Strategic Planning for Digital Convergence in South African Businesses

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Abstract
Findings generated from a study that looked at the benefits and barriers that organisations anticipate, experience and plan for when considering a strategic implementation of convergence initiatives are presented. The study focused on the strategic planning aspects of convergence in South African organisations and analysed the sophistication of these plans. The paper presents a discussion of three phases within the process: The first phase interrogates the planning process and reveals that the organisations under study did not adopt a formal approach to planning, and at best relied on a semi-formal approach. The second phase investigates the planning steps for convergence, which show that the majority of organisations do follow a step-by-step approach and make deliberate attempts to identify the benefits of and barriers to their convergence initiatives. An expanded model incorporating these planning steps is proposed with additional steps extrapolated from the research findings and the literature review. Lastly an in investigation of the benefits and barriers anticipated and experienced reveals that the benefits anticipated from a convergence initiative show a clear expectation of lower management and service costs.

Keywords: Digital Convergence, Strategic Planning.

Introduction
There has been much written about convergence in the past few decades, so much so that it has become increasingly difficult to separate hype from

reality. Convergence is not a single homogenous process, but a range of processes comprised of a series of discrete developments in technologies, networks, content, gateways, retail marketing strategies, services and markets, as well as the changing relationships between all of these distinct areas. A clear definition of the concept of convergence does not exist (Kaluza, Blecker & Bischof 1999). Convergence has the ability to impact an organisations' strategic capability (Chaterjee & Byun 2002) and also has the potential to impact on the delivery of government services. But convergence has not progressed at the speed at which it was previously thought, largely due to a number of technological, market regulatory and consumer barriers (Gillwald 2003), with lingering concerns holding some firms back from deployment (Economist Intelligence Unit 2004). The management of technological transition have always been difficult for organisations, and those that approach convergence tactically rather than strategically will rebuild their network several times at multiple times the cost of a well-planned network (Srivastava & Finger 2006).

Problem Statement and Objectives of the Study

A review of the literature reveals that while extensive research has been conducted into the technological aspects of convergence, there is a lack of research into the planning aspects, especially the extent to which organisations are strategically planning for convergence. Even if planning is taking place, there is little or no evidence as to the sophistication of those plans. Additionally the literature points to many organisation's having a narrow view of convergence and its potential benefits, with many confining convergence to the realm of Voice over IP solutions (Gartner 2002). Similarly little is know about the barriers that organisations encounter in their endeavour to deploy a converged infrastructure or indeed what steps are being taken or what methods are available to overcome these barriers.

Given the problem outlined above, this study focused on the strategic planning aspects of digital convergence in South African organisations. Specifically this study sought to contribute to the literature by providing insight into the extent of the planning process for convergence that organisations are undertaking, and investigating the sophistication of these plans with respect to established planning process dimensions. Additionally

the study aimed to identify the benefits and barriers, both anticipated and experienced.

Importance of the Research

Competition in an environment marked by convergence is assumed to lead to faster-paced innovation and improved products and services for consumers at lower costs. The resulting networked economy will facilitate national economic growth and participation in the global information or knowledge society (Wild 2006). The South African government continues to emphasise the importance of ICT's and their contribution to the country's economic growth, specifically in the broad framework for economic policy as set out in the Accelerated and Shared Growth Initiative of South Africa (ASGISA). In the current version, the action plan includes the goal to bring down the cost of ICT by developing high-speed national and international broadband capacity. However, South Africa continues, despite the overall growth of the ICT sector, to lag behind the international community, and while the incremental movements down international scales are not dramatic, they certainly indicate an inability by the country to harness the potential of ICT for economic growth and development as articulated in various national policies and strategies. The World Economic Forum (2008) which measures a country's ICT capability through its 'networked readiness index' (NRI), currently ranks South Africa 52nd in its 2008-2009 report, out a possible 134 countries. South Africa has fallen from 51st in 2007-2008.

The results from this study will assist organisations reflect on their planning process; it will enable organisations understand weaknesses and strengths within their planning process for convergence, thereby assisting in the realignment of the planning process to better meet the demands of convergence planning. Moreover this study will identify and compare benefits and barriers, both anticipated and experienced. It will enable organisations to benchmark against the benefits being experienced in the wider industry and also gain a better understanding of the barriers to convergence being faced by organisations.

Literature Review

Convergence

Information has increasingly become a commodity in its own right and now

ranks as one of the natural resources of an economy along with human, natural and financial resources. It has been argued that society at large is now entering a new type of information-driven economy or even a completely new form of 'information society' and 'information economy' (Webster 1994). The International Telecommunications Union (ITU 2007) defines this information society as the digital revolution in information and communication technologies that have created a platform for a free flow of information, ideas and knowledge across the globe; while Katz (1987) describes the information society as socio-economic systems that exhibit high employment of information-related occupations and wide diffusion of information technologies.

The diffusion of new technology is perceived as a major feature of the information society (European Commission 1996; Melody *et al.* 2005), with convergence in particular being hailed by many as the catalyst for the information revolution (Hassan 2000; Braman 1993). Rosenberg (1963) notes that the term convergence was first used to describe 'convergent technologies' in the US machine tool industry. Since then several scholars have adopted the concept for various industries. The common theme in respect of a definition of convergence indicates a moving towards or meeting at some common point or tending towards the same result, i.e. merging. Primarily what is being conceived as merged relates to technology, i.e. the integration of communications, broadcasting, telecommunications and computers, but in a secondary sense a number of other areas come into play: services; markets; industry alliances and mergers and policy and regulation (Bohlin 2000).

While the literature is littered with definitions of convergence, the most frequently quoted source for a definition of convergence comes from the Green Paper on Convergence issued by the European Commission in 1997 which defines convergence as 'the ability of different network platforms to carry essentially similar kinds of services' or 'the coming together of consumer devices such as the telephone, television and personal computer'. For the purposes of this study convergence is defined at its most general level as the increasing interrelationship and level of integration, between the disciplines of telecommunications, broadcasting media, and information technology.

The Strategic Nature of Convergence

Competition in an environment marked by convergence is assumed to lead to faster-paced innovation and improved products and services for consumers at lower costs (Wild 2006). Kaluza *et al.* (1999) cite the example of Siemans AG, which stated that besides deregulation and privatisation, the main driver for the organisations planned restructure had been the convergence of technologies. Convergence can also shape the delivery of government services, redefine the way businesses operate and provide individuals with as yet unimagined information and communication services. Converged services may offer many people in developing countries a better value proposition and lower priced access to basic voice communications and will also provide new opportunities for extending network access to many rural areas in an economically sustainable manner.

