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## IT and social complexity – complementary resource combinations in the South African assurance industry

### 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), for instance, used “value chain” analysis as a tool for inter-functional linkage. Alternately, Chamberlin (1933) introduced the notion that assets can be exploited to create value, not only through inter-functional linkages (as in value chains) but also through unique processes, knowledge and cultural values.

We have extended resource-based theory (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 the top four assurance firms in South Africa, we have developed a model called a “Framework for Sustainability” that shows how these firms use CRCs to marketplace advantage.

Our research focuses on how information technology (IT) enables CRCs, and indicates that IT hardware and software do not per se possess properties of “rarity”; it is through combinations with an array of processes, actions, strategic intentions and programs within the firm that IT enables the creation of CRCs to sustain a firm’s competitive advantage over time.

**Keywords:** social networks, strategic competitive advantage, social complexity, resource based theory, social capital.

**JEL Classification:** M150.

### Introduction

The primary objectives of this research were to understand how firms differentiate themselves in the marketplace in order to successfully compete and extract returns, and what the role of IT is in ensuring the sustainability of that advantage. In order to accomplish this, the literature on strategic theory, IT theory and its economic underpinnings are reviewed, i.e., from the two dominant schools of thought: industrial organizational economics and resource-based theory. The reason for using an economic standpoint is because economic theories are traditionally used when defining and thinking about competitive advantage.

Although all three literature sources on competitive advantage were rich with insights and macro-theoretical constructs, the researchers found that the within-firm dynamics on how advantage is actually created, and sustained, as somewhat “thin.” Many researchers described the need for firms to differentiate themselves through developing core capabilities – however, what was missing was “how these differentiators of advantage evolve within the black box called the firm?” This research is an effort on the part of the researchers to remove some of the mystery, by making the dynamics of the firm less opaque. Resource-based theory provided the intellectual foundation for this research, because it helped structure the initial framework of how firm assets and resources can be made to create “rarity.” What RBT lacked was a means of demonstrating

“complementary-ness” of complex resources and processes to create “rarity.” The researchers were keen to explore the micro-forces within firms that fuelled the development of core capabilities.

The site of our research was the highly sophisticated personal financial services (assurance) industry in South Africa. This industry was selected as a venue for research for the following reasons: *industry size* – the personal financial services industry is among the top five industries in South Africa, offering a full range of short-term products such as automobile, property and medical insurance, to long-term products such as single premium insurance and investment products such as unit trusts and fixed income annuity products to all segments of the South African society; *role of information technology* – the industry had invested heavily in IT for well over 40 years, and has been at the cutting-edge of IT development, investing heavily to not only promote efficiency gains, but also support its strategic endeavors for bringing customized products to market (to meet its various market segments needs); and *ease of access* – the researchers have had long and established relationships with both the industry and all four individual firms selected – thereby facilitating access to senior executives and management at these firms.

### 1. Theoretical framework: strategic focus

**1.1. Industry organizational (IO) vs. resource-based theory (RBT) views.** The field of strategy, during the past three decades, has largely been shaped around a framework first conceived by An-

draws (1971)<sup>1</sup>, who defined strategy as the match between what a firm *can* do (organizational strengths and weaknesses) within the universe of what it *might* do (environmental opportunities and threats). According to Collis & Montgomery (1995), although the power of Andrew's framework was recognized from the start, 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-organizational (IO) economics<sup>2</sup>. In the IO view, competitive advantage is defined 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 for premium (Lado et al., 1992).

According to Cho (1996), Porter extended the traditional IO view, 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, which was a missing link from most of the IO research at the time. IO economics emphasizes industry attractiveness as the primary basis for superior profitability, the implication being that strategic management is concerned primarily with seeking favorable industry environments, locating attractive segments and strategic groups within industries, and moderating competitive pressures by influencing industry structure and competitors behavior.

With the appearance of the concepts of 'distinctive competence' (Hofer & Schendel 1978; Snow & Hrebiniak 1980; Hitt & Ireland 1985; Hitt & Ireland 1986), 'core competence' (Hamel & Prahalad 1989; Hamel & Prahalad 1990) and 'competing on capabilities' (Teece et al., 1991), the focus of attention among strategy academics changed from outside to inside the firm. As described by Hamel & Prahalad (1990), 'core competence' was a capability or skill that provided the thread running through a firm's businesses, weaving them together into a coherent whole. Furthermore, Hamel & Prahalad (1989; 1994) emphasized 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.

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

<sup>2</sup> 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.

