Towards an Understanding of Business Design within Enterprise Architecture Management: A Cautionary Tale

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in partial fulfilment of the requirements for INF5005W

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University of Cape Town

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Abstract

Business Design represents a set of concepts that are described in the literature as providing a sound foundation for sustainable competitive advantage into the future. The particular values underpinning Business design are based on the enablement of a design thinking approach to solving the imponderable problems that organisations regularly encounter. In particular, the application of a design thinking approach to Business Design requires that resultant system designs are economically viable and technologically feasible. Enterprise Architecture Management plays a vital role in supporting these latter two requirements. Yet the definition of Enterprise Architecture Management as the '*normative restriction of design freedom'* (Deitz, 2011) implies constraints that could impose limits on such business design.

Consequently, the qualitative inductive research described in this document was undertaken to explore the perceived paradoxical relationship between Business Design and Enterprise Architecture Management.

This dissertation recounts the process and results of this research initiative based on data recorded during interviews with a number of management level staff at a leading South African Insurance organisation. The participants were intimately involved in a programme to, amongst other objectives, establish a platform to support enterprise-wide Business Design within Enterprise Architecture Management, a programme that was experiencing a number of challenges and that was still underway at the time of completion of this research. Findings arising from this research were that the varying perceptions and levels of commitment of business and IT stakeholders associated with the programme and its requirements, contributed significantly to these challenges.

In addition to providing a rich description of the case organisation's journey towards the establishment of a Business Design platform, a sensitising framework – '*The 6 Cs Framework in Support of the Successful Enablement of Business Design within Enterprise Architecture Management'* – is proposed as a useful tool to assist organisations that might be considering a similar programme in the future.

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1. Introduction

> "*Given the availability of data through electronic sources (Internet, databases, etc.), the creation of competitive advantage will not occur because of one's knowledge of the customer. It will occur because of one's ability to leverage this knowledge in ways that will creatively enhance [a] company's value proposition and the consumption experience of customers*" (Davis & Berdrow, 2010, p. 6534).

Davis & Berdrow's (2010) statement is made in the context of teaching design thinking principles to business students. Martin (2009) echoes this view and contends that the adoption and mastery of '*design thinking*' in the context of Business Design will lead organisations to attain sustainable competitive advantage.

Design thinking in this context is explained as the type of thinking attributed to the minds of those persons with skills commonly associated with continuous innovation such as artists and professional designers. Martin does however point out that *"...even as corporate leaders chase the vital, elusive spark of* ***creativity****, their organisations'* ***structures, processes, and norms*** *extinguish it wherever it flares up*." (Martin, 2010, p. 38-39).

Business Design encompassing such design thinking could refer to both the act of designing within the context of a business, and the results of such a design act. The Rotman School of Management, a Business School closely associated with Roger Martin, which focuses on promoting the application of design thinking concepts to address business problems, has trademarked its own definition of Business Design as "*the application of design thinking principles to business practice*" (Rotman School of Design Website, 2012). For the purposes of this research design document, the term Business Design is used in the context of the Rotman School of Design's definition.

Enterprise Architecture Management (EAM) is described as "*a discipline that supports the coordination of enterprise transformation" (*Harmsen, Proper & Kok, as cited by Aier & Weiss, 2012, p. 2). As such, the scope of Enterprise Architecture Management is rather more than the modelling of an organisation's various architectural layers, stretching as it does to include the management of

organisational transformation in the context of these layers (Aier, Gleichauf & Winter, 2011). Aier and Weiss (2012) note that Enterprise Architecture Management can be challenging to implement perhaps due to the objective of attaining organisation-wide cohesion through "***restricting design freedom***" (Dietz, as cited by AIer & Weiss, 2012, p. 2), and also because the reflexive nature of the relationship between Enterprise Architecture Management and the host organisation is not clearly understood. As each organisation's transformation journey is necessarily unique, the particular organisational practices of Enterprise Architecture Management are similarly unique (Aier & Weiss, 2012).

It is important to differentiate between Enterprise Architecture (EA) design and Business Design (BD). EA design is described as being at a level of granularity of a '*class of systems*' (Proper & Greefhorst, 2011, p. 14), whereas Business Design, for the purposes of this document, is regarded as spanning EA design and individual system solution design. As the relationship between Business Design and Enterprise Architecture Management finds representation in the Organisation's Business Architecture and related system solution designs (SOA Consortium EA2010 Working Group, 2010; Versteeg & Bouwman, 2006), the restriction on design freedom associated with Enterprise Architecture Management suggests an organisational phenomenon that is worth exploring.

Business Design is portrayed as a key source of sustainable competitive advantage, and a concept that is gaining traction in management training (Davis & Berdrow, 2010, Dunne & Martin, 2006). Given the paradoxical relationship between Business Design and Enterprise Architecture Management provided earlier in this introduction, and the idea that **Enterprise Architecture Management restricts design options**, which could contribute to the suggestion that **an organisation's "*structures, processes and norms*"** (Martin, 2010, p. 38-39) **are often in conflict with the application of Design Thinking concepts**, it was regarded as appropriate to conduct research into the management of Business Design within Enterprise Architecture Management in order to provide insight that could contribute to the optimum design of such relationship in future organisations.

The purpose of this research therefore is to explore and explain the relationship between Business Design and Enterprise Architecture Management with a view to

contributing to Organisational Design theory. The mechanism for achieving this aim was the conducting of qualitative research into the accommodation of Business Design within Enterprise Architecture Management at a leading South African Financial Services organisation.

The remainder of this document recounts the research process and outcomes, and introduces the conceptual model that was compiled based on the research findings.

Chapter 2 is a summary of the in-depth literature review that formed a precursor to this research initiative. In this literature review, an attempt is made to describe the relationship between Business Design and Enterprise Architecture Management according to existing theory. The literature chapter is followed by Chapter 3 which summarises the theories that were accessed as sense-making tools in the data analysis phase of the research. This early presentation of literature that was, in reality, identified during the data analysis phase of the research initiative, is so presented based on Suddaby's (2006) support for presenting a research document in a traditional format in order to improve comprehensibility. Chapter 4 explains how the findings of the initial literature review led to a specific research question relating to identifying the contextual organisational elements necessary in order to accommodate Business Design within Enterprise Architecture Management. Chapter 4 includes a comprehensive description of the research methodology and strategy, being the undertaking of a qualitative and interpretive single organisation case study at a leading South African financial services organisation. In Chapter 5, a discussion of the research paradigm is presented. Use of Thematic Analysis with Case Study research is described. Chapter 6 recounts the results of the research and describes the sensitising framework that was compiled based on the analysis of the data.

2. Literature Review

In preparation for this research, a literature review was undertaken to explore the theory underpinning the relationship between Business Design and Enterprise Architecture Management. In the course of this literature review, Business Design and its relationship with Enterprise Architecture Management and related organisational processes – situated from the time that a business model is

envisioned during the strategising process, through to the implementation of the designed solution – were analysed in terms of the literature.

In the following sub-sections of this chapter the literature review findings related to the purpose of this research are described in more detail. Firstly an explanation is provided of the definition of Enterprise Architecture that is adopted for this research. Thereafter the link between Design Thinking and Business Design is more firmly established, resulting in a re-conceptualisation of Business Design as being enabled through an organisation-wide sensitivity towards the values of *mindfulness* and the accommodation of *virtuous cycles of ambidexterity.* These values are then explained as key contributors to understanding the link between Business Design and Enterprise Architecture Management where such link is identified as the incorporation of identified values in Enterprise Architecture principles, and the resultant enablement of design thinking to arrive at optimum system designs to address business problems. This chapter ends with an explanation of the gaps in the literature that the researcher encountered.

2.1 Definition of Enterprise Architecture adopted in this Literature Review

Enterprise Architecture is a more generic term than Enterprise Architecture Management that accordingly encompasses a more general scope. This document does not intend to cover a comprehensive discussion of Enterprise Architecture (EA) and its constituents. Therefore, to clarify the view of EA as adopted in this proposed research, the following definition of EA is adopted:

"...where business capability (financial and market goals) and technology capability (products, vendors, and functionality) are tied together with organisational capability (people [and] process) to drive an ongoing strategy or desired outcome" Kistasamy, van der Merwe & De La Harpe, 2010, p.129).

References to EA in this paper encompass the generic EA elements of a *management domain (Enterprise Architecture Management)*, relating to the management of the EA function and its transformation processes (this term is further clarified elsewhere in this document), a *modelling domain*, relating to the creation and maintenance of models and views that map the architecture of the enterprise,

and the *IS/IT domain*, which provides the underlying software support (Wang & Wang, 2011). These domains are understood as operating across a number of architecture layers, with each layer involving a number of artefacts (see Figure 1).

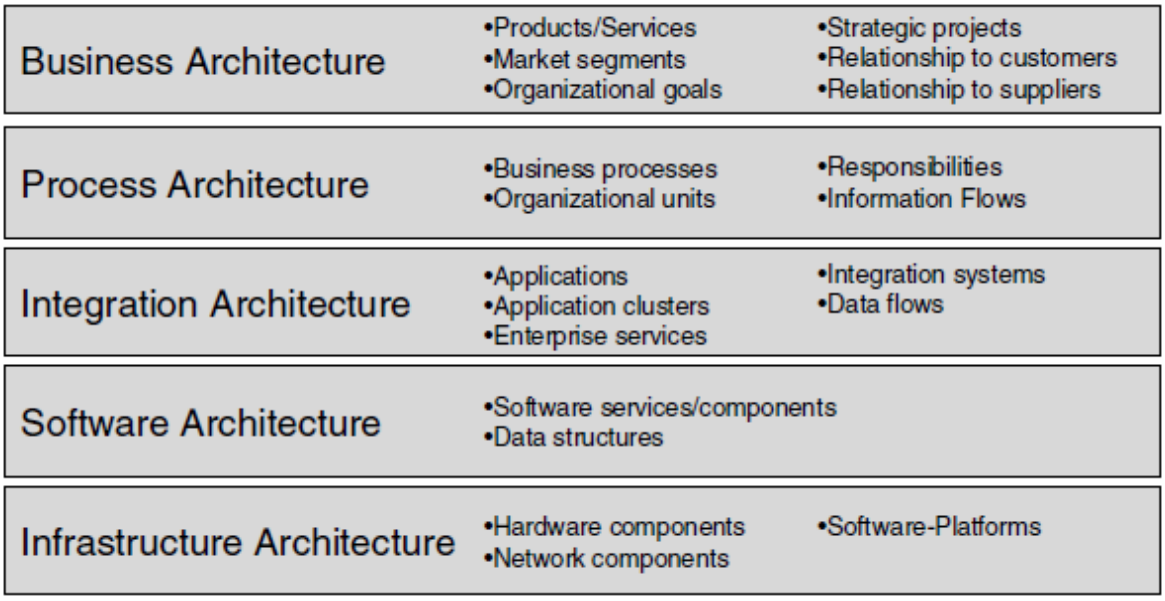

Figure 1: Proposed Layers and Artefacts of Enterprise Architecture (Aier, Riege & Winter, as cited in Kloeckner & Birkmeier, 2010)

2.2 Business Design as the application of Design Thinking

In the introduction to this document, Design Thinking is described as the type of thinking attributed to the minds of those persons with skills commonly associated with continuous innovation such as artists and professional designers (Martin, 2009). This type of thinking supports the use of an abductive approach to problem solving through the deliberate use of intuition in order to foster innovation and to meet the real needs of the customer.

Abduction, as a third approach for addressing problem-solving, over and above induction and deduction, is much discussed in literature. Reichertz (2004) cites Peirce in explaining abduction as the following: "…*the only truly knowledge-extending means of inferencing…that* [is] *categorically distinct from the normal types of logical conclusion, namely deduction and induction*" (Reichertz, 2004, p. 299). Yu (1994) cites Peirce in explaining that taking an abductive approach to problem solving *"...is to look for a pattern in a phenomenon and suggest a hypothesis*" (Yu, 1994, p. 9). Yu (1994) explains that Peirce believed that the selection of the correct aspects of data to further explore was the essence of abductive thinking. After such

selection, the next step is *induction of theory, followed by deduction to test such theory.* Intuition is regarded as providing the grounding for the selection step of this process (Peirce, as cited in Yu, 1994).

Beyond an abductive approach, Design Thinking emphasises the importance of consideration of the customer's needs, a collaborative and integrative approach to problem-solving undertaken using both analysis and synthesis of the problem area (systems thinking), and the iterative re-visiting of the resultant designs for continuous improvement (Dunne & Martin, 2006).

An important requirement is that business system designs that are the outcome of such thinking must be realistically implementable (Martin, 2009). This requirement, that resultant designs should be practically implementable, is echoed in Brown's (2008) description of applying design thinking to business design which states that such system designs should be "...*technologically feasible and what a viable business strategy can convert into customer value and market opportunity*" (p. 86). This requirement is indicative of the potential relationship between Business Design and Enterprise Architecture Management, in terms of the role of Enterprise Architecture as the harbourer of the 'AS IS' business model of the organisation, and thus a source for providing input to design decisions (Van Gils, 2009).

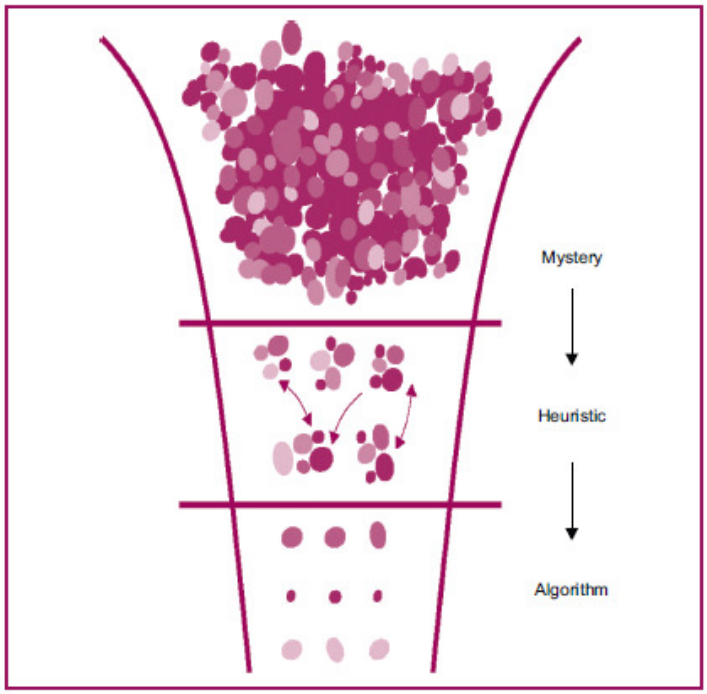

Figure 2: The Knowledge Funnel (Martin, 2010)

In linking Design Thinking to business design, once the intuitive and inductive aspects of design thinking have been exercised (what Martin (2010) in his Knowledge Funnel refers to as "*Heuristic*", see Figure 2), the next step is defining an "*Algorithm*" (Martin, 2010, p. 39), that is, using a deductive approach to consider the previously induced theory, to arrive at a practical design for the resolution of the business problem.

Design Thinking is presented as the core tenet of Business Design with successful Business Design being described as continuous movement through the Knowledge Funnel balanced by exploitation of the knowledge gained at each stage (Martin, 2009).

Martin (2009) explains that organisations that have been in existence for some time have a natural inclination to get caught in the knowledge funnel at the level of heuristic and algorithm. He describes this as a strong tendency towards the design of reliable business systems rather than innovative designs that are based on the real needs of the customer.

2.3 Business Design enabled through the accommodation of values

In this section Business Design is reconceptualised as being enabled through the values of *mindfulness* and the accommodation of *virtuous cycles of ambidexterity*.

2.3.1 Business Design enabled through the value of Mindfulness

A number of Business Design concepts described by Martin (2009) are incorporated into the concept of *mindfulness* as explained in the work of Swanson and Ramiller (2004). Swanson and Ramiller discuss similar ideas to Martin's in the context of organisations that adopt IT innovations. Weick, Sutcliffe and Obstfeld are cited by Swanson and Ramiller (2004, p. 555) in providing a definition of *mindfulness* as *"...an organisational property grounded in, although not reducible to, the minds of participating individuals through a process of heedful interrelating*". Such '*heedful interrelating'* is regarded as one of the key contributors to the establishment of shared cognition amongst disparate Enterprise Architecture stakeholders (Buckl, Matthes, Roth, Schulz & Schweda, 2010; Espinosa, Armour & Boh, 2011). Further papers (Weick & Sutcliffe, 2001; Weick *et al.*, 1999) are cited by Swanson and Ramiller (2004) as the source of five attributes of *mindfulness*:

A preoccupation with failure

This alertness to the possibility that the organisation might become too comfortable when things are going well is a point made by Martin (2009) in substantiating the need for organisations to continually search for new opportunities for innovation.

A Reluctance to Simplify Interpretations

This requirement to engage with complexity is echoed in Martin's (2007) support of integrative thinking *("the ability to hold two opposing ideas in mind at the same time and still retain the ability to function*" (F. Scott Fitzgerald, as cited by Martin, 2007, p. 1)), and in his exhortation for designers to embrace constraints as an opportunity for identifying innovation opportunities.

Sensitivity to Operations

Swanson and Ramiller (2004) address reliability versus validity (in this context, reliability versus validity is described as an organisation's tendency towards the design of reliable business systems rather than innovative system designs that are aimed at meeting the real needs of the customer), under this attribute. They present the resolution of this paradox as taking a view of reliability as long term organisational viability, rather than as a representation of addressing efficiencies in operations that are sufficient for the current context. With this view, validity is addressed through tackling long term viability of the organisation in terms of meeting customers' future needs.

Commitment to Resilience

Swanson and Ramiller (2004, p. 561) explain this attribute as the *"...recognition that anticipation is necessarily incomplete*". Martin (2009) tackles this subject in terms of warning against pandering to the reliability requirement that proof of an idea be provided before any innovation is tackled. In the same vein, Martin (2009) explains how the reliability bias affects an organisation's ability to deliver on innovation projects for which the design of the final system has not been established. These projects are constrained through the importance placed on meeting the predetermined project budget. Swanson and Ramiller (2004, p. 561), in close accordance with Martin (2009), describe mindfulness in this context as *"...a practical and realistic view, one that acknowledges that trade-offs between schedule, budget, and delivered functionality may need creative adjustment.*"

Deference to Expertise

Swanson and Ramiller (2004) describe this final attribute as a sensitivity to the distributed nature of knowledge, and the requirement for appropriate resources to be included in decision making related to innovation. This sentiment aligns with Martin's (2009) suggestion that organisations balance a project-oriented approach that assembles a disparate team of designers to address each innovation opportunity, with the traditional approach of permanent roles to address business-as-usual issues.

In this section, a relationship between the concept of *mindfulness* and a number of Business Design concepts has been explained. The following sub-section addresses the Business Design concept of a balance between exploration and exploitation.

2.3.2 Business Design enabled through the accommodation of Virtuous Cycles of Ambidexterity

Exploration and Exploitation are explained by Martin (2009) in terms of their respective orientations to movement through the knowledge funnel. Exploitation is described as the inclination of firms to continuously revisit a particular heuristic or algorithm that has proved beneficial in the past, in order to make existing processes more effective. Such firms generally show a reluctance to move into unknown territory through the identification of new mysteries to pursue. Exploration on the other hand, is the activity of an organisation that is intent on moving knowledge through the knowledge funnel at ever increasing speeds, perhaps to the detriment of making existing processes more efficient. Martin (2009) suggests that an organisation that can balance these two modes of innovation is one that will reap the benefits of sustainable competitive advantage through Business Design. This concept of a balance between exploitation and exploration is explained by Andriopoulos and Lewis (2009) as representing *virtuous cycles of ambidexterity* (see Figure 3).

Andriopoulos and Lewis (2009) refer to literature to support the importance of an organisational balance between exploration and exploitation. They explain that organisations generally deal with the attendant paradoxes in one of two ways: either by employing structures and strategies that differentiate the two approaches (*differentiation*), or by addressing the related organisational discomfort through social

means to ensure shared values and attitudes in support of such ambidexterity in the work place (*integration*).

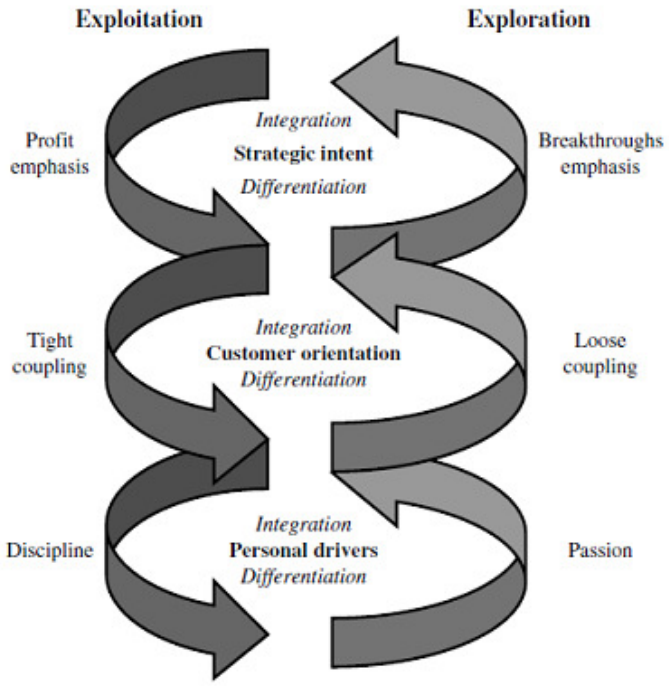

Figure 3: Virtuous Cycles of Ambidexterity (Andriopoulos & Lewis, 2009)

As a result of their research across 5 leading design-oriented organisations, Andriopoulos and Lewis (2009) produced a framework (see Figure 3) that they believe synthesises differentiation and integration in a complementary manner across 3 levels of exploitation and exploration, resulting in the enablement of continuous organisational learning.

Andriopoulos and Lewis's (2009) three levels of ambidexterity span the strategic level where the paradox is between a profit motive and innovation, the project level where the paradox is between close attention to meeting the customer's stated needs versus exploring possible un-thought of futures, and at the personal level where organisational constraints aligned to exploitation are perceived as a curb on individual creative flair. Organisational learning, it is stated, is achieved through improved absorptive capacity enabled through simultaneous exposure to exploitation and exploration strategies (Jansen, Van den Bosch & Volberda, as cited in Andriopoulos & Lewis (2009)).

These virtuous cycles begin with the leadership of the organisation who set context in the strategising process. This context is further focussed in the project development process which is required to operate within the constraints set by the organisational strategy, and is finally implemented by knowledge workers who use the constraints channelled through the project management process to determine the best approach to implementing the desired system.

Andriopoulos and Lewis (2009) believe that the mechanism for making these cycles virtuous is based on finding the necessary balance between paradoxical points of view. This mix of a commitment to balance, together with a grounding in mindfulness, used in the context of innovation (and therefore associated with Design Thinking), is closely aligned to the holistic concept of Business Design as described by Martin (2009).

2.4 Enterprise Architecture Management and its link with Business Design

Concern has been expressed that Enterprise Architecture Management, defined as "*a discipline that supports the coordination of enterprise transformation" (*Harmsen, Proper and Kok, as cited by Aier & Weiss, 2012, P. 2), is unique to each organisational context and that therefore it can be challenging to implement. A key reason for this is its stated objective of attaining organisation-wide cohesion through "*restricting design freedom*" (Dietz, as cited by AIer & Weiss, 2012, p. 2).

The remainder of this sub section addresses the management of EA in an organisation and its links with Business Design, as it is Enterprise Architecture Management that will determine the governance over Business Design processes, and it is in the design processes that Business Design enabling values find expression.

Haki, Legner and Ahlemann (2012, p. 5) draw on their literature review on Enterprise Architecture Management adoption to provide a breakdown of EA governance as the following: structure in terms of EA sub-divisions within the organisation, together with related roles such as architects, and stakeholders that have been co-opted onto related committees; "*standards and principles, comprising a set of policies, rules, and guidelines that shape unified logic across architectural layers*"; mechanisms for

ensuring compliance with such standards and principles; and co-ordinated communication across all stakeholders regardless of their functional responsibilities in the organisation.

For the purposes of this document, the definition of '*EA governance'* is provided by Sauer and Willcocks (as cited by Espinosa *et al*., 2011, p. 2):

"EA governance involves the implementation of ***structures, roles*** *and* ***processes*** *for decisions and compliance associated with system implementations".*

In the remainder of sub-section 2.4, **structures, roles** and **processes** implicated in governance processes and therefore in the accommodation of business design enabling values are further explored in terms of the literature.

2.4.1 Structures and Roles associated with optimal synergy between Enterprise Architecture Management and Business Design

Turner, Gøtze and Bernus (2009, p. 168) approach the subject of governance and management in terms of EA maturity. Three case studies are described which illustrate issues of coherency and consistency when EA is adopted at any level other than at a level where it is "...*all pervasive and fully coherent at all levels of the Organisation, a natural and unconscious extension of normal management practice*." At this high level of adoption, the value of Enterprise Architecture Management is appreciated by all stakeholders, thus contributing to reducing the divide between IT and the business. In addition, support for EA is deeply ingrained through all levels of the organisation, and the EA discipline is represented at executive level. Enterprise Architecture Management is valued as providing valuable input to establishing organisational strategy, in fact, *"...the EA team...have the additional responsibility (similar now to that of the Finance function) of ensuring that the senior business decision-makers are fully informed prior to any strategic business decision* [being] *made"* (Turner *et al*., 2009, p. 168).

This researcher holds the viewpoint that it is this holistic and pervasive level of EA adoption maturity that should be considered as most appropriate for optimal synergy between Business Design and Enterprise Architecture Management. As a class of goals aligned to this high level of adoption maturity, Lange and Mendling's (2011) '*support innovation'* implies a service orientation and a commitment to innovation

practices in spite of the complexity that such a commitment is required to overcome. In order to deliver on such a commitment, it is only logical that Enterprise Architecture Management will be required to temper its control over design freedom. Both Lange and Mendling (2011) and Turner *et al.* (2009) explain that this high level of EA adoption maturity, positions Enterprise Architecture Management where it can play a significant role in organisational strategy setting.

In the following sub section, aspects of Enterprise Architecture Management strategy setting, and program and project management, are further explored with a view to identifying mechanisms by which Enterprise Architecture Management could be optimally imbued with Business Design enabling values.

2.4.2 Processes associated with optimal synergy between Enterprise Architecture Management and Business Design

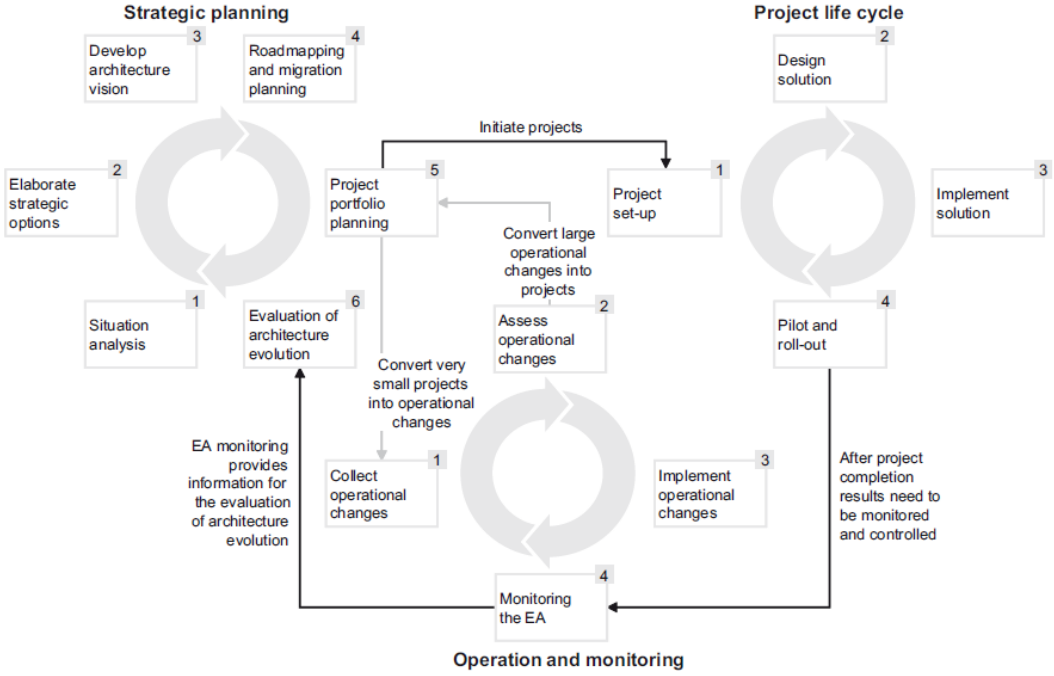

Figure 4: Enterprise Architecture Management Process Integration (Ahlemann *et al.*, 2012)

Ahlemann, Stettiner, Messerschmidt, Legner and Arbi (2012, p. 38) identify three integrated processes for Enterprise Architecture Management: *Strategic Planning, Project Life Cycle* and *Operation and Monitoring*. An explanation of the individual activities making up these processes, as well as an indication of the interrelationships between the processes, is reflected in Figure 4. The individual activities are described in the model and therefore will not be further explained at this

point. These activities are alluded to in the discussion that makes up the remainder of this sub section.