Convergence: Legislation and Research

With its relatively well developed and diverse infrastructure, South Africa is taking a leading role in the region in respect of convergence of telecommunications and information technologies with the media and entertainment sector (Budde 2008), as envisaged in the Electronic Communications Act (ECA), that encompasses legislation relating to convergence. The stated intention of the ECA is to lower costs of access to ICT and increase efficiency of telecommunications provisioning in South Africa (ECA 2005).

Various industry-based surveys that provide evidence of the strategic nature and of the importance with which organisations view convergence have been undertaken. The Economist Intelligence Unit (2004) survey found that over two-thirds of companies surveyed were expected to shift to converged networks throughout most or all of their organizations. A Yankee Group (2003) survey found that 80% of operators believe deployment of converged services will boost profit margins.

The Planning Process for Convergence

Gottschalk (1999) writes that barriers to the implementation of strategic plans may have roots in the planning process, and may include the fact that the plan was not sufficiently useful and it did not fit the organisation. An extensive analysis of Strategic Information Systems Planning (SISP) reveals

six emergent process dimensions that are robust (Segars, Grover & Teng 1998), and which can be used to investigate the strategic planning process for convergence.

Research Question 1

What is the extent of planning for digital convergence in South African organisations with respect to the following planning process dimensions?

Formalisation: refers to the existence of structures, techniques, written procedures, and policies that guide the planning process (Lederer & Sethi 1996).

Consistency: is concerned with the frequency of planning activities and the frequency of evaluation and revision of strategic plans (Sabherwal & King 1995 as cited in Segars *et al.* 1998).

Planning Flow: refers to the locus of authority or devolution of responsibilities for strategic planning; in other words, the roles played by corporate and divisional managers in the initiation of the planning process (Segars & Grover 1999).

Focus: refers to the balance between creativity and control that exist within the strategic planning process (Chakravarthy 1987).

Participation: captures the breadth of involvement in strategic planning by examining the number of planners involved and representation from various functional areas in the planning process (Lederer & Sethi 1996; Sabherwal & King 1995).

Comprehensiveness: Segars *et al.* (1998) define comprehensiveness as 'the extent to which an organisation attempts to be exhaustive or inclusive in making and integrating strategic decisions'.

Planning Steps for Convergence

Various commentators (Chatterejee & Byun 2002; Hukill *et al.* 2000) propose questions that must be posed when undertaking a strategic planning

process for convergence. Green (2001) proposes a model that begins with a complete understanding of the business plans and organisational objectives. Problems the organisation is experiencing are analysed. Once the problems and objectives are well understood, the next step is to develop alternatives. The alternatives are tested against the objectives to determine how they will meet the mandatory features. Then a feasibility process is used to determine which alternatives offer the best economic and technical performance. The literature suggests that there appears to be no adequate planning model for convergence initiatives. There are many models for strategic planning, but none that specifically target infrastructure convergence initiatives and none that take into account the nuances that may make a convergence infrastructure project unique.

Research Question 2
2a -What are the relevant steps for convergence planning?
2b -Do the planning steps specifically identify the implementation issues with regards to these initiatives?

Benefits of, and Barriers to Convergence
In an opening address at the National Colloquium on Convergence Policy (NCCP 2003), held and hosted by the South African Department of Communications in July 2003, the then Minister of Communication affirmed that convergence will lead to numerous economic and social benefits, but that there are many challenges as well (MoC 2003). Organisations need to have a clear understanding of what benefits they anticipate from convergence before they invest in it. The value proposition for convergence embraces service providers, enterprises, individual business users and residential users (Chatterjee & Byun 2002). Many organisations have a narrow view of convergence and its potential benefits with many having considered convergence simply as the transmission of voice traffic over alternate technologies without fully planning for the value-added services that can be leveraged off of a converged network. While the uptake of convergence seems inevitable, Gillwald (2003) notes that convergence has not progressed at the speed at which it was previously thought, largely due to a number of technological, market regulatory and consumer barriers, with

one of the major challenges being the actual concept and definition of convergence.

Research Question 3

3a -To what extent are benefits and barriers that are anticipated during the planning stage for convergence being experienced post implementation?
3b -Do the planning steps specifically identify the benefits of, and barriers to convergence?

Research Methodology

This study was exploratory in nature with the intention to look for patterns and to gain familiarity with the area of strategic planning for convergence, and to identify areas for a more rigorous investigation at a later stage. A primarily qualitative design was selected which allows for in-depth probing of issues and greater detail in responses (Denzin & Lincoln 1994). The study also included some quantitative data collection and analysis using a priori methods, with the analysis taking the form of frequency counts and descriptive statistics.

This study adopted a multiple case study approach considered appropriate to an exploratory study (Galliers 1991; Hussey & Hussey 1997), based on a series of semi-structured in-depth interviews (Martin 2003; Denzin & Lincoln 1994). The unit of analysis were organisations that had implemented, or were in the process of implementing, a converged infrastructure. The population for this study were medium to large organisations as defined by the National Small Business act of 1996, (NSBA 1996) with more than 50 employees and annual turnover of over R10m.

The organisations were based in Gauteng, South Africa. In total eleven participants from eight organisations contributed to this research and all were interviewed individually in their role as a representative of a particular company. Three of the eight organisations provided two respondents, while the remaining five provided one respondent. Where organisations provided two interviewees, these multiple interviews were treated as confirmatory interviews. Divergent views were reconciled by contacting these interviewees with a view to reaching consensus. An interview schedule was developed that contained all the questions required

to elicit the required information. Both a pre-test and a pilot test were conducted prior to the initial data collection phase. The eleven interviews were held in person in the second half of 2008 and took approximately one hour each.

In this research the quantitative questions produced responses that could be easily counted and summarised. The qualitative questions were subject to content analysis or interpretive analysis (Martin 2003). This involved coding the qualitative data which entailed mapping the interview transcripts and notes made during the interview. Codes were allocated to pre-existing categories developed as part of an a priori design and also to the categories that emerged from the data. The process planning dimensions, Research Question One, provided a convenient and appropriate high-level coding scheme with the process dimensions being allocated codes D1-D6. Multiple-choice questions provided natural categories that only needed to be allocated appropriate codes. Research Question two did not require a category construction but integrated the relevant steps described by the respondents to derive the planning model.

