Developing Corporate Strategies To Enable Resilience In The South African Information Systems And Technology Industry

Pieter W. Buys, Ph.D., North-West University, South Africa

ABSTRACT

Globalisation has contributed to many new challenges in the Information Systems and Technology (IS&T) industry, which placed increased pressure on organisational long-term sustainability. Just like their global counterparts, IS&T organisations in the South African marketplace also need to be cognisant of its competitive business environment in order to survive in a very competitive environment. However, in the dynamic business environment, organisational resilience becomes a crucial building block in achieving sustainability. The objective of this article is to identify and consider key factors in the South African IS&T industry that not only embraces a thorough understanding of the business environment, but also of corporate resilient strategies that may support its long-term sustainability. Based on a PEST and SWOT analysis, it was found that the local IS&T business environment, which includes the uncertain and unpredictable role of government together high-levels of crime and unemployment, makes for both challenging and promising times in the South African IS&T industry.

Keywords: Developing Corporate Strategies for South Africa; Information Systems and Technology Industry in South Africa; Organisational Resilience in South Africa

BACKGROUND

The globalisation of the modern business environment, together with high-levels of economic volatility and the development of new technologies, has resulted in organisations being forced into reconsidering key aspects inherent to their own sustainability (Paddey & Rousseau, 2011). The modern business environment, however, is increasing in turbulence faster than many organisations are increasing their resilience (Gulati, 2011). Evidence hereto can often be found in the business media's reports on the frequent and high-profile corporate failures. Even enduringly successful companies are finding it more and more difficult to deliver constantly superior performances (Hamel & Välikangas, 2003). Although organisational competitiveness is a diffuse concept that is subject to many interpretations, Lall (2001) defines it as an organisation's ability to perform better in the business environment than other comparable organisations. Furthermore, even though the dynamic business environment demands pro-activeness (Ali, 2011; Anon, 2005), *organisational resilience* is not about rebounding from a setback or responding to a one-time crisis (Kanter, 2011; Hamel & Välikangas, 2003). It is about continuously anticipating, and adjusting to, profound developments in the business environment that can permanently impair the organisation's long-term viability and sustainability.

In the ever-changing business environment, no one would question the role of information systems and technology (IS&T). According to Cohen and Dennis (2010), the improved contribution of IS&T to organisational performances is a key business objective. Carr (2003) goes even as far as stating that IS&T has become the backbone of modern commerce. The establishment of new technologies has produced a virtual explosion of new opportunities to incorporate competitive applications in support of the organisation's vision (Cook, Kirkpatrick, Minogue & Parker, 2004). Furthermore, research findings have shown that high IS&T-capable firms (Bharadwaj, 2000) and diversified firms (Chiang, 2010), often outperform their competitors on a number of performance measures, while De Kock (2008) and Silerova and Lang (2003) found that many organisations already use

information technological systems to increase their competitive advantage. Considering the rapid pace of change in technology and the business environment, resilient organisations must be knowledgeable of their own unique situation. In developing corporate resilience strategies, the fundamental question that needs to be asked is therefore whether the organisation is continuously cognisant of factors affecting its competitive advantage, and thus its sustainability.

Within the African context, South Africa is often considered as the IS&T gateway into the rest of the continent and an increasing number of locally-based organisations are expanding into Africa (Going Global Inc., 2006). However, the fact that South Africa is somewhat removed from key European and North American markets, did not mean that it weathered the recent global recession without any scars. According to Anon (2010), the local information technology industry has been pummelled quite severely by the recession. It is therefore acknowledged that so much of the global economies are integrated, that there is virtually no industry that is immune to any of a wide array of developments in the global business environment. Therefore, in order to achieve long-term sustainability, the IS&T industry (even in South Africa) needs to adopt resilience as a core business strategy, and in order to become resilient, it should become very aware of its environment.

PROBLEM STATEMENT AND OBJECTIVES

For the purpose of this article, IS&T is considered as consisting of two complementary components, namely all electronic-based technologies that gather, manipulate, store and manage data, as well as any technological platform that allows for the transmission of business information. Based upon the above discussion, the research problem under consideration for this article can be defined as follows:

P_1:   What are possible key factors affecting the South African IS&T industry's business environment that will impact on resilience strategies and policies?