During the past two decades, the resource-based view (RBV)<sup>3</sup> of the firm has dominated, articulating the dynamic relationships among firm resources, capabilities, and competitive advantage. While early work on the resource-based view of the firm<sup>4</sup> initially came from the works of Chamberlin (1933), Robinson (1933), Penrose (1959) and Selznick (1957), it has more recently generated work from researchers including: Lippman & Rumelt (1982), Wernerfelt (1984), Barney (1986a; 1986b; 1986c; 1991; 1995), Dierickx & Cool (1989), Conner (1991), Mahoney & Pandian (1992), Lado et al., (1992), Grant (1991; 1995), Peteraf (1993), Amit & Schoemaker (1993), McGrath et al., (1995), Azzone et al., (1995), Collis & Montgomery (1995; 1997), Chen (1996), Segal-Horn (1995) and Bowman & Faulkner (1997).

While Penrose (1959) is oft-cited, Chamberlin (1933) already argued that a firm's competitive advantage is achieved from the firm's unique assets and capabilities, including technical know-how, reputation, brand awareness, and the ability of managers to work together (Cho, 1996). According to Chamberlin, heterogeneous firm characteristics<sup>5</sup> create imperfect competition that allows firms to enjoy monopolistic competition, refined to be limited to a certain period of time (Barney, 1986c). Thus, in order to achieve competitive advantage, firms should have a strategy to develop their idiosyncratic resources.

The RBV thus 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, must raise 'barriers to imitation' (Rumelt, 1984)<sup>6</sup>. The firm and its resources are the focal level of analysis in this strategy theory (Chen, 1996), and the underlying orientation considers a firm as a unique bundle of linked, idiosyncratic, tangible and intangible assets and resources (Penrose, 1959; Wernerfelt, 1984; Hall,

<sup>3</sup> The resource-based 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 paper.

<sup>4</sup> In many ways, the resource-based view 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.

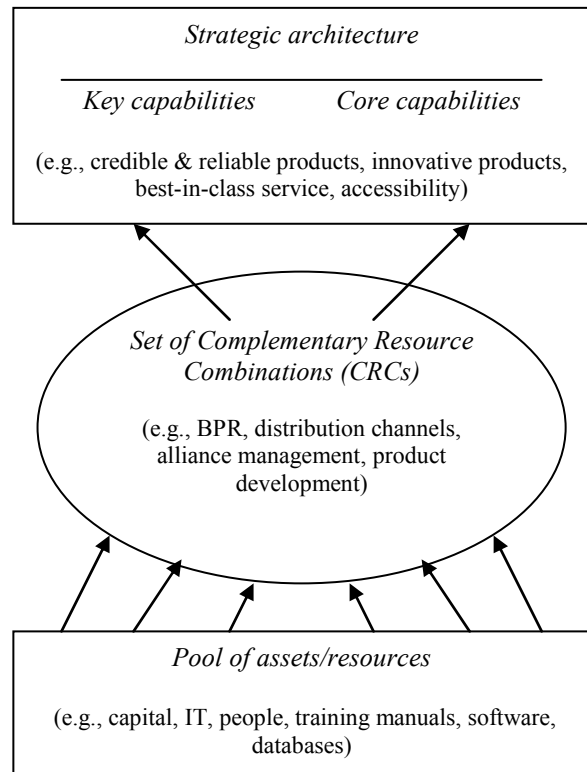
<sup>5</sup> "Firm heterogeneity can represent an important source of competitive advantage for firms" (Barney, 1986c, p. 793).

<sup>6</sup> 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 resource-based framework.

1992). One of the central notions of RBT<sup>1</sup> is that firms in the same industry compete with substantially different bundles of resources using disparate approaches. A basic assumption of the resource-based work is that resource bundles and capabilities are heterogeneously<sup>2</sup> distributed across firms, and that each firm is idiosyncratic because of the different resources and assets it has acquired over time, because of differing histories of strategic choice and performance, because management of these firms appear to seek asymmetric competitive positions, and because of the various routines it has developed to manage them (Wernerfelt, 1984; Barney, 1991; Teece et al., 1991).

The theoretical foundation of RBV most certainly has its limitations. According to Grant (1991, p. 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. Bowman & Faulkner (1997, p. 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 recognize 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 generalized 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 (1993) call for the operationalization of RBT is the objective of this research.

**1.2. A framework for sustainability.** Based upon an extensive review of the strategic literature, the following framework (Figure 1) for sustainable advantage was developed based upon RBT. In this research, a firm is said to have a *competitive advantage* when resources combine in a way which creates “complementary resource combinations” (CRCs), which supercede resources whether tangible like buildings and land, or intangible, like technological know-how, trademarks or intellectual capital, in isolation. The framework proposed in Figure 1 is designed to explore the dynamics of intra-firm development of sustainable competitive advantage.



Source: Authors.

**Fig. 1. Assets combined to make CRCs, that serve as based for competitive advantage when firms compete on capabilities**

A firm’s ‘*set of complementary resource combinations*’ results from bundles or combinations of certain assets and resources. The firm’s assets and resources may further exhibit complementarity in deployment or application (Barnard, 1938). Complementarity represents an enhancement of resource value, 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). ‘*Complementary resource combinations (CRCs)*’, defined here, are not factor inputs like tangible and intangible assets; they are complex, idiosyncratic combinations of these assets. 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 simply cannot be easily recreated by another firm. That said, it is our researched belief that IT is core to the creation and enablement of many of these CRCs.