Presentation and Interpretation of Findings

The respondents were senior personnel responsible for the planning and deployment of converged solutions; they had insight into the reason why organisations opt for a converged infrastructure and were able to highlight the benefits and barriers anticipated and experienced. Four of the interviewees were in executive IT positions. The specific responsibility included new business development, ICT process optimisation and general IT management. One respondent was the managing director of the company and another was the chief enterprise architect. The industry sectors represented by the organisations in the sample were telecommunications, information technology, transportation and system integrators. The average experience in 'IT planning and administration' across all organisations was approximately 12 years. The average experience in 'network planning and administration' across all organisations was approximately five years. The average experience in 'telecommunications, media and broadcasting planning across all organisations was approximately four years.

Research Question One: Discussion and Interpretation of Findings

Analysis of the process dimensions reveals distinct profiles in planning within organisations (Chakravarthy 1987). Figure 3.1 has been adapted from Segars & Grover (1999) and profiles the sample under study with respect to the six dimensions for the planning process. Even though the Segars & Grover model was used to illustrate the analysis of quantitative data, the model is still a convenient way of profile the planning process for this exploratory study.

The position of the dimension in Figure 3.1 is an indication of where the majority of responses occurred. The horizontal line indicates a mid-point i.e. an even split in responses. Rational planning systems display high levels of comprehensiveness, formalisation and a focus on integration while planning systems with high adaptability display wide participation and high levels of planning consistency (Segars *et al.* 1998). This profile of the study is split on rationality and adaptability and exhibits relatively informal and non-comprehensive planning with a medium magnitude of control, but with a high top-down orientation and high levels of participation and consistency.

In practice the formalisation of the planning process generally has a weak focus in the sample with only two organisations emphatically indicating a formal process. This has important implications for the choices that are apparent to organisations. Formal planning systems and processes will lead to better choices, more informed evaluation of alternatives and ultimately better levels of organisational performance. Organisations that exhibit a low degree of formality may find it difficult to facilitate 'out of the box' thinking, and the planning process may not be particularly effective (Segars & Grover 1999).

Both of the organisations that indicated a formal strategic planning process were system integrators, and were subsidiaries of larger international organisations. Respondents from both organisations alluded to a strong influence from the parent company and also, parent organisations that were process dependent. The inference of this is that South African organisations, which made up the remainder of the sample, have to pay more attention to their operational processes, all of which may relate to the 'maturity' of organisations. While the degree of formalisation of the strategic planning process for convergence was generally low there was an overall intention to

change this situation - all organisations were in the process of creating formalised structures and techniques to initiate and guide the planning process, which are characteristics of formal systems (Segars *et al.* 1998).

Formal planning systems create efficiency for both the receipt and processing of information and increases organisational ability to consider a greater number of issues, a view that was supported by the majority of the sample. Mintzberg (1994) in describing what he calls the 'fallacy of formalisation' voices a contrasting view, which says that while formalisation implies a rational process from analysis to eventual action planning is also a learning process that can proceed in the opposite direction as well.

In this study the sample displayed a high-level of consistency, characterised by a planning process that is part of a continuous planning cycle. A continuous planning process improves decision speed, which may be necessary for organisations that are required to adapt to unexpected changes in both internal and external environments (Sabherwal & King 1995). Inconsistent planning systems, on the other hand, generally have strategic plans with longer time frames, an approach that may be warranted when strategic issues are relatively few and stable. The organisations in the study sample all work in the IT, telecommunications or transportation sector, which are considered fast-changing environments, in which organisations have to react quickly and display organisational agility. Highly consistency would be an imperative for this. In South African companies information technology is viewed as essential for executing strategies and therefore 'ad-hoc, incremental and disconnected approaches to information systems (IS) strategy formulation are simply not good enough' (Cohen 2003). While the strategic plan analyses the longer-range view, normally three to seven years into the future, some companies attempt to look even further into the future. But the longer the planning the more likely something will render it invalid especially in a fluid environment e.g. the rapid growth of the Internet and e-commerce took many organisations by surprise (Green 2001).

This study revealed a 'top-down' planning flow that is characterised by limited participation of lower level managers in the initiation of the strategic planning process. Wilson (1991) supports this approach and contends that strategy must be corporate in character and must be initiated at board level. The role of functional or business unit managers in a top-down planning system is limited to strategy implementation. In essence higher

Figure 1: Profile of Planning
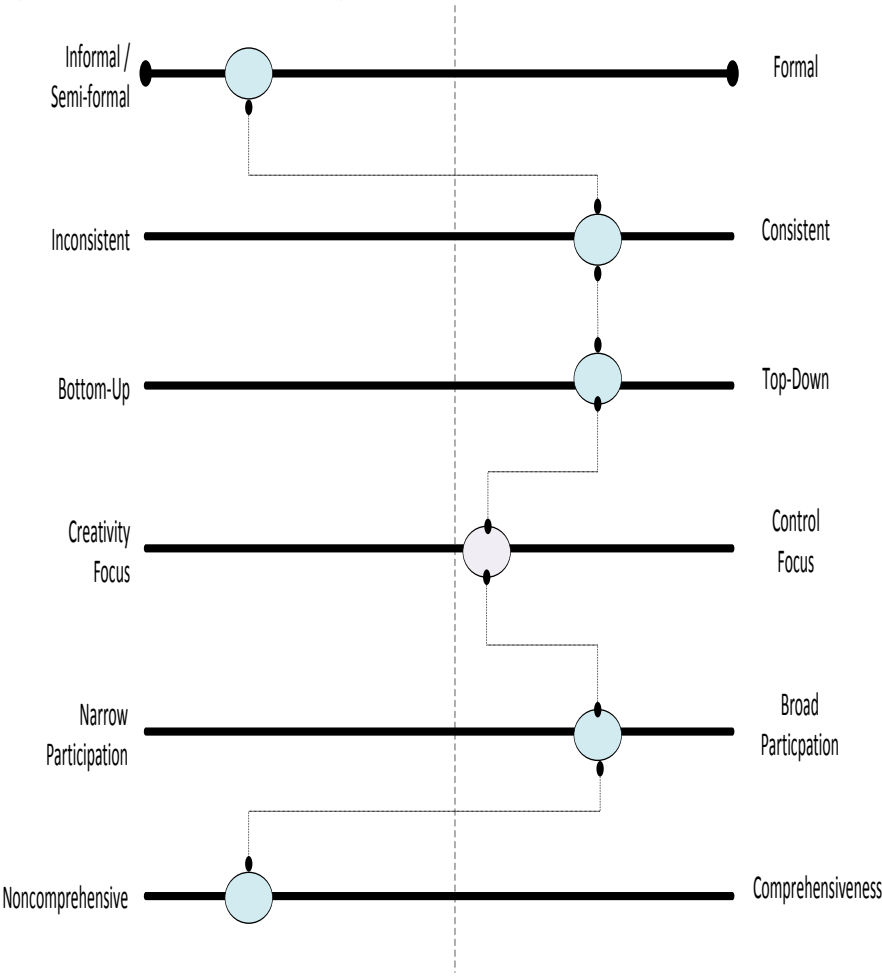
levels of management assume the responsibility for formulating all new strategic moves. Top management participation has been associated with more successful strategic information system planning (Lederer & Salmela 1996). Enns & Huff (n.d.) believe that the ability of the CIO to obtain the cooperation and commitment in the organisation is critical to the successful IS strategy implementation.