The primary objective of this article is therefore to identify, analyse and interpret important factors in the South African IS&T industry's business environment. In order to achieve this objective, two detailed sub-objectives are further defined:

- Identify and analyse key factors in the local IS&T business environment; and
- Interpret and extrapolate the findings within the context of the local IS&T industry.

In order to address the above research problem and objectives, the remainder of this article is set out as follows. Firstly, an overview of the research methodology is provided; secondly, a high-level theoretical framework for conducting the competitive analysis is provided; thirdly, the empirical results of the IS&T competitive analysis is provided and interpreted within the South African industry context; and finally, some recommendations and research limitations are provided.

RESEARCH METHOD

Business research can be undertaken for two different purposes; i) applied research, which is undertaken with the intention to solve specific problems experienced, and ii) fundamental research, which is undertaken in an effort to enhance the understanding of organisational problems and to seek methods of solving it (Terre Blanche, Durrheim & Painter, 2008; Sekaran, 2000). This article considers practical aspects in relation to corporate resilience and sustainability in the South African IS&T industry. As such, this research can be considered as part applied research and part fundamental research.

The target population consisted of 2,265 IS&T company employees based in South Africa. A representative and stratified random sample was identified across five different business units. The data was statistically analysed using Vovici software by way of measuring it with the central tendency measurement, or mode, which Terre Blanche *et al.* (2008) and Sekaran (2000) describe as the most frequent occurrence. The data was collected using a survey questionnaire that was published and completed on the Internet with an explanatory email sent to the sample subjects.

THEORETICAL FRAMEWORK

Introduction

When developing its corporate strategies, it is imperative that an organisation has a sound understanding of the business environment in which it operates. This environment, however, is in constant flux and to ensure its resilience and sustainability, the organisation must take proactive steps to meet changing market conditions (Ali, 2011; Buys, 2011; Chiang, 2010; Cecchetti, 2008). Hamel and Välikangas (2003) also state that an organisation that fails to adjust to its changing environment would lose its relevance, its customers and ultimately the support of its stakeholders. In order to thrive in turbulent times, resilient companies should be as efficient at constantly renewing themselves as they are at producing the latest products and delivering the latest services as required by the market place (Gulati, 2011).

The concept of resilience

According to Hamel and Välikangas (2003), organisational resilience should start with an aspiration of *Zero Trauma*, where the goal is a continuously morphing strategy, forever conforming itself to promising opportunities and developing trends. Therefore, within the context of resilience, that which can be classified as current *Best Practices*, are inherently insufficient to ensure organisational resilience. An organisation that hopes to become resilient, must, according to Gulati (2011) and Hamel and Välikangas (2003), address several challenges, including the following, i) the *cognitive challenge* in which the organisation should become free of denial, nostalgia and arrogance and become deeply aware of what is changing in its own environment; ii) the *strategic challenge*, in which it should nurture a culture able to create alternatives; iii) the *political challenge* that requires the organisation to be able to divert resources to new and promising opportunities; and iv) the *ideological challenge* that requires the organisation to challenge the irrelevant doctrine of optimisation. Resilience is therefore a continuous and opportunity-driven process, rather than periodic 'process optimisation' events brought along by some kind of organisational crisis.

According to Francis (2010), the proper understanding of the complex nature of business systems is an essential component of resilience. Two frequently used strategic management techniques used in the continuous evaluation and analysis of the business environment are the PEST and SWOT analysis techniques, which are high-lighted below.

PEST analysis

The PEST analysis technique provides a framework for analysing an organisation's external business environment (Anon, 2012; Hoskisson, Hitt & Ireland, 2004; Analoui & Karami, 2003) and considers factors such as the political, economic, social and technological environments. Firstly, the *political environment* is the arena in which organisations compete for resources (Anon, 2012; Hoskisson *et al.*, 2004). In developing countries such as South Africa, key attributes include political instability, inconsistent policies and regulations, as well as a lack of transparency in such policies (Kwak, 2003). Secondly, the *economic environment* refers to the nature and direction of the economy in which an organisation competes, and is influenced by both *domestic* and *global* developments (Goldstuck, 2003). Notwithstanding the fact that many organisations can diversify into global markets (Anon, 2012; Hoskisson *et al.*, 2004), it is imperative that the organisation is also knowledgeable about its local market trends. Thirdly, the *social environment* can be differentiated into the degree to which the individual, as opposed to the group, forms the basic unit of social organisation, and the degree to which a society is stratified into classes (Hill, 2005), while it is also concerned with a society's attitudes and values, which in turn affect the demographic, economic, political and technological conditions (Anon, 2012; Hoskisson *et al.*, 2004). Finally, the *technological environment* includes the activities involved in creating new knowledge and translating such knowledge into new outputs and materials (Anon, 2012; Hoskisson *et al.*, 2004). Furthermore, according to Dunning and Narula (2004), technological developments have reduced information acquisition and transaction costs associated with cross-border activities by helping organisations to integrate the activities of their affiliates, and to respond quicker to changing global conditions.