**1.3. IT as a strategic resource.** As the field of strategic management has expanded, strategy researchers and practitioners have shown increasing interest

<sup>1</sup> Made explicit in Wernerfelt’s (1984) empirical observations.

<sup>2</sup> Peteraf (1993) states 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 across firms.

in the role of IT in strategy formulation and implementation, and in its impacts on performance (e.g., Powell & Dent-Micallef, 1997; Cho, 1996; Kettinger et al., 1994; Henderson & Venkatraman, 1993; Holland et al., 1992; Sabherwal & King, 1991; Earl, 1988; 1989; Farrel & Song, 1988). Much of this research has developed as a parallel stream of research to that of strategic research based upon the IO and RBT views<sup>1</sup>.

The pre-1990 IT literature focused on the strategic importance of IT adoption and innovation, and reflected a general optimism concerning IT's potential for creating competitive advantage. An important empirical study of IT in the US retail industry suggests that "owing to IT imitation by competitors, technology resources themselves have not, in and of themselves, produced sustained performance advantages" (Powell & Dent-Micallef, 1997, p. 375). After a series of studies (Clemons & Row, 1992; 1990; 1988; Clemons & Kenz, 1988; Clemons & Kimbrough, 1986; Clemons, 1986) on competitive advantage from IT, Clemons and his co-authors concluded that a firm's IT application is a 'strategic necessity' rather than the source of competitive advantage, because of its availability to competitors. For example, when only Citibank and Chemical had automated teller machines (ATMs), they briefly had a significant advantage over their competitors, offering a service that customers wanted and they alone could provide. But, ATMs soon became available throughout the industry, and what had been a competitive advantage was simply a "baseline requirement" (Davenport & Prusak, 1998) for consumer-oriented banks. This notion of baseline requirements, termed the 'strategic necessity hypothesis', has been noted by other IT researchers (e.g., Floyd & Wooldridge, 1990; Kettinger et al., 1994; Powell & Dent-Micallef, 1997).

In a resource-based conceptual analysis of technology resources and firm performance, Clemons & Row (1991) advanced a 'commodity view' of IT, arguing that competitive imitation eventually erodes most IT-based advantages, that non-imitators are eliminated, and that above-normal returns attributed to the IT eventually vanish. The authors concluded that "examples of using IT to achieve sustainable advantage through either barriers to imitation or first-mover advantages do exist, but they are far less common than a trusting first scan of the MIS literature would imply" (Clemons & Row, 1991, p. 278).

To develop an RBT for competitive advantage from an IT application, Clemons & Row established a theoretical link between IT applications and specific complementary resources. They explain how com-

petitive advantage can be sustained from IT in the presence of resource differences among firms: differences in degree of vertical integration, differences in diversification, and differences in resource quality and organization. It therefore follows that the issue of competitive sustainability, through complementing IT with other in-house resource endowments, is an important research issue within the current domain of IT. Feeny & Willcocks (1997) stress the notion of Quinn (1992), that successful businesses focus on creating advantage through a small number of 'core' activities, and that this notion should be translated into the IT domain. In other words, the authors argue, if IT is able to 'exploit' a firm's unique resources and change the value of key resources by reducing the cost of integrating and co-ordinating economic activities, it increases production economics such as scale, scope and specialization.

Whereas the original view of 'IT as a commodity' is limiting, investigating the role of IT as a key element in enabling CRCs is more promising. Rather than hypothesize about this potential relationship, this study sought to extend this work through field testing.

## 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 our "Framework for Sustainability". This industry is characterized by its heavy investment in IT, a primary reason for selecting this sector as a research venue. For this paper, the focus will be on the discussion of how firms create unique complementary resource combinations (CRCs) that support its strategic architecture. More specifically, this paper will focus on those rarity characteristics enabled by intra-firm dynamics, specifically, *social complexity* anchored in IT.