The scope of Strategic Information System Planning (SISP) efforts is broad and includes the development of organisational-wide information requirements and plans for the general direction the company. These plans lack detail and look at issues like market share, opportunities, threats, and competitive position (Green 2001). The perspective of SISP is that of the highest levels of management and the highest level of an organisation's planning hierarchy. This implies a 'top-down' flow, where authority resides with top management, and indicates a responsibility from top management for the strategic planning process and implementation of strategic plans. Simpson (1998) in contrast states that the governance model based the premise that senior people should work on strategy is flawed because usually people at the top of an organisations are too disconnected from the business to do a good job of developing strategy on their own.

The sample showed a very small bias towards a control focus i.e. an integrative approach that is closely tied to the regular accounting and budgetary systems of the organisation (Chakravarthy 1987). These two somewhat opposed orientations of control and creativity must be balanced in order to enhance the effectiveness of a planning system; an excessive emphasis on either of these is apt to be a dysfunctional planning system (Ramanujam *et al.* 1986). The innovative approach, which nurtures creativity through a continuous and systematic search for opportunities and/or threats in the competitive environment (Segars & Grover 1999), was also favoured by many of the organisations in the sample. This duality of purpose is a source of further research and can be attributed to the current market conditions that may have forced organisations to re-look at their strategic purpose and reducing costs may be the more prudent option at present. Innovation and the search for innovation carry a financial burden; more sources of information would have to be consulted and this is possibly a financial outlay that organisations are not prepared to make at present. The stimuli for innovative solutions are often opportunities e.g. reaching new customers or introducing new products, and are often based on expectations and projections without hard evidence (Boonstra 2003). Simpson (1998) believes that strategy development is a creative process and does not flourish when there are routines imposed and contends that 'routines processes produce routine results' while Mintzberg (1978) states that strategy development is as much art as science and is crafted rather than engineered.

The research was conducted during a time of extreme world-wide economic crisis, with many organisations and countries facing extremely tough trading conditions. While the research did have a long-term view in mind, it is possible that some responses were tinged with a pre-occupation with the economic conditions, which may have favoured a more integrative approach to planning.

With respect to participation there was a wide breadth of involvement across all organisations. All organisations involved the IT management staff in the strategic planning process for convergence, with the majority of organisations indicating some involvement of senior IT management. There was an intention amongst organisations to increase the level of participation from non-IT management. Lederer and Salmela (1996) contend that participation by members of the user community and information system managers can greatly facilitate the planning process as long as they have the necessary skills and experience. Systems with a narrow participation generally foster an isolated approach to planning (Segars *et al*. 1998) and this study highlighted a contradiction in that although there was a high degree of participation, there was still an isolated approach to strategic planning for convergence. One explanation is that while the breadth of participation is broad, it is broad across the IT function within the organisation and therefore relatively isolated from other sections of the organisation; if this scenario of narrow ownership is true, then it may result in planning that is sterile (Grundy & King 1992). Godet (2000) writes that the complexity of strategic problems means using methods that are as 'rigorous and participatory' as possible to find acceptable solution.

The study showed a low-level of comprehensiveness with the majority of organisations not being exhaustive in information gathering or in evalu-ation of alternatives. This in turn negatively affects an organisations ability to: thoroughly canvass a wide range of alternatives; survey a full range of objectives; carefully weigh up the costs and risks of various consequences; search for information to evaluate alternative actions; objectively evaluating information regarding alternative actions; re-examining the consequences of all known alternatives and make detailed plans – all of which are indicators of comprehensiveness (Janis & Mann 1977).

In general, organisations must balance the benefits of consistency and integration associated with thorough decision analysis with the costs of inaction, managerial time and financial resources. This study indicated a low degree of comprehensiveness as there was no attempt to be exhaustive in information gathering and also no inclination to searching for the best solution. In some competitive contexts it may be more appropriate to 'satisfice' rather than optimise (Sabherwal & King 1995). This may be particularly true of this study sample that all operate in fast-changing environments. Boonstra (2003) identified decision-making patterns of simple 'impasse', where a ready-made solution is available, or 'basic search' where the search is for the best available ready-made solutions, as part of the 'satisficying' approach.

Research Question Two: Discussion and Interpretation of Findings

A suitable model from the literature (Green 2001) was presented to and served the purpose of framing the respondents' responses. This model represents what is currently being used and was chosen as a convenient benchmark and does not represents an authoritative or definitive view on what planning steps should be included. Based on the findings an extension of Green's model, illustrated in Figure 3.2 below, is presented. The model attempts to specify planning steps as articulated by the respondents and from the literature.

The first step identified by respondents entailed the identification of either a problem within the organisation that required a solution or a potential opportunity. This step was also referred to as a 'feasibility study', 'project mandate' or 'identification of a need'. The second step identified was given the label 'approval' and as the name implies, it is the step that either approves or rejects the initiative. The next two steps involved the analysis of the initiative, with step three given the name 'financial analysis' and step four given the label 'technical analysis'. The next step was the labelled 'choose plan', which as the name implies involved choosing from the alternatives available. Surprisingly not all organisations indicated a specific step to evaluate alternate solutions. Green (2001) states that while solutions may be obvious when problems and objectives are clearly stated, when there is no obvious solution in sight, alternatives must be developed. Step six,

'detailed planning' expanded on the alternatives that were accepted in the approval step and received three mentions. Step seven was responsible for 'implementation'; it received five mentions and was also termed 'rollout' or 'implementation analysis'. This step implemented the solution in a working environment. The 'post-implementation' issues were part of step eight.

