

Challenges of Information Systems Strategy Implementation in Public Hospitals: A South African Experience

Hwabamungu, Boroto, University of the Western Cape, South Africa, boroto.hwaba@gmail.com

Brown, Irwin, University of Cape Town, South Africa, Irwin.Brown@uct.ac.za

Williams, Quentin, CSIR Meraka Institute, Pretoria, South Africa, QWilliams@csir.co.za

Paper Category: Research Paper

ABSTRACT

Information Systems (IS) strategizing research conducted mostly in the private sector setting indicates that there are many challenges to the implementation of Information Systems strategy and that there is need for further research on this phenomenon in the healthcare sector. Building on previous IS strategizing research we explored the challenges of Information Systems strategy implementation. We then explored the challenges of IS strategy implementation in public hospitals in developing countries, using a province of South Africa as a case. Semi-structured interviews and meeting proceedings were the sources of collected data. We used IS strategizing theory to guide the thematic analysis of the collected data. Our findings indicate that the challenges of IS strategy implementation in a public hospital environment in developing countries are complex and context-bound, although similar to the general IS strategy implementation challenges found in literature. This paper thus contextualises IS strategy implementation in the public health sector of developing countries - a complex environment which differs from the traditional corporate environment, where much IS strategy implementation research has been conducted.

Keywords: Information Systems strategy implementation, Healthcare Sector, Strategic Information Systems planning, IS strategy implementation challenge, case study, interpretive research, South Africa

INTRODUCTION

The enabling role of Information and Communication Technology (ICT) is the backbone of ICT for development (ICT4D) initiatives globally (Avgerou, 2010; Heeks, 2008). Unlocking ICT's potential to improve health service delivery in developing countries is among the various global ICT4D cases that ought to contribute to the attainment of the millennium development goals (MDGs) (Panir, 2011). However there have been concerns about the impact of ICT4D programmes and ICT's contribution to the MDGs (Clarke, Wylie, & Zomer, 2013). There has also been critique around the MDG's contribution to the attainment of development objectives (Byrne, Nicholson & Salem, 2011). Nonetheless, developing countries' governments such as South Africa [through the South African National Department of Health (NDoH)] have been undertaking Information Systems (IS) strategy development and implementation processes with the aim of improving healthcare services and the quality of care at public hospital level. The peculiarities and the complexity of the public hospital environment in developing countries such as South Africa however could present new challenges for IS strategy implementation and hence this context needs to be investigated.

IS strategizing literature reveals that there has been lack of research on IS strategy implementation (Bell et al., 2010; Gottschalk, 1999; Peppard et al., 2014). A persisting issue has been the trend of organisations developing IS strategies and not always implementing these strategies (Lederer and Salmela, 1996). Scholars such as Lederer and Salmela (1996), Segars and Grover (1998) and Newkirk & Lederer (2006) have argued that IS strategy implementation is affected by a variety of challenges such as inadequate top management support, resource constraints, lack of participation and lack of implementation planning. The implementation of IS strategies is also affected by certain contextual factors (Brown and Brown, 2011). Although the criticality and organisational relevance of IS strategy implementation have been widely discussed (Ward and Peppard, 2002; Pollack, 2010; Teubner, 2013), these notions still need to be investigated in the context of the healthcare sector of developing countries where scholars such as Littlejohns et al. (2003) and Kumalo (2003) have argued for the need to investigate the implementation of ICTs in healthcare.

The South African public health sector consists of approximately 332 public hospitals and caters for about 80% of the population (NDoH, 2011a). It is complemented by the following

subsystems of the broader health care system: the private sector, traditional healers and complementary alternative medicines (Harrison, Bahna, & Ntuli, 2007). The public health sector has been going through major transformation since 1995 (Braa & Hedberg, 2002). Presently the country's NDoH is in the process of implementing the National Health Insurance (NHI) scheme with the aim of improving access, quality and affordability of healthcare services to all individuals living in South Africa (NDoH, 2011b). Innovative IS initiatives such as the Health Information Systems Programs (HISP), telemedicine and mHealth have demonstrated ICTs' enabling role for the improvement of health care services in the South African public health care sector in general and the rural areas in particular, as argued by scholars such as Kachienga (2008), Braa & Hedberg (2002) and Curioso & Mechael (2010). The country's current eHealth strategy highlights strategic priorities and guidelines in this regard.