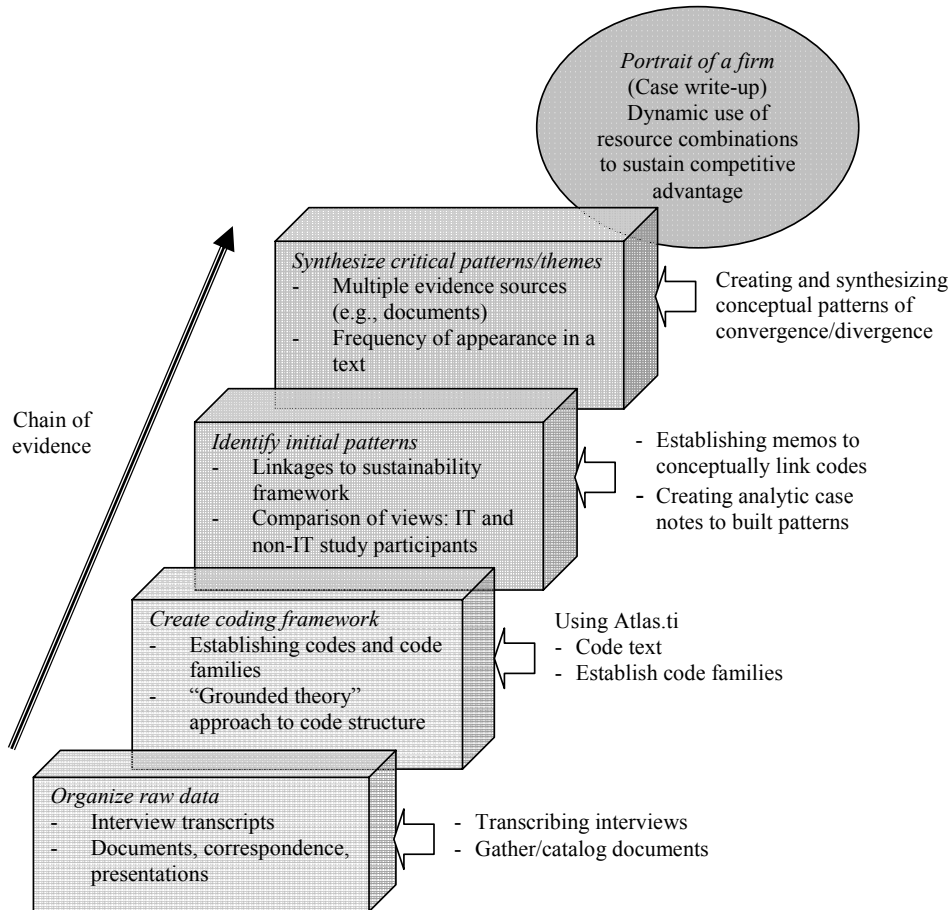
The design structure of the research project was based upon using semi-structured questions and documents analysis. Because this research was exploring "uncharted waters" in which frameworks for understanding how resource bundles are acted upon within a firm to create CRCs that eventually form its strategic architecture, these qualitative tools were felt to be the most effective means of gathering data (Eisenhardt, 1989; Shockley, 2003). Among these four firms, a total of 45 ninety minute 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) that the data itself

<sup>1</sup> For a much extensive review of the IT literature on competitive advantage, refer to April (2004).

should form the foundation of developing theoretical insights, a “chain of evidence” (Yin, 1984) was designed which eventually led to a portrait of the firm (see Figure 3). The data analysis process goal was to ensure “reliability” such that each level of abstraction (interpretation) could be linked to either interview- or document evidence

(Glaser & Strauss, 1967; Yin, 1984; Corbin, 1986; Miles & Huberman, 1994; Strauss & Corbin, 1997). The reliability of these portraits was also important to support the cross-case analysis in which patterns of convergence and divergence (Miles & Huberman, 1994) among the four firms could be developed on the basis of evidence.



Source: Authors, with other input taken from Miles & Huberman (1994), Patton (1990), Yin (1984).

**Fig. 2. Data analysis: a process of increasing abstraction**

In addition, a “bottom-up” view was obtained, for cross-validation with interviews and documents analysis, with evidence gathered from a short questionnaire and focus group discussions held with 178 staff in the four firms. The data analysis was also enhanced using a qualitative software tool, ATLAS.ti<sup>1</sup>. This software program improved the rigour of the research by creating a means of linking the “Framework for Sustainability” attrib-

utes through a coding structure to the interview data itself.

**2.2. The case studies.** The four firms, Old Mutual, Sanlam, Momentum, and Liberty represent 91% of the total South African market. These firms offer a wide range of products which include life insurance, banking, investment services, medical and auto insurance to both retail and wholesale clients. The unit of analysis established for this investigation was the life insurance subsidiaries in these firms with particular focus on IT resources.

**2.3. Old Mutual.** Old Mutual is the largest assurance firm in South Africa with a market share of 38% and a significant presence in all retail market segments. With de-mutualization in 1998-99<sup>2</sup>, Old

<sup>1</sup> 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.

<sup>2</sup> In SA, the demutualization 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

Mutual re-structured the company, establishing South Africa as a fully separate subsidiary with the global headquarters in London. The analysis of Old Mutual focuses on its South African subsidiary.

**2.4. CRC analysis – Old Mutual.** Old Mutual had structurally established a strong, centralized marketing group at the SA corporate level, which had the responsibility for establishing overall market direction, managing the corporate brand, and collaborating with the Business Units (BUs) to sponsor market research. To support its leadership in product development, interviewees at Old Mutual strongly felt that IT competence was vital to maintaining its product marketing dominance in SA. Its IT product platforms allowed the firm to provide highly flexible, linked products, such as investment products wrapped with life insurance.