In summary the initial steps of the extended model differ from Green's model; the analysis steps remain similar while the post-analysis steps differ. The additional steps at the beginning were the 'SWOT' analysis, development of a business case and project definition and mandate. The steps added at the end included a proof of concept, testing, implementation and post-implementation. The need for improved implementation of strategic IS plans has been emphasised in both empirical and prescriptive studies. The poor implementation of strategic plans has been cited as one of the causes of lack of investment in IS (Gottschalk 1999).
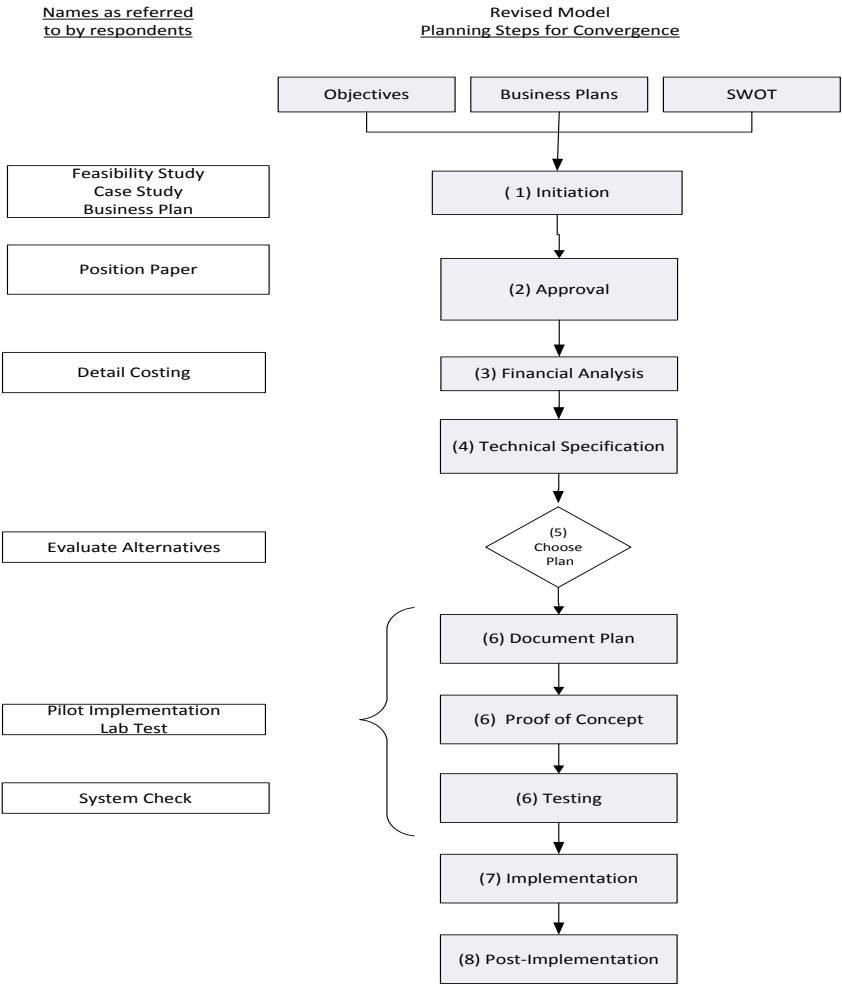
Consideration of implementation issues is particularly important in a converged initiative where there is a lack of understanding and consensus around the definitions and benefits that can be leveraged, or indeed the barriers that may be encountered. Fuller & Swanson (1992) warn that especially when new technology is involved, implementation is likely to be problematic. Therefore any consideration of implementation during the planning process must be a positive factor in the eventual implementation of these strategic plans.

A close look at the anticipated benefits of convergence shows a focus on the costs and management of the network. It was not surprisingly to find an emphasis on costs saving that could be leveraged from a converged infrastructure. Reducing network management costs and lower operational costs were some of the benefits anticipated by organisations (Yankee Group 2003; Wild 2006). Other benefits anticipated included 'better customer service' and 'new applications'.

There is no single convergence benefit that was experienced widely across organisations with the highest-ranking benefits being selected by most, three organisations. This was an unexpected finding as there was an expectation that at least some of the benefits identified would be experienced by a greater number of organisations. Another surprising finding was that the 'lower cost of network management' was not being experienced by the majority of organisations, nor was the possibility of

'easier network management'. The evidence for this point to the fact that the people intimately involved with convergence initiatives have a more pragmatic understanding of the benefits that can be leveraged.

## Figure 2: Extension of the planning model for convergence

Names as referred
to by respondents

Revised Model
Planning Steps for Convergence

| Objectives | Business Plans | SWOT |

Feasibility Study
Case Study
Business Plan

(1) Initiation

Position Paper

(2) Approval

Detail Costing

(3) Financial Analysis

(4) Technical Specification

Evaluate Alternatives

(5) Choose Plan

(6) Document Plan

Pilot Implementation
Lab Test

(6) Proof of Concept

System Check

(6) Testing

(7) Implementation

(8) Post-Implementation

Research Question Three: Discussion and Interpretation of Findings

Benefits Anticipated vs. Benefits Experienced

This section presents the findings with respect to the benefits anticipated and benefits experienced.

Figure 3: Benefits anticipated versus Benefits experienced
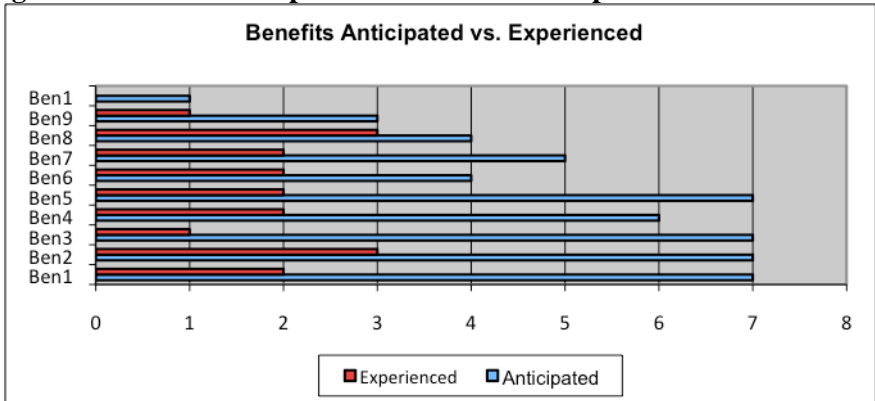
Legend