The first two of the three Enterprise Architecture Management processes, *Strategic Planning* and *Project Life Cycle,* are closely aligned to the processes identified by Andriopoulos and Lewis (2009) as being the realm of virtuous cycles of ambidexterity (see Figure 3), and as such are closely related to Business Design. Given this close relationship, the remaining sub-sections explore governance mechanisms associated with the Enterprise Architecture Management processes of *Strategic Planning* and *Project Life Cycle*.

It is acknowledged that the third Enterprise Architecture Management process, *Operation and Monitoring*, could also be considered as playing a role in Business Design and Enterprise Architecture Management synergy through its potential to expose stakeholders to opportunities for design thinking.

Enterprise Architecture Management Governance Mechanisms associated with Strategic Planning

In order to understand the Enterprise Architecture Management governance mechanisms associated with strategic planning, it is first necessary to identify the artefacts of strategic planning that are embedded in the EA. The business architecture of an organisation reflects the business model as it exists at a particular point in time, as well as the intended future model based on the organisational strategy.

To relate the business model reflected in the business architecture to the strategising process, it is necessary to review the differences between *business model, strategy* and *tactics* (see Figure 5).

Casadesus-Masanell and Ricart (2010) explain that a *business model* represents the operating model for the organisation, *strategy* is the mechanism employed in order to decide on the business model, and *tactics* relate to the restrictions on subsequent choices inherent in the choice of a particular business model. Further, business models are constructs resulting from *choices* that are made by management, as well as *the resultant consequences* of such choices.

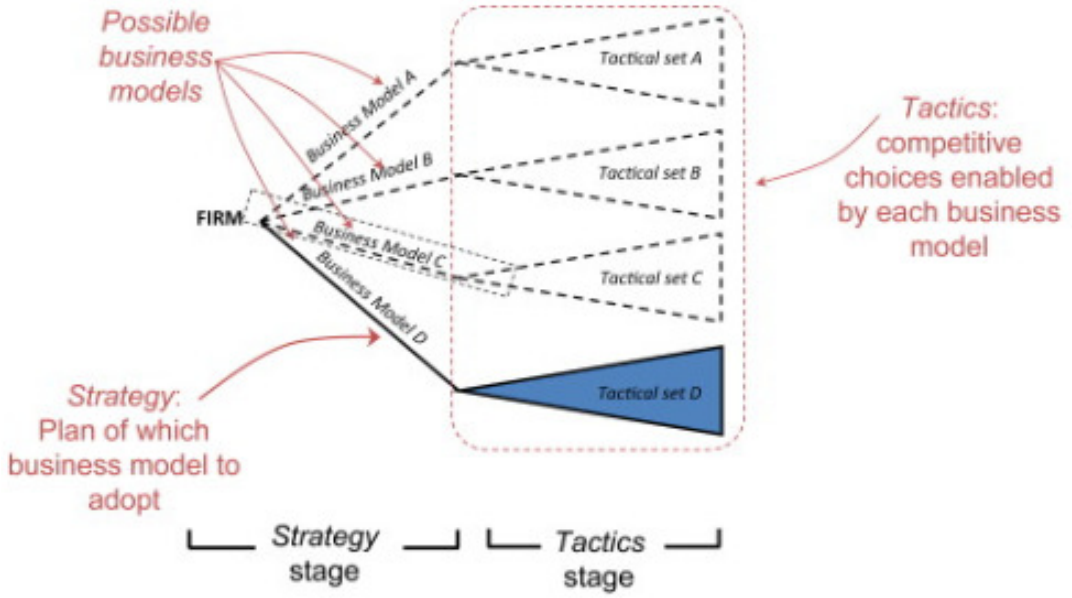

Figure 5: Strategy, Business Model and Tactics (Casadesus-Masanell & Ricart, 2010)

Casadesus-Masanell and Ricart (2010, p. 198) provide a further breakdown within business model choices: *policy choices* (which equate to "*courses of action*"), *asset choices* (which equate to choices in respect of fixed assets), and *governance choices* (which equate to "*the structure of contractual arrangements that confer decision rights over policies or assets*"). Transaction cost economics is used to explain that governance choices are key to the realisation of the expected benefits from policy and asset choices. Virtuous cycles can arise from choices made during strategising over business model selection and the resultant consequences of such selection (Casadesus-Masanell & Ricart, 2010).

In this description of virtuous cycles related to strategising, a link can be found to Business Design. The first virtuous cycle of ambidexterity (see Figure 3) identified as embodying the values that enable Business Design, takes place in the realm of strategising, and entails choices made between exploitation and exploration through pursuing either a profit emphasis based in reliability, or a breakthrough emphasis based in long-term validity. The resultant consequences of such choices are the potential impact on the organisational capability for long term sustainable advantage as noted by Davis & Berdrow (2010), and Dunne & Martin (2006). The decision to follow either an exploitative or an explorative approach to aspects of the business

model realisation (in effect a *policy choice*) would be affected by related *governance choices* established during the strategising process. Following this train of logic, embedding the values that enable Business Design established earlier in this chapter - *the belief that a balance of reliability and validity in innovation, and a balance of exploration and exploitation in strategic intention, embedded in holistic mindfulness, and fuelled by an organisational wide commitment to Design Thinking, have the potential to lead to sustainable competitive advantage* – in the *policy* and *governance choices* of the business model, could be the starting point for an organisation to establish optimal synergy between Business Design and Enterprise Architecture Management.

When EA is adopted at the level of maturity where appreciation and awareness of EA is pervasive from the executive down through each of the enterprise domains, Enterprise Architecture Management plays a key role in the *strategising* process (Lange & Mendling, 2011; Turner *et al*., 2009). In such an organisation, the current *business model* is represented in the EA. This indication of the current business architecture, together with related and more detailed EA models across the various EA layers, provides the necessary supporting information to *enable Business Design through the accommodation of virtuous cycles of ambidexterity* in the selection of the future architecture of the organisation. This future architecture, recorded as the future model of the business, is recorded in the EA as the focus for the design of *tactics* in the form of program and project management initiatives. Choices for tactics are constrained by the choices made when determining the future business model, thus clarifying Dietz's (2011) description of EA as *imposing restrictions on design*. This perceived constraint over tactics provides a focus for the further pursuit of Business Design enablement in the realms of the project life cycle.

Enterprise Architecture Management Governance Mechanisms associated with Project Life Cycle

The relationship between the business model and the role of business architecture has been explained. However, the progression within EA, from the determination of the future business model to individual system design, and the method by which *design freedom is curbed* in order to comply with the future business model, need further clarification. Such progression takes place in the realms of the project life-

cycle. Accordingly, this section clarifies the Enterprise Architecture Management mechanisms used to guide design through the project life cycle.

Proper and Greefhorst (2011) (Figure 6) position '*architecture principles*' as the bridge between the future view implicit in the strategising process, and the design of an acceptable system to make this future view a reality. Enterprise Architecture Management is seen as the guardian of the future business model, and as such, as being in a position to determine the meta-principles to which individual projects need comply.

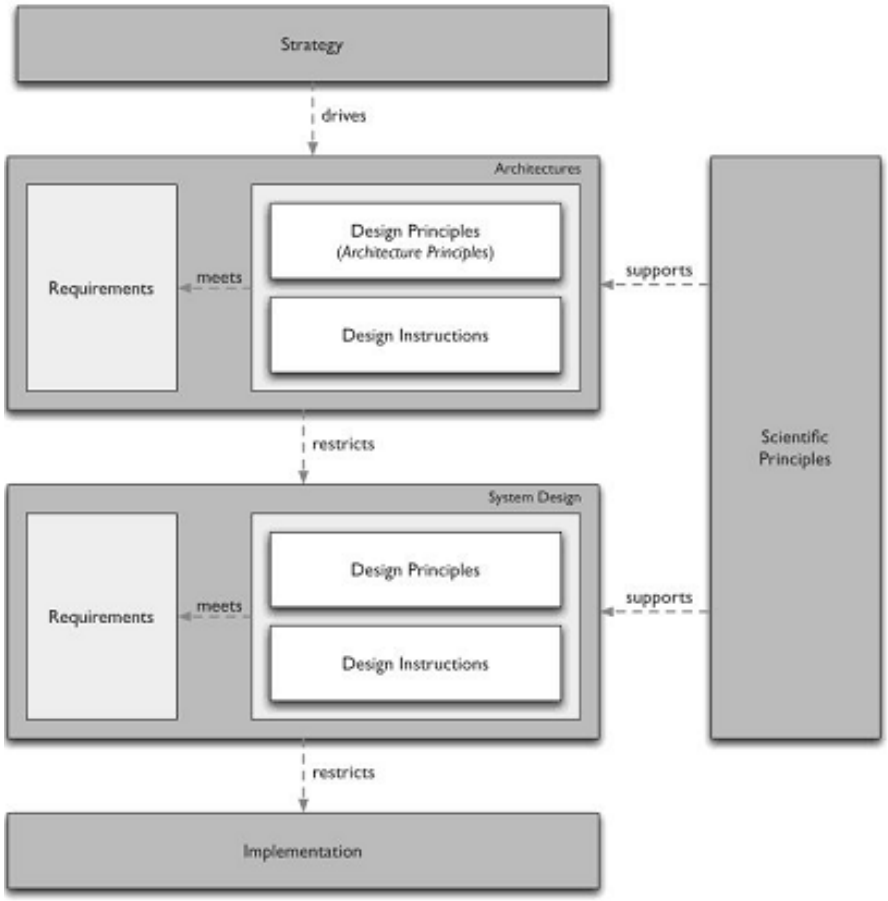

Figure 6: Architecture as a Bridge from Strategy to Design (Proper & Greefhorst, 2011)

The following is a set of definitions relating to *Architecture* and *Enterprise Architecture Principles* that explains the relationship between the two concepts (Haki & Legner, 2012):

Architecture is:

"the fundamental organisation of a system, embodied in its components, their

*relationships to each other and the environment, and the **principles** governing its design and evolution" (ANSI/IEEE STD – as cited by Haki & Legner, 2012, p. 182).*

Drawing on this definition, and explaining that EA principles are an under-researched concept, Haki and Legner (2012) reference what existing peer-reviewed literature there is, to define *"a common understanding"* of Enterprise Architecture principles as the following:

*"**EA principles**, which can be attributed to different architectural layers, are based on business and IT strategies and refer to the construction of an organisation. Each EA principle is described in a principle statement. It consists of a rationale that explains why the principle is helpful to attain the predetermined goal, as well as implications that describe how to implement the given principle. Finally, metrics should be identified for each principle to measure its fulfilment." (Haki & Legner, 2012, p. 187).*

Contributing '*drivers*' to the formulation of Enterprise Architecture Principles are listed as "*goals and objectives, **values**, issues, risks, potential rewards, and constraints*" (Greefhorst & Proper, 2011, p. 331).

Proper and Greefhorst's (2011) description of measureable Enterprise Architecture design principles based in part on the value systems of stakeholders, suggests that Business Design enabling values could be embedded in the project life cycle via such principles. As such, the second and third virtuous cycles of ambidexterity (see Figure 3), addressing customer orientation and personal drivers, could be mitigated via *mindful* formulation and use of EA principles.

Having determined via the literature that it is possible to relate Business Design to Enterprise Architecture Management through *a high level of maturity of EA adoption,* which enables *imbuing strategic policy and governance choices with values that enable Business Design*, and further *guiding the subsequent EA and systems design through embedding such Business Design values via architecture and design principles,* this emergent finding was regarded as justification for further research on the contextual organisational elements that are required to enable the paradoxical relationship implied by the definitions of Business Design and Enterprise Architecture

Management. The scope of Business Design in this context encompasses the description determined in this Literature Review:

> ***Business Design*** *implies the application of design thinking to business design problems. This encompasses a continuous search for new opportunities for innovation, the embracing of constraints as an opportunity for identifying innovative business opportunities, the balancing of reliable exploitation with risky exploration, and as such, reliability of tried and trusted design solutions with validity of innovative solutions whose value may not be possible to prove in advance; the accommodation of such an attitude to business design through the acknowledgement that trade-offs between schedule, budget and delivered functionality might be a consequence of such an approach; and finally, the acknowledgement, and therefore accommodation, of the views of multiple role players as a pre-requisite in determining optimum solution designs. All Business Design solutions are required to be based on what is technologically feasible and economically viable.*

2.5 Gaps in the Literature

As the literature review into the relationship between Business Design and Enterprise Architecture Management revealed, Enterprise Architecture (as pointed out by Lange and Mendling (2011)) and Enterprise Architecture Management (as indicated by Aier and Weiss (2012)) have been much discussed in literature. Design Thinking as a concept is described in many papers, where Jones (2010), and Kimbell (2009) are two such examples. Similarly, Business Design as a particular application of Design Thinking is well-covered by Roger Martin as well as other academics (Davis & Berdrow, 2010, Dunne & Martin, 2006, Martin, 2009, Martin, 2010). However, Business Design (upper-case letters intended) in the context of the definition adopted for this research, is not well represented in academic literature.

Once Business Design is re-conceptualised as being enabled through the accommodation of the values of *mindfulness* (Swanson & Ramiller, 2004), and a *commitment to virtuous cycles of ambidexterity* (Andriopoulos & Lewis, 2009), it is possible to trace the theoretical links between Business Design and Enterprise Architecture Management through a number of organisational processes, originating

in strategising (Casadesus-Masanell & Ricart, 2010), progressing through the creation of Enterprise Architecture principles (Proper & Greefhorst, 2011, Greefhorst & Proper, 2011), and finally in explaining the conception of Enterprise Architecture as the '*normative restriction of design freedom'* (Dietz, 2011, p. 4).

The researcher was unable to discover evidence of specific research into the relationship between Business Design (where Business Design is understood as "*the application of design thinking principles to business practice*" (Rotman School of Design Website, 2012)) and Enterprise Architecture Management.

2.6 Conclusion to the Literature Review

After reviewing the literature, the relationship between Business Design (as trademarked by the Rotman School of Management) and Enterprise Architecture Management resulted in a re-conceptualisation of Business Design as a phenomenon that is enabled through the accommodation of organisation-wide values of *mindfulness* and an accommodation of *virtuous cycles of ambidexterity*. Further, in applying this re-conceptualisation in the context of the sustainable competitive advantage claims of Davis and Berdrow (2010) and Dunne and Martin (2006), it was posited that *a balance of reliability and validity in innovation, and a balance of exploration and exploitation in strategic intention, embedded in holistic mindfulness, and fuelled by an organisational wide commitment to Design Thinking, have the potential to lead to sustainable competitive advantage*. This re-conceptualisation made it possible to describe Enterprise Architecture Management inscribed with such Business Design enabling values, where such inscription would be manifest in the construction of explicit EA principles.

In the following section of this dissertation, theories identified through the data analysis process as being applicable to this research subject, are summarised.

3. Emergent Theoretical Background

"Clearly, there are tensions between the way grounded theorists work with the literature while doing the research, and the way the literature is traditionally presented in journal articles. On the one hand, if the literature is discussed first, as is common with other methods, authors may feel that they are not truly representing the manner in which the literature was incorporated into the

> *study. On the other hand, if the literature is presented later, the reader may not have the necessary information to appropriately follow and evaluate the argument. Suddaby (2006) provides a reasonable solution to this dilemma: authors can note that, although they are presenting theoretical concepts in a traditional manner (i.e., up front in the study), the concepts did, in fact, emerge from the study."*
>
> (Urquhart & Fernandez, 2013)

Although this research does not follow the full grounded theory methodology, given this research's inductive and emergent nature, the above quote is regarded as relevant to substantiate the positioning of this chapter. In the interests of comprehensibility, this early chapter of the dissertation presents the theoretical literature that was found, during the data analysis process, to be relevant to the research findings.

In the data analysis phase of this research, 4 frameworks were found to contribute to an understanding of the contextual organisational elements necessary for an optimal relationship between Business Design and Enterprise Architecture Management. These frameworks, 3 originating in the realm of organisational strategising, and 1 originating in the realm of organisational culture, emphasise the importance of the creation of an environment within which emergent and adaptive changes to business processes, originating at any level of an organisation, can be accommodated.

Also during the data analysis process, a 5th theory, that of the concept of an organisation as a complex adaptive system (CAS), was found to contribute an influential management approach to the organisational accommodation of the paradoxical relationship between Business Design and Enterprise Architecture Management.

Most studies reference a single theory in pursuit of addressing a particular research question. Although it could be argued that an unusually large number of theories are drawn upon in this research document, this researcher believes that this is justified based on the research problem (see Section 4). The frameworks and theory described in the remainder of this section of the document are introduced in order to describe an holistic context within which the paradoxical relationship between

Business Design and Enterprise Architecture Management could best be managed. Each of the following frameworks addresses a particular dimension of this holistic context.

The remainder of this section is therefore made up as follows: an explanation of the concept of '*spaces of strategy'* (Lejeune & Sack, 2011), followed by an explanation of Segars and Grover's (1999) descriptions of various Strategic Information Systems Planning (SISP) schools of thought, Galliers' (2011) *'Holistic Framework for IS Strategising'* which aligns to the goals of Business Design as described by Martin (2009), Adler and Hecksher's (2011) description of various forms of community and their appropriateness in an organisation that values balanced ambidexterity in its exploitation and exploration strategies, and finally the concept of a CAS, and the management approach regarded as key to influencing organisational change in a CAS.

3.1 Spaces of Strategy (Lejeune & Sack, 2011)

Lejeune and Sack (2011) draw parallels with the approaches of renowned Architects of the built environment to identify 3 '*spaces of strategy'* which are explained as 'cognitive spaces' that represent the social environment within which those responsible for designing, position their designs: *Empty* Space, *Programming* Space and *Inhabited* Space. The authors explain that built environment Architects are in effect allowed to choose their space of representation by virtue of the power afforded them due to their professional credentials, the knowledge that they are perceived to be imbued with, and the recognised tools of their trade, all granted by society due to their professionally recognised skills. Such '*space of representation'* can be equated to a '*space of strategy'* for the organisational architect.

To an Architect of the built environment, *Empty* space would be literally that – an empty space upon which he could design whatever he pleased. In the context of organisational modelling, such an empty space for strategising is only possible when certain conditions exist. Lejeune and Sack (2011) describe these conditions in the same terms as those of the architect of the built environment who is able to design in a vacuum: the power of the organisational strategist (in the context of empty space, this would be afforded due to there being no one in a position to professionally challenge the architect), the knowledge of the organisational strategist (afforded for

similar reasons), and the recognised tools of the organisational planner's trade (likewise afforded for similar reasons).

> *"He is the only individual having access, defining the subject of his strategy and ensuring that its implementation is in line with his vision"*
>
> (Lejeune & Sack, 2011, p. 102)

To an Architect of the built environment, *Programming* space is far less openly accessible. A number of pre-existing rules and structures, to say nothing of monetary and policy constraints, limit his influence to freely design according to his own aesthetics. Instead, he is constrained to work within accepted guidelines with much focus on planning and project management. Similarly, an organisational strategist, working in the *programming* space of strategy, is no longer free to determine the strategy himself, instead he is bound to share strategic decision-making with planners and programme managers thus becoming a '*mechanical and objective manager, functioning according to the costs-benefits and opportunities-constraints and strengths-weaknesses'* (Lejeune & Sack, 2011, p. 104) of the organisation. The *Programming* space is all about the 'fit' of the design within the meta-organisation.

The final space of representation, the *Inhabited* space, in the built environment context, is a space where the social inhabitants determine the requirements of the future design, regardless of their perceived lack of professional expertise. In terms of the organisational strategist designing in the *inhabited* space of strategy, his responsibility is to provide an environment '*that allows the strategic autonomy of the greatest number of members and managers of the organisation'* (Lejeune & Sack, 2011, p. 107).

Lejeune and Sack's (2011) description of the *inhabited* space of strategy holds parallels with Martin's (2009) description of an organisation within which managers at all levels are able to contribute to changes in business practice through the application of design thinking principles (Business Design). The reaching of consensus between various groups in the organisation is regarded as imperative in the *inhabited* space, as is an emphasis on the importance of a shared culture and the application of initiative in the practising of business, rather than a dependency on designated authority. Lejeune and Sack (2011, p. 107)) explain that the aim of an

architect designing for the inhabited space of strategy is to define a '*context*' rather than to '*provide a model*' .

By applying these conceptual spaces of strategy to the themes that emerged from the research interviews, aligned stages in the progress of the case study organisation in its transformational journey were identified. These stages have been used to structure the description of the research results that are conveyed in a later section of this dissertation.

3.2 5 Schools of Thought reflecting management approach to SISP (Segars & Grover, 1999)

Segars and Grover (1999) note that it is possible to distinguish 5 different SISP (Strategic Information Systems Planning) profiles, the application of which has been recorded as having different levels of outcome effectiveness. The definition of each of these 5 different planning schools of thought assists with later analysis of the research data that was collected by this researcher.

The *Design School* is described by Segars and Grover (1999) as representing an IS planning process that emanates from a senior executive in the organisation who believes, based on prior experience, that a speedy turnaround from vision to implementation is imperative. Such an individual assesses the capabilities of the organisation against perceived opportunities in the competitive environment and then works at passing on his vision through various high level informal interactions rather than formal written documentation. Alignment of business and IT strategies is achieved through personal networks. The top-down approach is regarded as beneficial for business and IT alignment, but raises a concern due to the delay in appreciation of ground-level complexity that is generally only discovered much further along in the attempted implementation of strategies derived in such a manner.

Segars and Grover (1999) describe the *Planning School* of SISP as aligned with the production of detailed documents outlining the determined strategy, where the process preceding the production of such documents follows a strictly controlled analytic approach. A number of people are involved in the planning process in order to complete its rigorously defined requirements, and the senior staff member responsible for the strategy plays the role of final approver. The method for conveying the results of such planning is therefore highly formal and carries

overtones of strong governance, in contrast with the informal approach of the *Design School.* However, in a similar manner to that described for the *Design School*, this IS Planning School is considered as taking a top-down approach in the organisation. As may be expected, issues of alignment and lack of co-operation are experienced with this SISP school, and the reservation is expressed that there could be an impact on the degree of innovativeness that is possible in such an environment. "*In severe cases, the guiding strategic vision of the organisation can be lost in the myriad of blueprints, architectures, and models generated through hyperrational planning*" (Segars & Grover, 1999, p. 219).

The formulation of strategy by a small number of executives at a senior level in the organisation acting as '*high level analysts'*, is the description provided for the *Positioning School* approach. Although this is a similar approach to that described for the *Design school*, the difference is that the resultant strategy tends to be "*generic, tangible positions relative to a targeted strategic group within the industry*" (Segars & Grover, 1999, p. 219). Effectiveness of such an approach to strategising is largely experienced in the realm of Analysis, and it is on the dimension of co-operation that most failures of this planning school are encountered. The authors of this theory relating to SISP schools of thought caution that adopted frameworks used in this planning approach could become outdated, leading to a reduction in quality of the strategies determined in this manner.

In describing the SISP *Learning School*, Segars and Grover (1999) call on attributes of a learning organisation, attributes closely aligned to the requirements for effective Business Design. Strategic planning is described as an ongoing function where strategies emerge from a constant evaluation of the capabilities of the organisation when measured against changes and opportunities in the external environment. Such emergence of strategy could happen anywhere in the organisation, and from individuals or groups of people, but is approved at the most senior levels of the organisation. Segars and Grover (1999, p. 220) express the view that this school stems from the belief that "*continuous planning can better identify avenues of innovation and adaptability [that are] needed for effective competition*". This SISP school encompasses the ideas of '*a shared consensus for action'* (an idea closely aligned to the concept of '*shared organisational values'* highlighted elsewhere in this

literature review), and continuous monitoring of '*strategic actions and resultant feedback'* (Segars & Grover, 1999, p. 221), upon which subsequent actions are based. Broad organisational communication and **consensus** feature strongly in the SISP *Learning School*, and this school is reported as reflecting positively when measured against all dimensions of IS planning effectiveness. However there are areas of concern. An issue is that the diffused nature of strategic decision-making can lead to conflicting priorities, particularly when the *Learning School* approach is applied to very large initiatives. In such cases, the sanction of top-management becomes critical to maintain a shared focus throughout the organisation. Regardless, the *Learning School* approach is an expensive one and "*a key assumption...is that investment in strategic planning need not pay off immediately or in readily quantifiable financial metrics*" (Segars & Grover, 1999, 222).

The final SISP School identified by Segars and Grover (1999) is the *Political School*. As the name implies this SISP school operates on the basis of power and influence, where such power and influence arises by virtue of the senior position of the strategist, and his ability to muster support for his views. The informal nature and narrow focus of such IS strategic planning is liable to result in contestation from non-like-minded associations in the organisation, i.e. power struggles. The *Political School* is reported as reflecting poorly when measured against all dimensions of IS planning effectiveness. It similarly measures poorly when measured against the Business Design requirement of continuous attention to innovative redesign of business processes throughout all management levels of an organisation.

As can be gleaned from the above, the SISP *Learning School* aligns most closely to the values identified as being key to the management of the paradoxical relationship between Business Design and Enterprise Architecture Management.

3.3 An Holistic Framework for Strategising (Galliers, 2011)

Galliers (2011) shares Lejeune and Sack's (2011) views on strategising from the point of view of creating an empowering organisational environment. Galliers (2011), whose definition of IS is a socio-technical construct encompassing both IT and knowledge sharing, identifies the creation of a supportive environment for diffused decision-making as an important requirement for IS Strategy planning. (This concept of diffused decision-making is one of the cornerstone concepts of Business Design,

as is the belief that a balanced strategy encompassing both exploration and exploitation is essential for organisational success.) Galliers (2011) states that the version of IS planning represented by his revised framework (Galliers had published a previous strategic framework in 2007) is one that is continuous and iterative rather than a strategic planning process that is performed at specific intervals.

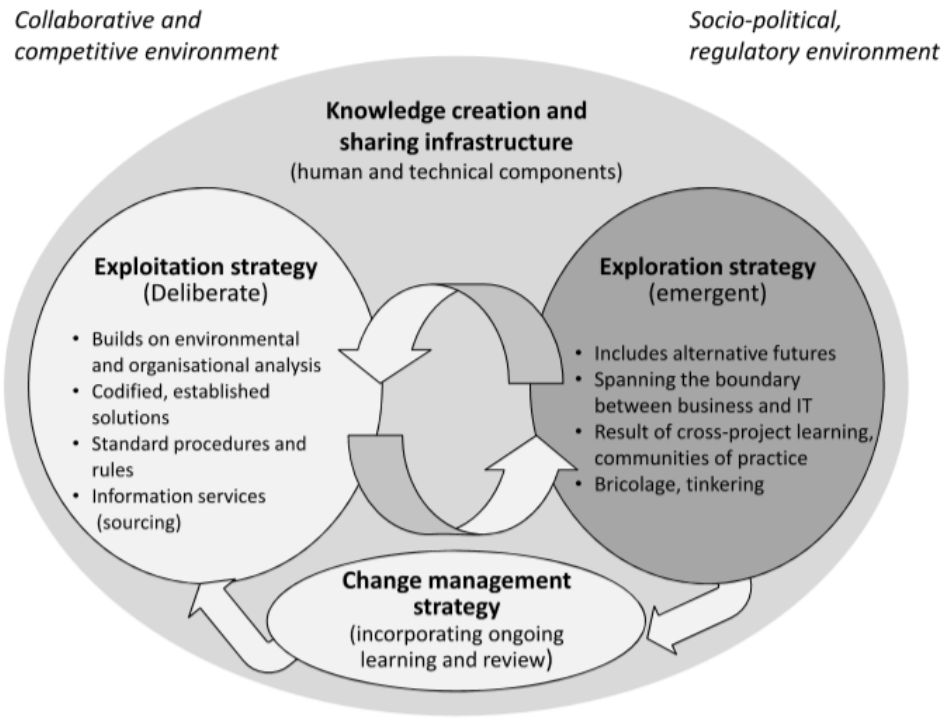

Figure 7: Galliers' Holistic Strategising Framework (Teubner, 2013)

Galliers' (2011) *'Holistic Framework for IS Strategising'* (see Figure 7) acknowledges the requirement of a balance between exploration and exploitation (identified as a key concept of Business Design), and the requirement for a defined change management and implementation strategy, all situated within a knowledge creating and sharing infrastructure.