SWOT analysis

The SWOT analysis technique typically builds on the findings of a PEST analysis (Anon, 2012) and is based on the assumption that effective strategies are derived from a good fit between the organisation's internal resource capabilities and the organisation's external environment (Anon, 2012; Groenewald, Le Roux & Rossouw, 2003; Thompson & Strickland, 2001). The SWOT categories are therefore classified based on internal strengths and weaknesses, and external opportunities and threats. The organisational *strengths* are considered the skills, abilities and competencies of an organisation (Anon, 2012; Katsioloudes, 2006; Analoui & Karami, 2003), which are considered better than those of its competitors (Groenewald *et al.,* 2003). In contrast, organisational *weaknesses* are something that it lacks, or is not good at in comparison with other organisations (Anon, 2012; Katsioloudes, 2006; Analoui & Karami, 2003, Groenewald *et al.,* 2003). The *opportunities* of an organisation are external situations that can be used to improve its overall strategic position (Anon, 2012; Analoui & Karami, 2003), or is a major positive environmental factor that puts an organisation in a better position to meet the needs of its customers in comparison to its competitors (Groenewald *et al.,* 2003). In contrast hereto, the *threats* facing an organisation are seen as major obstacles in its external environment (Analoui & Karami, 2003) or as such a major negative factor that it puts the organisation in a weaker position than its competitors (Groenewald *et al*., 2003).

IS&T COMPETITIVE ANALYSIS

Demographics

With regard to the respondents' demographics, a wide spectrum of professional responsibilities was covered. Just over 31% of the responses came from a sales environment, 25% from a IS&T department, 19% each from finance and marketing, and 6% from an administrative function. As far as industry experience is concerned, 38% had between one and five years of experience, 25% between five and ten years and 31% had more than ten years' experience, with only 6% having less than one year of related experience. (Note that all numbers are rounded to the closest whole number).

The demographic profile of the respondents provides some credibility in respect of the perceptions of the South African IS&T industry. Firstly, a substantial percentage of respondents are either directly involved in the IS&T arena itself or are sales professionals. As such, these respondents should be knowledgeable about new developments in the industry. Furthermore, more than half of the respondents had more than five years of IS&T experience. Based hereupon, it is also reasonable to expect that the respondents are at least aware of significant trends in this industry.

PEST analysis

The data related to the PEST analysis was measured as nominal data, which can be defined as an arbitrary number assigned to a category, with no implied value thereto (Terre Blanche *et al.,* 2008; Brace, 2004). Table 1 below highlights certain key indicators of the PEST analysis.

Table 1 – Business environmental issues (PEST analysis)

PEST factor	Indicator	Response
Political	- High regulatory influence	56%
	- Inconsistent regulatory policies	19%
Economical	- Negative unemployment impact	100%
	- Negative crime impact	88%
	- Negative growth expectations on IS&T	44%
Social	- Negative about social upliftment successes	88%
Technological	- Overly complex IS&T technologies	40%
	- Difficulty in keeping up to date on IS&T	44%

The PEST analysis indicated that two key aspects in the South African *political environment* were considered as important, both relating directly to the influence of government regulations and its role within the South African IS&T context. Fifty-six percent (56%) of respondents indicated that government regulations and policies would affect the industry, while 19% also considered the inconsistency of such policies as a further external obstacle within the industry. Given the recent history in South Africa, it is not unreasonable to expect high levels of regulatory influences in various key industries. However, an area of concern is wide-spread (perhaps perceived) inconsistencies in regulatory policies. Resilient management practices should therefore have a thorough understanding of how deep the regulatory influences go, and constantly be aware of economic developments specific to the IS&T arena.