In this paper we investigate the following research question: *What are the challenges that affect the implementation of IS strategy in public hospitals of developing countries?* We use IS strategizing theory as a theoretical framework and follow a case study approach using semi-structured interviews and meeting proceedings to collect data. A province of South Africa was chosen as the case. This paper is structured in four parts: the first part presents the background of the study with an emphasis on IS strategy implementation and IS strategizing; the second part discusses the methodology that was followed; the third part presents the study's results; and the last part discusses the study's findings and recommendations.

CONCEPTUAL FOUNDATION: IS STRATEGIZING

IS strategizing - described by Henfridsson and Lind (2014) as the set of activities that lead to organisational use of IS for the realization of the IS strategic intent - provides rich insight on the notions of organisational relevance (Brown, 2008; Khani, Mor, & Bahrami, 2011; Rajiv, 1999; Segars & Grover, 1998; Ward & Peppard, 2002), the IS strategizing process (Pollack, 2010), the importance of IS strategizing in attaining business alignment and competitiveness goals (Ward & Peppard, 2002, Lederer and Salmela, 1996) and IS strategizing success factors (Newkirk and Lederer (2006). In Peppard et al.'s (2014) elaboration of the state of IS strategizing and related IS strategy research over the past four decades, the demarcation between the much-researched and the less-researched aspects in IS strategy practice are associated with five notions: (1) the ad hoc bottom-up approach to determining IS, (2) IS planning, (3) Strategic planning for IS (SPIS),

(4) building an IS capability and (5) IS strategizing. These notions can be grouped into a set of 3 major IS strategizing concepts as summarised in Figure 1: organisational context, IS strategy integrative scoping and IS strategic achievement.

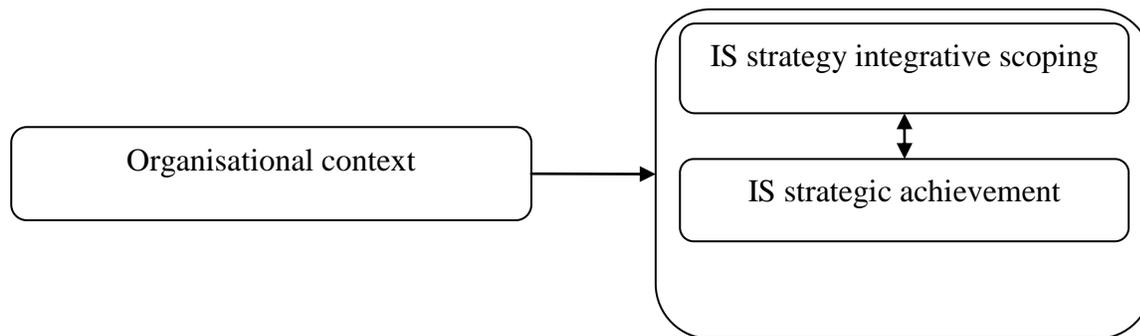


Figure 1. An IS Strategizing conceptual framework.

Organisational context and IS strategizing

Different organisations engage in complex processes of IS strategizing not only to develop IS strategy but also to ensure that the developed IS strategy is in line with the business strategy (Bartenschlager & Goeken, 2009). Although there are various methodologies and techniques that organisations can refer to, each organisation has its distinctive peculiarities which influence the strategizing process. Freedman (2003, p. 27) for example argues that: “organisations must have a clear, robust and motivating strategy, formulated using a proven process”. For possible successful IS strategizing, Newkirk and Lederer (2006) suggest that an analysis of the environment within which implementation is envisaged is essential. In the exploration of the IS strategy theory-practice gap and challenges, Teubner (2013) encourages researchers to take into consideration the business environment and organisational context.