The **external environment** indicated in Galliers' framework, which is the environment external to the organisation's strategising process, is concerned with the '*institutional context'* (Galliers, 2011, p. 332) within which the organisation finds itself. A key contribution of this dissertation is a theory identifying the human aspects of the organisational elements making up this external environment that would best complement Galliers' **internal constructs**.

The **internal constructs** of this framework provide a useful representation of the goals of the case study organisation's transformation programme. An aspect of Galliers' 2011 framework that provides a clear distinction between this framework and prior frameworks emanating from Galliers, is the idea that such an IS strategy is integrated into an organisational business strategy – and not a separate construct as indicated in prior frameworks.

The issue of **balance** (a key Business Design concept) between the internal constructs is described in terms of being between the '*formal and informal; the technological and the organisational; codified and tacit knowledge; the deliberate and the emergent, and implementation and innovation'* as well as between '*too much planning and too little*' with the latter cautioning that too much planning can lead to unacceptably lengthy implementation schedules (Galliers, 2011, p. 332).

The **Knowledge Creating and Sharing Infrastructure** is described as a '*socio-technical environment [that] is meant to enable and facilitate the strategising process by ensuring that the necessary human and technical capabilities are in place'* (Galliers, 2011, p. 334). Galliers explains that this concept includes issues of governance and human skills, management, technical and operational, as well as all aspects of necessary technology to support the organisation. The need for a reflexive relationship between exploration and exploitation facilitated by such a knowledge creating and sharing infrastructure is highlighted. Of particular bearing on the results of this research, is Galliers (2011, p. 334) assertion that "*trust plays an important role here too [...] with a team atmosphere needing to be in place. Additionally, the means by which alternative stakeholder concerns are taken into account [...] is an important consideration"*.

The **Exploration Strategy** refers to '*emergent*' strategising. In terms of the case study organisation's case, the exploration strategy is regarded as referring to the projects outside of the transformation programme.

The **Exploitation Strategy** on the other hand can be understood as '*deliberate*' (Galliers, 2011, p. 335), as opposed to '*emergent*' strategising, and is most appropriately applied to the projects in the transformation programme.

The **Change Management Strategy** is discussed in terms of '*providing the appropriate organisational architecture for change*' (Galliers, 2011, p. 337). Galliers points out the need to evaluate the success of implemented strategies as a lack of such evaluation could result in the perpetuation of opposing, yet rationally based behaviour on the part of managers in business and IT, which are in conflict with integrated organisational interests.

Galliers (2011) emphasises that this framework is a sense-making construct only, and it is in this sense that the framework is used in this dissertation – as an aid to assessing the perceived goals of the case study organisation's transformation programme.

The framework was found to provide an accessible graphic representation of the aspirational dimensions of the case study organisation's strategising process. The appropriateness of this model for application to matters of IS Strategy is supported by Teubner (2013). Teubner (2013), in criticising the academic points of emphasis in theoretical discussions of IS strategising when compared to the practical points of emphasis preferred by practitioner authors, lauds the pragmatic approach of Galliers' 2011 model.

3.4 Collaborative Community as the basis of Organisational Ambidexterity (Adler & Hecksher, 2011)

Adler and Hecksher (2011) cite a number of literary papers to establish that organisational ambidexterity, the paradoxical ability to balance both exploration and exploitation, a cornerstone of the establishment of Business Design within an organisation, requires a strong sense of ***community*** ("*a collectivity that shares norms and values*" (Adler & Hecksher, 2011, p. 4)), and ***trust*** ("*a willingness to make oneself vulnerable to other's behaviour*" (Adler & Hecksher, 2011, p. 4)), if success is to be achieved. Adler and Hecksher (2011) explore this idea further, resulting in the description of 4 unique types of community. Each of these 4 community types is considered in terms of its support, or otherwise, of organisational ambidexterity, resulting in the determination that the *Collaborative Community* type is the most supportive of such a combination of strategies.

The *Traditionalistic Community* type is described as one based on long-standing values and norms based on the history of the organisation, rather than successful

strategies of the past. Traditions of respect based on position within the hierarchy are upheld, and behaviour is largely based on what is expected given the reigning situation. As a result, innovation is inclined to be constrained: "*The scope of action and capacity for innovation are limited by the sacred quality accorded to established patterns*" (Adler & Hecksher, 2011, p. 10).

Adler and Hecksher (2011) describes the *Charismatic Community* as a community united through shared emotions, often headed up by '*charismatic authority'* (Adler & Hecksher, 2011, p. 10). This type of community does not require a rational basis for its existence, and is subject to the vision and whims of a strong leader who has earned the respect and trust of the community. There are a number of weaknesses associated with this type of community: its non-rational nature which means that effectiveness of strategy is inclined to be subsumed by emotion; exploitation is inclined to be neglected in favour of the exploration goals of the leader; the fragile nature of a community built upon the influence and personality of a particular leader results in such community becoming vulnerable should that individual no longer be present; and finally, the requirement for belief in the charismatic individual leads to the exclusion of members who might otherwise have contributed positively to an innovation.

'*Individual self-interest'* is described as being at the heart of the *Contractual Community* (Adler & Hecksher, 2011. P. 11). Unlike the previous two community types, the *Contractual Community* is regarded as being based on rationality – a rationality that arises from a legal requirement to operate in a certain manner in order to receive agreed rewards. Trust in such a community is based upon the belief that other members of the community will similarly behave and act based upon legally binding contracts. This community type is based upon a loss of unique individual behaviour, in pursuit of personal gain through reliable group interaction. "*When people lose this system trust [in reliable group interaction], they withdraw from exchange and investment relations, and the system falters*" (Adler & Hecksher, 2011, p. 12). In particular, this form of community is reported as inclined to falter in the face of the kind of collaboration required in order to successfully attain an ambidextrous strategy.

Collaborative Community, on the other hand, is based on '*value-rational action'* (Adler & Hecksher, 2011, p. 12). Such action is defined by Adler and Hecksher (2011, p. 12) as "*rationally oriented toward an end-value higher than self-interest*". (This description carries a strong alignment with the literature review findings of the necessity for shared organisational values as a basis for establishing Business Design within Enterprise Architecture Management.) Adler and Hecksher (2011) report that there is contention in literature as to whether such a community type is possible, when considered in the context of a large and complex organisation, as they believe there would be issues pertaining to following the will of senior management. This viewpoint has been disputed by other academics in the field however (as acknowledged by Adler & Hecksher, 2011), who have suggested that it is an entirely appropriate community type for organisations competing in the modern age of emergent strategising, where employees need to work outside of the narrow confines of their profession based on an '*ethic of contribution'* to the greater good (Adler & Hecksher, 2011 p. 13). Adler and Hecksher (2011) argue that the reconciliation of numerous competing priorities, by a diffuse community of people, in an organisation that is practising ambidexterity, makes such *Collaborative Community* imperative. Beyond such shared values, there is a requirement for an ambidextrous community to be grounded in shared norms of behaviour. Adler and Hecksher (2011) assert that such shared norms are developed at the level of the organisation at which participants interact, and refer to the required normative behaviour as '*interdependent process management'* (Adler & Hecksher, 2011, p. 15). This type of process management is described in terms of making deliberate, continuous, adjustments to relationships with colleagues in order to operate in a mutually effective manner, in an ambidextrous environment.

3.5 Conceptualising the organisation as a Complex Adaptive System (CAS)

CAS is defined as a particular type of systemic organisation that arises in situations of complexity:

> *"CAS focus[ses] on the interplay between a system and its environment and the co-evolution of both the system and the environment"*
> *(Choi, Dooley & Rungtusanatham, 2001, p. 352)*

As the *a priori* literature review revealed, the accommodation of Business Design within Enterprise Architecture Management could be described as requiring the '*co-evolution of both the system and the environment',* described above by Choi et al. (2001) as a key focus of a CAS.

There are particular attributes that characterise a CAS: CAS systems are characterised as being balanced on the edge of chaos – a condition that ensures continuity – as opposed to an open system that acquires new inputs from its environment (thus ensuring its continuity), or a closed system that inevitably faces entropy and consequent death due to its lack of a renewable energy source. This careful balance in a CAS is associated with non-linear system behaviour that is described as *'emergence'* (Schneider & Somers, 2006).

Lee (2011, p. 520) points out that there is no global inter-disciplinary definition for '*emergence*' used in the context of complex systems. The word, when used in the context of systems thinking, has been variously described as a system *'property'* that applies to the whole, a system '*process*' that results in an unplanned-for structure, and even a '*detection*' process that identifies a new aspect of the system. Lee (2011) prefers that the phenomenon be described in terms of its mechanics. According to Lee (2011), '*Emergence*' occurs when elements at the bottom of a system hierarchy interact in an unforeseen manner giving rise to system behaviour that is discernible in the system as a whole. As pointed out by Schneider and Somers (2006), '*Emergence*' is activity in the system that is not caused by energy received from the system's environment, but is rather the result of interactions between system elements.

The *'adaptation'* implied in the term 'Complex Adaptive System', alludes to the reaction of various parts of the CAS to the previously-described *emergence,* and refers to the manner in which these various parts respond to organisational change with further changes, that in turn lead to the requirement of further adaptation elsewhere in the organisation. This '*adaptation'* is a property that ensures the continuity of the system and arises from the ability of sub-systems to self-organise.

Business Design is a philosophy that supports design thinking at all levels of management for continuous competitive advantage, and therefore implicitly

encourages change throughout the organisation – both top-down and bottom-up - on a continuous basis. Such a multiplicity of possibilities for change suggests consequences in terms of possible unexpected repercussions in diverse parts of the organisation (the complex system), requiring the tolerance for *emergence*, and resultant *adaptation* – indicative of the organisation operating as a CAS. It is this researcher's contention that an organisation that has identified the requirement to transform to an organisation that enables Business Design within Enterprise Architecture Management can therefore be viewed as a Complex Adaptive System (CAS).

Schneider and Somers (2006, p. 357) identify "*common schemata shared by system sub-units*" as the key to influencing organisational change in a CAS. They further relate this element, re-defined as '*self-similarity*', to the idea of a shared '*organisational identity'*. This proposition is supported by the following quote of Wheatley, as cited by Schneider and Somers (2006, p. 357):

"*Self-organisation succeeds when the system supports the independent activity of its members by giving them, quite literally, a strong frame of reference".*

Schneider and Somers (2006, p. 357) explain that a shared organisational identity over time becomes imbued with historical "*identities, motivations and values*". By influencing organisational identity, leadership in an organisation can have a marked influence on an organisation's adaptability. An important contingency though, is to ensure that this organisational identity does not become cast in concrete, as "*[a]n effective identity encourages continuity as well as change (Brown & Eisenhardt, 1997) and* ***creates the potential for balance between exploitation and exploration*** *(March, 1991)*" (Schneider and Somers, 2006, p. 358).

The *emergent* and *adaptive* aspects of organisational behaviour in a CAS require situated responses. To ensure organisational **coherence**, situated leadership is best influenced through a shared organisational identity. In the context of the interrelationship between Business Design and EA, an organisational identity supportive of optimal synergy between these protagonists could be reflected in an organisation-wide **commitment** to Business Design values, and well as a pervasive approach to EA Management.

As alluded to earlier in this section, this researcher found that the theories that are described in the preceding sub-sections were useful tools to assist with the analysis of the research data. These theories are referred to in the '*Data Analysis and Findings'* section of this dissertation.

4. Research Question and Strategy

Lee (2010), in presenting an argument as to the relevance to practice of scientific theories in the realm of the IS discipline, identifies that the foundations of IS research might need reinvention. In its current form, viewed as a science of the natural, production of '*applied theory'* as a result of IS research is proving questionable as to its usefulness and timeliness. However, should the IS discipline be re-conceptualised in terms of a science of the artificial, resulting theories, most appropriately being theories of design and action, could conceivably hold more promise for the advancement of IS Research and related theories (Lee, 2010).

('*The Sciences of the Artificial'* is the title of a book written by Herbert Simon in 1967 in which Simon draws a distinction between natural science and science of the artificial, where natural science is used in the context of '*what is'* and the science of the artificial is concerned with '*what might be'* (Kimbell, 2009, p. 3). Natural science seeks to understand laws of nature and therefore is inclined to review pre-existing phenomena with a view to providing an explanation after the fact, whereas the science of the artificial is inclined towards a future orientation, designing what does not yet exist (Lee, 2010).)

Lee (2010) believes that through the repositioning described above, IS research will be conducted with a view to assisting IS managers and practitioners to predict and plan effective strategies to address organisational phenomena. Lee (2010) similarly suggests that IS research be conducted with a far stronger emphasis on '*Systems'* to more clearly differentiate the IS discipline from the disciplines of IT and Computer Science.

As an IS practitioner who is constantly grappling with imponderable organisational design issues, this researcher concurs with Lee's (2010) stated point of view. The research objective and design described in this Research Design document is

therefore an attempt to comply with Lee's (2010) suggested approach to IS research – that is, the objective was targeted at contributing to practice-based knowledge of an organisational phenomenon with an emphasis on the systemic aspects underpinning this phenomenon.

The following sub-sections of this document convey the Research Question, followed by an explanation of the selected Research Strategy and a discussion of the possible limitations associated with such selection.

4.1 Research Question

A paradox that emerged from the literature review was the proposition that Business Design values should be inscribed in Enterprise Architecture principles in order to establish an optimal relationship between these two organisational elements. The paradoxical nature of this proposition for optimum partnership is inherent in the definition provided by Dietz (2011, p. 4) of Enterprise Architecture as the '*normative restriction of design freedom'*.

Accordingly, the following research question was adopted:

What contextual organisational elements are required to manage the paradoxical relationship implied by the definitions of Business Design and Enterprise Architecture Management?

Consequently, and based on Flyvbjerg's (2006, p. 237) compelling argument in respect of the "*irreducible quality of good case narratives"*, the researcher undertook to conduct *a case study* aimed at *exploration and description* of the perceived paradoxical relationship between Business Design within Enterprise Architecture Management.

This was regarded as an appropriate research question for IS due to the multi-disciplinary nature of, and socio-technical aspects inherent in, the relationship between Business Design and Enterprise Architecture Management. As pointed out by Espinosa *et al*. (2011), effective architecting requires shared cognition between business, IT and architecture resources, thus spanning business and technology, and even within these disciplines, spanning widely diverse functional roles.

The intention of this research was to explore the described phenomenon via qualitative, inductive, single-organisation case study research. The organisation selected for the conducting of the case study was selected due to its perceived paradigmatic potential (this choice is explained in more detail elsewhere in this document).

4.2 Case Study as selected Research Strategy

The literature review summarised earlier in this document revealed that the subject of this research was closely associated with the interrelationships between various organisational actors, both social and technological. The most appropriate way for exploring such complex interrelationships and associated personal responses is through listening to, and assessing, the unique stories of the involved actors (Flyvbjerg, 2006). An interpretive case study approach, which interrogates individual participants and allows for the emergence of issues that have not been recorded in existing literature, was therefore deemed appropriate for this research.

A case study is regarded as an appropriate research strategy for conducting research where the subject is a complex issue, requiring in depth understanding of organisational processes (Flyvbjerg, 2006). Yin, Bennett, Glatter and Levacic (1994) similarly support the case study approach for research of a phenomenon where the border lines between the context and resulting phenomenon are not clear. As explained by Harmsen, Proper and Kok (as cited by Aier & Weiss, 2012, P. 2), Enterprise Architecture Management is challenging to implement (Harmsen, Proper and Kok, as cited by Aier & Weiss, 2012, P. 2), it is fraught with '*wicked problems'* (that is, problems that are "*poorly formulated, confusing, and permeated with conflicting values of many decision makers or other stakeholders*" - Pries-Heje & Baskerville, as cited by Aier *et al.*, 2011, p. 645), and the literature review in this document revealed that the border lines of the phenomenon under discussion and its Enterprise Architecture Management context are difficult to define.

Flyvbjerg (2006) has critically assessed 5 perceived misunderstandings associated with case study research (see Table 1).

In refuting the first three '*misunderstandings*', Flyvbjerg (2006) supports the contribution that contextual knowledge can make to learning through explaining the

importance of knowledge of multiple contexts to an individual's level of expertise in the field of study. Flyvbjerg (2006) points out that generalisable knowledge is possible from case study research in the degree to which it can be used to discount previously accepted general hypotheses. However, it is Flyvbjerg's (2006) reasons for refuting the *fourth* and *fifth misunderstandings* in particular that are regarded as informing the validity and purpose of this research, and thereby the means for judging whether the research results ultimately meet the research objective.

Fourth Misunderstanding: The argument that the researcher is likely to influence the production of findings such that they reflect her previously held opinions

Flyvbjerg (2006) is of the opinion that such lack of rigour is a possibility regardless of the research strategy. In his opinion, case study research is rather less likely to exhibit such a bias due to the intimate nature of the researcher's relationship to the case and the resultant personal influence of the research participants, especially in a situation where the validity of such findings is supported through gaining the deliberate acceptance of the participants themselves. In Flyvbjerg's words: "*the researcher...often ends up by casting off preconceived notions and theories*" (2006, p. 236). (Validity checks that will be performed in the context of this particular research effort are described elsewhere in this document.)

Fifth Misunderstanding: The argument relating to the difficulties inherent in documenting case studies, as well as the difficulties in deriving theories and propositions from individual case studies

Flyvbjerg (2006) does not believe that the production of generalisable theories and propositions is essential in order for single case studies to make a contribution to knowledge. Rather, Flyvbjerg (2006, p. 237) quotes Nietzsche in referring to the '*rich ambiguity'* of existence and the necessity to ensure that '*doing science'* does not detract from this. In order to do sufficient justice to this rich ambiguity, it is necessary to "*focus on the minutiae*" of the phenomenon. Flyvbjerg (2006) further quotes Peattie to explain that summarisation of a case study is not a good idea: "*It is simply that the very value of the case study, the contextual and interpenetrating nature of*

forces, is lost when one tries to sum up in large and mutually exclusive concepts" (Peattie, as cited by Flyvbjerg, 2006, p. 238).

Misunderstanding associated with Case Study Research	Flyvbjerg's Mitigation of the Misunderstanding
Such context dependent knowledge as is produced from a case study is not as valuable as generalisable knowledge	Flyvbjerg (2006) explains that in order to become an expert in any field, it is necessary to have practical knowledge that extends beyond pure theory. This practical knowledge can be provided through 'concrete, context-dependent' case studies (p. 224). This is not to say that theory will not emerge from such research, but rather than generalisable theory is not absolutely essential in order to achieve a contribution to learning.
One cannot generalise on the basis of a single case study	Once again Flyvbjerg (2006) does not agree, pointing out the potential for generalisability of a theory should the case study results disprove a previously generally accepted proposition. This can be put another way as 'the generalisability of a finding which indicates that that there is an exception to a rule previously thought to be inviolate'.
Case studies are "most useful for generating hypotheses...whereas hypothesis testing and theory building are best carried out by other methods" (Flyvbjerg, 2006, p. 229)	Flyvbjerg's (2006) debunking of the myth prior to this one provides a basis for debunking this one as well. He does, however, point out the importance of appropriate 'sampling' in order to create optimum conditions for theory building.
Case studies are inclined to produce the results that the researcher is looking for, rather than results unsullied by preconceived notions	Flyvbjerg (2006) cites a number of papers to point out that the potential for a lack of rigor exists in any research strategy, not only case study research. Case study research might in fact be more resilient to such a phenomenon due to its closeness to the study in question and the influence brought to bear by study participants. Flyvbjerg (2006) goes so far as to state that "the researcher...often ends up by casting off preconceived notions and theories" (p. 236).
Case studies are not easy to summarise, neither is it simple to derive theories and propositions from individual case studies	As Flyvbjerg (2006) points out, the very basis of this misunderstanding is questionable. It is not essential for theories and propositions to emerge from individual case studies in order to derive benefit from such research. There is benefit in providing rich narratives that can be read and interpreted across a wide scope of reader, and from which diverse readers can draw learning applicable to their own area of interest. In Flyvbjerg's (2006) own words: "Students can safely be let loose in this kind of reality, which provides a useful training ground with insights into real-life practices that academic teaching often does not provide" (p. 239).

Table 1: Compiled from Flyvbjerg's 5 Misunderstandings about Case Study Research (Flyvbjerg, 2006)

Flyvbjerg (2006, p. 238) therefore supports the presentation of case study findings in the form of a narrative which can be interpreted by each individual reader in the

context of their own particular area of interest – "*The case story is itself the result*". In Flyvbjerg's (2006, p. 239) view, *"[s]tudents can safely be let loose in this kind of reality, which provides a useful training ground with insights into real-life practices that academic teaching often does not provide*".

In spite of Flyvbjerg's concerns in respect of the summarisation of case study research, the findings of this research have been used to propose a sensitising framework that is believed to be sufficiently abstracted as to be generalisable to other organisational transformation initiatives. This perceived generalisability of the proposed framework is based on the description of Klein and Myers (1999) of the **Principle of Abstraction and Generalisability** applicable to interpretive field research.

4.3 Possible Limitations associated with the selected Research Strategy

Few research efforts are without limitations. For this particular research initiative, the first apparent limitation that needs to be addressed is the use of a single organisation case study rather than a multi organisation case study. The research question is general and it could be argued that the research should have been conducted over a number of different organisations in order to establish generalisable norms.

The decision to conduct a single organisation case study rather than a multi-organisation case study can be supported, firstly by referring to the complexity of the subject matter that required in depth understanding of a particular instance of Business Design/Enterprise Architecture Management, and secondly by relating this requirement of an in depth understanding to the timeframe within which this research study was required to be completed. Lee and Baskerville (2003) provide an analysis of the applicability of a claim of generalisability to the outcomes of a single organisation case study. The sensitising framework arising from this research is believed to be generalisable in compliance with the findings of Lee and Baskerville's (2003) analysis.

A related perceived limitation of qualitative case study research is that of the effect of the inevitable bias of the researcher's point of view (Flyvbjerg, 2006). Due to the subjective nature of the coding of qualitative texts, it is acknowledged that no two researchers will arrive at the same results (Thomas, 2006). The researcher will

inevitably be required to apply her own unique judgement as to what is relevant to the findings, and what is not (Thomas, 2006). Nevertheless, while acknowledging the validity of such concerns, this researcher conforms to Flyvbjerg's (2006) views on the positive aspects of case study research as elucidated in his paper "*Five Misunderstandings about Case Study Research*". Flyvbjerg's (2006) views, as well as the designed approach to mitigate such concerns, and the related application of appropriate validity checks, have been described elsewhere in this document.

5 Research Methodology

5.1 Research Paradigm

This researcher concurs with Lee's (2010) stated belief that IS research should be conducted with a view to assisting IS managers and practitioners to predict and plan effective strategies to address organisational phenomena. Lee (2010) similarly suggests that IS research be conducted with a far stronger emphasis on '*Systems'* to more clearly differentiate the IS discipline from the disciplines of IT and Computer Science. It is this applied and systemic view of the potential contribution of IS research to which this researcher subscribes.

Due to the multi-disciplinary nature of IS, there are a number of different philosophical approaches that can be adopted when undertaking IS Research. Therefore, It is important for an IS researcher to clearly state her ontological and epistemological point of view and to ensure that the related research methodology aligns with such expressed viewpoint. In this way, a coherent design can be proposed (Kanellis & Papadopoulos, 2009).

From an epistemological point of view, it is necessary for the researcher to convey her beliefs in respect of how true knowledge is attained (Kanellis & Papadopoulos, 2009). A *positivistic* approach is one whereby the researcher takes a scientific approach to research in the belief that knowledge can only truly be gained from hard measurable results. Kanellis and Papadopoulos (2009) cite Dube and Pare in explaining that a positivistic approach looks for causal effects emanating from human behaviour, with a view to establishing generalisable theory. The knowledge emanating from *interpretivist* research, on the other hand, is not given much

credence by positivist scientists. Such an interpretivist view is the belief that knowledge emerges through an individual's lived experience. In the context of IS research, the interpretivist approach holds that the perceptions of the user of the IS constitute knowledge (Kanellis and Papadoulos, 2009). Kanellis and Papadoulos point out the social nature of such knowledge in contrast to the hard scientific knowledge of the positivist. Such an interpretivist approach results in more descriptive research and is more likely to result in conceptual frameworks and taxonomies (Orlikowski as cited by Kanellis & Papadopoulos, 2009). Although many instances of a positivist approach to research have been used to the advancement of the IS discipline (Orlikowski & Baroudi, as cited by Kanellis & Papadoulos, 2009), given the research subject, and this researcher's belief that the role of a researcher cannot help but be value-laden (a contrary belief to that of positivists (Kanellis & Papadoulos, 2009)), the interpretivist epistemology is regarded as best reflective of this researcher's viewpoint. An interpretivist approach implies that the researcher believes that individual participants perceive their existence and their relationship to their environment in a unique manner and it is this unique interpretation of their reality that contributes to knowledge. As pointed out by Boland in describing interpretivist's beliefs (as cited by Orlikowski & Baroudi, 1991, p. 14): "*individuals act towards things on the basis of the meanings that things have for them, that meanings arise out of social interaction, and that meanings are developed and modified through an interpretive process*".

This researcher conforms to the subjectivist view that is closely aligned to an interpretive epistemology – the view that no objective reality, external to human lived experience, exists and therefore *"any knowledge claims* [are] *based to a large extent on personal experience, values and feelings*" (Kanellis & Papadoulos, 2009, p. 14). In the context of the IS discipline, the socio-technical nature of the area of concern is such that a subjectivist approach that recognises the socially constructed nature of IS interactions, is regarded by this researcher as best representing her ontological philosophy. Qualitative research, in contrast to the positivistic quantitative approach which pursues hard, measurable outcomes, is appropriate to such an ontological and epistemological viewpoint:

"*Qualitative research uses a naturalistic approach that seeks to understand phenomena in context-specific settings, such as* [a] *real world setting in which the researcher does not attempt to manipulate the phenomenon of interest and only* [tries] *to unveil the ultimate truth"* (Golafashani as cited by Bashir, Afzal & Azeem, 2008, p. 38).

In order to further elucidate on the proposed research approach, the remainder of this sub-section is made up as follows: Firstly, the appropriateness of the selection of case study research as strategy is explained, followed by a justification for selecting semi-structured interviews and Thematic Analysis for data collection and analysis of results. Finally, certain research design limitations are acknowledged.

5.2 Research Method

The research described in this proposal was undertaken qualitatively. Hoepfl (1997) provides a synthesised list of 8 points raised in various authors' papers when describing qualitative research. The content of these 8 points supports the combination of contextual case study research of a unique phenomenon, together with the idea that the tool for data collection is embodied in the researcher herself, together with an interpretive philosophy, as appropriate to a qualitative research approach.

The remainder of section 5.2 describes the research process that was undertaken and covers the following:

- Case Study Selection
- Research Timeframe
- Collecting and Recording of Data
- Analysis of Data
- Reliability and Validity
- Research Ethics and Confidentiality

5.2.1 Case Study Selection

The single case study research was conducted at a leading insurance company in South Africa – henceforth referred to by the pseudonym 'SASure'. Flyvbjerg (2006) explains that in order to ensure the greatest possibility for generalisable findings from case study research, the researcher must carefully choose the case study based on

its validity rather than a random selection. Careful attention was therefore given to the options that are required to be considered when choosing a case, which are suggested as being an *extreme* case, a *critical* case, or a *paradigmatic* case.

An *extreme* case is described as a case that will likely gain attention due to 'dramatic' findings in the context of the research objective. A *critical* case, however, is that of a clearly demarcated 'type', and where the case is a model example of such type. A case selected on the basis of criticality is likely to enable generalisable findings to the extent that the case type is easily recognisable in other cases. Flyvbjerg (2006, p. 231) suggests that "*when looking for critical cases, it is a good idea to look for either 'most likely' or 'least likely' cases, that is, cases likely to either clearly confirm or irrefutably falsify propositions and hypotheses*". The third type of case is the *paradigmatic* case – "*cases that highlight more general characteristics of the societies in question*" (Flyvbjerg, 2006, p. 232). Such paradigmatic cases are further described in terms of the possibility of such a case serving as a *'reference point'* or '*focus for the founding of schools of thought'*. These last indicators of the attributes of a paradigmatic case are indicative of the difficulty of identifying such a case as, by implication, the case type does not yet exist. Flyvbjerg (2006) suggests intuition as a possible means by which such cases are initially identified, but concurs with the opinion that requires such intuition to be able to be substantiated to the researcher's peers in the field of study, Whether such a case will stand up to validity tests once the research is concluded is not something that can be determined at the outset.