Table 1. Summary of analysis – significant CRCs and social complexity attributes – Old Mutual

CRC - IT impacting strategic architecture	Social complexity attributes
<ul style="list-style-type: none"> <li>◆ Deploying a ubiquitous distribution network selling to all retail market segments from high income to low income groups</li> <li>◆ Designing cross-selling capabilities through market-based alliances with other firms, capitalizing on synergies with complementary products</li> <li>◆ Highlighting and investing in business-aligned IT as a key lever to organic growth and efficiency</li> <li>◆ Institutionalizing a Program Office to support large business-sponsored projects</li> <li>◆ Using outsourcing partnerships as a means of developing more efficient maintenance of “backroom” IT functions</li> </ul>	<p>The “Old Mutual Way” Culture – a commitment to integrating multiple stakeholders through the integration of 4 core values (integrity, commitment, growth and passion)</p> <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>Employees valued for longer career contributions to teamwork and collaboration</p>

Source: Authors.

IT also played a role in distribution, by providing brokers and direct sales with the ability to access customer information. Through IT, Old Mutual was able to maintain agent loyalty and keep the sales force efficient by making access convenient and reliable.

This dominant market share position created a critical secondary advantage of a large customer base

bancassurance (full banking and insurance markets). Mutual-based companies were member-based; while demutualized companies were share-owner based. De-mutualization also helped companies like Old Mutual to establish a presence worldwide in order to maintain its competitive viability – a global trend in the financial services, insurance industries.

from which to cross-sell other insurance, banking, and investment products. Some of these “related” products involved alliances with outside firms. For example, “wellness” awareness packaged healthcare insurance products with gym membership discounts. A key to exploiting product bundling as a market strategy had required Old Mutual to develop more sophisticated data warehousing applications that enabled cross-selling of insurance and investment products across BUs.

The 2000 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 the firm, was highly influential in not only supporting the firm’s direction, but also shaping the structure, process, and employee behavior. Although BUs had some discretion on IT spending, the sheer size of many projects required that a business case be presented to the Old Mutual SA IT committee, composed of the firm’s senior managers, for approval. Old Mutual had adopted the concept, established by extensive research in IT, that multi-year projects had exponentially more risk, and that prototyping and modularized project implementation mitigated implementation risk<sup>1</sup>. Old Mutual’s Program Office’s role was mainly coordinative and facilitative. The Program Office maintained a database of all projects. This not only gave 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. Old Mutual 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. Additionally, the firm had outsourced its entire mainframe asset and IT staff infrastructure to an outside alliance partner, Global IT Outsourcer (name changed). 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”.

**2.5. Sanlam.** Both Old Mutual and Sanlam have over an 80 year history of serving the South African assurance marketplace. Sanlam also demutualized; however, unlike Old Mutual, Sanlam remained

<sup>1</sup> Feeny (1997) uses the metaphor “dolphins, not whales” to illustrate the need to prototype and modularize large projects. Sauer (1993) has studied why large multi-year projects fail, and has come to similar conclusions.

structured as a South African firm, rather than as a global bancassurance firm. Table 2 summarizes the analysis of CRCs and social complexity for Sanlam.

**2.6. CRC analysis – Sanlam.** Through its marketing experience, Sanlam had understood the dynamics of the SA market in which close client relationships could result in more wealth-creating products being sold to these clients as their income grew. This middle-market, particularly the Black segment of that market, was identified as the fastest growing market segment in SA (Symeonidis, 2002, 2001). Driven by efficiency and changes in the make-up of the middle-market, Sanlam re-structured its channels. Sanlam had the greatest number of store fronts among SA assurers. In addition to its branch offices and own sales agents, Sanlam had a well-developed broker network. Sanlam had continued to change the ethnic mix of its advisors to match the ethnicity of its target market. As a result, it announced in its 2002 Annual Report that the number of Black advisors increased by 65%, with Black sales agents representing a third of its entire sales. The firm indicated that, *“Black advisors were responsible for 35% of sales in recurring premiums, and Black clients representing 44% of new recurring policies....”*

Table 2. Summary of analysis – significant CRCs and social complexity attributes – Sanlam

CRC-impacting strategic architecture	Social complexity attributes
<ul style="list-style-type: none"> <li>◆ Establishing smaller corporate functions, like IT and HR, to reduce staff costs and embed these functions in the business units</li> <li>◆ Exploiting IT to drive efficiency within the business</li> <li>◆ Exploiting e-commerce to drive channel efficiency and create a stronger client relationship</li> <li>◆ Implementing a business process re-engineering (BPR) process to drive cost out of the business</li> <li>◆ Using outsource initiatives to achieve efficiency</li> </ul>	<p>Culture in transformation from “White Afrikaner” to “multi-ethnic” value system</p> <p>Leadership focus on management and administration with backgrounds in finance or actuarial functions</p> <p>Financial control with emphasis on cost as consistent cultural value</p> <p>Employee empowerment with both responsibility and accountability</p>

Source: Authors.