Secondly, in respect of the South African *economic environment*, there was consensus that unemployment would have a negative effect on the local economy, while a large portion of the respondents (88%) also indicated that the high crime levels would impact on the economy, and as such on the industry. Considering these aspects, it was not surprising that as much as 44% of the respondents were pessimistic about the general economic outlook and its impact on the industry. Although the impacts of crime, unemployment and growth prospects were seen in a negative light, it is never possible to predict what the future economy will hold. Management, however, should at least attempt to anticipate new economic developments in the IS&T arena in order to adjust their strategies to ensure sustainability.

Thirdly, in respect of the *social environment*, the vast majority of the respondents (88%) were of the opinion that the government is not achieving enough success in their efforts to improve the country's social environment in respect of effective social upliftment. The reason for this may be linked to the political environment in which the government is a key role-player in the many sectors, including the IS&T industry. Many organisations are required to meet certain Black Economic Empowerment (BEE) requirements, and even though the intentions of such BEE compliances are commendable, the actual successes in achieving broad-based successes are still very much a topic of debate and contention in the South African environment.

Finally, regarding the *technological environment*, it was surprising to find that, in a major IS&T company, as much as 40% of the respondents considered IS&T technologies as overly complex, while 44% of the respondents also indicated that it is difficult to keep up with new technological developments. This fact could perhaps be a further indication of the rapid pace of change in the IS&T industry, and since new and updated IS&T technologies are considered a big role-player in the future of many companies and industries, the rate of change may be intimidating. However, this makes the importance of *Resilience Strategies* in the industry even more crucial in attempting to ensure longer-term organisational sustainability.

SWOT analysis

Data related to the SWOT analysis responses was measured as ordinal data, which is described by Terre Blanche *et al.,* (2008) and Brace (2004) as data being used as ranking scales and is often in the order of preference. Table 2 below presents the responses to key indicators in the SWOT analysis

Table 2 – Ranking of influencing factors in formulating resilient strategies (SWOT analysis)

SWOT factor	Ranking		
	First	**Second**	**Third**
Strengths	Service line	Global reach	Industry expertise
Weaknesses	Staff retention	Management style	Non-core service
Opportunities	Government spending	Customer service	Niche products
Threats	Integration skills	Suppliers becoming competitors	Acquisition by suppliers

The SWOT analysis indicated that, firstly, in terms of organisational *strengths*, the respondents considered the company's full line of services as the most crucial strength, followed by its global reach and industry experience as further key aspects of strength. One might have thought that having good industry expertise could surely be a greater strength, yet the ability to meet a diverse spectrum of customer demands was considered more important.

Secondly, as far as the organisation's *weaknesses* are concerned, the responses indicated some workplace-related concerns in the company with staff retention identified as the most crucial weakness, followed by management style as the second most crucial weakness and the focus on non-core service capabilities as a third weakness. Since the information technology professional has historically been seen as highly in demand and therefore very mobile, this weakness could perhaps be considered as typical in the IS&T industry. Furthermore, due to the dynamic nature of the industry, many senior level managers may be considered young, and perhaps not established in their management styles, hence the reported weakness in this area.

Thirdly, in respect of available *opportunities*, the possibility of additional government funding for the IS&T industry was considered as the most important opportunity, followed by the focus on, and improvement of, customer services as the second most important opportunity, and the further exploitation of niche IS&T solutions as the third most important opportunity. Considering the state of the global economy, the South African economy might very well result in negative growth in the near future, which makes it all the more important for an IS&T company to secure a substantial market share. The increase in government spending may be a good opportunity to attain such a market share.

Finally, in respect of *threats*, it would seem as if a lack of integration skills is a pressing threat, followed the possibility of suppliers moving into the organisation's current market environment, and the acquisition of the company by a 'telecom carrier' services provider as the second and third biggest threats, respectively. In the current dynamic business environment, it is not unusual for various supply chain participants to move into other areas. The potential impact of government spending in the IS&T arena may even make the IS&T market attractive to other non-core players. It is therefore crucial that management be very aware of the key and emerging participants in this area, and has strategies in place to react thereto. A sure way to lose market share is to deliver sub-standard services. The perceived lack of integration skills is therefore an important threat that needs to be urgently considered.