Although this researcher was employed for some time as a contractor at the organisation selected as the case for the proposed research, and one could therefore assume that the case selection was a convenient one, the case was rather selected due to the researcher's belief in its *paradigmatic* nature. This intuitive selection is further explained through the remains of this sub-section.

The organisation concerned had recently explicitly adopted an Enterprise Architecture Management approach to Business Design, and was busy instituting various structures and processes to support this strategic change. However, Enterprise Architects refused to use the selected EA modelling tool as they considered it to be a constraint on the creative process. In spite of this, the organisation had been successful in introducing a significant innovation since the

introduction of Enterprise Architecture Management, being the rewriting of its claims processing system using SOA together with a Business Process Management suite (Lavin & Seymour, 2012). This researcher believed that the situation just described, in its illustration of successful Business Design in the midst of business-as-usual, could be regarded as supportive of the selection of this case as an appropriate paradigmatic choice.

Due to the emphasis on sound architectural practices at this organisation, as well as its stated intention of providing holistic architectural support for all facets of the organisation, it was believed to be an eminently suitable site at which to conduct this research. Further support for this choice lay in the relationship between the researcher and the organisation. This researcher had previously conducted case study research at this site which resulted in published research (Lavin & Seymour, 2012). During this previous research effort, the participants were found to be thoughtful and reflective, willing to contribute, and perceived as having a deep interest in the research process and the validity of related findings.

Yin *et al.* (1994) warn against getting confused as to the primary unit of analysis of a case study. For the purposes of this research initiative, the primary unit of research was a sub-group of this organisation, that is, those actors who were implicated in one way or another in Business Design and Enterprise Architecture Management.

5.2.2 Research Timeframe

The timeframe of the research described in this proposal was initially planned to be a classic cross-sectional study. However, once the initial round of interviews had been analysed, it was felt that, in order to fully understand the Enterprise Architecture Management/Business Design relationship, it would be necessary to conduct a second round of interviews to clarify certain points and to observe whether there had been any maturation in related processes at the case organisation over time. According to Ployhart and Vandenberg (2010), this research could therefore be regarded as a variant of cross-sectional research due to a second set of interviews having been conducted 6 months after the initial set of interviews.

5.2.3 Collecting and Recording of Data

Twenty semi-structured interviews, each lasting approximately one hour, were conducted at the case organisation during the period of this research. Eighteen participants, responsible in one way or another for business design and Enterprise Architecture Management, were interviewed. The data collection and recording process that was used is explained in more detail through the remainder of this sub-section.

Role
CIO
Head of Applied Architecture COE
Solution Architect (x 2)
Head of Business Architecture COE
Senior Business Architect (X 2)
Head of Business Analysis COE
Senior Business Analyst
Head of an IT COE
Head of IT Technology
Senior IT Technology Architect
Head of PMO
Senior IT Project Manager
Head of Business Design COE
Business Change Manager
External Consultant for a Business Division
Team Leader of an IT Development Team

Table 2: List of Participant Roles

The Participants

As previously mentioned, the primary data for this research was collected through the conduct of semi-structured interviews with an initial set of participants. Initially the identification of such participants was through a pre-compiled list of roles (compiled with reference to the list of roles for '*architecting*' suggested by Espinosa *et al.(*2011))

but this list grew as the knowledge of the researcher grew. The roles at the case organisation that were interviewed for this research are listed in Table 2.

The Interviews

Participants were invited to agree to an interview via an interview consent form which had the list of proposed open-ended questions attached. The form explained the voluntary nature of such an interview and emphasised that the participant could retract such consent at any time during the research process. On receipt of acceptance to be interviewed, interviews were booked at a mutually agreeable time and location.

On commencement of each interview, the researcher collected the signed consent form and requested permission to make a digital recording of the interview. In no case, was such request turned down. The first aim of the researcher was to establish a shared understanding with the participant of the key elements of the research, i.e. the terms 'Business Design' and 'Enterprise Architecture Management'. Espinosa *et al.* (2011) explain the communication difficulties that arise between various stakeholders in the context of '*Architecting*' due to the diverse nature of the functional areas of expertise of such stakeholders. The reading of their research had highlighted to the researcher the importance of the establishment of shared cognition when discussing EA issues in the midst of such diversity. Only once such shared cognition had been reached did the interview progress to the prepared research questions.

Although the intention had been to put the prepared open-ended questions to each interviewee based on the relevance of their role to the research topic, the researcher soon found that the prepared questions, which were based on theory, did not gel with participants' worldviews. As a fallback strategy, the researcher reverted to asking participants for their opinions of the case organisation's approach to, and success with, the enablement of Business Design within Enterprise Architecture Management.

Interviews were transcribed as soon as possible, and by the researcher herself. This researcher subscribes to Bailey's (2008, p. 130) view that transcription is the start of

the interpretive process, and therefore the researcher made a point of noting inflection and emphasis in the verbal responses of participants.

The Questions

As mentioned previously, a list of initial open-ended questions is provided in **Appendix A** of this document**.** The questions were derived from the literature review conducted in advance of this research design document. As it was realised that the prepared questions did not find resonance with participants worldviews, and as certain themes were identified through constant and iterative analysis of the collected data, this initial list of questions was eventually discarded and questions became more focussed on identified phenomena of interest, together with the participants' stories of their experiences of the interrelationship between Business Design and Enterprise Architecture Management at the case organisation.

Secondary Data Sources

Although it had been hoped that secondary data sources such as documentation relating to architecture principles in use at the case study organisation would be forthcoming, the researcher was not able to acquire such documentation.

5.2.4 Analysis of the Data

Cecez-Kecmanovic (2011, p. 1) cites numerous academic papers in support of her statement that a key underlying reason for criticism of IS research is *"the narrow research focus and a rigid application of research methods that constrain investigative possibilities, impede the relevance of IS research, and also stifle creativity and the production of relevant knowledge"*.

Thematic Analysis of the data was identified as the appropriate data analysis tool. This concurs with Braun and Clarke's (2006) view that the named choice of Thematic Analysis as research method is more appropriate for research that does not fully equate to the application of the Grounded Theory Methodology (GTM) (p. 81). Alhojailan (2012, p. 39) provides an alternative line of support for the appropriateness of Thematic Analysis for this research: *"[T]he process of thematic analysis [is] appropriate for analysing the data when the research's aim is to extract information to determine the relationship between variables".*

In light of the above, this researcher elected to follow the Thematic Analysis approach to data analysis for this research initiative.

Thematic Analysis

> *"[T]hematic Analysis involves the searching across a data set – be that a number of interviews or focus groups, or a range of texts – to find repeated patterns of meaning.")*
>
> ***(Braun & Clarke, 2006, p. 6)***

In Cecez-Kecmanovic's (2011) IS Research methodological landscape (see Figure 8), '*Thematic Analysis and Coding'* is positioned as an appropriate tool for the interpretivist Case Study Research method. Braun and Clarke (2006) take the subject of Thematic Analysis further in arguing that Thematic Analysis deserves the status of a method, rather than a tool, due to its perceived flexibility and usefulness across a broad spectrum of epistemologies. In a more recent paper, Clarke and Braun (2013, p. 120) note that Thematic Analysis has "*recently started to achieve the 'brand recognition' held by methodologies such as grounded theory and interpretative phenomenological analysis*".

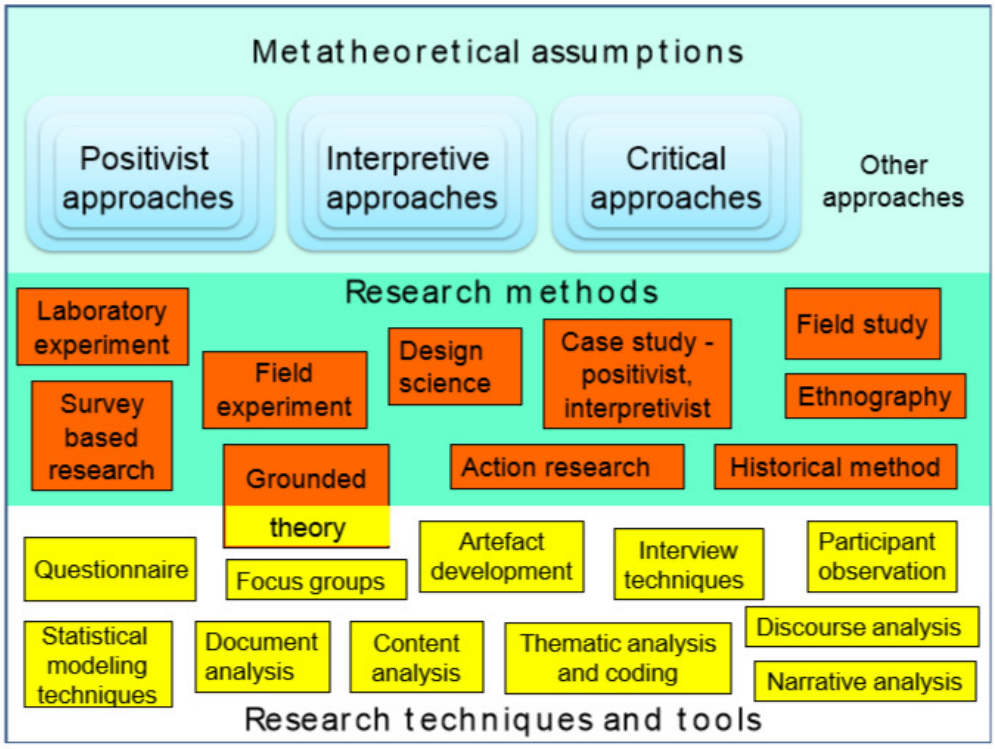

Figure 8: The IS research methodological landscape (Cecez-Kecmanovic, 2011)

Braun and Clarke (2006) believe that Thematic Analysis as a method suffers from poor support due to the perception that it lacks a clear and concise definition, yet they point out that the provision of such a definition runs the risk of compromising one of its strongest attributes – its flexibility. In attempting to provide an adequate definition of Thematic Analysis, where such definition does not compromise the method's lauded attribute of flexibility, Braun and Clarke (2006) have provided a comprehensive guide which includes steps that researchers can follow when selecting to use this method (see Figure 9), together with pros and cons that need to be considered when making such a choice.

Phase	Description of the process
1. Familiarizing yourself with your data:	Transcribing data (if necessary), reading and re-reading the data, noting down initial ideas.
2. Generating initial codes:	Coding interesting features of the data in a systematic fashion across the entire data set, collating data relevant to each code.
3. Searching for themes:	Collating codes into potential themes, gathering all data relevant to each potential theme.
4. Reviewing themes:	Checking if the themes work in relation to the coded extracts (Level 1) and the entire data set (Level 2), generating a thematic 'map' of the analysis.
5. Defining and naming themes:	Ongoing analysis to refine the specifics of each theme, and the overall story the analysis tells, generating clear definitions and names for each theme.
6. Producing the report:	The final opportunity for analysis. Selection of vivid, compelling extract examples, final analysis of selected extracts, relating back of the analysis to the research question and literature, producing a scholarly report of the analysis.

Figure 9: Phases of Thematic Analysis (Braun & Clarke, 2006)

An important point made by Braun and Clarke is that, contrary to many research accounts, themes do not '*emerge*' from research data, but rather, they are specifically selected by the analyst who applies the equivalent of design-thinking to the body of research data as a whole, in order to come up with a unique set of themes. (In the context of this research initiative, this is an interesting point. Martin's (2009) Knowledge Funnel (see Figure 2) provides a graphic explanation of this phenomenon which helps to illustrate why each researcher would find their own points of interest in a common set of research data.)

> *"A theme captures something important about the data in relation to the research question, and represents some level of patterned response or meaning within the data set."*
>
> **(Braun & Clarke, 2006, p. 82)**

An important aspect of Thematic Analysis is the **selection of themes** in the data. Themes are identified based on their perceived appositeness with respect to the

research question, in the personal view of the researcher concerned. Consistency in such selection is key. Braun and Clarke (2006) point out that, although a number of researchers do attempt to identify some type of measurement in order to underpin the choice of particular themes, the subject of whether this is necessary or not is still up for discussion. In terms of the research that is described in this document, the type of analysis required was in order to identify *"an accurate reflection of the content of the entire data set*" (Braun & Clarke, 2006, p. 83). This type of analysis is regarded as appropriate when the research is conducted without knowledge of the participants' own views on the subject matter.

In terms of Braun and Clarke's (2006) explanation of various **types of thematic coding**, the initial coding approach that this researcher chose to use was an inductive one. With this approach, the resultant themes might well not bear any relationship to the original research question, as the analysis is data-driven. As observed by Braun and Clarke (2006) as a common occurrence, this approach did result in the research question evolving over the period of this research.

Braun and Clarke (2006, p. 84) advise that choices also have to be made clear as to the 'level' at which the analysis is undertaken: an "*explicit level"*, or an "*interpretative level"*. This researcher undertook thematic analysis at the interpretative level in an attempt to look beyond obvious meanings in order to expose theoretical implications. Regarded as essential by Braun and Clarke (2006) is that the researcher provides an account of what was done during data analysis, and why. Such an account in respect of this research initiative is provided in **Appendix B.**

A particular emphasis articulated by Braun and Clarke (2006) is the necessity for the resultant research story to transcend mere description and to proceed to argue the research question. The researcher in this research initiative has endeavoured to do this.

The research data was analysed using the Computer Aided Qualitative Data Analysis Software (CAQDAS) *HyperResearch* tool.

HyperResearch is a user-friendly tool that can be purchased and downloaded from the internet. Within a *study* (equivalent to a research project), interviews and other texts can be stored as individual *cases* and participants can be stored as *sources*.

Cases are linked to their related *sources*. *Codes* can be assigned to text snippets in *cases,* and all assigned codes are stored in a *code book*. There is a facility to arrange assigned *codes* hierarchically into *higher level codes*. Various reports and inquiries are possible across most combinations of *sources, codes* and *texts* within a *case*. The researcher had prior experience of using this tool and had found that it contributed to providing an accurate audit trail of the progressive application and analysis of identified categories and themes.

Throughout this process, the researcher constantly reflected on the codes that emerged, and iteratively re-visited previously coded texts with a view to ever more accurate higher-level categorisations. Analysis and grouping of the data continued in an iterative manner until the point where the researcher believed that an informed narrative and related theory could be produced. An audit trail of the grouping process was retained so that an accurate explanation of the hermeneutic coding process could be recounted at the end of the coding journey (see **Appendix B**).

On completion of the iterative data analysis process, a sensitising framework was compiled that the researcher believes can assist organisations with the identification of the contextual organisational elements that are required to enable the paradoxical relationship implied by the definitions of Business Design and Enterprise Architecture Management.

5.2.5 Reliability and Validity

Reliability and validity of the research findings are particularly important in qualitative research (Hoepfl, 1997). Bashir *et al.* (2008, p. 35) remind us that *"[v]alidity in qualitative research means the extent to which the data is plausible, credible and trustworthy; and thus can be defended when challenged*". Bashir *et al.* (2008, p. 35) continue by pointing out that the responsibility for ensuring the applicability of such attributes to the research findings lie with the researcher, and will apply to the extent that the research has been designed and conducted in a matter that will produce '*the truth'*. This point of view is shared by Hoepfl (1997) who points out that internal validity will be possible to the degree that the researcher has gathered appropriate data and has applied pertinent analysis techniques to such data.

Bashir *et al.* (2008, p. 39) explain that there is some dissension in academia as to the necessity for '*reliability*' in qualitative studies, and that a recognised point of view is that "*there can be no validity without reliability*" (Lincoln & Guba as cited by Bashier *et al.*, 2008, p. 40) thus making '*reliability'* defunct. One term that is favoured over *'reliability and validity'* in the context of qualitative research is '*credibility*'. Regardless of the choice of term, the aim must be the highest "*degree of congruence between the explanations of the phenomena and the realities of the world*" (McMillan & Schumacher as cited by Bashir *et al.*, 2008, p. 41). Various alternative methods for achieving this congruence extracted from literature range from "*continuous refinement of the sampling and data collection techniques*", to extended time of the researcher spent in the field, to "*multiple data collection strategies to corroborate the findings*" including the important concept of "*triangulation*" (Bashir *et al.*, 2008, p. 41). Creswell (as cited by Bashir *et al.*, 2008) explains '*triangulation'* as the sourcing of the same information from multiple sources and at different times in order to ensure accurate interpretation of such information. '*Triangulation*' addresses the necessity for applying suspicion to data collected during interpretive research as pointed out by Klein and Myers (1999). "*Reflexivity*", as the conscious and continuous self-regulation of the researcher, is suggested as a further technique to control bias and enhance credibility (Creswell as cited by Bashir *et al.*, 2008, p. 42).

This researcher endeavoured to apply all these suggested approaches. Although time was limited for completing this research effort, the researcher had been a contractor at the organisation concerned for many years, though not directly employed in the functions of either Business Design or Enterprise Architecture Management. This does mean that the researcher had an understanding of the context of the research study which assisted in mitigating the time constraints. This understanding similarly assisted with the richness of the data that was gathered from participants. It is believed that this provenance has enhanced the contribution of this research *through the provision of a rich narrative description* of a project to enable Business Design within Enterprise Architecture Management, in the context of a specific paradigmatic South African case.

As far as external validity of findings is concerned, as explained elsewhere in this document and in terms of Flyvbjerg's (2006) 5th misunderstanding in respect of case

study research, it is not always possible to produce generalisable theory from a case study. Nevertheless, the researcher has complied with the recommendations of Lee and Baskerville (2003), and Klein and Myers (1999), that generalisable theory is one of the outcomes of case study research. As is explained elsewhere in this document, although the case study organisation cannot be regarded as a successful example of this interrelationship, the issues that prevented such success have been analysed in order to compile a sensitising framework for the enablement of Business Design within Enterprise Architecture Management.

It is possible to conduct an audit of the research findings as the researcher has kept an audit trail of artefacts at various stages through the coding process thus making it possible to view all outputs, from the documentation of transcribed interviews through to the final list of hierarchical codes that are applied to the interview transcriptions, and ultimately to the case description, and the framework that was produced.

5.2.6 Research Ethics & Confidentiality

Written permission to conduct this research at the selected case organisation was obtained from the CIO of SASure. Written permission was obtained from each participant before any interview was conducted.

As explained earlier in this document, all participants that were interviewed were fully informed of the research context and were assured of their right to withdraw from the research process at any time. The case study organisation and all participants are treated as anonymous actors in the outputs of this research process and are referred to via pseudonyms. In the case of research participants, such pseudonyms relate to the generic role of the participant in the organisation, e.g. *Business Analyst 1*. Care has been taken to ensure that at least three possible staff members could be the participant for any generic pseudonym.

In the following section of this document, the results of the analysis of the research data are described, and a framework that emerged from this data analysis is presented.

6. Data Analysis and Findings

6.1 Introduction to Data Analysis and Findings

"...you have an interesting company to do that research...you've got the good old conservative insurance world...I think [the huge amount of change of SASure's transformation programme] is one of the challenges, because when I got here there was no change at all...[a B2B project] had been done and that was about it, and everything else was VERY conservative looking, and then suddenly it's like, everyone is going, 'Oh no, we're falling behind!', and they're going completely bonkers in the other direction, so now there's almost too much change, where you've got 3 massive multi-million rand projects all happening at the same time...[an E-business Project], ah man, [a Call Centre Project] and [a redevelopment of the core Policy Administration System], and they all fundamentally affect business operations, so it's quite, it's quite scary actually."

Senior IT Architect 2

The strategic goal of the above transformation programme was portrayed by a Senior IT Manager as a future organisation that was enabled for Business Design. The vision was conveyed in a story that started as follows:

"...it would be great if we were given a tool ... where we tell the business for instance, um we are going to redefine the processes in the Contact Centre, Commercial Lines and Sales. So [Operational Manager], just go into the tool and say, just quickly model your current business, okay? Model your business. She models the business AS IS. Yes, she's doing it! Not the Business Change, Enterprise business architect, that goes to sit, asks her questions, and then models for her. She does it herself!"

Senior IT Manager 2

In order to achieve this strategic goal, a fully modelled Enterprise Architecture Model was identified as a fundamental requirement:

"... I'm saying, if you've built a proper EA and you understand all the different components within it, it's like when you look at the manufacturing environment and you look at the um the parts list of this, this car [holds up a small model

motor car], its very well defined it tells you exactly what the specification is of this thing, okay, where it is in the store, if you don't have it in the store, how long it will take to get it into the store. [He points at a head light on the model] At the time you wanted to put this [headlight] on in the manufacturing process, you glue it on there and off you go. So if you cannot define your business, okay, your ENTIRE business as being the car, and every one of the components, if you leave out the lights, and the lights are important, and you haven't defined it in your architecture, and you want to change that - there's an innovation that says I actually want to put a new kind of LED lighting on this car - and you haven't even defined it as a component in your business architecture, how the hell are you going to do the innovation, okay, to go and change it in the EA context."

Senior IT Manager 2

By providing a fully comprehensive Enterprise Architecture Model, this participant believed that agile and flexible Business Design could be enabled in the organisation:

"So why you want to do this, why do you want to do EA, because [it can] give you the ability to define your business in a standardised way so that I can start to see it as components, and I can go into plug and play mode so I can do those innovations."

Senior IT Manager 2

The participant further described the various technologies that needed to be implemented to enable such agile and flexible Business Design in a business that was still largely dependent on a mainframe for its core operational systems:

"... you need to put the foundation enablers in place, to allow you to get this new agile world to talk to this old monolithic blob of data held in some database for certain green screens to take you through a way to capture the information and to get it into the database, you know ...The enablers [are] the ESB, it is the BPM, it is SPSS for instance to get the analytics to understand the data, so you have to bring technology in, in a way to separate, okay, um,

the old monolithic thing in a layer, okay, and give you the ability to plug in all the new innovative things."

Senior IT Manager 2

Once the technological enablers were in place, the participant explained how the visionary story of enabled Business Design would be complete:

"So [the Operational Manager] models [a component of the whole] and says 'Okay, how do you want to change this process. Okay, change it there. Now create the thinking blah, blah, blah.' Change it there, YOU [Operational Manager], no business requirements changes nothing, YOU do it. As soon as you have done that new model, you send it to IT, okay, and we will do the engineering for it. Then it will be the ideal world."

Senior IT Manager 2

This interview with a senior IT Manager transformed the perception of the researcher as to the concept of Business Design within the case organisation. It was realised that Business Design, in the context of this research, was about **creating an enabling environment** through appropriate **structures, processes and norms**, a supportive infrastructure within which both exploration and exploitation could be tackled simultaneously. Regarded as essential to this enabling environment, was a shared **cognition** of the enterprise architecture of the organisation in order for it to be possible to apply the Business Design attribute of mindfulness.

SASure's approach to creating this enabling infrastructure was to first complete a pilot project which resulted in the rewriting of the Claims Administration system using BPM (Business Process Management) and SOA (Service Oriented Architecture) principles (see Lavin & Seymour, 2012). This first phase resulted in the creation of a technical capability to support SOA and analytics, as well as expertise in Enterprise Architecture Management and Business Process Management. At the time that this research was conducted, this initial project had been completed and the next phase of the transformation was in progress. This phase encompassed extending the scope of BPM and SOA in the organisation to include the 3 remaining core operational processes of the business (the *E-business, Call Centre* and *Policy Administration systems* described in the quote in the beginning of this section).

The following sub-section describes this transformation process from the managerial and planning point of view, as perceived by the research participants, all of whom played key roles in the organisational transformation.

6.2 Identification of a Lens through which to interpret the Research Results

After initial interviews it became clear that, contrary to the expectation that had emerged from the preceding theoretical literature review, architecture and design principles did not play a role in SASure's attempts to accommodate Business Design in Enterprise Architecture Management. In fact, not only was the researcher unable to surface any indication of reflection on deeper issues related to having a business design competency together with an Enterprise Architecture Management function at SASure, but there also did not appear to be any alignment of the results of strategic planning to SASure's architecture principles:

> *"[Potential strategic sources of] principles of the business - are we going to expand overseas?, do we want to modernise the mainframe?, do we want to sell more products?, are we going to stay intermediated?, or do we want to change into a direct model? ... - none of those I can see pulling through into [SASure's] Architecture Principles. I don't see a list of 10 Architecture Principles that says these are our driving principles and this is how they link back to our strategy and our vision."*
>
> **Senior IT Architect 1**

At SASure, architecture principles as a concept appeared to be a problematic issue. The compilation of Architecture Principles was described as '*very difficult'* and largely a waste of time due to the number of anomalies that arose in reality.

> *"...if you look at a well articulated architecture principle you say that just makes so much sense and it's so helpful, but to come up with the principle in the first place - you know from green fields or blank page - wow, what a, it's an exercise in self-mutilation, its horrendous!"*
>
> **Senior Business Architect 1**

The concept of architecture principles was understood in different ways even amongst the various different types of architects themselves, and the impression

created was that, although architecture principles had been produced when EA was initially introduced to SASure, these principles had been left to gather dust on a shelf somewhere. The principles were spoken about in a hypothetical manner with an emphasis on saving money:

> *"So the principles can't be many - there's about 7 of them - but you must be able to implement them, and it must save you MONEY. It must EITHER save you money in decision-making, OR it must save you money in development, OR it must save you money in turnaround. If you can't do that, it's a useless principle."*
>
> **Senior Enterprise Architect 2**

None of the enterprise architects interviewed was able to provide a list of enterprise principles that had been adopted by SASure. The most feasible explanation that was provided was that the 'real' principles were actually held in the sub-conscious of the members of the various architecture governance bodies, and that if attention was to be paid to the written version, there would be a constant need to provide for departures from such principles.

This lack of tangible enterprise architecture principles led to a change in direction in questioning in the interview approach, with an emphasis on individual's opinions of the '*normative restriction'* (Dietz, 2011) view of Enterprise Architecture, versus the innovative nature of Business Design. The concept of Business Design was difficult to grasp by most participants, with a particular understanding being adopted based on the participant's world view. The lack of a shared cognition of Business Design did not however prevent common themes from emerging from the interviews. The themes that emerged were **challenges** facing an organisation in transition, **conflict** (with a preponderance of issues concerning **lack of collaboration** and **lack of a shared understanding of Enterprise Architecture Management issues**) as well as indications of **learning** that had taken place (see **Appendix B** for a list of themes and related codes). A theme that made itself manifest from a number of interviews was one of **a paradoxical state of affairs** – a constrained agility and flexibility in allowed actions, in a transformation programme that had as its goal enabled organisational flexibility and agility.

Taken as a whole, these results illustrated a *lack of coherence* in SASure's transformation process, and the researcher therefore decided to conduct a second round of interviews. This second round of interviews included some participants that had been interviewed 6 months earlier, as well as some new participants. What emerged from this second round of interviews was an evolutionary journey that was still in progress, to move the organisation from its initial context to the intended goal of the strategy – an organisation enabled for a flexible and agile response to business change, that is, an organisation enabled for Business Design.

The subsequent set of interviews was conducted with a similar result in terms of a variety of themes, although what did become apparent was that even though SASure was 4 years into its transformation journey, it was still making structural and procedural adjustments in order to come up with an optimum configuration to support the organisation in its transition.

In searching through literature in a bid to shed light on these results, the researcher found that 4 theories in particular could be used as sense-making tools to position the themes that had been previously identified: the concept of '*spaces of strategy'* (Lejeune & Sack, 2011), (this concept assisted in identifying various stages in SASure's transformational progression), Segars and Grover's (1999) descriptions of the various Strategic Information Systems Planning (SISP) schools of thought, Galliers' (2011) *'Holistic Framework for IS Strategising'* which aligns to the goals of Business Design as described by Martin (2009), and finally Adler and Hecksher's (2011) description of various forms of community and their appropriateness in an organisation that values balanced ambidexterity in its exploitation and exploration strategies. These 4 theories are explained in the '*Emergent Theoretical Background'* chapter of this document.

Taken together, these theories emphasise the importance of the creation of an environment within which emergent and adaptive changes to business processes, originating at any level of an organisation, can be accommodated. As such, they are appropriate for application to a discussion of Business Design concepts (with the emphasis of Business Design concepts being on the application of design thinking principles to business practice) in the context of an organisation in transition – where

the transition is to an environment that enables flexible and agile operational innovations.

