Corbin, J. (1997). *Grounded Theory in Practice*. Thousand Oaks: Sage Publications, Inc.
- Symeonidis, C. (2001). *A Review of the SA Life Insurance Sector*. Sandton, Guateng: USB-Warburg (South Africa).
- Teece, D.J. (2000), 'Strategies for Managing Knowledge Assets: The Role of Firm Structure and Industrial Context,' *Long Range Planning*, Vol. 33, No. 1, pp. 35-54.
- Teece, D. J. (1987). Profiting from Technological Innovation: Implications for Integration, Collaboration, Licensing, and Public Policy. In D. Teece (Ed.), *The Competitive Challenge* (pp. 185-220). Cambridge, MA: Ballinger.
- Teece, D. J., Pisano, G., & Shuen, A. (1991). *Dynamic Capabilities and Strategic Management* (Working Paper). Berkeley: University of California-Berkeley.
- Thompson, A. A., & Strickland, A. J. (1990). *Strategic Management: Concepts and Cases*. Homewood IL.: Irwin.
- Toffler, A. (1990). *Powershift: Knowledge, Wealth and Violence at the Edge of the 21st Century*. New York: Bantam Dell Publishing Group.
- Tucker, D., Singh, J., & Meinhard, A. (1990). Founding Characteristics, Imprinting and Organisational Change. In J. V. Singh (Ed.), *Organizational Evolution: New Directions*. Newbury Park, CA: Sage Publications.
- UBS-Warburg. (2001). *Life Insurers Under a Microscope: A Review of the SA Life Insurance Sector*. Sandton: USB Warburg Securities-South Africa (Pty) Ltd.
- Ulrich, D., & Lake, D. (1990). *Organizational Capability: Competing from the Inside Out*. New York: John Wiley.

- Van den Bosch, F. A. J., Volberda, H. W., & de Boer, M. (1999). Coevolution of Firm Absorptive Capacity and Knowledge Environment: Organizational Forms. *Organization Science*, 10(5), 551-568.
- Walsh, J. P., & Ungson, G. R. (1991). Organisational Memory. *Academy of Management Review*, 16(1), 57-91.
- Weitzman, E. A. (2000). Software and Qualitative Research. In N. K. Denzin & Y. S. Lincoln (Eds.), *Handbook of Qualitative Research* (Second ed., pp. 803-820). Thousand Oaks: Sage Publications, Inc.
- Wernerfelt, B. (1984). A Resource-Based View of the Firm. *Strategic Management Journal*, 5(2), 171-180.
- Williamson, O. E. (1979). Transaction Cost Economics: The Governance of Contractual Relations. *Journal of Law and Economics*, 22, 233-261.
- Winter, S. (1987). Knowledge and Competence in Strategic Assets. In D. Teece (Ed.), *The Competitive Challenge* (pp. 159-184). Cambridge, MA: Ballinger.
- Winter, S. G. (1971). Satisficing, Selection and the Innovating Remnant. *Quarterly Journal of Economics*, 85(2), 237-261.
- Yin, R. (1984). *Case Study Research: Design and Methods*. Newbury Park: Sage.