An organisation’s IS strategizing exercise entails considering and addressing intertwined IS strategizing dimensions for the attainment of IS strategic goals and objectives. These include aspects such as: the contextual environment, IS vision and guidelines, IS assessment, strategic business planning, sought achievements, organisational relevance of IS strategizing, the strategizing process, implementation of IS strategies, outcomes and benefits of strategic initiatives. These various IS strategizing notions can be integrated into three major practical

concerns: the organisational context, IS strategy integrative scoping and IS strategic achievement.

IS strategy integrative scoping

A major aspect of the strategizing process is the development of IS strategy through an organisational IS planning exercise (Lederer and Salmela, 1996) . The complexity of the IS planning process and the interplay between successful information systems and the extent to which organisation engage in complex IS strategy planning processes are contributors to the emergence of the concept of IS strategy planning sophistication (Rajiv, 1999). Pollack (2010) suggests that the planning process is an iterative one consisting of five process – strategic business planning, information systems assessment, information system vision, information systems guideline and strategic initiatives – that leads to the development of an information systems strategy. This process aims at ensuring that the developed IS strategy is appropriate and that the developed IS strategy is in line with the business strategy (Bartenschlager & Goeken, 2009). This process therefore entails defining the scope of the IS strategy in an integrative manner.

IS strategic achievement

Although different organisations might have differing aim when embarking on a strategizing exercise, the end goal of IS strategy implementation is IS strategic achievement. Yet many developed IS strategies are not always implemented (Lederer and Salmela, 1996). The sought IS strategic goals can only be realised when the IS strategy is implemented, the consequential IT investments are made, the necessary organisational changes are made and the IS use is embedded in organisational practice as argued by Arvidsson et al. (2014). They particularly emphasise the notion of the realisation of IS strategic intent which entails the attainment of the sought organisational IS strategic goal.

In this study we explore the challenge of IS strategy implementation in public hospitals in a province of South Africa. This exploration is grounded in the three organisational dimensions described above: the organisational context, the IS strategy integrative scoping and, the IS strategic achievement.

RESEARCH METHODOLOGY

This study has been conducted following a case study approach, one of the many approaches used in social science research (Yin, 2009) that is frequently used by scholars in information systems (Benbasat, Goldstein, & Mead, 1987; Klein & Myers, 1999). The case study approach allows a deep and detailed exploration of specific cases (Olivier, 2009) and the exploration of complex multi-variate phenomena in their contextual natural settings (Ferlie, Wood, & Fitzgerald, 1999; Fitzgerald, 1999; Yin, 2009). The data was collected through interviews, a key data collection tool in interpretive studies (Myers & Newman, 2007) and meeting proceedings. Thematic analysis - a data analysis technique that is used in a pattern of data development and recognition fashion (Fereday & Mui-Cochrane, 2006; Ritchie and Lewis, 2003) – was used to analyse the data. The preliminary analysis of the data resulted in the identification of 16 emergent concepts. The code EC was allocated to these emergent concepts. These emergent concepts were then grouped according to similarity of themes. This resulted in the identification of 6 final summarised themes to which the code ST was allocated. Table 3 provides a summary of the findings of the thematic analysis.

The case study

A province of South Africa was selected as one case study. With an estimated population of 10,267,300 (Statistics South Africa, 2012), the province has a total of 72 public hospitals across its 11 districts (NDoH, 2011a). The selection of the public hospitals for data collection purposes was based on permission to conduct research approval at district level, approval at the public hospital level, the availability of the CEOs and the availability of the other interviewee groups.

The interviews

A total of 16 semi-structured interviews were conducted between 04 March 2013 and 16 March 2013 with the following respondent types as: 7 Hospital CEOs or CEO representatives, 2 IT staff members at the hospital level, 3 individuals within the IT department at provincial department of health, 3 IT suppliers and one IT user at hospital level. The interviews were conducted with CEOs at 3 hospitals in a municipality, 3 hospitals in one district and 1 hospital in another district. Table 1 provides a summary of the conducted interviews. The interviews were recorded and then transcribed for data analysis. The duration of the individual interviews was between 25 minutes

and 90 minutes depending the interviewees ability and/or willingness to provide detailed responses. There were instances where interviews were rescheduled due to unforeseen circumstances. Interviews were mostly conducted at the interviewees' offices. However in one instance the interview was conducted at a café in a different province.