The remainder of this section is made up as follows: a description of the research findings explained in terms of the 4 above-mentioned conceptual theories, an in-depth discussion of these findings, and finally a description of a conceptual model that was compiled based on the research results. This model reflects the contextual elements that were highlighted by the research case as being required in order to transition to an organisation enabled for continuous competitive advantage – through being enabled for Business Design within Enterprise Architecture Management.

6.3 3 Phases in SASure's Journey to Transformation, interpreted as an Evolutionary Process through Lejeune and Sacks (2011) 'Spaces of Strategy'

This sub-section provides a description of 3 phases in SASure's transformation journey – two phases of which have already been experienced, and the third being a necessary subsequent phase which this researcher believes is imminent

The research took place at a time when SASure was 4 years into its transformation journey. As indicated earlier, the ultimate goal of SASure's transformation journey could be described as a radical change, from a hierarchical organisation with a dominant IT department using mainframe technology to a flexible and agile organisation, using leading edge technology in its aim to meet the needs of its increasingly challenging and competitive environment.

At the time of this research, SASure recognised that readily available technology was not at the point where the vision described in the quote at the beginning of this section could be achieved, however the intention was to create a platform using SOA and BPM, that would facilitate an agile IT response to changes in the business. Success in this agile response would require all the Business Design values of mindfulness and organisational ambidexterity that were explored in the literature review elsewhere in this document. The aspects of the transformation journey explored during the interviews and reported on in this research, were those associated with the alignment of business and IT in the context of the transformation to incorporate Business Design within Enterprise Architecture Management at SASure.

The 3 phases of SASure's journey to transformation reported on in this dissertation are each distinguished by their perceived '*space of strategy*' where this term is used in the sense provided by Lejeune and Sack (2011). The '*space of strategy*' analogy was found to be an appropriate lens through which to describe the 3 identified phases. The SISP school of thought in each space of strategy provides insight into SASure's evolution in SISP thinking, and Galliers (2011) framework acts as a sense-making tool through which to interpret the effectiveness or otherwise of each particular phase in meeting its interim goal towards enabling Business Design within Enterprise Architecture Management. The measurement of effectiveness in meeting each phase's goal is discussed using the dimensions identified by Grover and Segars (2005): *business and IT alignment, analysis and cooperation, improvement in IS planning capabilities*, and *contribution*. Adler and Hecksher's (2011) description of the appropriateness of various community types in an organisation that is pursuing ambidexterity in terms of exploration and exploitation, assists in identifying the goal of the expected third phase of SASure's transformation.

6.3.1 Phase 1 – Strategising in the Open Space of Strategy

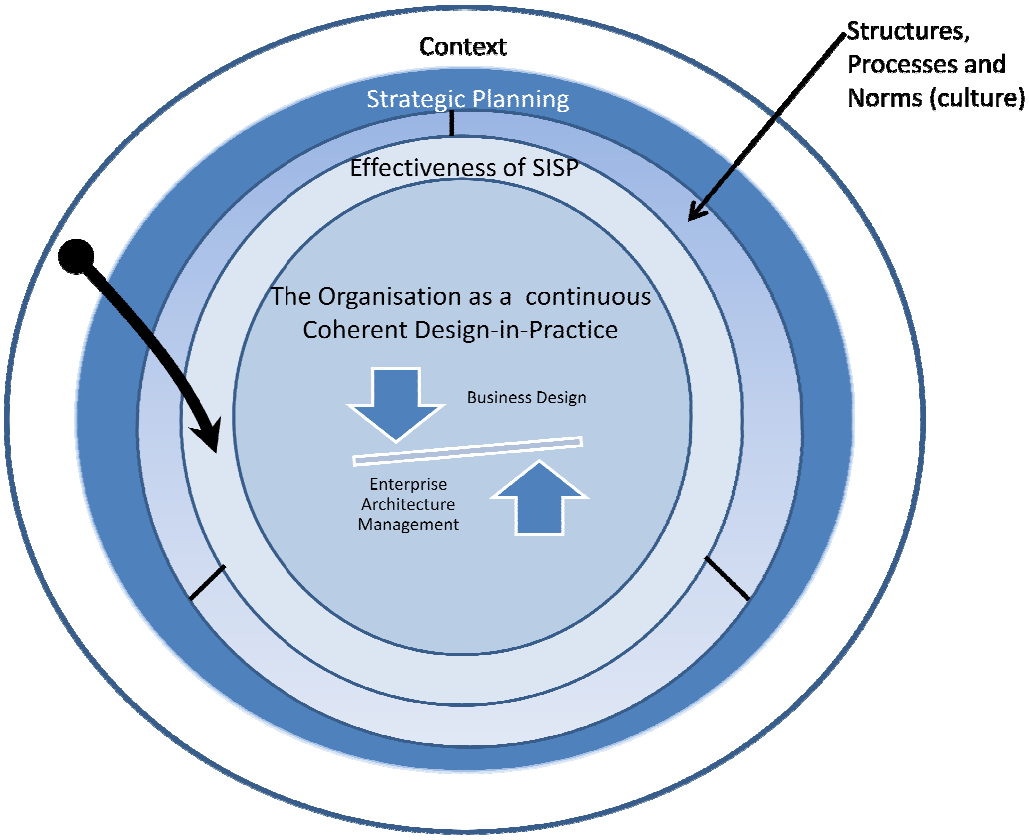

Figure 10: SASure Architecting in Lejeune and Sack's (2011) Open Space of Strategy

In this sub-section, SASure's strategising in the *Open Space of Strategy* (Lejeune & Sack, 2011) is described, firstly in terms of the goal of this phase of SASure's transformation journey, and then in terms of the *context*, *strategic planning*, *choices* in terms of **structures, processes and norms**, and finally, *effectiveness* of SASure's strategic planning approach (see Figure 10).

6.3.1.1 Goal of the first transformation phase in Lejeune and Sack's (2011) *Open Space of Strategy*

The first transformation phase was performed under the auspices of a redevelopment of the Claims Administration system. The meta-transformation goal was a Claims Administration system enabled for agility and flexibility through being redeveloped based on SOA and BPM principles. Accordingly, a number of structural changes were planned to both business and IT departments with the introduction of a Business Change capability in the Business that incorporated a Business Design Centre of Excellence (COE), and the introduction of an Enterprise Architecture capability in the IT Department. Although the goal of this phase included acquiring and implementing significant new technologies and the integration of such new technologies with the legacy mainframe systems, the emphasis for this research was on the degree to which Business Design was enabled within the new Enterprise Architecture Management function. (A separate research paper has been produced on the adoption of SOA and BPM at SASure – see Lavin and Seymour, 2012.)

Successful planning of this first phase of transformation, from the point of view of the enablement of Business Design within Enterprise Architecture Management, would be manifested by a Business Design COE that was enabled to assist business with future thinking:

> *"...the key thing was that in order for business design to be effective, you need your, ALL your resources from an analyst to an architect, to sort of a consultant strategist, to be in synch with business, to work with the business closely, uh and to kind of take their thinking their issues their strategy and to translate that into, call it models or deliverables, be it even power-point presentations, to move them in the right direction, so the architecture facets of that."*
>
> **Senior Enterprise Architect 5**

6.3.1.2 Context

In the first quote at the beginning of this section, a senior IT Solution Architect explains the conservative nature of SASure at the beginning of its transformation journey. Another senior Project Manager described a strong conservative value system (indicating a *Traditionalistic Community* (Adler & Hecksher, 2011)), and an IT COE manager noted how IT decisions were made in a hierarchical manner, with no input being sought from those staff members who had the practical knowledge to contribute pragmatically to such discussions. For some time projects had been largely exploitative, other than a B2B project that was attributed to the innovative architectural thinking of the CIO. Project planning and prioritisation were done largely through personal and positional influence, thus indicating the SISP *Political School* (Segars & Grover, 1999).

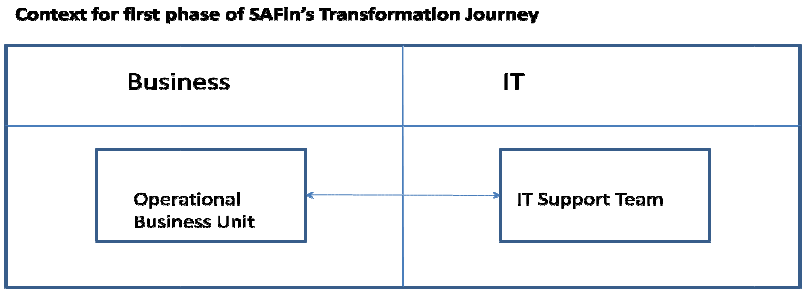

Figure 11: Lines of Communication between Business and IT prior to SASure's Transformation Journey

When a Senior IT Architect was questioned as to the researcher's perceived gulf between business and IT at SASure, the following explanation was provided:

> *"...I think that's a political and structural legacy, um, basically, maybe from years gone by where IT was very much seen as separate from business, business got requirements together and IT hammered them out, and 6 months later you get some solution in front of you, so there is still very much that distinction between the two that keeps them separate and I've not very often seen collaborative effort where you get a lot of role players in, where you get um, different thinkers, different opinions actually sit together and decide on a strategy, a way of going forward, a way of, I guess, changing the way business, the business process side of things."*
>
> **Senior IT Architect 1**

Accordingly, the first movement to accommodate Business Design within Enterprise Architecture Management at SASure emerged from a context of a largely mainframe IT department that was composed of application teams that dealt directly with their related business departments. Systems Analysts in the IT teams communicated directly with Business Analysts in the business (see Figure 11). The business regarded IT as a service about which they did not need to know very much. The research data suggested that IS Strategising and Business Strategising were conducted separately from each other:

> *"At the moment what possibly is happening is, you go to a business unit that says: 'You know what, we've got a problem. We've got too many dropped calls in our contact centre'. So we start at a very low level saying: 'OK, I need to solve this problem, so to solve that problem I'm going to buy a couple of new software bits, um, add that to our portfolio, and that will solve your problem of dropped calls'. But we don't link it to the high level objective that says - in 5 years time we actually want to, I don't know, create more products that we can sell..."*
>
> **Senior IT Architect 1**

6.3.1.3 Choices in terms of structures, processes and norms

> *"...designing an organisation requires **managerial choice** at every stage of development, choice associated with **the constructs** chosen by management to represent the organisation, choice with respect to **the organisational domains** which management is interested in pro-actively designing, choice of **alignment among organisational domains** and choice of **operationalisation**"*
>
> *(Lejeune & Sack, 2011, p. 109)*

At the start of the transformation programme, the requirement for multiple organisational design changes was identified in order to create a structure that could support the envisaged future. A host of additional centres of excellence (COEs) were created. For the purposes of this research, the creation of a *Project Management Office*, and an *Applied Architecture COE* reporting in to the CIO, and a *Business Change Department* reporting in to the COO, are relevant. The creation of the Business Change Department included the creation of a ***Business Design COE***

under its auspices. The *Business Design COE* included Business Architects and non-IT Business Analysts and was tasked with assisting business operations with design thinking:

> *"...business design is initially future thinking, and then in the design, of building capabilities, renewing capabilities, upgrading capabilities, [the business] must align to that future thinking."*
>
> **Senior Enterprise Architect 5**

When viewed through the '*spaces of strategy'* lens of Lejeune and Sack (2011), these choices could be interpreted as strategic moves in the *Open Space* of strategy. The open space of strategy is characterised by a single entrepreneurial strategist who has *carte blanche* with creating his envisioned design. The design is created in an environment which is not currently occupied. In the context of SASure, this first movement could be interpreted as a stepping-stone for the CIO to attain his charismatic vision for a future Business Design-enabled organisation. Whereas in the IT department, the CIO could be regarded as the legitimate lone strategist, it could be questioned as to whether this approach is appropriate in the case of the creation of the *Business Design COE*. Whereas structures for Enterprise Architects responsible for applications, technology and information were created in the IT department, reporting to the CIO, the Business Design COE was created in the Business Operations Department, reporting to the COO:

> ***Interviewer:***
> *So who is responsible then for that design - I mean who sits down and plans that design?*
> ***Interviewee:***
> *'IT 'drove a lot of the design, the organisational design...*
> ***Interviewer:***
> *What - the CIO?*
> ***Interviewee:***
> *Ja [Yes], aggressively they drove it.*
>
> **Senior IT Project Manager 1**

"...a lot of work was done prior to [implementing the Business Design COE] and ... [the CIO] scoped that very well, and [the CIO] has a very architectural mindset to his thinking"

Senior Enterprise Architect 5

However, although the research results indicated that agreement for the creation of the Business Design COE had been reached at an EXCO level, it did not appear that the role of this COE had permeated the organisation beyond this high level:

"...how was Business Change created? And Business Design? It was created at an Exco level - so when [the Head of Business Design] got here, [he] had to go and explain to all the senior managers what Business Design is, and I'm talking very senior level business managers..."

Senior Enterprise Architect 5

"... your leader at the top has to be, has to understand, BELIEVE in this competency, so our COO whom [Business Design COE] reports into is operationally focussed, not architecturally focussed, right? He has to be operational or he won't be strategic as a COO, but he's more on the ground, bring greater efficiencies, get the job done, you know, and the moment you bring in things around strategy and architecture, etc., he kind of will listen to you, but I don't think he gives you enough time and ear, simply because, you know, it's just all about operations. Our CIO has that view of an architectural mindset, but he's only in the IT space, so really Business Design did not have a proper home, did not have the EXCO support and buy in..."

Senior Enterprise Architect 5

6.3.1.4 Effectiveness of SASure's Choices in the *Open Space of Strategy*

The choices made in the Open Space of Strategy appear to have emerged from planning using the SISP *Positioning School,* as the goal was to create a new IS capability. Segars and Grover (1999) describe the *Positioning School* as being placed somewhere in-between the informal and charismatic approach of the SISP *Design School* and the formal procedurally-oriented approach of the SISP *Planning School*.

The effectiveness of the strategy choices made in the establishment of a *Business Design COE* to introduce business operations to Design Thinking, together with an *Application Architecture COE,* the members of whom were tasked with solution design, are described based on Segars and Grover's (2005) Five Dimensions of SISP effectiveness: *Alignment, Analysis, Co-operation, Improvement in Capabilities* and *Contribution*:

Alignment

> *"...it's about the business being ready [emphasis] to embrace the concept of business design from an architectural mindset in the way they work. So this is my personal view, I think [SASure] was not ready when they created Business Design as a competency and it was kind of just thrown there..."*
>
> **Senior Enterprise Architect 5**

This dimension of SISP effectiveness is concerned with the alignment of IS Strategy with Business Strategy (Grover & Segars, 2005). In terms of such alignment, effectiveness was not achieved on a number of levels:

- **Lack of alignment of Business Design Outputs between Business Design Processes and IT Processes:**

  > *"So my view is, business design, you kind of get high-level business design thinking, but not detailed business design thinking. The two didn't come together, it doesn't matter if [IT Business Analysts do] the detailed business but [the two levels of design] must gel, and they must meet and they must align. So it wasn't aligning very well."*
  >
  > **Senior Enterprise Architect 5**

  The above statement was made in the context of business processes that required incorporation in an IT process. Such business processes, due to SASure's particular SDLC design, were required to be passed from Business Architects in the Business Design COE, to Business Analysts in the IT department, as opposed to being passed to their own Business Analysts in the Business Design COE.

- **Lack of usage of Business Design resources for operational planning:**

"In order for Business Design to be effective, you need your, all your resources from an analyst to a [business] architect, to sort of a consultant strategist, to be in synch with business, to work with the business closely, uh and to kind of take their thinking, their issues, their strategy, and to translate that into, call it models or deliverables, be it even power-point presentations, to move them in the right direction, so the architecture facets of that."

Senior Enterprise Architect 5

Business did not make use of Business Design resources to assist them with planning. The role of Business Design was not understood. Even though a concerted effort was made to inform various senior business leaders of their existence and role, Business Design resources were not included in business planning sessions, and in fact, on occasion external consultants were contracted to assist business leaders with future planning without Business Design being informed.

- **Lack of financial resources for taking an Enterprise approach to Business Design:**

  The Business Design COE was not granted a budget to perform in its role of Enterprise Design. Instead, all resources had to be assigned to projects in order to pay their way.

  "...so now we have the business architects, but they're kind of, and you talk about enterprise architecture, but all of them ... they all got employed to projects. So the concept of ENTERPRISE design at the enterprise level gets lost, because they get heads down involved in a project"

  Senior Enterprise Architect 5

  "How do you convince EXCO to give you money for [Business Design] EA, when they don't buy in to the concept?"

  Senior Enterprise Architect 5

Analysis

This dimension of SISP effectiveness is concerned with the degree to which IS Planners have taken existing organisational operations into account (Grover & Segars, 2005). In spite of Segars and Grover (1999) noting that effectiveness in Analysis is generally achieved from the SISP *Positioning School*, from the quotes below, it would seem that effectiveness in analysis was not being achieved.

"...our analysts are becoming less and less appropriate. In the old days, we knew the systems and we wrote ourselves, so it was easy. Nowadays, the analysts, they don't know the systems any more so you must decide is that now the systems analyst, the business analyst or the enterprise analyst or the solution architect - who is now coming with that knowledge to the table and do they understand the environments. And that is a real issue for me."

Senior Business Manager 1

"[The business] open up a spreadsheet and do what they want [to achieve a manual business design change], and say 'But why do you [Business Architect] come with all these difficult systems and processes to do things? Tell me it's going to take me 3 years to reach that conclusion?"

Senior Business Architect 2

"...if you are clashing with somebody, you're not going to say : 'why can't we move that chair there?', because you know there will be 'Hoekom will jy dit doen?' [Why do you want to do that?], you know, versus, let's understand what you want to achieve with that? How does it make sense? That's a whole different approach. And I think that's where the especially the whole Business Design and Enterprise Architects if they can play those roles, then your innovation will kick...That is why I am saying, the Enterprise Architect with the Business Design can be your vehicle to drastic innovation or the opposite, depending on how they manage it..."

Senior Business Manager 1

The above statement was made in the context of a growing realisation on the part of senior business managers that the relationship between the Business Design COE, and the Solution Architects in the IT department, was not conducive to constructive systems development outcomes.

Co-operation

Segars and Grover (1999, p. 205) explain this measure of planning effectiveness in terms of "*general agreement concerning development priorities, implementation schedules, and managerial responsibilities".* This measure of effectiveness is regarded as particularly problematic for the SISP *Positioning School* (Segars & Grover, 1999).

The Business Design COE encountered a lack of co-operation both in its dealings with business people, and in its dealings with the Application Architecture COE which was the home of the solution architects. The lack of co-operation of Business Design resources with the business was described by one participant as follows:

> *"...if you have the right people, um and they come close - and there's a maturity and up-skilling and time and - if they come very close to the business and the business **trusts** them, as their representative who knows IT well, and knows solutioning as well, who knows architecture well - maybe [Business Design resources] can be [the business's] representative. Even though the business hasn't come up to speed with their thinking, or their level of detail, at least their back is covered by their Business Architect or their Business Design resource, so your probability of issues, or misunderstandings, or incorrect assumptions, is lowered significantly, if you have the Business Design resource. But what we have is the situation where, um, the business also hasn't engaged with the complexity of its design, whatever it is - its resisted, because 'who are you, you are doing my work!', type of thing."*
>
> **Senior Enterprise Architect 5**

This same participant described the lack of co-operation between the Business Design COE and the Solution Architects in a similar vein:

> *" IT had their, what they called, Applied Architecture, but it was IT Architecture, so yes it covered the IT domains, or the knowledge domains of applications, data and infrastructure, [Business Design COE] had Business Architecture. And why I talk about the maturity is, [the CIO] assumed [the two COE's would] collaborate and work together and be in synch, but [they] continued to - obviously [they] were butting heads because [IT] didn't really understand [the Business Design COE] role. Prior to that IT kind of drove the thinking, not the business, so [the Business Design COE] came in and challenged them, and they were like, who are you to challenge us..."*
>
> **Senior Enterprise Architect 5**

An effort was made by the Business Design COE to have its processes integrate with the processes of the Application Architecture COE, but in the opinion of the Business

Design COE, the IT systems development processes were found to be too entrenched, and consequently Business Design processes that should have taken precedence, and which should have had IT system development processes sub-sumed under them, instead were themselves sub-sumed by IT systems development processes:

> *"[The CIO] created a methodology for the SDLC, and he said 'the software delivery lifecycle will deliver this'. [The Business Design COE] created a methodology for the business change lifecycle which SDLC imbeds into. But they didn't really, kind of come together very well ... because [SASure's] methodology is very IT SDLC. ... [SASure's] got an HBRS which is a High Level Business Requirements Specification, and [the Business Design COE has] to embed business architecture in there, so already [SASure] took away the concept of Enterprise Thinking and pushed it into project thinking..."*
>
> **Senior Enterprise Architect 5**

Improvement in Capabilities

Segars and Grover (1999) explain that an important indicator of the success of an IS planning exercise, is the degree to which capabilities implicated in such planning have consequently improved.

Architecting in the *Open Space of Strategy* did not achieve the objective of creating a Business Design capability.

> *"The biggest challenge for me at the moment in that area [the area of gaining a true understanding of the role of Business Design] is that people don't acknowledge or understand the effort that it takes to produce the content that you need. To really go and sit and take a view of each of those perspectives towards the business [what are your products? How do you deliver the service? What are your processes, your people, and the integration to technology?] and in that exists the conflict between the Business Design function and the business owners as well, because they've got profit to make, they've got a business to grow, and people to manage, and you're drawing pictures which they may, or may not, understand, depending on the level of detail that they are interested in".*
>
> **Senior Business Architect 2**

Contribution

> *"An effective SISP should contribute to the overall effectiveness of the organisation. "*
>
> *(Grover & Segars, 2005, p. 764)*

Architecting in the *Open Space of Strategy* did not achieve the objective of creating a Business Design COE that was enabled to assist business with future thinking. In fact, architecting in the Open Space of Strategy could be regarded itself as an example of a failure in the application of business design, as explained by a participant from the Business Design COE:

> *"...we went to an Exco member and said [lack of inclusion of Business Design Architects in Strategic Workshops] is what happened, and he went 'but I told my MANCO' [in a high pitched voice], but telling them is one thing, actually actioning it, selling it and bringing, sort of, you know, getting them to agree with the value, and letting them experience the value delivered, wasn't there. So that's another instance where business design wasn't effective."*
>
> **Senior Enterprise Architect 5**

In this *Open Space of Strategy*, the emphasis was on structure – processes and norms were largely left to emerge from organisational adaptation to this structural change. The **lack of commitment** in accommodating the Business Design COE, and the **lack of coherence** in the positioning of the Business Design capability in SASure's organisational model, provided the context for the next phase in SASure's journey to establishing a Business Design capability.

6.3.2 Phase 2 – Strategising in the Programming Space of Strategy

In this sub-section, SASure's strategising in the *Programming Space of Strategy* (Lejeune & Sack, 2011) is once again described, firstly in terms of the goal of this phase of SASure's transformation journey, and then in terms of the *context*, *strategic planning*, *choices* in terms of **structures, processes and norms**, and finally, *effectiveness* of SASure's strategic planning approach (see Figure 12).

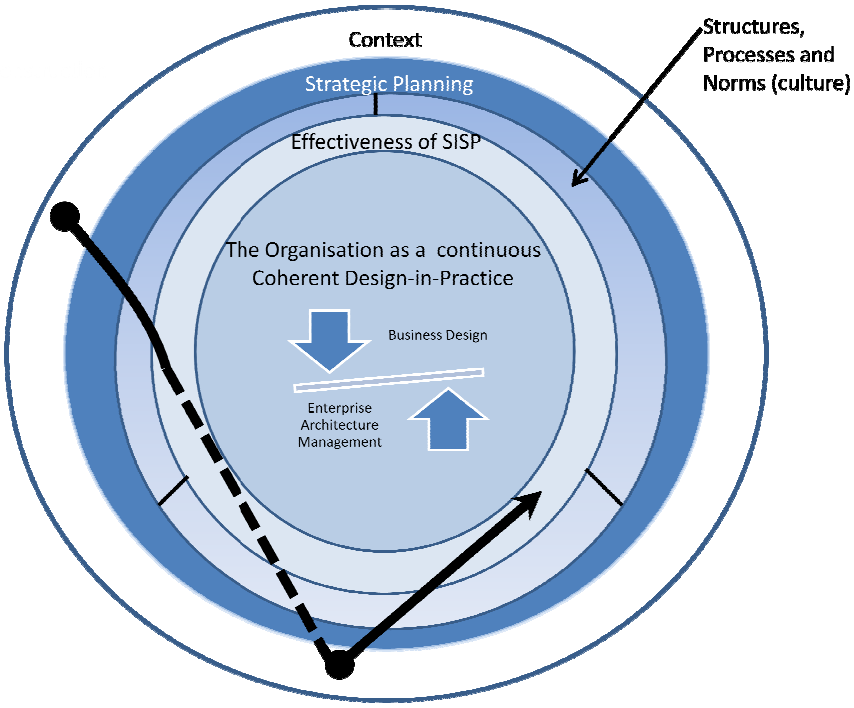

Figure 12: SASure Architecting in Lejeune and Sack's (2011) Programming Space of Strategy

6.3.2.1 Goal of the Second Transformation Phase in Lejeune and Sack's (2011) *Programming Space of Strategy*

"...so they've gone for a total um I would say, rapid replacement of their application portfolio, you know. And if you look at [the E-business project], you look at [the Call Centre Replacement Project] and you look at [the Policy Administration Project], all replacing your old technologies and applications, to enable better agility."

Senior IT Project Manager 1

The meta-transformational goal of the second phase of SASure's transformation identified by this research, was the enablement of the remaining 3 core operational systems for agility and flexibility through similarly being redeveloped based on SOA and BPM principles (see above quote). Accordingly, further structural and procedural changes were planned for both business and IT departments.

With the emphasis for this research being the degree to which Business Design was enabled within the Enterprise Architecture Management function within SASure, successful planning of this second phase of transformation, would be manifested by an evolved Business Design capability that included processes aligned to the

proliferation of service objects and integration points that arise from a BPM and SOA approach to systems development:

> *" ... it's no good just getting Finance's sign off, you [now] actually need to get signoff for the correct GL entries, the correct GL date, the correct VAT treatment, the correct reconciliation, the correct category codes so that we can go through to Group reporting so that it is actually going to report properly in group reporting. So it's crazy, but in fact that is what it has to come down to."*
>
> **Senior Business Manager 2**

6.3.2.2 Context

The context for this phase of SASure's journey to establish a Business Design capability begins with the description of the outcome of architecting in the O*pen Space of Strategy* described previously (see Figure 13 for a diagram of the changes that had taken place in the lines of communication between Business and IT).

Unsurprisingly, the ineffectiveness of the Business Design COE had repercussions in the *Project Management Office* and the *Applied Architecture COE* which is where the Solution Architects were situated.

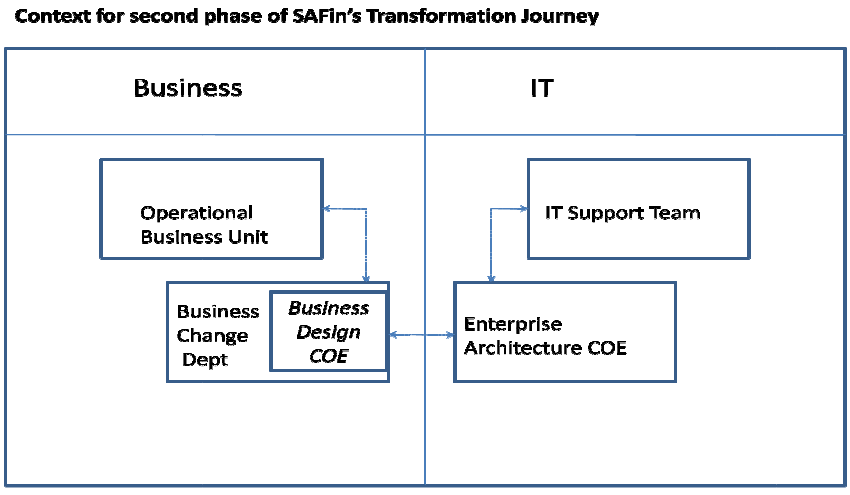

Figure 13: Lines of Communication between Business and IT Subsequent to SASure's 1st Phase of Transformation

The Application Architecture COE had the following mandate*:*

> *"[In SASure] we've got the Applied Architecture COE, we are the practical expression of EA... So it's not an Enterprise Architecture, it's actually the practices and how we've decided to apply it which is why we call it Applied*

Architecture. How you apply it in practical terms by engaging in projects, by engaging in operational issues, by engaging in terms of understanding and working out the best shape for our EA." [In effect, providing the organisational architectural boundaries described by Dietz (2011) as the normative restriction of design freedom.]