CONCLUDING DISCUSSION

In terms of corporate strategies, resilient organisations accept that nothing succeeds for long without considerable effort and constant vigilance (Kanter, 2011), while also facing up to the reality that even the best strategies eventually decay (Hamel & Välikangas, 2003). There are several reasons as to why corporate strategies lose their effectiveness. It cannot be denied that as the business environment evolves, specific strategies get *exhausted* as the market gets saturated and even good strategies get *supplanted* by better strategies. Furthermore, as strategies get replicated over time, they tend to lose their distinctiveness and hence their ability to continuously deliver high-level performances.

The IS&T industry has for many years been characterised by highly mobile IS&T professionals. In the modern business environment, new technologies are constantly being developed and in order to survive, organisations need to adjust their strategies in response to these changes. Although an organisation may have little influence over its external environment, it must not only adapt in reaction to developments in the external environment, it must be able to anticipate such developments. In order to become resilient, an organisation must expand its mindset (Gulati, 2011; Hamel & Välikangas, 2003), and reduce the time it takes to go from *that can't be true* to *we must face the world as it is*. In order to achieve this mindset, senior management must make a habit of visiting the places where change happens initially, such as the customer services desk or the R&D laboratories, and help the organisation to reorganise itself by shifting internal barriers.

Therefore, in answering the research problem as stated earlier, it is clear that the external business environment is considered to have a significant influence on participants in the local industry. Government regulations are key political considerations that will affect organisational sustainability. From an economic perspective, the South African context may be perceived as less than positive in terms of the IS&T industry. Aspects such as crime and unemployment are always areas of concern. In consideration of the social aspects, the respondents indicated that government was not doing enough to improve the socio-cultural environment in South Africa. These economic and social concerns have the potential to cripple not only this industry, but the overall economic performances of the region. Even though a corporate resilience strategy typically falls in the domain of the top management structure, resilience needs to become part of the overall corporate culture that is driven by the

masses. In support hereof, management should drive and support the efforts to put a formal and continuous competitive environmental analysis process in place. Such a formal documented process needs to be produced to gain insight into the IS&T business environment, and should include i) comprehensive planning to identify the corporate objectives, ii) the data compilation techniques and formats, and iii) the analysis and presentation of data for management to support the adjustment of organisational strategies. An organisation could promote technology throughout society to create a national IS&T culture, thereby also enhancing its own social responsibility efforts, while taking advantage of the increased government spending. Within the South African context, government is often seen as a poor service delivery sector and a resilient role-player in the sector could leverage off this by collaborating with government to improve these services.

LIMITATIONS AND FUTURE RESEARCH

This article is considered an exploratory study, which by definition may limit the relational findings between variables. Additional research may be conducted to determine the reliability of the measuring instruments and may also focus on broader samples to improve the confidence in the study findings. The reader should also be cognisant of certain limitations applicable to this article. Firstly, it is assumed that the respondents have a good understanding of the South African IS&T business environment. Secondly, as has been highlighted above, the external environment is constantly changing and it is difficult to measure all the variables that could potentially influence the industry. But then again, the aim of resilience as a corporate strategy is to nurture a culture of continuous awareness and adaptability.

ACKNOWLEDGEMENT

AUTHOR INFORMATION

Professor Pieter W Buys is currently the Research Program Leader at the North-West University (South Africa) and holds two PhDs (Accountancy and Management Accountancy), two Masters Degrees (MComm and MBA), and he is also a US Certified Management Accountant (CMA). He has worked in the ERP and business consulting industry in Canada, the USA and South Africa for more than 15 years. He has published more than 35 articles in peer-reviewed and professional publications. His current research revolves around corporate social responsibility, resilience and integrated reporting. E-mail: Pieter.Buys@nwu.ac.za