| Respondent types | Number | Code |
|----------------------------------|---------------|-------------|
| Hospital CEO/CEO representatives | 7 | Hosp CEO |
| IT person at the hospital | 2 | Hosp IT |
| IT/Health provincial department | 3 | Prov IT |
| IT suppliers | 3 | IT Supp |
| IT user at hospital level | 1 | Hosp ITU |
| Total | 16 | |

Table 1. Summary of conducted interviews.

The meetings

Meetings were conducted with different groups between the 04 December and 07 December 2012 in the province. A total of five meetings were conducted with different stakeholder groups as summarised in Table 2. The meetings were generally conducted at the stakeholder groups' premises except one case where the meeting had to be conducted at a specific public hospital where the IT supplier group had a technical support session at that hospital.

| Meeting s | Stakeholder groups/levels | Attendees |
|------------------------|----------------------------------|------------------|
| Meeting 1 (04/12/2012) | Provincial | 6 |
| Meeting 2 (05/12/2012) | Hospital IT supplier | 3 |
| Meeting 3 (05/12/2012) | Hospital IT supplier | 7 |
| Meeting 4 (06/12/2012) | District | 8 |
| Meeting 5 (74/12/2012) | Hospital IT supplier | 5 |

Table 2. Summary of meetings.

RESULTS AND FINDINGS

The thematic analysis of the findings indicated the complexity of the challenges of implementing IS strategy in the public hospitals environment of South Africa. We have therefore identified the following challenges to IS strategy implementation in public hospitals: (1) Leadership, management and human capital; (2) Multiple stakeholders, hierarchical structures and roles; (3)

Time frame of IS strategizing process and multiple levels in IS strategic decision making; (4) IS strategizing practice inefficiencies; (5) organisational mechanism ineffectiveness; and (6) facilities/hospitals level IS strategy operationalization complexity. We now describe each of these challenges. Table 2 provides a summary of these identified challenges and their embeddedness in the findings of the thematic analysis of the collected data.

| Guiding dimensions | Emerging concept (and code) | Emerging concept grouping and code | Code and summarised themes |
|--|--|---|--|
| Organisational context | Human capital shortages (EC 1) Hierarchical structures and decision making (EC2) Lengthy periods for eHealth Policy sign off and IS strategy scoping (EC 3) Leadership and management team change and continuity of strategic initiatives (EC 4) Funding of IS strategic initiatives (EC 5) | 1 (EC 1, EC 4, EC 6) = ST 1 2 (EC 2) = ST 2 3 (EC 3, EC 7, EC 11, EC 12) = ST 3 | ST 1: Leadership, management and human capital ST 2: Multiple stakeholders, hierarchical structures and roles ST 3: Time frame of IS strategizing process and multiple levels in IS strategic decision making |
| IS strategy integrative scoping | Lack of leadership and guidance from national level (EC 6) Obsolete IS strategy (EC 7) Decisions making (EC 8) Inter-organisational engagements mechanisms and agreements (EC 9) Integration of national, provincial goals into strategic initiatives and scoping of IS strategy (EC 10) Lengthy procedure of IS strategizing (EC 11) IS strategy form and scope (EC 12) Management of contractual agreements (EC 13) | 4 (EC 8, EC 10) = ST 4 5 (EC 9, EC 1, EC 13, EC 16) = ST 5 | ST 4: IS strategizing practice inefficiencies ST 5: Organisational mechanisms ineffectiveness |
| IS strategic achievement | Delays in deployment of IS strategic initiatives (EC 14) Public hospitals infrastructural readiness, large number of public hospitals (EC 15) Piloting and scaling up IS strategic initiatives (EC 16) | 6 (EC 5, EC 14, EC 15) = ST 6 | ST 6: Facilities/Hospitals level IS strategy operationalization complexity |