Before 1998, Sanlam functioned as a fully centralized organization with large specialist staffs in the areas of strategy development, IT management, financial management, and HR support. As the firm changed its strategy to support a more “federal” system of autonomous BUs, the role of staff changed, i.e., these staffs were downsized, with their expertise moved either out of the business or to the BUs themselves.

BU executives, and IT managers especially, spoke to the importance of efficiency improvements as the key driver for business-enabled IT. The BU executive of Life Insurance particularly stressed the importance of integrating IT, people capabilities, and streamlined processes to achieve efficiency. She claimed: *“... hopefully we will get to a stage where we have much more generic software and hardware for that matter. But how you actually use {IT} – how you streamline the processes around that, and how you link your people with the software and get the economy to scale around that ... that will become very important”*.

In 2000, a separate E-Commerce Group was set up to look at infrastructure solutions, primarily the areas of channel effectiveness and client access. This E-Commerce Group was set up as a “start-up” venture with seed money from Sanlam’s Board. Its business proposition was that the middle-market, with its emerging Black African participants, needed efficient access to bancassurance products, not via computers but via mobile telephony<sup>1</sup>. Most of these potential clients have had very little experience with banks and insurance firms; therefore, finding access to them was very important. In addition, the E-Commerce Group extended its business proposition, suggesting that brokers would also want to use mobile telephony to access their clients’ data since many of them were not located in offices, but at home or at potential clients’ premises.

**2.7. Momentum.** Momentum was a wholly-owned subsidiary of Rand Merchant Bank (RMB), which was SA’s only fully integrated financial services businesses that ranged from full service banking operations, insurance, and investment operations<sup>2</sup>. It was the first entity in SA that had created a bancassurance model viewed, by industry leaders, as a long-term global trend (Symeonidis, 2002, 2001).

**2.8. CRC analysis – Momentum.** Momentum took pride in its decentralized, egalitarian structure. Each profit centre was held to its bottom-line commitments. As a result, these profit centres did find themselves competing with each other in the marketplace with product offerings that overlapped. However, within the firm, profit centres were expected to share “best practices” with other profit centre groups. The CIO, who coordinated the activities of the Strategic Project Re-

<sup>1</sup> Mobile telephony, in SA, was growing at faster rates than home computer usage, particularly in the Black African population segment (Goldstuck, 2004).

<sup>2</sup> Because RMB was a unique conglomerate of businesses, investment analysts have had a difficult time assessing the potential of RMB. In its 2003 Annual Report, RMB admitted that key stakeholders such as shareowners and the investment community found the conglomerate “somewhat complex and confusing”, and acknowledged that its continuum of businesses put them at a disadvantage from a market capitalization standpoint. However, RMB felt that its “uniqueness” gave them a market advantage.

view Board, indicated that his governance role was not one of “standard compliance”, but that of a facilitator in ensuring that best IT practices were shared among profit centre groups. An outcome to this approach to governance was a small headquarters staff, and line organizations that were responsible for their IT applications development. The CIO summarizes the governance roles: *“We have a Strategic Project Review Board, on which I sit ... I don’t have line responsibility, so it is a consultative role. ...What we do say, though, is that every company must value profitability and what I {do is} encourage IT best practices. But it’s not standards-based, it’s involvement-based ...”*

Table 3. Summary of analysis – significant CRCs and social complexity attributes – Momentum

CRC-impacting strategic architecture	Social complexity attributes
<ul style="list-style-type: none"> <li>◆ Aligning IT to business profit centre needs</li> <li>◆ Designing channel flexibility to cost-effectively deliver standard (not customized) products to the high- and middle-market customers</li> <li>◆ Embedding innovation culturally and structurally into the organization</li> <li>◆ Establishing business efficiency through automation</li> <li>◆ Exploiting IT with client-centric applications developed in-house; with infrastructure and other non-critical applications managed through vendor alliances</li> </ul>	<p>Empowerment/egalitarianism: stories of employees making a difference</p> <p>Recruited, retained, and recognized the “right” people</p> <p>Leadership: flat structure with few senior leaders who were charismatic and directive</p> <p>Informal working relationships required multi-skilled employees</p>

Source: Authors.