(Ben1) Lower-cost network management
(Ben2) Reduced network tariffs / service costs
(Ben3) Easier network management
(Ben4) Better customer service
(Ben5) Better quality of communications
(Ben6) Increased employee productivity
(Ben7) New applications e.g. video training
(Ben8) Centralisation of telephony services / reductions in PBX's
(Ben9) Improved teamwork
(Ben10) Deployment costs

There is a wide disparity between the benefits anticipated and those that were actually experienced with none of the benefits anticipated being experienced to the same extent upon implementation. The expectation that converged networks would be easier to manage and would provide some

cost savings did not materialise. This expectation is consistent with the literature with the Yankee Group (2003) stating that organisations implementing converged infrastructures generally expect lower operational costs. The benefits of 'improved teamwork' and 'increased productivity' were also only realised in one organisation although they were planned for in three and four organisations respectively. It is possible that current planning systems are focused on traditional IT planning which may not be in sync with what is needed for convergence initiatives. Kaluza *et al.* (1999) writes that convergence significantly alters the way business is done making traditional concepts of strategic management obsolete; rather it requires innovative approaches in order to gain and sustain competitive advantage in the increasing fluid environment of converging industries.

The main barriers anticipated dealt with the financial implications of rolling out convergence infrastructure and the biggest barrier, which was selected by seven organisations, was 'price of equipment/technology'. The next biggest anticipated barriers were 'implementation costs' and 'awareness and understanding'. It is not surprising to see 'awareness and understanding' listed as a barrier as this is supported by the literature which highlights the lack of definition and understanding of convergence (Kaluza *et al.* 1992). One surprising findings was that the barrier 'regulatory landscape' received only one selection. It was expected that this would be most pertinent to organisations than indicated. Concerns over privacy' received no mentions.

This was also a surprising finding. The discussion around the right to privacy is in the public domain, even more so since the adoption of many laws post 9/11. It is possible that even while rights to privacy are very much on people's mind the connection between convergence (which has only recently permeated the broader media) and rights to privacy has not been made.

The barrier which was most experienced by the sample under study, and which received six mentions was 'implementation costs'. At present the costs of converged infrastructure is not competitive and this will probably prevent large-scale adoption until costs drop (Economist Intelligence Unit 2004). The next most experienced barrier was the 'disruption to business' during the deployment phase, which was experienced by five organisations.

Figure 4: Barriers anticipated versus Barriers experienced
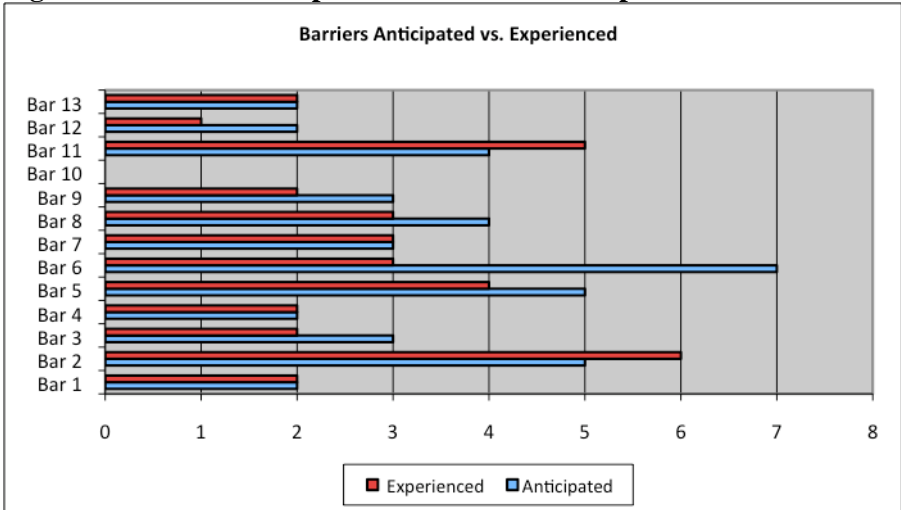
Legend
(Bar 1) Doubts about security
(Bar 2) Implementation costs
(Bar 3) Lack of a compelling business case
(Bar 4) Concern over quality of voice communications
(Bar 5) Awareness and understanding
(Bar 6) Price of equipment / technology
(Bar 7) Lack of consensus within organisation
(Bar 8) Concern over implications of single network 'putting eggs in 1 basket'
(Bar 9) Timescales for Return on Investment
(Bar 10) Concerns over privacy
(Bar 11) Disruption of business while converting
(Bar 12) Satisfaction with present system
(Bar 13) Regulatory landscape

'Awareness and understanding' was selected as a barrier experienced by four organisations. There is much confusion and a lack of awareness over convergence exacerbated by the different definitions assigned to convergence by different authors; a clear definition of

convergence that satisfies all industry sectors does not exist with actors in the media sector viewing convergence differently from actors in the telecommunications sector (Kaluza *et al*. 1992). This lack of understanding is a major barrier to achieving convergence. The allied barriers of 'lack of consensus within organisation' and 'lack of a compelling business case' allude to problems with the objectives (or lack thereof) that are being planned for convergence projects. It could also relate to a lack of communication within the organisation or even to a deeper planning malaise. If the convergence initiatives do not have consensus within the organisation it could be that either the initiative has not been thought through properly – no exhaustive investigation into current situation and future objectives, or it could be that the objectives have not been communicated effectively from higher-level planning hierarchies.

There was a more equitable match between barriers anticipated and those actually experienced. Barriers to the implementation of strategic plans may have roots in the planning process and may include the fact that the plan was not sufficiently useful and it did not fit the organisation. Some barriers were experienced to a greater extent than anticipated e.g. 'implementation costs' and 'disruption of business while converting'. The cost of implementation was a barrier that was anticipated by five organisations and experienced by six organisations. This shows that organisations have a good idea of the high cost currently involved in convergence projects. Some barriers were anticipated to a greater extent than experienced including 'lack of a compelling business case' and 'awareness and understanding'. The 'awareness and understanding' of convergence was anticipated by five organisations and experienced by four. Steinmuller (2000) and Stieglitz (2003) write that it is vitally important to have a clear definition of convergence with many commentators indicating the lack of a clear definition of convergence (Kaluza *et al*. 1999). Some barriers were anticipated and expected to the same extent. Voice quality and security concerns were still very important to organisations when considering deploying converged infrastructures (Economist Intelligence Unit 2004). The 'lack of consensus within organisation' and the allied barrier of 'lack of a compelling business case' can be addressed by the planning process and the planning steps for convergence.