Table 3. Findings of the thematic analysis

Leadership, management and human capital

Lack of leadership, management and human capital affects the implementation of IS strategy in public hospitals. Lack of leadership particularly at national level is a major challenge that has implications throughout the entire IS strategy implementation process. A direct consequence of lack of leadership is lack of direction, delays in IS strategic activities at provincial level and delayed IS strategy operationalization at facility level. Management of IS strategic initiatives and shortage of human capital are also major challenges that negatively affect IS strategy implementation at public hospitals in South Africa. The common management and general human capital shortage that affect public hospitals in general are also common in the implementation of IS strategy. The implications of management difficulties and human capital shortage at facility level particularly makes the deployment and effective use of IS at public hospitals a big challenge. In this regard one IT person at the provincial department of health made the following remark:

“The problem is lack of guidance from national. Now that the e-health strategy has been approved so there will be some guidelines but there is no policy on how this will be done. The thing is when you do not have policies or guidelines, this is what happens: you run around like a headless chicken. If you have guidelines you know exactly which direction you are taking. Otherwise you are going on that road, this road, that road, this road, not attaining what you are trying to achieve” {Prov IT}

Multiple stakeholders, hierarchical structures and roles

The different stakeholders who are involved in the implementation of IS strategy at public hospitals not only have different expectations and competencies but also provide input at different levels of the IS strategy implementation process. Certain stakeholder groups' delayed input affect negatively IS strategy implementation, as a delay at one level has grave repercussions throughout the rest of the IS strategy implementation activity system. This is the case when subsequent activities are highly dependent on the completeness of preceding activities such as the formulation of a strategy, the approval of the strategic document and the signing off thereof. The multiple stakeholder groups' characteristic makes the management of these stakeholders and their respective roles problematic in the implementation of IS strategic initiatives. An IT person at a hospital highlighted the following:

“With systems that involve different stakeholders there are major problems such as with the NHLS but with Clinicom we did not experience major issues except the normal resistance changes” {Hosp IT}

Time frame of IS strategizing process and multiple levels in IS strategic decision making

The very nature of the IS strategizing process requires an extensive time frame. Public hospitals are worse off in this regard as the complexity of the healthcare environment, the multiple stakeholders, hierarchical structures and roles overburden an already lengthy process therefore making it an overstretched long term exercise. Another critical aspect in this regard is the multiple levels of IS strategy and IS strategic decisions in public hospitals in the context of South Africa. The IS strategy for public hospitals is complex and is not contained in a single IS strategic document. It is rather a multi layered cross-cutting strategy that intersects different strategic goals and/or documents such as the national eHealth strategy, the provincial health strategic plan and the provincial service transformation plan. This makes the IS strategic decision making an intricate procedure that may sometimes lead to incomplete IS strategic implementation and outdated strategies. An IT supplier made the following observation:

“Again there the assumption was made and the decision was made by a project manager (not a clinical) and he made an assumption and again this has to do with the leadership in 2008. He made the assumption that the strategic imperatives of 23 years ago were still relevant today (20 years later). Now what happens is that they are implementing “revitalisation” with a strategy that was developed 20 years earlier and the strategy now and the choice of modules did not take into account the stakeholders. The clinical stakeholders have been very disturbed. The people who are running HIV/AIDS were not involved, epidemiology was not involved, reporting to DHIS was not a consideration” {IT Supp}

IS strategizing practice inefficiencies due to public hospital context, change and contract management

In parallel with the time frame of the IS strategizing process and the multiple levels in IS strategic decision-making, challenges exist due to IS strategizing practice inefficiencies at public hospitals. IS strategic investments in the context of the public hospitals are way behind in comparison to the traditional business organisation setting. Moreover in the context of public hospitals there will have been unavoidable changes in leadership, management, and underlying policy mechanisms which would not have been catered for throughout the lengthy IS strategizing process. There is a clear indication of the public sector contextual realities and the implications of these contextual realities on different aspects of IS strategy implementation. Cost implications

of IS strategic initiatives and the difficulties in dealing with the structural political changes are but a few of these challenges. This concern was raised by an IT supplier as follows:

“Health cannot afford the IT of the populous world. You can’t have 1400 desk tops. 1,400 desktops may cost you Rands 10,000 per desktop because you got to buy quality, (because you can’t buy the cheap ones as they do on the city contracts... That’s not the cost that kills you. The cost that kills you is keeping them running. And the support for it and the skills you got to have. We don’t have those skills in South Africa. You might have pocket of them. Remember health covers the entire country... You struggle with the public sector, they keep changing the management. They change the government, they change the MEC, they change the head of department, and they change the financial manager... So you enter into these long terms contracts and you are constantly dealing with people who don’t know what the hell you are talking about because of memory loss”. {IT Supp}

Organisational mechanism ineffectiveness

There are organisational mechanisms that are critical to the implementation of IS strategy in public hospitals in South Africa. These mechanisms address aspects such as funding of IS strategic initiatives, IS procurement, and management of related contracts. These mechanisms are not always effective. The ineffectiveness of these mechanisms lead to difficulties in attaining the overall IS strategy implementation objectives. An IT supplier made the following comment regarding the management of contracts:

“The bigger challenge is that of the contract management with the department, Because you have no consistency in the department, you always go back to square one, you always have to repeat yourself, you always to explain the contract to them because they don’t understand the contract at all, they don’t take the time to understand it because they don’t have the skills to understand it” {IT Supp}.

Facilities/hospitals’ level IS strategy operationalization complexity

A major challenge in the implementation of IS strategy in public hospitals in South Africa is the complexity of IS strategy operationalization at facilities/hospitals level. The province under study has a total of 72 public hospitals which have different levels of maturity in terms of IT infrastructure readiness and/or appropriateness. Moreover each public hospital has its own requirements for peculiar IS. Additionally in terms of the decisions regarding the deployment of IS strategic initiatives at the public hospitals, decision makers sometimes overlook the complexity of the IS requirement of a public hospitals. They focus on short term and single service improvement goals at the expense of long term service improvement goals which should rather address integrated service improvement at public hospitals in a systemic fashion. The implications of these are contradictory expectations, inadequate IS strategic initiative

deployment and difficulties in scaling IS strategic initiatives to the vast number of public hospitals. An IT supplier made the following observation:

“However what happened is that soon after hospital A went live, they made other big decision that today will be difficult to believe... We want our ten facilities to improve their billing. Can you give us a billing module? So for the 10 selected hospitals they requested a billing module only, just the billing module. Not the other modules. The improvement in efficiencies at hospital A was due to the implementation of a set of modules, and here they are looking at one module... So beyond A hospital they lost it” {IT Supp}.

DISCUSSION

Lack of leadership, management challenges and human capital problems are among the many challenges that affect IS strategy implementation in public hospitals in South Africa. The lack of adequate leadership is perhaps a direct consequence of the leadership orientation style within the context of public hospitals. As argued by Osman et al. (2013) leadership orientation styles can have great implications on IS strategizing. There is therefore a need for proper leadership and communication regarding the strategy so as to communicate the related strategic goals, to champion the whole process and to ensure the success of the strategic information systems process and the consequential deployment of information systems as advocated by Waema and Walsham (1990).

The heterogeneity of stakeholders, their respective roles and the hierarchical structures also affect IS strategy implementation in public hospitals in South Africa in different ways. Regarding stakeholder factors and IS strategy implementation Segars and Grover (1998) note that lack of cooperation among different stakeholders is problematic to the implementation of formulated strategy. Cooperation among the different parties is also reported to be critical for successful IS strategy implementation (Newkirk & Lederer, 2006). A direct implication of the multiple stakeholders' characteristic is the multiple levels at which IS strategic decisions are taken and the consequential length of the IS strategizing process. The long time frame of the strategizing process has been identified to affect the implementation of IS strategy in public hospitals in South Africa. This has many implications. Lederer and Salmela (1996) for example note that this sometime results in obsolete strategies due to environmental and organisational changes that will have occurred before the strategy is implemented. Peppard and Breu (2003) further advocate the necessity of making consideration of historical factors that affect the entire strategy formation and implementation process as strategizing is not ahistorical. Another

implication is the multiple IS strategy levels and the associated decisions which corroborate Arvidsson et al.'s (2014) multi-dimensional view of IS strategy. They identify the following three major IS strategy implementation challenges: selecting system capabilities that align with and enable strategic intent, implementing the systems successfully within the organisation and, producing the necessary organisational change to allow strategic intent to be realised.