Senior Enterprise Architect 1

There were two main issues that led to a lack of harmony in the Business Design and Enterprise Architecture Management relationship at SASure: the development of a working relationship between the Business Design COE and the Applied Architecture COE appeared to be elusive, and the disputed use of the selected architectural modelling tool.

i. The Working Relationship between Business Design COE and the Applied Architecture COE

"So here we had, IT was may more mature, 'cos they've been doing it for such a long time, they're dictating the methodology as I said, they got a bigger team and more resources, also the financial model was in their support, ... So [Applied Architecture COE] would say – [Business Design COE] can't keep up with them, [Business Design COE's] slowing them down, they've got KPI's which they can't deliver because of [Business Design COE], so [Applied Architecture COE's] just moving ahead and they're making business design decisions, they're making business architecture decisions, or assumptions - they would phrase them as assumptions - which is essentially a decision 'cos you can't give [the Business Design COE] all of that - and [Business Design COE's] saying but we don't have people, we don't have resources..."

Senior Enterprise Architect 5

"...we kind of had two people, two groups of people trying to do the same thing"

Senior Enterprise Architect 5

ii. The Lack of Consensus over the Use of the Architecture Modelling Tool

The Head of the IT Business Analysis COE also had the role of '*Enterprise Architecture Expert*' and was responsible for compiling a

strategy for SASure's Enterprise Architecture, and for developing the Enterprise Architecture repository with the use of a well-known and highly regarded Enterprise Architecture modelling tool. The use of the modelling tool was a particular source of contention, not only between the IT Business Analysis COE and the Business Design COE, but also between the IT Business Analysis COE and the Applied Architecture COE. Whereas the tool was being used by the IT Business Analysts, the Business Architects and non-IT Business Analysts were not being compelled to use the tool. The staff in the Business Design COE were seriously questioning the usability of the tool for their interactions with the business, and the IT and Enterprise Architects were voicing similar concerns:

> *"...you're drawing pictures which [the Business] may, or may not, understand, depending on the level of detail that they are interested in. So if you don't come up with the right picture, then, um, they don't buy into it."*
>
> **Senior Business Architect 2**

> *"I think that it may work in the IT world but I think that as a business tool it's too much, it's too technical. You almost want in the business side of things, a more conceptual level tool, something that you can draw like on a white board thing."*
>
> **Senior Business Architect 2**

> *"Now the whole approach, and this is my very personal and very biased opinion...this [Modelling Tool] implementation at [SASure] is completely screwed up. It has no practical value whatsoever, from my perspective, other than to make people's lives difficult. Its, the, the repositories are all over the place, um, the models that are being used are all over the place, they are not consistent. the tool doesn't lend itself to being able to make presentations in the way that the business or anyone that you want to talk to can understand them, um, it's just, I think for me, [the Modelling Tool] is just a big disaster."*

Senior Business Architect 3

"The modelling is not a product out of architecture, the modelling is a product of how we chose to communicate with the broader audiences that are affected or impacted or interested in what the architecture decisions are, and it can be as granular and verbose and as complex, or as pragmatic as one makes it. So the methodologists which love methodology, the software supplier who loves their software, theorists, practitioners of different flavours - I think all of those folk were all very guilty of confusing the issue and then it [the reason for modelling in the first place] kind of all gets lost."

Senior Enterprise Architect 1

A further interesting point with a bearing on Business Design was made as to the lack of motivation of business to participate in process modelling exercises:

"Business is not interested, they're not, because all those modellings will actually show up their shortcomings in how they're flexible in their business. And as soon as they start doing that, they will be forced to actually not be so flexible..."

Senior Business Manager 2

6.3.2.3 Choices in terms of structures, processes and norms

"So we realised it wasn't working, and IT refused to give up their Business Analysts which is being frank, um, around this. So it was decided to move all the Business Analysts into IT and dissolve Business Design, but [the non-IT Business Analysts] must still, they must do design thinking as well, Okay, in their new team..."

Senior Enterprise Architect 5

"...the CIO made a lot of noise, and he got it right, because the COO wasn't really um, hadn't bought into business change under HIS wing, so he saw it as purely another capability he got, under his portfolio because IT didn't want business change."

Senior IT Project Manager 1

"...so [the Head of IT Business Analysts/Enterprise Architecture Expert] threw a tantrum and said he can't work like this and they put all BAs with him, I mean, that was the restructure!"

Senior IT Project Manager 1

The terminology used by the participants in the above quotes suggests a return to the SISP *Political School* in terms of the approach used to plan this step in SASure's transformation process. There is no indication that Business Strategy was taken into account in making this change to organisational design. As indicated, the Business Design COE was disbanded. The Business Architects remained in the Business Change Department.

In addition to the disbanding of the Business Design COE, the IT development services were divided into '*Build*' (responsible for the exploitation and development related to the transformation projects) and '*Run*' streams (responsible for the exploration and development related to the support of legacy systems):

"When they split the [Systems Support] and solution delivery, they split [Head of Systems Support] off and they split [Head of Solution Delivery]. And that split has created an us and them!"

Senior IT Project Manager 1

CMM (Capability Maturity Model) governance - the adoption of which, at SASure, had been evolving over time - was implemented via the modelling tool:

"...you know there's this whole initiative to get CMM compliance, what do they call it? -'The way we work' - so it's all about getting your specs signed off and governance, ja, and [the Head of IT Business Analysts/Enterprise Architect Expert] is focussed on using [the modelling tool] in that space."

Senior IT Architect 2

Lejeune and Sack (2011) point out that this Programming Space of strategy *"is unique to the architect who eventually abandons any a priori aesthetic vision for putting together a program*" (p. 103), as *"the specialists for strategic planning, the project management office and the finance people form a larger team around the top*

strategist...the strategist is linked to a planning system that acts on him and on which he acts" (p. 104).

6.3.2.4 Effectiveness of SASure's Choices in the Inhabited Space of Strategy

The effectiveness of the strategy choices made in order to progress the enablement of a Business Design capability are once more discussed based on Segars and Grover's (2005) Five Dimensions of SISP effectiveness: *Alignment, Analysis, Co-operation, Improvement in Capabilities* and *Contribution.* As suggested by Segars and Grover (1999), reverting to the SISP *Political School* did not have an effective outcome on any of these effectiveness measures:

Alignment

The impact on organisational alignment of the disbanding of the Business Design COE was experienced in different ways by different parties.

Business Design at SASure reverted to a 'Push' strategy from IT, rather than a 'Pull' strategy from Business:

> *"...it's still very much IT going to the business, as opposed to the business going to IT and saying we need a portal and we want it to do this, because they are too busy running business as usual, and maybe that's what Business Change upstairs should be driving...is 'what's the business strategic direction?' and part of the strategic direction should be portal, and mobile, and using the internet.."*
>
> **Senior IT Architect 1**

The 'Enterprise Design' aspiration of Business Architects in the now defunct Business Design COE, reverted to Business Architecting at a Project Level only.

Business Architecture Management in Business Change Department versus Applied Architecture Management in IT Department:

> *"I am coming at [designing an Enterprise Business Solution] with a business focus and not with an application focus as such. But then to be able to make those decisions I'm going to [Head of Applied Architecture] for support, I'm not going to [Head of Business Architecture] for support in that particular sense, and that is probably what isn't quite right at this point in time in [SASure].*

Because the Business Architecture side I think at this point focuses as I said, mostly on the project work, so mostly on the detail and the nitty-gritty... "

Senior Business Architect 3

Analysis

Existing organisational operations were not positively influenced by this organisational change:

"I was in the business analysis environment in IT, and I just feel that aren't adding that value any more...You see its more a case that they are going 'Ja [Yes], but Pietie said we must do it this way' but it's not enough collaboration, challenging, putting different scenarios on the table and it feels as if their focus is more to document whatever business wants and that's it, versus, 'I need to show business, by asking them questions, saying why can't we do this?'. You're not saying 'this is the only way', it's more to get that engagement, that collaborative thinking in there to say what is the options, so that we...'cos in the end if you don't do that, you are going to fall back into the old way of doing things..."

Senior Business Manager 1

"So we are replacing your business analysts and your systems analysts with [Modelling Tool] documenters, you know...Your whole joint application design has fallen away... it's a fallacy that we understand, um, the people skills, or the soft skills, in the architecture and design aspect. And, in my opinion, we are flatly ignoring that part of a guy's skills, you see."

Senior IT Project Manager 1

Co-operation

If anything, co-operation between Business Architects and Solution Architects deteriorated as a result of the decommissioning of the Business Design COE:

"...there is a very strong line in the sand between the Business Architects in Business Change and the System slash Enterprise slash Applied architects that sit in the IT space."

Senior Business Architect 3

Within the IT Department, there were indications that the Solution Architects were regarded as holding too much power:

> *"... [Solution] Architecture should be a design enabler, they should have been one of the players, not THE player that is able to say 'No, we are not going to do something',...So our structure is wrong, it's not serving the client..."*
>
> **Head of an IT COE**

With the removal of the Business Design COE, the Business Architecture capability lost its Enterprise Level profile in the organisation, and there were indications that it was being treated dismissively by the Enterprise Architecture function in the IT department:

> *"I heard two days ago that [Head of Business Architects] is the Business Architect, so two things hit me - one is 'what does he do?', um, 'what does he know about the business?'. We know more about the business because we interact with the business, right? And secondly, I heard we were supposed to consult about one of the projects with the Business Architect. I don't understand how, how do we work together? How is that collaboration supposed to work, and what is he going to say when we present [this solution design], what value is he going to add?"*
>
> **Senior IT Architect 2**

Improvement in Capabilities

Architecting in the *Programming Space of Strategy* did not achieve the objective of creating a Business Design capability at SASure.

> *"So design thinking and enterprise design thinking as a front-runner in the way we kind of do things, um, I think is not there. And it's the way we think, the way we operate, the way we do things..."*
>
> **Senior Enterprise Architect 5**

Contribution

SASure's architecting in the *Programming Space of Strategy* did not contribute to the overall Business Design effectiveness of the organisation. Architecting in the *Programming Space of Strategy* did not achieve the objective of creating an evolved

Business Design capability, as is illustrated by the lack of effectiveness in the dimensions described above.

A salient tension was identified as having arisen due to the paradoxical requirement of a Business Design function and an Applied Architecture function both working in the same solutioning space. However, rather than addressing this tension through either recognition and acceptance, or resolution, SASure adopted an approach reported in academia as '*spurring vicious cycles*': a *cognitive and behavioural drive for consistency* (Smith & Lewis, 2011, p. 389). According to Smith and Lewis (2011), this mode of response is indicative of a community that does not share norms and values, and which therefore lacks trust.

In this *Programming Space of Strategy*, the emphasis was on processes and related structural changes – norms were largely left to emerge from organisational adaptation to these changes. The continued **lack of coherence** in the positioning of the Business Design capability in SASure's organisational mode, together with an oft-reported **lack of collaboration**, was the situation at SASure at the time of this researcher's final interviews. Therefore, the following sub-section arises from interpreting Lejeune and Sack's (2011) concept of spaces of strategy as an evolutionary progression, with the result that a further phase of architecting in the *Inhabited Space of Strategy* would appear to be inevitable if a coherent Business Design capability is to be realised.

6.3.3 Phase 3 – Strategising in the Inhabited Space of Strategy

6.3.3.1 Context

> *"...it's really challenging...they've got a myriad of cultural problems, so my bet is they're not going to save this thing..."*
>
> **Senior IT Project Manager 1**

The above quote was made in the context of the meta-transformation project. This redevelopment of core systems was not going according to plan:

> *"So we're failing. Then you could argue – no, we're not failing, and what's my variables to fail? Are we on time? No! Are you on budget? Absolutely not, we're way over budget. Is the business going to get what they want? No!*

They've de-scoped critical business units. Issue! So, I could go on and on and on..."

Senior Enterprise Architect 5

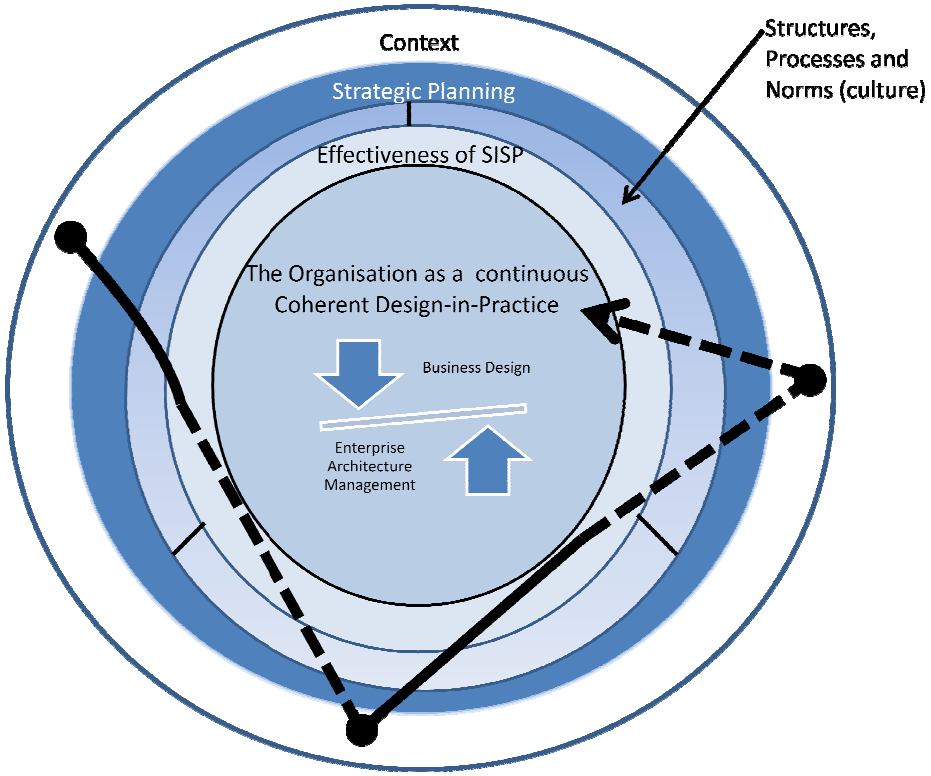

Figure 14: SASure Proposed Architecting in Lejeune and Sack's (2011) Inhabited Space of Strategy

The context for this phase of SASure's journey to establishing a Business Design capability begins with the description of the outcome of architecting in the *Programming Space of Strategy*. The predominant theme that emerged from an analysis of the data was that of a general lack of collaboration, both between business and IT, and between the Enterprise Architecture capability in the IT Department and the remainder of the IT department. This predominant theme was followed in predominance by the perception that strategic IS planning was at a low level of maturity, and thirdly by the perception that the IT department continued to be '*the tail wagging the dog'* of business:

"My theory is that when we shifted from IT wagging the dog, to the dog wanting to wag the tail himself, the dog didn't have the skill-set to do it, but we made that shift. And then IT found new ways to wag that dog without him knowing, you see - because IT has the expertise. You can think you're

actually, um, in charge of this project, but, you know, you look at the exposure to the architecture, we just made it more confusing to the business. And whether it's business architecture or IT architecture...architecture as a concept is difficult..."

Senior IT Project Manager 1

There was an opinion that the architecture function was introducing an architecture that was theoretically impeccable but lacking in practical business application:

"I think what has to my mind, has um, always happened is the design of this roadmap by EA is the - what's the word - the nirvana - the architectural nirvana, um, what this roadmap doesn't take into account is the dimension, if I can put it like that, of 'what's the business reality?'. I think that too often the EA, they will take that perspective, that dimension only - the architectural nirvana - but you have to balance that with the business reality, and what business is, business challenges that they are facing today."

Head of an IT COE

"...when you have an architectural and design arm, and you are shifting to um task-driven philosophy as opposed to people-driven philosophy - 'cos I think if you exploit the competence of people you are more likely to get collaboration, if you exploit the competence of, of, for results only you can let your egotism and dominance come in - so I think that our problem here is that we've got, we've gained high quality architecture, from a singular egotistical perspective, so at the coalface the architecture looks unflawed you know, but the practical reality is that it, when it's exposed to your clients, when the people that [are] really going to use whatever you are going to put down start [to use it], its flawed, because they don't feel it's fit for purpose - it doesn't serve them - it serves an egotistical view..."

Senior IT Project Manager 1

Dissatisfaction was voiced on the part of business and business architects as to the prescriptive approach from the Applied Architecture COE:

"...let's go through that process of saying, 'Why is that? How can we resolve that?', instead of saying, 'No, this is how it's going to happen!'. We tend to have that, and it's something I see a lot of times, 'No, you can only do it this way', and I'm saying 'Why?', because there isn't one right answer. Because there [are] 5 people in the room you're going to have 5 different ways that people will make coffee or whatever, but they will still get to a cup of coffee!"

Senior Business Manager 1

"And that's probably the biggest, um, innovation cruncher, is where people say, 'No this is the way we are going to do it and that's it', versus 'This is the way we did it, now explain to me why do you say this?', and understand the impact, and then we can debate that..."

Senior Business Manager 1

"I think in this case [the case of a certain system design], again, Solution Architecture, or IT EA, has too much control in this particular one, direct control, clinging to a decision that was made to go on Sharepoint for example, and to do it in a certain way. Um, and not wanting to, you know for them to change direction or to change, or bring in elements that's not Sharepoint-related, is almost - I sometimes feel they look at it as an admission of failure...

Head of an IT COE

"...It's more like the business architects point of view doesn't ever feature. So if your IT architects have um, it's like whatever they say, must go."

Business/Systems Analyst 2

The relationship between the Business Architecture function in the Business Change department and the Solution Architecture function in the IT department was regarded as being unbalanced in favour of the Solution Architecture function:

"I don't think that the, it's a very clear delineation as to who should be responsible for what. Um, and, I think, I know that for example with [Head of Applied Architecture COE] who has got a very good um understanding of where she wants the organisation to go, and how she wants to enable such an organisation from, um, a systems architecture perspective, she is going at it, um, her approach is good, but I think it actually steps over the bounds of what

her role should be, because Applied Architecture - if the construct is that you have a Business Architecture separate, and it sits within Business Change - um, then those are the people within my understanding that should be doing the strategic work, working with the strategy area within [SASure] to come up with [strategic business] kind of decisions and this is absolutely not happening at this point in time. The Business Architects focus on a much lower level and, in fact, that role that Business Architecture should in fact be doing is being taken up by Applied Architecture, because the focus, the drive, is coming so much from that area, from the IT side more than anything, and so much less from the business. Um, I think that's, there's kind of a reversal of roles in that regard."

Senior Business Architect 3

Even within different EA streams there was unhappiness, particularly around the prescriptive approach to the use of the modelling tool:

"So in the past, where you had [Head of Applied Architecture] and you had [Head of Technology Architecture] and, they all sat apart, even though they had to collaborate, because maybe 3 out of the 4, they weren't conforming [to the governance implicit in the use of the modelling tool], so they wouldn't, uh, make it known to their architects, whether it be application, or whatever the case may be, they wouldn't drill down and say, you need to conform to this standard, and you need to contextualise, and you need to have the same wording, and the same naming conventions, etc., and things were beginning to fall apart... well, essentially it boiled down to the matter of, if they didn't do it [conform to the governance inherent in the modelling tool], they would be fired. [IT Management] were taking the hard line, to the point that, even in their COE meetings, apparently [Head of Applied Architecture] stomped out, burst into tears, and said she was resigning, and [Head of IT QA, previously the Head of IT Business Analysts/Enterprise Architecture Expert] was the cause of that argument."

Business/Systems Analyst 2

There was an example of a brewing unhealthy adversarial approach between an exploitative project working in the new flexible and agile technology base, and the

support team working on exploring the system functionality on the existing technology base:

> *"I'm telling you now, the race is on. We are going to have functions here [in the existing system] that gives you access to, let's say, policy inquiries, and we've got that! By the time [the redevelopment of the core strategic systems] is done, people are going to say, hey, but I can access this on the mobile [through the existing system], while I'm out on the road with my client, I don't need to be on the fixed, uh, internet – Sharepoint (because Sharepoint is limited to where it also runs) - I don't need to be on my laptop, I can go there!"*
>
> **Head of an IT COE**

There was an acknowledgement among middle management that whereas process and technology were being addressed, attention to people aspects was lacking:

> *"...in the bigger change management, just looking after people, I don't think we are looking at it holistically enough"*
>
> **Senior Business Manager 1**

> *"The secret to getting out of crap is not to put more pressure, and I think that is where [the CIO] is not leading the organisation out of trouble. They are in trouble, and he is leading the organisation out of trouble through putting on more pressure - becoming more aggressive, etc. So you've got to just take time out and get the people back into thinking space, you see."*
>
> **Senior IT Project Manager 1**

The source of the general lack of collaboration was verbalised by a Senior IT Project Manager as the following, indicating a migration from the original *Traditionalistic Community* type, to a *Contractual Community* type (Adler & Hecksher, 2011):

> *"We hire the type of person that's skilled in his technical skill but he's not skilled in the people side...there's tools all over the show - you can see if the guy's a psychopath or not - but we choose not to hire, we're choosing technical skill over people skill. So then whatever you do, whether it's strategy, architectural design, it's going to be based on technical superiority, so if you're putting in, over time, all these technical skills, you will shift your organisation,*

like we did over the last few years, to be technically skilled individuals, and you ask yourself, can you design without collaboration? Can you architect without collaborating?"

Senior IT Project Manager 1

A Senior Business Manager offered this related cautionary insight into the progress of SASure's transformation programme:

"...at the end, it's what are your values, what's driving you, it's those kind of things that make sure that you actually perform. You know you will perform up to a point. And a good example is our Springbok Rugby Team. They performed up to a point with a certain coach. But that coach was a, um, dominant aggressive arrogant 'I'm the guy!' - up to a point [until] they said 'Stuff you!', you see. And that's exactly, and that's where you need to be very careful with - short term, or one or two years - how everything is going well, because underlying everything it's probably not going well - if you know through all the levels that the value systems are not right..."

Senior Business Manager 1

However, there were pockets of change emerging:

"What we have done in [a particular project] as well, that was sort of unique, and [the programme manager] is now trying to do it as a product owner in other projects as well, there has to be a collaboration between IT and business. Business won't have an idea when they look at what they design and [what] the requirement is, what the impact would be and [what] the level of change would be, and what the cost would be...`

Senior IT Project Manager 2

Given the disaffection in various departments of the organisation, as well as the loss of key transformation programme staff, it would seem to this researcher that a third phase of architecting, this time in the *Inhabited Space of Strategy*, is inevitable:

"...some people from [3rd party service provider] that I worked with, just said [sigh] why are all the good people leaving?"

Business/Systems Analyst

(The CIO and the Head of the Project Management Office, as well as senior architects and designers, resigned from SASure over the course of this research.)

6.3.3.2 Goal of the Expected Third Transformation Phase in Lejeune and Sack's (2011) *Inhabited Space of Strategy*

> *"The inhabited space of strategy is proper to the social architect, who is listening to the customer, seeking to capture and reflect only the needs of a family, community or organisation without imposing its aesthetics trajectory ... the inhabited space is filled with living legitimised subjects. They are the future inhabitants of an environment built for the community..."*
> *(Lejeune & Sack, 2011, p. 106)*

As intimated by Lejeune and Sack in the quote above, strategising in the *Inhabited Space of Strategy* implies planning an organisational design that accommodates the needs of all its inhabitants, i.e. in the case of SASure, planning for the enablement of the application of design thinking principles to business practice throughout the organisation. Such an organisational design is supported by Galliers (2011) Holistic IS Strategising Framework described earlier in this analysis section. Galliers (2011) explicitly identifies the creation of a supportive environment for diffused decision-making as an important requirement for optimal IS Strategy planning.

The recurring theme that emerged from an analysis of the research data that had quite clearly not been addressed at SASure, was the pervasive lack of collaboration that was having an impact on all participants in this research.

> *"[SASure]'s downfall is lack of collaboration. Because they did employ top notch individuals - there's no doubt about that - I just think that these guys don't naturally collaborate, and with an aggressive IT portfolio like [SASure] undertook, when the pressure hit, your natural ability to NOT collaborate actually becomes more and more - so they tried, but every time the pressure hit, everyone tried to solve the problem on their own, you see. Um, so I think they just disable each other. And specifically from the IT perspective - IT disables business, you see."*
>
> **Senior IT Project Manager 1**

For one participant, this lack of collaboration was interpreted as a lack of attention to the organisational culture:

> *"...[SASure] came from a strong ... [conservative community] value [system] which worked well because it was well-defined, right, they needed to move it. And they weren't moving it in a managed way, that's why it's shaping itself. It shaped itself by the critical mass of new people that were brought on, that were not, uh, which had their own value system, their own individual value systems, and their own individual agendas. So [SASure] did not control its culture, right?"*
>
> **Senior IT Project Manager 1**

The impact of organisational culture on successfully achieving intended goals when establishing an Enterprise Architecture Management capability, has been highlighted in research reported upon by Aier (2013). Aier's quantitative study found that although culture was not the only factor, it played a measurable role in Enterprise Architecture Management implementation success. Consequently, this researcher believes that in order to achieve an improvement in collaboration at SASure, planning for the *inhabited space of strategy* (Lejeune & Sack, 2011) needs to address aspects of culture. The aspects of culture identified by Adler and Hecksher (2011) as particularly important for the key Business Design concept of a balance between exploration and exploitation, are **trust** and **community type**.

Adler and Hecksher (2011) have identified various community types which are described elsewhere in this document. The organisational impact of these community types is explained in the context of an identified global need for organisational ambidexterity. Ambidexterity is an attribute closely aligned with Business Design, and features strongly in Galliers' (2011) Holistic Strategising Framework.

A strategic planning choice aligned with organisational inertia, rather than the option to embrace organisational ambidexterity, has been theorised elsewhere in this research document as the lever behind SASure's second transformation phase. Through studying Adler and Hecksher's (2011) description of various community types and their appropriateness for an organisation that is seeking to embrace ambidexterity, one could interpret SASure's journey through Lejeune and Sack's

(2011) stages of strategy as a parallel movement through these described community types. In this way, one could identify the community type, the establishment of which would best serve as the goal for SASure's third transformation phase.

6.3.3.3 A Conceptual View of the Suggested Goal of SASure's Third Transformation Phase

The research results indicated that SASure's Architecture Principles not only were not directly derived from a formulated strategy, but also did not incorporate any values supportive of the shared value of *mindfulness* that the literature review had highlighted as being necessary for Business Design. The organisational trait of *ambidexterity,* identified in the literature review as equally important for Business Design, was similarly not being addressed to any degree – rather, the organisational capacity for exploration, in terms of both budget and resources, had been reduced in order to fund and resource the exploitative transformation programme. The Enterprise Architecture function was regarded as an IT competency, rather than a mature competency in service of the organisation as a whole. In light of these findings, the conceptual model necessary for a balanced relationship between Business Design and Enterprise Architecture Management (see Figure 15) is suggested as the goal for the next phase of transformation at SASure.

The suggested goal of SASure's 3rd Transformation Phase is represented in the Conceptual Diagram of Balanced Business Design and Enterprise Architecture Management in Figure 15. The triangle is used to denote the idea of balance, in that Business Design and Enterprise Architecture Management are equally supported at the apex, with neither element being addressed at the expense of the other. The body of the triangle, which provides the required foundation for such balance, is made up of successful attention to the following organisational elements:

Shared Commitment to Enabling Business Design within Enterprise Architecture Management

This element of the diagram draws from the literature on Complex Adaptive Systems (CAS).