'Regulatory landscape' received one mention, which is surprising in light of the literature. Convergence has not progressed at the speed at which it was previously thought, largely due to a number of technological, market regulatory and consumer barriers. For the potential of convergence to be realised and the backbone of an effective digital economy to be developed an entirely new approach will need to be adopted – one that is more reflective of the information era and which will enable the development of the information infrastructure needed to underpin a modern network economy (Gillwald 2003). Addressing convergence through appropriate ICT policy and regulatory mechanisms is therefore important as part of the broader strategy to promote growth and position countries within regional and global information environments. Current restrictions regarding what types of services can be carried on different infrastructures could make it difficult for operators to formulate unified strategies and may also prevent economies of scale being optimised.

Contribution of the Study

The most important conceptual implications of this research relates to the identification of a planning profile for the sample frame. The profile gives an indication of current planning systems for convergence and highlights areas of weakness and areas of strengths within these systems. The study created a basis for further study into the relevance of the planning dimensions used for this study for convergence planning. Closely aligned to this is the identification of the actual steps of the strategic plan and the extension of current models. This study contributed to the understanding of how strategic planning for convergence differs from these other planning models and provides a basis for developing a comprehensive strategic planning model for convergence.

Delegates to the International Federation for Information Processing conference held in 1998 agreed that qualitative approaches to information systems research was finally gaining acceptance (Avison *et al.* 1999) This study presents a methodological approach through the use of primarily qualitative methods, combined with some quantitative methods.

The practical side of the study relates to the increase in understanding of the planning process and the dimensions involved. It

elucidates the dimensions and the types of questions that practitioners must address when planning strategically for convergence. The steps identified give a basis for practitioners to use in their own planning systems. Organisations must look at their current strategic planning processes objectively and decide if their planning system is adequate. This ongoing process of evaluation and refinement is called meta-planning and results in systems of planning that emerge through constant iteration. The meta-planning process is characterised by three inter-dependent processes of analysis, design and evaluation. Analysis is the process of assessing both the organisational and environmental context to determine the 'fit' of the existing planning system with competitive planning needs. Design is the process of structuring the desired system of planning and formulating strategies for conversion of the existing planning system. Evaluation is the process of assessing the performance of the planning system.

Conclusion

The research set out to answer three questions. With respect to the planning process the research revealed that the organisations under study did not adopt a formal approach to planning, and at best relied on a semi-formal approach. Most planning took place as part of a continuing planning cycle and there was a wide breadth of involvement at all management levels in the strategic management process with most organisations indicating active involvement from their senior IT management. The primary focus of strategic planning for convergence was the controlling of costs through the diffusion of assets across the organisation. The planning process for convergence followed a 'top-down' approach with senior management responsible for endorsing and initiating the strategic planning process and lower-level managers responsible for the implementation of these plans. The majority of organisations did not delay the planning process until all decisions had been evaluated but rather were content to 'satisfice' – i.e. choosing a solution that works rather than optimising the evaluation process. The planning profile of the organisations investigated can be summarised as: relatively informal and non-comprehensive planning with a medium magnitude of control, but with a high top-down orientation and high levels of participation and consistency.

The planning steps for convergence revealed that the majority of organisations do follow a step-by-step approach. All organisations made deliberate attempts to identify the benefits of and barriers to their convergence initiatives. The majority of organisations do consider implementation issues during their strategic planning steps with a high proportion taking into account the allocation of resources. An expansion of a current model was proposed with additional steps extrapolated from the research findings and the literature review.

The investigation into the benefits and barriers anticipated and experienced revealed a disparity between what was anticipated and what was eventually experienced. This disparity was more profound with regards to the benefits, with the barriers showing a better correlation between what was anticipated and what was actually experienced. There was a clear expectation of reduction in costs that were not necessarily realised within the sample frame under study. The barriers that were anticipated also related to costs in respect of equipment and implementation. This study has offered:

- An assessment of the state of the convergence planning process in South African organisations
- An enhanced model for convergence planning
- An understanding of the benefits and barriers of convergence initiatives both anticipated and experienced.

References

Avison D, F Lau, M Myers & PA Nielsen 1999. Action Research. *Communications of the ACM* 42,1: 94-97.

Bohlin E 2000. Convergence in Communications and Beyond: An Introduction. In Bohlin E, K Brodin, A Lundgren & B Thorngren (eds): *Convergence in Communications and Beyond*. Amsterdam: North Holland.

Boonstra A 2003. Structure and Analysis of IS Decision-making Process. *European Journal of Information Systems* 12: 195-209.

Braman S 1993. Harmonization of Systems: The Third Stage of the Information Society. *Journal of Communication* 43,3: 133-140.

Budde P 2008. *South Africa – Convergence – VoIP, NGN and Digital Media.* Paul Budde Communications Pty Ltd.

Chakravarthy BS 1987. On Tailoring a Strategic Planning System to its Context: Some Empirical Evidence. *Strategic Management Journal* 8,3: 517-534.

Chatterjee S & J Byun 2002. Network Convergence: Where is the Value? *Communications of the Association for Information Systems* 9: 421 - 440.

Cohen JF 2003. Chapter 16 - Explaining Information Systems Strategic Planning (ISSP) Behavior: An Empirical Study of the Effects of the Role of IS on ISSP. In Kangas, K (ed): *Business Strategies for Information Technology Management*. Hershey, USA: IRM Press.

Denzin NK & YS Lincoln 1994. *Handbook of Qualitative Research.* Thousand Oaks: Sage. ECA 2005. Available at: http://www.info. gov.za/view/DownloadFileAction?id=88342.

Economist Intelligence Unit 2004. *Deploy or Delay? Converged Networks in the Enterprise.* Available at: http://graphics.eiu.com/files/ad_pdfs/ Agilent_Convergence_WP.pdf.

Enns HG & SL Huff n.d. *CIOs' Power, Influence, and IS Strategy Implementation.* Ontario: University of West Ontario. (Richard Ivey School of Business.)

European Commission 1996. *The Information Society.* Luxembourg: Office for Official Publications of the European Communities.