The ineffectiveness of organisational mechanisms and the inefficiencies in the strategizing practice at public hospitals in South Africa affect various aspects of IS strategy implementation such as: IS strategy implementation operationalization, IS strategic initiatives funding, management of contracts, IS project governance, etc. McDaniel and Pashmos (1996) questioned the relevance of the traditional hospital structural model and the traditional approaches to strategic decision-making in a healthcare environment, as constant change creates the need for complex IS. Premkumar and King (1994) noted that there exists implementation mechanisms whose quality have implications on the practice of IS strategizing. Some of these implications are obsolete strategies and inadequate decisions that have been noted to be a major challenge in the implementation of IS strategy in public hospitals. Waema and Walsham (1990) argued that past IS strategy and related implemented IS that were relevant at a given point in time can have unplanned implications on future decisions such as the choice of equipments' suppliers whose equipments have become obsolete. Killingsworth, Newkirk, and Seeman (2006) further argued that reviewing IS strategy is critical and spares hospitals the consequences of having obsolete strategies.

The complexity of IS strategy operationalization at the facilities or public hospitals level is a major challenge. This challenge and the previously raised ones are possibly a direct reflection of the peculiarities of the public sector environment in general and public hospitals in particular. The patterns of distinguishing characteristics regarding the practice of IS strategizing in the public sector and the private sector organizational contexts have been highlighted by Dufner, Holley, and Reed (2002). In their investigation of IS strategizing practice in the public sector they identified that, in comparison to organisations in the private sector, organisations in the public sector environment faced challenges and difficulties such as: public sector wide IS strategy definition and formulation challenges, poor participation of stakeholders at higher structural hierarchical levels and the lack of involvement of different stakeholder groups/actors. The findings of this study not only corroborate Dufner, Holley, and Reed's (2002) observations,

but also highlight the magnitude and peculiarities of IS strategy implementation challenges in a developing country's public hospitals context. The findings of this study also highlight similarities with generic IS implementation given the fact that implementation of IS strategy cannot be immune to the common concerns regarding IS implementation. This concern has been raised by Brown and Brown's (2011) investigation of contextual factors affecting the implementation of IS strategies.

CONCLUSION

The findings of this study reveal that there are various IS strategy implementation challenges in the public hospital context of South Africa. These challenges can be observed at an organisational context level and at the IS strategizing level. Although these findings emerged from a single case study, these challenges are likely to be relevant in the case of IS strategy implementation in public hospitals in other provinces of South Africa, and other public institutions and organisations in similar environments. The findings of this study contribute to the field of IS strategy implementation in the health care environment setting, highlighting a set of six challenges that affect the implementation of IS strategy in a public hospital context in a developing country: leadership, management and human capital challenges; multiple stakeholders, hierarchical structures and role challenges; time frame of IS strategizing process and multiple levels in IS strategic decision making challenges; IS strategizing practice inefficiencies challenges; Organisational mechanism ineffectiveness challenges; and facilities/hospitals level IS strategy operationalization complexity challenges. It is therefore imperative that national departments of health, provincial departments of health and other actors responsible for the implementation of IS strategy in similar environments take cognisance of these challenges and develop mitigation measures. The findings of this study are complementary to the general body of knowledge on the challenges of IS strategy implementation by contextualising IS strategizing in the public health care sector, a complex environment which differs from the traditional business environment. Further investigation of IS strategizing practice in the healthcare environment at a national level or in other developing countries could assist in unpacking the root causes of these challenges.

Acknowledgement: The findings presented here form part of a larger study that investigated stakeholder relations and IS strategy implementation in the South African public hospitals context. This study has been fully sponsored by the Council for Scientific and Industrial Research (CSIR) Meraka Institute.

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