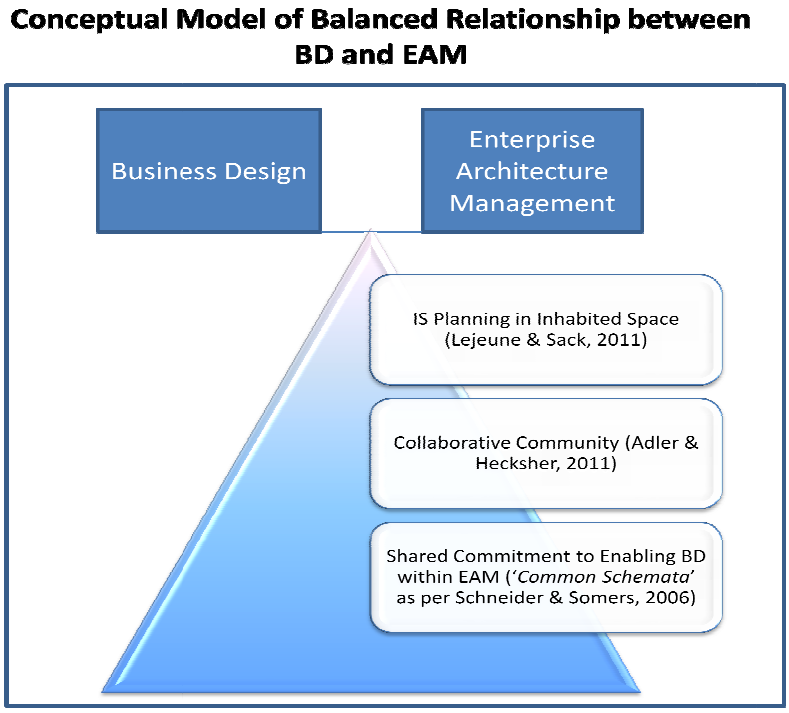

Figure 15: Conceptual Diagram of Proposed Balanced Business Design and Enterprise Architecture Management at SASure

The description of a CAS provided elsewhere in this document, and the identification of a shared organisational identity supportive of Business Design enabled within Enterprise Architecture Management, provides the basis for the bottom-most element of the Conceptual Diagram of Balanced Business Design and Enterprise Architecture Management in Figure 15.

Organisation-wide management **cognition** of what is holistically meant by '*enabling Business Design within Enterprise Architecture Management*', organisation-wide management **consensus** as to the changes that need to be made to structures, processes and norms to enable this outcome, organisation-wide management **conviction** that such a strategy is in the best interests of the organisation, as well as an organisation-wide management **commitment** to achieving this strategic goal, are considered to be lacking at SASure.

In the CAS context of '*common schemata*' for SASure, the publishing of architecture principles which are inscribed with the Business Design values of mindfulness, as well as values that support a balanced approach to exploration and exploitation in strategic choices, could provide a useful rallying vehicle for a shared organisational identity in support of holistic Business Design.

Collaborative Community (Adler & Hecksher, 2011)

Over the period that this research was conducted, the sense of community at SASure was clearly an issue:

> *"In [SASure] IT, it's cool to be aggressive and underhanded, you know, so you can have all the brilliance, but if you don't have the right culture, collaboration, cohesion, you're not going to be successful. I mean [SASure] is a massive lesson about talent not realising its worth - because it's all individualistic"*
> **Senior IT Project Manager 1**

Adler and Hecksher's (2011) 4 different community types are explained elsewhere in this research document. The *Collaborative Community* type is identified as most appropriate for the enablement of Business Design within Enterprise Architecture Management. In particular, the following two attributes of a collaborative community are regarded as key for SASure's transformation programme:

- **Interdependent Process Management: (*Norm*)**
  "Actors at all levels manage their interdependencies through direct negotiation and dialogue"
  (Adler & Hecksher, 2011, p. 15)

- **Ethic of Contribution: (*Value*)**
  "people who are able to look beyond their specific roles to advance the common purpose"
  (Adler & Hecksher, 2011, p. 13).

This community type, identified as the most supportive of Business Design enabled within Enterprise Architecture Management, provides the basis for the middle element of the Conceptual Diagram of Balanced Business Design and Enterprise Architecture Management in Figure 15. Such a community type, believed to be essential to ensure **commitment** from all involved in the transformation programme, is considered to be lacking at SASure. This observation is further explored in the '*Discussion*' section of this research document.

IS Planning in Inhabited Space (Lejeune & Sack, 2011)

This element of the diagram relates to the need to plan in Lejeune and Sack's (2011, p. 107) Inhabited Space of Strategy:

> *"[The strategist] must lose power to legitimise the actions of other potential strategists, but must use tools, both structural and cultural, to create a new context by creating and approving strategic behaviour. The* ***definition of a context*** *rather than the publication of a model is critical to the inhabited space."*

Drawing on the statement above, the structural and cultural tools that create an enabling context, can be scoped with reference to the Holistic Framework for Strategising of Galliers (2011) described elsewhere in this research document, a framework that provides for a combined business and IT strategy, where equal importance is given to exploitation and exploration, in an environment supportive of knowledge management and continual organisational learning.

This *space of strategy* identified as most supportive of Business Design enabled within Enterprise Architecture Management, provides the basis for the top element of the Conceptual Diagram of Balanced Business Design and Enterprise Architecture Management in Figure 15. Such a space of strategy underpinned by Galliers' (2011) Framework, is believed to be essential to ensure **consensus** from all involved in the transformation programme as to what elements must be addressed when strategising at SASure. This observation is further explored in the 'Discussion' section of this research document below.

6.4 Discussion

Although the literature review raised the expectation that enterprise architecture principles would be the mechanism for ensuring that the Business Design values of mindfulness, and a balance of exploration and exploitation in strategy selection, would be reflected in SASure's Enterprise Architecture principles, the situation at SASure was found to differ substantially from this approach. For such an approach to be the enabler of Business Design, the architecture principles would need to be transparent and shared by all, which was not the case at SASure. In fact, Business Design was a poorly understood concept with many different perceptions being

reflected in the views of the research participants. Rather, SASure's transformational programme emphasised the importance of the creation of a technological platform upon which a relationship between Business Design and Enterprise Architecture could be supported, where such platform would be largely the result of a holistic approach to enterprise architecture management. The opinion of senior IT management was that without such an enabling platform, the more intangible issues related to, for example, the support of thinking in a designerly manner, could not begin to be addressed:

> *"So why you want to do this, why do you want to do EA? Because...to give you the ability to define your business in a standardised way, so that I can start to see it as components, and I can go into plug and play mode, so I can do those innovations!"*
>
> **Senior Enterprise Architect 4**

An interpretation of the underlying approach to Business Design at SASure that was revealed through the research data, was the assumption that Business Design could be regarded as an artefact that could be delivered through automation, where the tool to support such automation was Enterprise Architecture Management. In support of this interpretation, the imagery used in the story to describe the future view of the organisation was manufacturing imagery - the likening of the organisational structure to the structure of a motor vehicle, where alterations to design could be applied in the same manner as in a manufacturing environment - in a largely automated manner on a production line. This is a view that supports technology as engineering, and implies a technology focus at the expense of full cognition of the social impact of such a radical organisational change.

Accordingly, the issues that this research identified as working against the creation of the envisioned enabling platform, were found to be the softer issues relating to senior management gaining a mutual understanding and commitment to the selected strategy for Business Design. Although the more concrete issues that affected the progress of the transformation programme were highlighted by the participants - issues such as the differing reporting lines between Business Architecture and the more IT-related architecture streams, as well as the deliberate tactic on the part of IT of reducing the resourcing of exploration initiatives in order to fund the larger

exploitative transformation programme – the underlying factors that were not as specifically articulated but which nevertheless together undermined the project progress, were factors that could be attributed to human behaviour and perception. The result of the misaligned human behaviour and perception at SASure was a lack of congruence in the Business Design/Enterprise Architecture Management relationship, where the definition of *congruence* in this context is taken from Dietz (2011, p. 2): "*coherence and consistency, collectively also called congruence".*

In the following subsections, the *Themes* and *Findings* arising from the Data Analysis are explained. The *Findings* are presented in the form of the **6 Cs Framework in Support of the Successful Enablement of Business Design within Enterprise Architecture Management.** This framework is presented as the synthesis of all findings of the research, and is consequently presented as the response to the Research Question.

INITIAL CODES	Summation of Themes arising from the Theme Review
Challenges facing an organisation in transition	*Organisational Context*
Collaboration Issues	*Lack of Conviction/Coherence*
Impact of Culture	*Lack of Consensus/Coherence*
Impact of EAM processes	*Lack of Coherence*
Impact of Process Ownership	*Lack of Conviction/Coherence*
Importance of people skills	*Lack of Commitment/Coherence*
Management Issues contributing to conflict at SASure	*Lack of Consensus/Conviction/Coherence*
Issues with Agile	*Lack of Consensus/Coherence*
Issues with Process	*Lack of Coherence*
Issues with Structure	*Lack of Conviction/Coherence*
Lack of Alignment between Bus and IT	*Lack of Consensus/Cognition/Coherence*
Lack of Shared Understanding	*Lack of Cognition/Consensus/Coherence*
Differing Opinions on Architecture Models	*Lack of Consensus/Commitment/Coherence*
Recognition of the need for synergism	*Lack of Cognition/Commitment/Coherence*
Required Attitude of operational staff	*Lack of Conviction/Coherence*
Requirement for business to understand EAM	*Lack of Cognition/Coherence*
Requirements for coherence	*Lack of Cognition/Conviction/Consensus/Commitment*
The impact of an IT leaning EA Function	*Lack of Consensus/Coherence*

Table 3: Synthesized Themes after review of Initial Codes

6.4.1 Themes arising out of the Data Analysis

Once all interviews with participants had been completed, an initial set of codes was identified (see the first column in Table 3). These codes were subsequently collated into themes (see Appendix B), and the resultant set of themes were reviewed, defined and named, to eventually arrive at a synthesized set of themes that the researcher considered to be an adequate representative of the research results (see second column in Table 3). This synthesized set of themes is further explained below.

As indicated in the previous section of this research document, the outcome of the research indicated that over the period of this research, SASure was experiencing issues that presented **as a lack of organisation-wide coherence** in its transformation programme:

> *"...there is no, um, clarity, um, as soon as, um, business turns the corner and they've accepted, um, they've accepted a process, they've accepted the business rule and how to work – yes, they have been re-visiting these old business rules to see if it's still viable or not - the moment they make the decision, then architecture comes along and says: 'No, but why do you want to do it this way.?' Then there's a hold up there. Then it interferes with business architecture, then it interferes...it replicates all down the line! ...It's more like the business architects point of view doesn't ever feature! So if your IT architects have, um, it's like whatever they say, must go! But it's so disruptive, they just, nobody's on the same momentum, they are not working alongside each other..."*
>
> **Business/Systems Analyst 2**

The research results indicated that this **lack of coherence** stemmed from the following:

- A **lack of cognition** on the part of both business and IT, as to the human implications of a strategy to enable Business Design within Enterprise Architecture Management:

"...in order to embrace the concept of business design and business architecture you have to have people who understand what it means in terms of how they behave and how they act, also how they should consult and engage"

Senior Enterprise Architect 5

"[At SASure] no-one is given the mandate, or the role, or the responsibility to do an ENTERPRISE TOM [Target Operating Model], of which, on a TOM, comes an organisation model and a whole lot of other process, and capability, and resource, and people, and - where's that? Where's the ideal place of IT, where's the ideal place for change management, for business design, blah, blah, blah?"

Senior Enterprise Architect 5

- A **lack of conviction** on the part of business as to the importance of the enablement of Business Design within Enterprise Architecture Management, which proved to be a significant contributor to the lack of congruence in structures, processes and norms at SASure :

  "[E]nterprise architecture I think, in a lot of companies, reports in to the CIO, uh, and the reason why [the business] accept it, is because it's traditionally an IT type skill. You need that detailed understanding, that logical argument, almost the left-brain thinking together with the right-brain creativity for [an] architect, and that's a typical IT person. The typical business person - THIS is my business, THIS is my problem today, SO I can solve my problem TODAY - so I DON'T CARE about the history. I have a certain requirement, this is my problem today (if I'm in operations)! Whereas, what architecture wants to do, is look at, take learnings from history - what have we done, what worked, what didn't work - um, combine that with - what is our current strategy, what is our objectives - interpret that, translate that into, uh, project goals and objectives, so that the projects are a chewable chunk [laughs], and align that with the vision, where we are going in the future, and come up with what is THE IDEAL DESIGN for now. It cannot be too far ahead - business sees that as science fiction - um, and if it's not solving their immediate problem, they won't accept it."

Senior Business Architect 2

"[O]ne of the focus areas that we've tried to focus on is to make sure that, it's not IT that wants [a change in Business Design], it's not Business Change [department], it's the business that wants it. And that's exactly one of the areas that I've been trying to focus on. I've said, why must I spend time to document my requirement. I want business to spend time on it. They must be the people to spend time on understanding 'what do I want'. If they will spend time on that, I will help them to get there but if they're not prepared to spend time, then it means that they haven't owned up to that, and it is not really important to them."

Senior Business Manager 1

- A **lack of consensus**, experienced as a lack of alignment between business and IT, as to the desired structures, processes and norms to achieve this strategy:

  "I think the setting of boundaries [through establishing an EA], although it sounds like it's inhibiting, I don't think you are inhibiting, I think you are focussing - IF they are all aligned. The moment they start getting out of alignment, which is what I've found at [SASure] it is quite a problem. I don't think, our EA is not that well defined, and where it is well-defined, I can't always see it hanging on to the business strategy or vision, so quite often there is a mismatch where business wants to go - Business Change, Business Design - the ideas they come up with are not necessarily aligned with where IT is thinking it will be taking the company."

  Senior IT Architect 1

- A **lack of commitment** on the part of business to achieve success with the implemented structures, processes and norms:

  "[The business] agree to a project, takes [the Project Team] 3 years or 4 years to reach whatever, and in the meantime [the business] go and implement their own type of workarounds to reach their goals...so that's the belief, and the acknowledgement of the angle that business design and business architecture can add as part of the enterprise architecture...it's not there..."

  Senior Business Architect 2

In the following sub-section, two propositions arising from these themes are articulated. A sensitising framework reflecting these propositions is suggested.

6.4.2 Findings arising from the Data Analysis

6.4.2.1 The Propositions that give rise to the 6 Cs Framework in Support of the Successful Enablement of Business Design within Enterprise Architecture Management

The outcome of the data analysis of this research effort which has been described above, gives rise to the following propositions:

> ***P1****: A congruent relationship between Business Design and Enterprise Architecture Management needs to be achieved in order to experience the concomitant Business Design benefits of continuous competitive advantage.*
>
> ***P2****: In order to realise a congruent relationship between Business Design and Enterprise Architecture Management, organisation-wide 'common schemata' (as per Schneider and Somers, 2006) need to be established. Such 'common schemata' must embrace shared cognition, shared conviction, shared consensus, and shared commitment in respect of the contextual elements required for Business Design-enablement within Enterprise Architecture Management.*

These propositions are graphically represented in the framework in Figure 16.

6.4.2.2 Explanation of the 6 Cs Framework in Support of the Successful Enablement of Business Design within Enterprise Architecture Management

The enablement of Business Design within Enterprise Architecture Management requires a high degree of commitment in order to ensure organisation-wide coherence across the Organisation's Enterprise Architecture. The *6 Cs Framework in Support of the Successful Enablement of Business Design within Enterprise Architecture Management* can be used as a tool in order to highlight the responsibilities of key decision-makers from both business and IT, if a transformational journey to enable Business Design within Enterprise Architecture Management is to be successful.

The 6 elements of the framework are described in detail below.

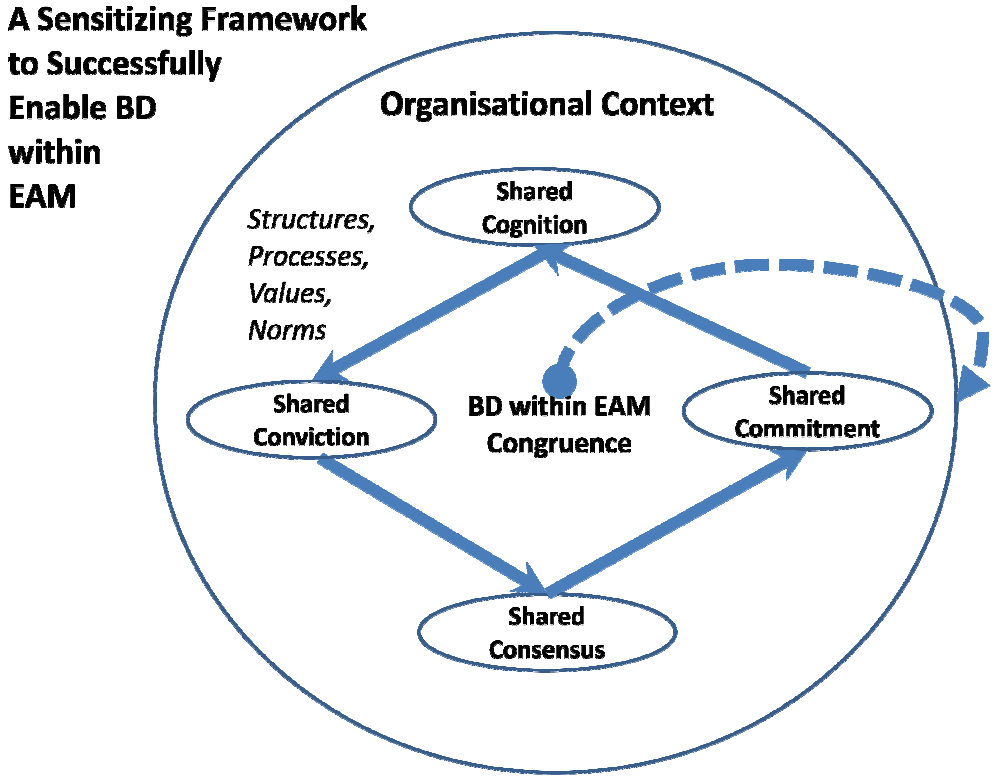

Figure 16: The 6 Cs Framework in Support of the Successful Enablement of Business Design within Enterprise Architecture Management

CONTEXT:

Each organisation has its own context from which it is transforming. This unique context will impact the substance of the evolutionary journey, as well as the COGNITION, CONVICTION, CONSENSUS and COMMITMENT that need to be applied in order to reach a CONGRUENT relationship between Business Design and Enterprise Architecture Management.

Such context will include *a particular IS Planning School* (Segars and Grover, 1999 – the various planning schools identified by Segars and Grover are described elsewhere in this research document), *a particular view of the relationship between IS Strategy and Business Strategy* and the elements that need to be addressed therein (Galliers, 2011; Teubner, 2013 – *Galliers' Holistic Strategising Framework* is described elsewhere in this research document), and *a particular community type* that is required in the organisation (Adler & Hecksher, 2011 – the various community types identified by Adler and Hecksher are fully described elsewhere in this document). These aspects of the current organisational context feed into the remaining elements of the above framework.

COGNITION:

The transformation of an organisation to establish a foundation that will enable Business Design within Enterprise Architecture Management requires enterprise-wide **cognition** of the profound impact that such a transformation will have on the organisation's structures, processes and norms. The most salient areas of change requiring **cognition** when planning for the enablement of Business Design within Enterprise Architecture Management, were identified through this research as being:

- *The evolutionary nature of such change*. In the case of SASure, this is evidenced by the research results indicating movement through Lejeune and Sack's (2011) Spaces of Strategy.
- *The approach to IS strategising* measured against Segars and Grover's (1999) Schools of IS Strategising. The research results suggest that an organisation needs to determine the SISP school of thought currently in operation, and needs to recognise that a migration needs to take place to reach the SISP school identified as most appropriate for the accommodation of Business Design within Enterprise Architecture Management – the *Learning School* (Segars & Grover, 1999).
- *The elements that need to be considered when strategising* as identified by Galliers' (2011) *Holistic Framework for IS Strategising*. Although the research results did not identify elements of strategy used in SASure's strategising process, what was identified was the difficulty in relating the enablement of Business Design within Enterprise Architecture Management that formed a key goal for the transformation programme, with an expressed business strategy. However, strong alignment was found between Business Design concepts, and the elements identified in Galliers' (2011) *Holistic Strategising Framework*, where the framework highlights the need for business and IS strategy to be jointly developed.
- *The Community Type* (Adler & Hecksher, 2011) most appropriate to such a strategising infrastructure. A key shortcoming highlighted in the research results was the lack of collaboration among various transformation programme role players at SASure. The *Collaborative Community* type described by Adler and Hecksher (2011), with its high regard for mutual trust and collaboration to meet a shared goal, makes the aspiration to establish such a community type an

important transformational goal.

CONVICTION:

Cognition of the impact on structures, processes and norms, of an organisation that is enabled for Business Design within Enterprise Architecture Management is but the first step. Once a shared cognition has been reached, conviction is required on the part of senior management of both business and IT, that such a strategic goal is worth attaining. If either business or IT senior management is not convinced of the benefits of a strategy to enable Business Design within Enterprise Architecture Management, any initiative to enable such a business model is unlikely to be successful (as appears to have been the case at SASure).

CONSENSUS:

Subsequent to shared cognition and shared conviction, consensus will largely be achieved through joint business and IS strategising in the *Inhabited Space of Strategy* (Lejeune & Sack, 2011), using a SISP *Learning School* approach (Segars & Grover, 1999), where such strategising takes the elements of Galliers' (2011) *Holistic Strategising Framework* into account. (Taking a strategic thinking approach to Galliers' (2011) *Knowledge Creating and Sharing Infrastructure* element will require the strategy to address culture through the facilitation of an appropriate *Community Type* (Adler & Hecksher, 2011)).

In the case of SASure, research results indicated that a lack of consensus on the following issues led to disaffection on the part of various project members, and contributed to a lack of collaboration:

- The *strategic business goals* that will be met through the enablement of Business Design within Enterprise Architecture Management
- The *structures* that will be created in order to enable Business Design within Enterprise Architecture Management
- The *processes* that will be introduced in order to enable Business Design within Enterprise Architecture Management
- The *roles* that will be required in order to support the enablement of Business Design within Enterprise Architecture Management, together with the responsibilities of such roles
- The over-arching *Enterprise Architecture principles* that will be adopted

- The *feedback mechanisms* that will be instituted to monitor the success or otherwise of EA initiatives
- The *tools* that will be used for modelling the EA, together with the availability and usage of such tools.

COMMITMENT:

Once the organisation-wide cognition, conviction and consensus described above have been achieved, it is necessary to ensure commitment from all parties involved in the transformation journey as to the tactics that will be used to realise the strategy. Such commitment is required in terms of striving to attain pre-determined organisation-level shared goals in the face of seemingly un-reconcilable paradoxes. The research results highlight the following examples where, over the period that this reaseach was conducted, commitment at SASure was lacking:

- Commitment of business and IT resources to collaborating across the socio-technical gap, e.g. unhealthy competition between solution architects and business architects.
- Commitment to comply with changed processes e.g. usage of the selected EA modelling tool.
- Commitment to ensuring that paradoxical requirements, e.g. Business Design enabled within Enterprise Architecture Management, are accepted or resolved, rather than resorting to organisational inertia (as witnessed in the SASure's decision to move non-IT Business Analysts under the Head of IT Business Analysts/Enterprise Architect Expert instead of resolving the issue of the use of the modelling tool).
- Commitment to the cultivation of a *Collaborative Community* (Adler & Hecksher, 2011) is suggested in the literature as a community type that will support collaboration that is "*rationally oriented toward an end-value higher than self-interest*" (Adler & Hecksher, 2011, p. 12). It is acknowledged that the establishment of such a community type will not be a simple undertaking. Adler and Hecksher (2011, p. 22) state that "*the institutionalization of collaborative community is difficult and not yet complete in any case we know of*".

CONGRUENCE:

As noted elsewhere in this dissertation, CAS systems are characterised as being balanced on the edge of chaos – a condition that ensures continuity – as opposed to an open system that acquires new inputs from its environment thus ensuring its continuity, or a closed system that inevitably faces entropy and consequent death due to its lack of a renewable energy source (Schneider & Somers, 2006). Accordingly, *coherence* in a CAS is a *constantly sought after* position (the dynamic nature of such coherence is indicated by the dotted arrow in the diagram). The framework therefore refers to a richer term, **congruence**. Dietz (2011, p. 2) explains that "*Abundant research indicates that the key reason for strategic failures is the lack of coherence and consistency, collectively also called congruence*".

Congruence therefore embodies the ongoing nature of the accommodation of Business Design within Enterprise Architecture Management. As indicated by the dotted arrow in the framework (see Figure 16), such **congruence** in the Business Design/Enterprise Architecture Management relationship moves on to become the **context** for the following Business Design initiative, the implications of which are subject to organisation-wide **cognition**, and for which **conviction**, **consensus** and related **commitment** are needed in order to ensure organisational **congruence** of the Business Design/Enterprise Architecture Management relationship into the future.

It is believed that a continuous congruent relationship between **Enterprise Architecture Management** and **Business Design** will be achieved through an evolutionary organisational transformation that is based upon the above foundational concepts.

7. Conclusion

A literature review surfaced the viewpoint that the application of Business Design (where Business Design is defined as *'the application of design thinking principles to business practice*' (Martin, 2009)), could be a key enabler of sustainable competitive advantage for today's organisations. In addition to social desirability, a key requirement of Business Design is that emergent designs should be technically feasible and economically viable (Martin, 2009). The Enterprise Architecture function in an organisation was found to be an appropriate conduit for providing the

necessary information for making such a determination. By the same token, this same literature review raised a concern that such a positive outcome of Business Design could be mitigated due to constraints imposed by the "*normative restriction on design thinking*" (Dietz, 2011, p. 4) imposed by Enterprise Architecture Management.

The perception of a paradox between the definitions of Business Design and Enterprise Architecture Management, as well as the related observation that it is often an organisation's structures, processes and norms that appear to act in conflict with the application of Design Thinking in an organisation (Martin, 2009), suggested an intriguing conundrum worthy of further research. The following research question was therefore pursued: *What contextual organisational elements are required to manage the paradoxical relationship implied by the definitions of Business Design and Enterprise Architecture Management?*

The research was conducted at an organisation that represented a particular paradigmatic case – that of a conservative organisation in transition from legacy mainframe technology to SOA/BPM architecture, and where the IT department played a dominant role in determining organisational strategy.

The resultant rich description of the research case serves as a cautionary tale of a transformational journey that did not progress according to plan, and, in fact, where the ultimate success of the project remained in the balance at the time that the research was completed. In spite of the lack of success of the research organisation in reaching its transformational goals, it is believed that the conceptual framework arising from the research findings - the *6 Cs Framework in Support of the Successful Enablement of Business Design within Enterprise Architecture Management* (see Figure 16) – provides valuable insight into the softer contextual elements that affect the optimum design of such a relationship, and therefore goes some way to address the research question that formed the basis of this research. It is hoped that this pragmatic framework will prove a useful sensitising tool to organisations that intend to tackle such transformations in the future.

7.1 Contribution of this Research

The purpose of this research was described in the introduction to this dissertation as the desire to explore the conundrum of the perceived paradoxical relationship between Business Design and Enterprise Architecture Management with a view to providing insight that could improve organisational support for this relationship into the future. The particular research question related to identification of the contextual elements that affect the optimum design of such a relationship.

The research results recounted in this research document relate to a particular organisational paradigm – that of a conservative organisation in which the IT department is dominant, and in which the IT department made use of its dominant position in the organisation to attempt to facilitate an IT-affiliated enablement of Business Design within Enterprise Architecture Management.

In spite of the limited scope of this research, the research contribution is regarded as twofold:

- a rich description of a paradigmatic case where the case organisation, at the time of the research, was attempting to reconcile Business Design with Enterprise Architecture Management; and
- a conceptual diagram, the *6 Cs Framework in Support of the Successful Enablement of Business Design within Enterprise Architecture Management,* that can be used as a sensitising tool to inform the optimal design of aspects of this relationship, regardless of the organisational paradigm.

This researcher suggests that, together, these outputs provide practical insights that can serve to better prepare an organisation for such an impactful organisational design change.

7.2 Suggested Future Research

This research initiative was unsuccessful in its aim to explore a successful instance of the enablement of Business Design within Enterprise Architecture Management. However, through the analysis of research data collected from a less successful project, the research did go some way in revealing the complexity and far-reaching impact of the softer contextual elements related to such an initiative. This research also identified the important role of the unique context of the organisation in

determining the best approach to such enablement. It is therefore suggested that further research could be conducted into this subject matter from the standpoint of alternative organisational paradigms. In particular, a paradigmatic case where the IT department does not play such a dominant role as it does at SASure, but rather works in partnership with business to achieve organisational goals, could serve as an interesting counterpoint to this research.

7.3 Final Word

Soetekouw (2010, p. 18) has a unique view of organisational architecture and design that serves as an aspirational note on which to end this research document:

"Organization design becomes organization architecture when the functioning of [the] *organization will be experienced by many as harmonious. As gentle and elegant, as a utility that combines function and beauty. Beauty not in a tangible form but as an experience".*

References

Adler, P., & Heckscher, C. (2011). From clans to collaboration: Collaborative community as the basis of organisational ambidexterity. *Retrieved November 21, 2012 from* https://msbfile03.usc.edu/digitalmeasures/padler/intellcont/version%209.7.2011.single-1.pdf

Aier, S., Gleichauf, B., & Winter, R. (2011, 16–18 February). Understanding Enterprise Architecture Management Design–An Empirical Analysis. Paper presented at the *10th International Conference on Wirtschaftsinformatik* held in Zurich, Switzerland. Retrieved 17 October 2012 from http://aisel.aisnet.org/wi2011/50/

Ahlemann, F., Stettiner, E., Messerschmidt, M., Legner, C., & Arbi, F. E. (2012). An Enterprise Architecture Management Navigator. In F. Ahlemann, E. Stettiner, M. Messerschmidt & C. Legner (Eds.), *Strategic Enterprise Architecture Management,* (pp. 35-53), Berlin Heidelberg: Springer-Verlag.