European Commission 1997. *Green Paper on the Convergence of the Telecommunications, Media and Information Technology Sectors, and the Implications for Regulation*. Towards an information society approach, COM (97) 623. European Commission. Brussels. Available at: http://ec.europa.eu/avpolicy/docs/library/legal/com/greenp_97_623_ en.pdf.

Galliers RD 1991. Choosing Appropriate Information Systems Research Approaches: A Revised Taxonomy. In Klein, HK, R Hirscheim & H-E Nissen (eds): *Information Systems Research*: *Contemporary Approaches and Emergent Traditions*. Amsterdam: Elsevier.

Gartner Group 2002. Conv*ergence: More than Voice Over IP*. Gartner Symposium, U.S. Symposium/Itxpo, 6–11 October 2002. Orlando, Florida: Walt Disney World.

Gillwald A 2003. *National Convergence Policy in a Globalised World: Preparing South Africa for Next Generation Networks, Service and Regulation*. Link Centre Policy Research Paper No. 4. Available at: http://link.wits.ac.za/papers/ag20030707.pdf.

Godet M 2000. The Art of Scenarios and Strategic Planning: Tools and Pitfalls. *Technological Forecasting and Social Change* 65: 3-22.

Gottschalk P 1999. Implementation of Formal Plans: The Case of Information Technology Strategy. *Long Range Planning* 32,3: 362-372.

Green JH 2001. *The Irwin Handbook of Telecommunications.* Berkshire: McGraw-Hill.

Grundy T & D King 1992. Using Strategic Planning to Drive Strategic Change. *Long Range Planning* 25,1: 100-108.

Hassan R 2000. The Space Economy of Convergence. *The Journal of Research into New Media Technologies* 6,4: 18-35.

Hukill M, R Ono & C Vallath 2000. *Electronic Communication Convergence*. London: Sage Publications.

Hussey J & R Hussey 1997. *Business Research: A Practical Guide for Undergraduate and Postgraduate Students*. New York: Palgrave.

ITU 2007. International Telecommunications Union. *Basic Information – Frequently Asked Questions.* Available at: http://www.itu.int/osg/spu/wsis-themes/Vision/Vision.html.

Janis IL & L Mann 1977. *Decision-Making*. New York: Free Press.

Kaluza B, T Blecker & C Bischof 1999. *Implications of Digital Convergence on Strategic Management.* In Dahiya, SB (ed): *The Current State of Economic Science.* Volume 4. Rohtak: Spellbound.

Katz, RL 1987. *The Information Society: An International Perspective*. New York: Praeger.

Lederer AL & H Salmela 1996. Towards a Theory of Strategic Information System Planning. *Journal of Strategic Information System Planning* 5: 237-253.

Lederer AL & V Sethi 1996. Key Prescriptions for Strategic Information Systems Planning. *Journal of Management Information Systems* 13,2: 35-62.

Martin A 2003. What Drives the Configuration of Information Technology Projects? Exploratory Research in 10 Organisations. *Journal of Information Technology* 18: 1-15.

Melody WH, E Sutherland & R Tadayoni 2005. Convergence, IP Telephony and Telecom Regulation: Challenges & Opportunities for Network Development, with Particular Reference to India. *Telecommunication Regulatory Authority of India (TRAI)*. New Delhi.

Mintzberg H 1978. Patterns in Strategy Formulation. *Management Science* 24,9: 934-948.

Mintzberg H 1994. The Rise and Fall of Strategic Planning. *Harvard Business Review* January-February.

MoC 2003. Minister of Communications Convergence Colloquium. Available at: http://www.polity.org.za/article/matsepecasaburri-conver gence-colloquium-15072003-2003-07-15.

NCCP 2003. National Colloquium on Convergence Policy. Available Online at: www.info.gov.za/view/DownloadFileAction?id=70184.

NSBA 1996. *The National Small Business Act.* Available at: http://www.info.gov.za/view/DownloadFileAction?id=70848.

Ramanujam V, N Venkatraman & JC Camillus 1986. Multi-objective Assessment of Effectiveness of Strategic Planning: A Discriminant Analysis Approach. *Academy of Management Journal* 29,2: 347-371.

Rosenberg NS 1963. Technological Change in the Machine Tool Industry: 1840 – 1910. *Journal of Economic History* 23,4: 414-443.

Sabherwal R & WR King 1995. An Empirical Taxonomy of the Decision-making Processes Concerning Strategic Applications of Information Systems, *Journal of Management Information Systems* 11,1: 177 - 214.

Segars AH & V Grover 1999. Profiles of Strategic Information Systems Planning. *Information Systems Research* 10,3: 199-232.

Segars AH, V Grover & JTC Teng 1998. Strategic Information Systems Planning: Planning System Dimensions, Internal Coalignment, and Implications for Planning Effectiveness. *Decision Sciences* 29,2: 303-345.

Simpson DG 1998. Why Most Strategic Planning is a Waste of Time and What you can do about it. *Long Range Planning* 31,3: 476-480.

Srivastava JV & M Finger 2006. Fixed to Mobile Convergence (FMC): Technological Convergence and the Restructuring of the European Telecommunications Industry. *SPRU 40th Anniversary Conference*. Brighton, UK, September 11-13, 2006.

Steinmueller WE 2000. Paths to Convergence: The Roles of Popularization, Virtualization and Intermediation. In Bohlin, E, K Brodin, A Lundgren & B Thorngren (eds): *Convergence in Communications and Beyond.* Amsterdam: North Holland.

Stieglitz N 2003. Digital Dynamics and Types of Industry Convergence: The Evolution of the Handheld Computers Market in the 1990s and Beyond. In Bohlin, E, K Brodin, A Lundgren & B Thorngren (eds): *The Industrial Dynamics of the New Digital Economy*. Cheltenham: Edward Elgar Publishing.

Webster F 1994. What Information Society? *Information Society* 10,1:1-23.

Wild K 2006. The Importance of Convergence in the ICT Policy Environment. *Association for Progressive Communication* - APC Issue Papers Series 2006, October 2006.

Wilson T 1991. Overcoming the Barriers to the Implementation of Information System Strategies. *Journal of Information Technology* 1991,6: 39-44.

World Economic Forum 2008. *The Global Information Technology Report 2008-2009: Mobility in a Networked World*. Available at: http://www.insead.edu/v1/gitr/wef/main/fullreport/index.html.

Yankee Group 2003. *South African Communications Market Study*, prepared for the Department of Communications, South Africa.

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