REFERENCES

1.   Ali, A.J. (2011). Organizational culture and the rise of "Made Men". *Advances in Competitiveness Research,* 19(1&2) 1-3.
2.   Analoui, F. & Karami, A. (2003). *Strategic management in small and medium enterprises.* London: Thompson. 305p.
3.   Anon. (2005). Effective change management through application performance monitoring. Retrieved from: www.knowledgestorm.com Date of Access: 22 January 2012.
4.   Anon. (2010). Best of three. *Finweek,* 32. May.
5.   Anon. (2012). Marketing and competitive intelligence FAQ: SWOT and PEST analysis. Retrieved from: http: //www.marketing-intelligence.co.uk/help/Q&A/question24.htm Date of Access: 22 January 2012.
6.   Bharadwaj, A. (2000). A resource-based perspective on information technology capability and firm performance: An empirical investigation. *MIS Quarterly*, 24(1) 169-196.
7.   Brace, I. (2004). *Questionnaire design: how to plan, structure and write survey material for effective market research.* London: Kogan Page Limited. 289p.
8.   Buys, P.W. (2011). Legitimacy lost: Accounting's predicament. *Studia UBB Philosophia,* LVI(1) 3-14.
9.   Carr, N.G. (2003). IT doesn't matter. *The Harvard Business Review,* 41-49. May.

10. Cecchetti, S.G. (2008). *Money, banking and financial markets. 2nd ed.* New York: McGraw-Hill. 595p.
11. Chiang, C.C. (2010). Product diversification in competitive R&D-intensive firms: An empirical study of the computer software industry. *The Journal of Applied Business Research,* 26(1) 99-107.
12. Cohen, J.F. & Dennis, C.M. (2010). Chief Information Officers: An empirical study of competence, organisational structure and implications for performance. *South African Journal of Economic and Management Sciences,* 13(2):203-221.
13. Cook, P., Kirkpatrick, C., Minogue, M. & Parker, D. (2004). *Leading issues in competition, regulation and development. 1st ed.* Northampton: Elgar. 452p.
14. De Kock, D.J. (2008). *The competitive environment in the Information and Communication Technology (ICT) industry*. Potchefstroom: North-West University. (Dissertation – MCom) 82p.
15. Francis, G. (2010). The hardcore guide to resilience. *Alternatives Journal,* 36(2):12-15.
16. Going Global Inc. (Goingglobal). (2006). *Information technology employment trends.* South African Career Guide 2006, 1-9p. Available: Business Source Premier.
17. Goldstuck, A. (2003). ICT is alive and well in South Africa. Retrieved from: http: //networktimes.co.za/regular.aspx?pklRegularId=1325&pklIssueId=321 Date of Access: 12 February 2009.
18. Groenewald, D., Le Roux, S.J. & Rossouw. D. (2003). *Strategic management: An applied South African perspective*. Cape Town: ABC. 283p.
19. Gulati, R. (2011). Reorganize for resilience. *CMA Management,* 6. March.
20. Hamel, G. & Välikangas, L. (2003). The quest for resilience. *The Harvard Business Review*, 1-13. September.
21. Hill, C.W.L. (2005). *International business: Competing in the global marketplace. 5th ed.* New York: McGraw-Hill. 720p.
22. Hoskisson, E.R., Hitt, M.A. & Ireland, R.D. (2004). *Competing for advantage.* Ohio: South Western. 395p.
23. Kanter, R.M. (2011). Cultivate a culture of confidence. *Harvard Business Review*, 34, April.
24. Katsioloudes, M.I. (2006). *Strategic management: Global culture perspective for profit and non-profit organisations.* New York: Elsevier. 387p.
25. Kwak, Y.H. (2003). *Critical success factors in international development project management.* 10th International Symposium. CRC Press.
26. Lall, S. (2001). *Competitiveness, technology and skills*. Cheltenham (UK): Edward Elgar. 509p.
27. Paddey, M. & Rousseau, G.G. (2011). The effects of the global recession n the work restructuring levels of managers in the South African automotive industry. *South African Journal of Economic and Management Sciences,* 14(3):346-360.
28. Sekaran, U. (2000). *Research methods for business: a skill-building approach*. New York: Wiley. 463p.
29. Silerova, E. & Lang, K. (2003). Information and communications technology in a competitive environment. Retrieved from: http: //www.date.hu/efita2003/centre/pdf/0205.pdf Date of Access: 22 February 2009.
30. Terre Blanche, M., Durrheim, K. & Painter, D., *eds*. (2008). *Research in practice: Applied methods for the social sciences.* Cape Town: University of Cape Town Press. 594p.
31. Thompson, A.A. & Strickland, A.J. (2001). *Strategic management: Concepts and cases. 12th ed.* New York: McGraw-Hill. 364p.