Creativity and risk-taking, associated with innovation, were considered ingrained in the “Momentum Way” of doing things. Based upon examples of failed systems, Momentum employees were not castigated for trying out new vendors or applications – there was no sense of “blame”, but a sense of “learning” from failed systems. The expectation established among Momentum management was that innovative thinking, personal initiative, debate and team sharing of new ideas were all part of their value system. An IT BU manager observed: *“I would say that people here, are recognized by the fact that they get things done and they don’t follow the well-worn path. So people who can get things achieved very quickly and very dynamically ... {these} are the people who are acknowledged in the business as being successful ...”*

Each BU was expected to develop and “own” the applications used to support both products and services. The Corporate CIO provided consultative, rather than oversight and development services to the profit centres. Large projects, that could potentially impact mul-

tiples BUs, were brokered by the CIO through the Strategic Project Review Board. Momentum’s approach had caused the BUs to create environments where:

- ◆ IT employees shared the same incentives, of their profit centre business peers, for the success of the BU.
- ◆ The value of IT investment was addressed in terms of the impact to the bottom-line business results.
- ◆ Teamwork and collaboration between IT and business employees were the means by which development occurred.
- ◆ Project management processes were governed more by collaborative ongoing dialogue, and less by specification documents.

All interviewees attested to the concept that the business strategies drove IT development in Momentum’s BUs. It was the merger with Southern Life (a long-established Cape Town-based insurance firm) that brought to the forefront of how Momentum “used to be”. Southern Life had a hierarchical structure, engrained processes, and powerful centralized corporate functions, such as IT. The CEO of the Retail Operations for Momentum felt that the biggest accomplishment in 1998 and 1999 was the integration of Southern Life into the “Momentum Way” of doing business. The CEO said: *“... we converted all 1.3 million of {Southern Life} policyholders from a mainframe system to a common client-server platform. There is just a cost saving on that ... about 16 million per year from an IT point of view. {Initially} it was a big shock, as it was three times ‘Momentum,’ the number of policies, etc. So we put them together, we are now 118 million policy holders {integrated}....”*

**2.9. Liberty.** The firm was started by an entrepreneur, and over its four decade history, the Liberty entrepreneurial culture thrived and many of its management practices, products and services set key performance benchmarks for the SA business environment. However, the Group reached a point where quantum leap repositioning was required of the firm to meet envisaged 21<sup>st</sup> century demands, and in 1999, the Liberty Group transformed its previously centralized structure into a decentralized, and flatter BU structure.

**2.10. CRC analysis – Liberty.** Liberty closed all of its branch offices, and strengthened its sales agency force, creating a more “variable-” rather than “fixed-cost” channel system. It established a franchisee model for those insurance agents who were used to selling Liberty’s old product line. Liberty Group also created a new cadre of highly professionalized, highly trained, sales agents. This three-channel structure of agency, franchise and broker marketing forces became known as Liberty Consultancy.

Prior to 1998, there were low levels of business-IT alignment, and IT was dictating to the business



what it should do, with no clear view on total costs of ownership. In 1999, the business model, in relation to IT, was changed in a number of ways; the four most significant were: (1) A CIO appointment, reporting to the Financial Services Operation (FSO) Executive Director whose role was to balance the need to drive business and efficiency (a big focus in Liberty); (2) the creation of Techstrat, a Technology Strategy Committee, representing all BUs – its primary function was to act as a forum to discuss IT issues; (3) IT representation in the Strategy and Planning Committee chaired by the Group Chief Executive to assure business-IT alignment at multiple levels of the firm; and (4) the introduction of Project Management, supported by training, to ensure efficiencies was achieved when introducing new IT initiatives.

With the shift in business model at Liberty, from centralized to BU focus, it was understood that a “total customer view” rather than a “siloes BU

view” was imperative. Liberty launched a new initiative called Blueprint, designed as an intermediary sales tool and an in-house information management tool. This innovation – regarded as a world-first for client-focused software development in the life insurance and investment industry – commenced in the earlier 1990s as comprehensive needs-analysis software. Later in 2001, another new initiative was introduced to further embed customer-led processing, known as Customer Value Management (CVM), which also aided the firm’s goal with respect to leveraging bancassurance synergies through cross-selling. One IT manager said of Blueprint and other IT initiatives that they delivered: *“Enormous, enormous efficiencies. If you look in our financial statements you’ll probably notice ... that our cost ratio is significantly lower than our major competitors. In fact, it is one of the lower ones in the industry, and I attribute that to our very high degree of automation within our business processes”*.

Table 4. Summary of analysis – significant CRCs and social complexity attributes – Liberty

CRC-impacting strategic architecture	Social complexity attributes
<ul style="list-style-type: none"> <li>◆ Segmenting and tightening distribution capacity</li> <li>◆ Enabling efficiencies through governance structures and measures that continuously seek alignment of IT functions with business needs</li> <li>◆ Building customer-led processing capability, through IT-enabled analysis, lead generation, and supporting of agents and brokers</li> <li>◆ Designing IT infrastructure and automated business process efficiencies through widened, but structured, project management focus</li> <li>◆ Using a risk-sharing, outsourcing partnership model, as opposed to only focusing on cost-saving and good deals</li> </ul>	<p>Knowledge-sharing culture that was trend-aware, and sought synergies across functions &amp; disciplines</p> <p>Three-tiered approach using map for the development of employee potential</p> <p>Formalized inter-functional collaboration; required transformation of senior leadership from entrepreneurial to shared vision mindset</p>

Source: Authors.

Liberty also tightened its distribution capacity to serve its targeted markets by building resources in three ways: (1) establishing an outbound call centre, with IT systems developed to complement experienced outbound telemarketing; (2) building a variety of analysis tools to support agents and brokers with the identification of leads; and (3) using IT to improve channels for account maintenance on an anywhere, anytime basis.

In 2000, the Liberty Group established a guiding principle to only build proprietary systems as a last resort if no other packaged software application existed on the market. Liberty’s preferred means of software development was to work with an external vendor to provide both systems and related services. For Liberty, though, service support was seen as an important internal competence and, was therefore, handled by internal IT units.

A Projects Office was established and Liberty was assisted by an external firm to align individual competencies and organizational processes/systems. Unlike previous efforts by Liberty to train only staff

experts on project management, a number of executives were also participants in the training. This signalled to the rest of the firm that project management was an important competency in the firm, and linked to the financial, production and risk areas.

### 3. Overall findings: how CRCs enable firms to build sustainability

The findings in this section were based upon the cross analysis of the four cases.

**3.1. CRCs are more than assets.** The evidence suggests that the qualities of rarity are embedded within CRCs, not assets or resources themselves (as posited by many resource-based theorists). 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, that pathways for competitive advantage sustainability are set up – barriers to imitation, therefore, are the complex sum of these, and not the atomized resource elements. For example,

Momentum created a business built on a single channel, selling to a niche market. It has successfully built a web of CRCs based on IT that encourage brokers to sell Momentum products rather than those of a competitor. 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.

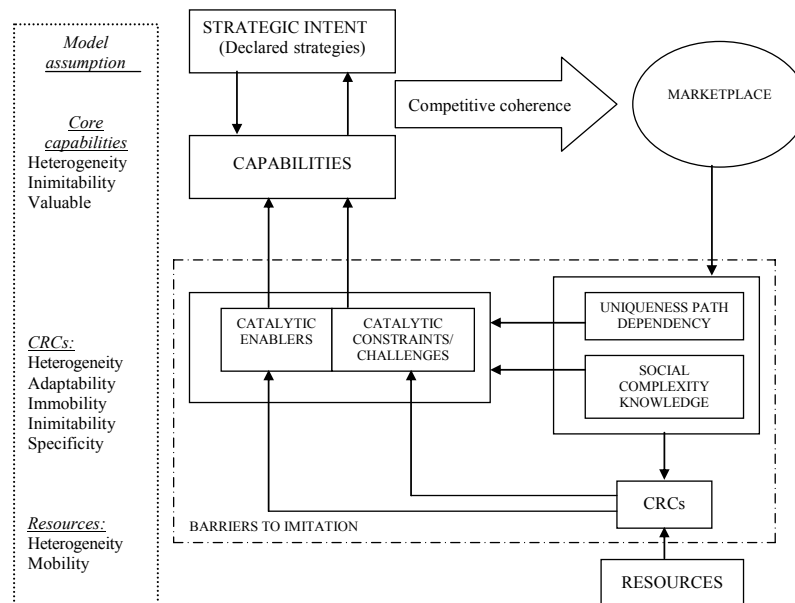
**3.2. CRCs are inward focused, while core capabilities are outward focused.** The “inwardness” of CRCs makes them less detectable by competitors and therefore helps strengthen the firm’s barriers to competitive erosion, unlike the firms capabilities which are deployed in the marketplace daily. Sanlam represents a case in which the firm has intentionally declared that it is in a transformation phase, motivated by marketplace forces such as Black Empowerment that is radically changing the composition of its traditional middle-market client base. Internally this has meant deploying IT in new ways, in conjunction with helping employees unlearn previous mental sets and realities (with tension as to how to hang on to corporate memory<sup>1</sup> that is useful, e.g., how to get things done in certain ways, who to work with in firm networks, where information and knowledge are stored, etc.) and redesigning business processes.

**3.3. 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 the case analyses unearthed these forces at work. 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. Incumbents which do not have the necessary CRCs for competing in a changed local and global environment must acquire start-ups, or merge or create alliances with firms that do have them, insourcing 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 for these CRCs to grow quickly.

**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 3. 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 within firm dynamics to creating capabilities.



Source: Authors.

**Fig. 3. New framework for sustainability – modified for CRC evidence<sup>1</sup>**

<sup>1</sup> Organizational memory provides information that reduces transaction costs, contributes to effective and efficient decision-making, and is a basis for power within organizations (Croasdell, 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.

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, using RBT, is to probe deeper into what goes on in the

firms, specifically assurance firms, to sustain competitive advantage.

The evidence provided by the study of the four top firms in the assurance industry suggests a rich set of dynamics that combines to create sustainable advantage based on the secondary effects of developments within the IT environment. The old view, of IT as a replicable asset, has been shown to have been superseded by a view indicating that IT is an enabler of complex processes which create competitive advantage.

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