Aier, S. (2013, 27 February-1 March). Understanding the Role of Organizational Culture for Design and Success of Enterprise Architecture Management. Paper presented at the 11th International Conference on Wirtschaftsinformatick held in Leipzig, Germany. Retrieved 3 November 2013 from http://aisel.aisnet.org/wi2013/56/

Aier, S., & Weiss, S. (2012, 10-13 June). An Institutional Framework for Analyzing Organizational Responses to the Establishment of Architectural Transformation. Paper presented at the European Conference on Information Systems (ECIS) held in Barcelona, Spain. Retrieved 17 October 2012 from http://aisel.aisnet.org/ecis2012/228/

Alhojailan, M. I. (2012, 14-17 October). Thematic Analysis: A critical review of its process and evaluation. Paper presented at the *WEI International European Academic Conference* held in Zagreb, Croatia. Retrieved 17 November 2013 from http://scholar.google.co.za.ezproxy.uct.ac.za/scholar?cluster=5924523739385775007&hl=en&as_sdt=0,5

Andriopoulos, C., & Lewis, M. W. (2009). Exploitation-exploration tensions and organizational ambidexterity: Managing paradoxes of innovation. *Organization Science, 20*(4), 696-717.

Bailey, J. (2008). First steps in qualitative data analysis: transcribing. *Family practice*, *25*(2), 127-131.

Bashir, M., Afzal, M. T., & Azeem, M. (2008). Reliability and validity of qualitative and operational research paradigm. *Pakistan Journal of Statistics and Operation Research*, *4*(1), pp. 35-45. Retrieved 17 October 2012 from http://www.pjsor.com/index.php/pjsor/article/view/59/38

Braun, V., & Clarke, V. (2006). Using thematic analysis in psychology. *Qualitative research in psychology*, *3*(2), 77-101. Retrieved 17 November 2013 from http://www.tandfonline.com.ezproxy.uct.ac.za/doi/abs/10.1191/1478088706qp063oa#.UoiL0doaLug

Brown, T. (2008). Design thinking. *Harvard Business Review, 86*(6), 84.

Buckl, S., Matthes, F., Roth, S., Schulz, C., & Schweda, C. M. (2010). A conceptual framework for enterprise architecture design. In Erik Proper, Marc M. Lankhorst, Marten Schonherr, Joseph Barjis & Sietse Overbeek (Eds.), *Trends in Enterprise Architecture Research*, pp. 44-56. Berlin Heidelberg: Springer-Verlag.

Casadesus-Masanell, R., & Ricart, J. E. (2010). From strategy to business models and onto tactics*. Long Range Planning, 43(2), 195-215.*

Cecez-Kecmanovic, D. (2011, 4-9 September). On Methods, Methodologies and How They Matter. Paper presented at *ECIS 2011 Proceedings held in Berlin, Germany*. Retrieved 16 November 2013 from http://aisel.aisnet.org/ecis2011/233

Choi, T. Y., Dooley, K. J., & Rungtusanatham, M. (2001). Supply networks and complex adaptive systems: control versus emergence. *Journal of operations management*, *19*(3), 351-366.

Clarke, V., & Braun, V. (2013). Teaching thematic analysis: Overcoming challenges and developing strategies for effective learning. *The Psychologist*, *26*(2), 120-123.

Davis, M. M., & Berdrow, I. (2010). Service science: Catalyst for change in business school curricula. *IBM Systems Journal, 47*(1), 29-39.

Dietz, J. L. G. (2011, 25-27 August). From information systems development to enterprise engineering. Paper presented at *19th International Conference on Information Systems Development (ISD 2010), hosted by the faculty of Mathematics and Physics, Charles University in Prague*. Retrieved 20 May 2012 from *http://www.springerlink.com.ezproxy.uct.ac.za/content/t667g74518327437/*

Dunne, D., & Martin, R. (2006). Design thinking and how it will change management education: An interview and discussion. *The Academy of Management Learning and Education Archive, 5*(4), 512-523.

Espinosa, J. A., Armour, F., Boh, W. F., & Clark, M. A. (2012, 4-7 January). A Self-Fueling Coordination Model for Enterprise Architecting Effectiveness. Paper presented at *45th Hawaii International Conference on System Science (HICSS), held in Maui,* pp. 4240-4249. Retrieved 17 October 2012 from http://ieeexplore.ieee.org.ezproxy.uct.ac.za/xpls/abs_all.jsp?arnumber=6149411&tag=1

Flyvbjerg, B. (2006). Five misunderstandings about case-study research. *Qualitative Inquiry, 12*(2), 219.

Galliers, R. D. (2011). Further developments in information systems strategising: unpacking the concept. *The Oxford Handbook of Information Systems: Critical Perspectives and New Directions. Oxford University Press, Oxford*, 329-345.

Greefhorst, D., & Proper, H. (2011, 29 August – 2 September). A practical approach to the formulation and use of architecture principles. Paper presented at *15th IEEE International Enterprise Distributed Object Computing Conference Workshops (EDOCW),* 330-339. Retrieved 19 July 2012 from *http://ieeexplore.ieee.org.ezproxy.uct.ac.za/stamp/stamp.jsp?tp=&arnumber=6037636*

Grover, V., & Segars, A. H. (2005). An empirical evaluation of stages of strategic information systems planning: patterns of process design and effectiveness. *Information & Management*, *42*(5), 761-779.

Haki, M. K., & Legner, C. (2012). New Avenues for Theoretical Contributions in Enterprise Architecture Principles-A Literature Review. *Trends in Enterprise Architecture Research and Practice-Driven Research on Enterprise Transformation*, 131(4),182-197. Retrieved 17 October 2012 from http://www.springerlink.com.ezproxy.uct.ac.za/content/q057u81101q612vq/

Haki, M. K., Legner, C., & Ahlemann, F. (2012, 10-13 June). Beyond EA Frameworks: Towards an Understanding of the Adoption of Enterprise Architecture Management. European Conference on Information Systems (*ECIS) 2012 Proceedings,* Barcelona, Spain. Paper 241. Retrieved 17 October 2012 from http://aisel.aisnet.org/ecis2012/241

Hoepfl, M. C. (1997). Choosing qualitative research: A primer for technology education researchers. *Journal of Technology Education*, 9(1), 47-63.

Jones, D (2010, 19-20 October). What kind of thinking is design thinking? Paper presented at *8th Design Thinking Research Symposium, held in Sydney, Australia, pp.*129-137. Retrieved 19 July from http://www.dab.uts.edu.au/research/conferences/dtrs8/docs/DTRS8-Jones.pdf

Kanellis, P., & Papadopoulos, T. (2009). Conducting research in information systems: an epistemological journey. *Information Systems Research: Public and Private Sector Applications, Idea Group Publishing*. Retrieved 17 October 2012 from http://www.igi-global.com/chapter/information-systems-research-methods-epistemology/23466

Kimbell, L. (2009, September). Beyond design thinking: Design-as-practice and designs-in-practice. Paper presented at *CRESC Conference,* Manchester. Retrieved 19 July 2012 from *http://www.inovacaoedesign.com.br/artigos_cientificos/beyond_design_thinking.pdf*

Kistasamy, C., Van Der Merwe, A., & De La Harpe, A. (2010, 25-29 October). The relationship between service oriented architecture and enterprise architecture. Paper presented at *14th IEEE International Enterprise Distributed Object Computing Conference Workshops, Brazil,* pp.129-137. Retrieved 19 July 2012 from http://www.computer.org/portal/web/csdl/doi/10.1109/EDOCW.2010.12

Klein, H. K., & Myers, M. D. (1999). A set of principles for conducting and evaluating interpretive field studies in information systems. *MIS quarterly*, 23(1), 67-93.

Kloeckner, S., & Birkmeier, D. (2010). Something is missing: Enterprise architecture from a systems theory perspective. In A. Dan, F. Gittler, & F. Toumani (Eds.), *Service-Oriented Computing, ICSOC/ServiceWave 2009, LNCS 6275,* (pp. 22-34), Berlin Heidelberg: Springer-Verlag.

Lange, M., & Mendling, J. (2011, 29 August – 2 September). An experts' perspective on enterprise architecture goals, framework adoption and benefit assessment. Paper presented at *15th IEEE International Enterprise Distributed Object Computing Conference Workshops (EDOCW), Berlin,* pp. 304-313. Retrieved 19 July 2012 from *http://ieeexplore.ieee.org.ezproxy.uct.ac.za/xpls/abs_all.jsp?arnumber=6037633*

Lavin, S. & Seymour, LF. (2012) Towards an Understanding of Enterprise-level SOA Adoption: A South African Case Study. Proceedings of the *3rd International Conference on Information Management and Evaluation*, ISBN 978-1-908272-35-5, pp. 174-184.

Lee, A. S. (2010). Retrospect and prospect: Information systems research in the last and next 25 years. *Journal of Information Technology, 25*(4), 336-348.

Lee, A. S., & Baskerville, R. L. (2003). Generalizing generalizability in information systems research. *Information systems research*, *14*(3), 221-243.

Lee, C. (2011). Bounded rationality and the emergence of simplicity amidst complexity. *Journal of Economic Surveys, 25*(3), 507-526.

Lejeune, A., & Sack, I. (2011). From the architect to the organisational architect: modelling organisational domains in the empty, programming or inhabited space of strategy. *International Journal of Work Organisation and Emotion*, *4*(1), 99-112.

Martin, R. (2010). Design thinking: Achieving insights via the “knowledge funnel”. *Strategy & Leadership, 38*(2), 37-41.

Martin, R. L. (2007). *The opposable mind.* Boston: Harvard Business School Press.

Martin, R. L. (2009). *The design of business: Why design thinking is the next competitive advantage.* Boston: Harvard Business School Press.

Orlikowski, W.J., & Baroudi, J.J. (1991). Studying IT in organizations: Research approaches and assumptions. *IS Research*, 2(1), 1-28.

Ployhart, R. E., & Vandenberg, R. J. (2010). Longitudinal research: The theory, design, and analysis of change. *Journal of Management*, *36*(1), 94-120.

Proper, E., & Greefhorst, D. (2011). Principles in an enterprise architecture context. *Journal of EA,* 1, 8-16.

Reichertz, J. (2004). 4.3 Abduction, deduction and induction in qualitative research. Retrieved 20 May 2012 from http://www.uni-due.de/imperia/md/content/kowi/abductionenglisch.pdf

Rotman School of Design Website (2012). Research Program. Retrieved on 12 May 2012 from *http://www.rotman.utoronto.ca/businessdesign/default.aspx.*

Schneider, M., & Somers, M. (2006). Organizations as complex adaptive systems: Implications of complexity theory for leadership research. *The Leadership Quarterly, 17*(4), 351-365.

Segars, A. H., & Grover, V. (1999). Profiles of strategic information systems planning. *Information Systems Research*, *10*(3), 199-232.

Smith, W. K., & Lewis, M. W. (2011). Toward a theory of paradox: A dynamic equilibrium model of organizing. *Academy of Management Review*, *36*(2), 381-403.

SOA Consortium EA2010 Working Group (2010). Business architecture: The missing link between business strategy and enterprise architecture. *Management,* January, 1-12. Retrieved 19 July 2012 from http://www.soa-consortium.org/EA2010_Business_Architecture.pdf

Soetekouw, A. A. (2010). Alignment revisited. Amsterdam, the Netherlands: University of Amsterdam Business School. PrimaVera Working Paper Series, 2010-03. Retrieved on 17 October 2012 from http://primavera.fee.uva.nl/PDFdocs/2010-03.pdf

Suddaby, R. (2006). From the editors: What grounded theory is not. *Academy of management journal*, *49*(4), 633-642.

Swanson, E. B., & Ramiller, N. C. (2004). Innovating mindfully with information technology. *MIS Quarterly, 28(4)*, 553-583.

Teubner, R. A. (2013). Information Systems Strategy. *Business & Information Systems Engineering*, *5*(4), 243-257.

Thomas, D. R. (2006). A general inductive approach for analyzing qualitative evaluation data. *American Journal of Evaluation, 27*(2), 237.

Turner, P., Gøtze, J., & Bernus, P. (2009). Architecting the Firm–Coherency and consistency in managing the enterprise. In R. Meersman, P. Herrero, & T. Dillon (Eds.), *On the Move to Meaningful Internet Systems: OTM 2009 Workshops, (*pp. 162-171) Heidelberg: Springer Berlin.

Urquhart, C., & Fernández, W. (2013). Using grounded theory method in information systems: the researcher as blank slate and other myths. *Journal of Information Technology, 28, 224–236.*

Van Gils, B. (2009, 11 June). Strategy and Architecture–Reconciling Worldviews. In *Advances in Enterprise Engineering II: First NAF Academy Working Conference on Practice-Driven Research on Enterprise Transformation, PRET 2009,* held at CAiSE 2009, Amsterdam, The Netherlands. *Proceedings* (Vol. 28, pp. 181-196). Heidelberg: Springer Berlin.

Versteeg, G., & Bouwman, H. (2006). Business architecture: A new paradigm to relate business strategy to ICT. *Information Systems Frontiers, 8*(2), 91-102.

Wang, S., & Wang, K. (2011). Contributions of Systems Theory to Enterprise Systems: A Review. *IEEE eNewsletter of Systems, Man and Cybernetics Society*, Issue number 35, June 2011. Retrieved 19 July 2012, from http://www.my-smc.org/news/back/2011_06/main_article3.html

Yin, R. K., Bennett, N., Glatter, R., & Levacic, R. (1994). Designing single- and multiple-case studies. In Rosalind Levacic, Ron Glatter & Nigel Bennett (Eds.), *Improving Educational Management: Through Research and Consultancy,* pp. 135-155. London: Sage.

Yu, C. H. (1994). Abduction? Deduction? Induction? Is there a logic of exploratory data analysis? Paper presented at the *Annual Meeting of American Educational Research Association, New Orleans, Louisiana.* Retrieved 17 October 2012 from http://www.creative-wisdom.com/pub/Peirce/Logic_of_EDA.html

Appendix A: Semi Structured Interview Protocol

The following questions are very general, high-level and open-ended. Although initial interviews followed this script, the researcher found that a small sub-set of these questions, appropriate to the participant being interviewed, was all that was necessary to get each participant to share their understanding and experience of SASure's approach to the research subject matter.

Opening Common Questions:

- What is your understanding of the term 'Business Design' in general?
- What is your understanding of the role of Enterprise Architecture Management in general?

(It was necessary to establish a common understanding of these terms. The shared understanding was agreed based on the definitions provided in the summarised literature review in the main part of this document)

- What would you regard as an optimal relationship between Business Design and Enterprise Architecture Management in general?

In the Context of Enterprise Architecture Management:

- When did SASure first adopt Enterprise Architecture Management?
- What was the organisational motivation for adopting Enterprise Architecture Management, and does this motivation still hold?
- What is the reporting structure surrounding Enterprise Architecture Management?
- To what extent has Enterprise Architecture Management been accepted within the SASure organisation?
- What roles are incorporated in Enterprise Architecture Management at SASure?
- What Enterprise Architecture Management governance processes are there?
- How is EA governance enforced?
- Has EA governance influenced the way that you do your work?

In the Context of Business Design:

- Who are the role players in Business Design at SASure?
- What are the artefacts of Business Design at SASure?
- What governance principles are applied to Business Design at SASure, and what are their origins?
- What is the relationship between the various Business Design role players and Enterprise Architecture Management at SASure?
- How was Business Design at SASure achieved prior to the adoption of Enterprise Architecture Management?
- How have things changed since the adoption of Enterprise Architecture Management at SASure?
- To what extent, do you believe, are these changes attributable to Enterprise Architecture Management vs. Other influences?

Wrapping Common Questions:

- What is your understanding of the relationship between EA and the Business at SASure?
- What is your perception of 'Business Design' at SASure?
- What is the relationship between Enterprise Architecture Management and Business Design at SASure?
- How is Business Design influenced by Enterprise Architecture Management processes at SASure?
- What do you believe the optimal relationship should be between Business Design and Enterprise Architecture Management at SASure?

Appendix B: Analysis of Interview Texts

In this appendix, the journey through the data coding and analysis process is explained.

An initial round of interviews was undertaken at SASure, during which 14 interviews were conducted. As a result of these interviews, the researcher gained an understanding of SASure's transformation programme, and particularly of the strategy for accommodating Business Design within Enterprise Architecture. However, the researcher was left with the impression that SASure staff were still at the beginning of their journey in that most explanations were largely anticipatory rather than based on experience. A subsequent set of 6 interviews was therefore conducted after 6 months. These additional interviews were analysed alongside the previous analysis of the initial set of interviews. The themes that were selectively identified for this analysis were the following:

INITIAL THEMES
Challenges facing an organisation in transition
Collaboration Issues
Impact of Culture
Impact of EAM processes
Impact of Process Ownership
Importance of people skills
Management Issues contributing to conflict at SASure
Issues with Agile
Issues with Process
Issues with Structure
Lack of Alignment between Bus and IT
Lack of Shared Understanding
Differing Opinions on Architecture Models
Recognition of the need for synergism
Required Attitude of operational staff
Requirement for business to understand EAM
Requirements for coherence
The impact of an IT leaning EA Function

The combined analysis described above yielded insights for this researcher that led to the identification of 2 phases in the SASure Transformation Journey, together with the intuitive belief that a further phase was in the offing. Studying literature that

combined insights into the relationship between Enterprise Architecture and Design, together with Organisational Design and Strategising, surfaced the paper by Lejeune and Sack (2011) which provided a lens through which the researcher was able to make sense of the data in terms of 3 potential theoretical phases. The data was therefore further analysed based on themes arising from Lejeune and Sack's (2011) three Spaces of Strategy. This gave rise to the researcher's identification of the following codes and their relationship to sub-codes identified in the interview data:

CODE	**SUB-CODE:**
Case Study Context	
	Description of Applied Architecture Function
	Description of Business Architecture Function
	Description of Management of EA at SASure
	Description of Process Ownership at SASure
	Description of Technology Architecture Function at SASure
	View of EA as Coherence Management
	View of EA as improving ROI
SASure's Goal of Transformation 1	
	IT Strategy to enable business
	Strategy via Business Architecture to grow the company
SASure Context 1 Structures	
	CIO vision for enabling the business
	Componentisation of the Org requires more governance
	Description of Applied Architecture Function
	Description of business change function and its role
	Description of Management of EA at SASure
	Description of Technology Architecture Function at SASure
	Original Business Change Concept
	Original OD done by CIO in IT context
SASure Context 1 Systems	
	Initial requirement for business design is recognised by business
	Lack of agility identified as an organisational issue
	Shortcomings of Modelling Tool
SASure Context 1 Culture	
	Argument against encouraging DT throughout Org

SASure Choice 1 Alignment among org domains	Bus regard IT as a service arm they don't need to know about Culture in business of viewing IT as totally separate from Business Culture is not to think about things at an org level Hierarchical culture where power supersedes process Innovative culture from the start IT Transformation imposed on business rather than agreed to? Lack of understanding of complexities of systems from business Political and structural legacy separating IT and Bus SASure culture initially was opposite to entrepreneurial
SASure Choice 1 Constructs chosen to represent Org	Alignment issue between Business Architecture and Solution Arch Business Design as the approach that you take in coming up with the architecture Operationalisation Issues with Design Efforts
SASure Choice 1 Operationalisation	Business Architecture as a technique to source business benefits View of EA as Coherence Management
SASure Choice 1 Org Domains to proactively design	Lack of transparency in Architecture Principles No strategy linked to vision linked to arch principles Story of creation of Business Design function Architecture requires skills over and above design skills
SASure's Goal of Transformation 2	Business Architecture not represented on Gov bodies just IT focussed Bus and IT architecture blaming each other for non delivery

	CIO is working towards standardisation in dealing with data
	EA as providing coherence in structures Goal of rapid replacement of application portfolio for bus agility
	Head of Modellers wanted all Modellers under him IT regarded Business Design COE function as a source of confusion
	Strategy of use what you've got and innovate Transformation 2 due to lack of ownership at executive level
SASure Context 2 Structures	
	Business Architecture definition and understanding not at level of IT Arch definitions Business Architectures and Solution Architects going to business for same info
	Bus BAs lacking in design thinking Business Design COE not given the necessary support by either bus or IT
	Business Architects operating at level of projects
	Change Management function not effective IT EA didn't accept Business Architecture from the COO space
	IT staff used to populate business design function Lack of a process owner limiting ability to apply process level governance in bus Manner in which Business Design was introduced to Org lacked Business Design thinking
	Multiple roles doing much the same thing
	Resultant structure not working as it should
SASure Context 2 Systems	
	BArch Model billable versus IT EA Model not billable
	Business Change as a capability not functioning well
	Business people lack the necessary design skills Business Process needs to be addressed regardless of project price
	EA is not well understood at SASure People issues relating to creating Business Design function were not addressed
	Split structure has an impact on coherence
	Successful collaboration within IT architecture
	Tool used as a repository not accessible to others
SASure Context 2 Culture	
	Business too busy concentrating on operational issues to consider Business Design
	Change 2 due to personality issues
	EA at SASure as providing a consulting service

	Impact of lack of clear architecture principles Indication of culture of IT in its assessment of Business Architecture and PM relationship Insufficient maturity in business for intro of Business Design capability
	Lack of EXCO level support for Business Design COE concept Quote indicating that CIO pushed Business Design COE on his own
SASure Choice 2 Alignment among org domains	
	Business Design at SASure as enabling Comp Advantage or improved efficiencies Example of ITs lack of understanding of businesses involvement in transformation
SASure Choice 2 Constructs chosen to represent Org	
SASure Choice 2 Operationalisation	
	A design effort is a journey and it's an issue if you join late
	Move to put BAs altogether in IT space
	Narrow job definitions and handoffs lead to frustration
	Operationalisation Issues with Design Efforts 2
SASure Choice 2 Org Domains to proactively design	
	Role of Business Architecture in a Packaged Solution environment
SASure Context 3 Culture	
	Aggressive IT portfolio being pushed at the cost of human creativity Business Change Management see shared values rather than governance as a requirement Business Design COE function struggles to bridge the bus IT alignment gap Business lacks belief in the contribution of Business Design and EAM Business underestimates the complexities related to Systems thinking
	Cult of individual Personality and Power Culture impedes collaboration because people hoard their space

	Difficult to be the dissenting voice EA at SASure as putting governance in place to govern design
	Enablement of Business Design as an aspiration
	Follow a recognised EA and Principles framework
	Importance of people skills
	Individuals rewarded for innovative thinking Insufficient focus on the project team staff and their futures
	Introduction of Governance in terms of compliance Checking
	Lack of belief in existing staffs ability to change
	Lack of collaborative behaviour from Solution Architects
	Lack of natural desire to collaborate Lack of principles results in lack of traceability as to WHY
	Mgmt lack insight into non-IT bus requirement challenges
	Need for Transparency in Architectural Thinking
	Need for transparent EA Principles that embody strategy
	Need to employ for soft skills as well as technical skills
	Need to take on more risk at SASure
	One individual practicing innovative use of data
	Project Planning and budget favoured over quality
	SASure has short term view of design changes Solution Architects lack of understanding of business need for coaching Solution architecture are driving the requirements and showing bus the results Success in design related to constant questioning of current business design Task driven philosophy as opposed to a people driven philosophy
SASure Context 3 Structures	
	Bus vs. IT Architecture requires common Mgmt e.g. Chief Strategy Officer Business given responsibility for things they have no control over
	Chinese Wall separating Business Architecture from EA Conflicting views between IT and Business on required Solution Architect Approach Diversified knowledge in a culture lacking collaboration planning is not the answer
	EA as a profession-not yet firmly established-IMPACT
	Governance being dictated by IT
	Indicator of CAS – not enough mgmt to go around
	Lack of an organisation design component in processes
	Lack of clarity on different roles and responsibilities
	Need for more Architectural Resources
	Overwhelming power of IT architecture function
	PMO biased towards IT

SASure Context 3 Systems	PMO will err on the side of IT due to IT mgmt SASure's governance around architectures Too much governance in the opinion of Business Change Programme Projects not delivering on their obligations A more human-centred approach required Agile makes business people designers INAPPROPRIATELY Answer does not lie in allowing business free rein on design EA Modelling Tool as a political battleground complicating lack of alignment Business Architects buried in project work Business struggling with Agile learning curve Challenge of projects using different SDLC Cohesion between different project streams sought thru rules and procedures Complex Nature of Orgs requires complex system thinking skills Consequences of excessive change Different Perceptions of same project - values not shared Example of Business Design COE requirement that needed SOA to be in place Impact of timelines Imposition of rules and regulations has a cost and project impact overhead Indications of need to operate as a CAS Insufficient attention paid to the user who has to implement a solution Knowledge of EAM itself still not pervasive Lack of attention to organisational design issues Lack of clear goals for Core Transformation Project teams Lack of support of for EA Modelling Tool in both Business Architecture and EA Management of complexity through project management and planning Mechanistic view of org resulting in loss of individual resources Non Core IT Teams frustrated Non Core projects getting paralysed thru complexity Planning not sufficient to deal with amount of complexity NEED FOR Business Design Responsibility for quality lost due to overwhelming emphasis on project type goals Requirement for Business Design enablement overtaking project that aims to create enablement SASure's lack of clarity with strategy State of transition creates totally different operating processes across the business Too much future thinking not enough now thinking Transition to Agile not well managed to quick for business

	to adapt
	Triangulation of issue with IT focussed transformation strategy Under estimation of the skills needed to use the EA Modelling Tool toolset
	Using EA Modelling Tool for governance of SDLC
SASure's Goal of Transformation 3	
	Business profitability is being affected and business is concerned
	Collaboration between business and IT is essential Culture that led to break up of business design competency
	Enforcement of collaboration through governance Identification that business reality is short term vs. long term architectural vision
	IT fighting back against Architecture space Recognition that EAM is a business operation that still needs to be fully understood Recognition that the emphasis on an IT strategy cannot be at the cost of business
	Understanding of the term Information Architecture Up to current time management is still by project and planning

This thematic analysis made it possible to write up the research findings in terms of Lejeune and Sack's 3 Spaces of Strategy.

To take the analysis further into theorising on '*the contextual organisational elements that are required to enable the paradoxical relationship implied by the definitions of Business Design and Enterprise Architecture Management'*, the data was then selectively coded, and then summarised into themes, based on key factors that the researcher identified as affecting the successful interrelationship between Business Design and Enterprise Architecture Management. The results are reflected in the table below, down to 3 levels of sub-code:

CODE	SUB-CODE	SUB-CODE	SUB-CODE
CONTEXT	Identify Current Culture	Context is a culture in business that drives innovation	
		Issue due to historical relationship between bus and IT	
	Identify Current Maturity in Business Design and EAM	Description of different EAM Functions	Description of Applied Architecture Function
			Description of Business Architecture Function
			Description of Management of EA at SASure
			Description of Process Ownership at SASure
			Description of Technology Architecture Function at SASure
			View of EA as Coherence Management
			View of EA as improving ROI
	Identify Current SISP School		
	Identify Current Space of Strategy		
COGNITION	Recognition of Galliers' Model as the Required Strategic Planning Framework	Paradoxical roles of PM and Bus Arch needs to be acknowledged	
		Business design concept and standardisation foreign to business people	
		Business not schooled in design in the way IT staff are	
		Componentisation of the Org requires more	

		governance	
		New systems lean more towards knowledge workers	
		Pre-existing resources are required to operate in new EA without having acquired required skill-sets	
		SASure's transformation strategy described	
		Support for Concept of Business Design and EA Synergy	
		Understanding what it means to implement EA operationally is challenging	
		Requirement for Shared Organisational Goals	
	Recognition of Impact on Organisational Design	3rd parties become integral to organisations processes	
		Foundation necessary for agile future	
		Indication of need for agility in IT response to business need	
		IT and EA regarded as a service by the business	
		Recognition that the emphasis on an IT strategy cannot be at the cost of business	
		Lack of attention to organisational design issues	
		Lack of clear definitions distinguishing Bus Architects	

		from Solution Architects	
		Lack of overall concept of enterprise design	
		Organisational implications of change not well understood	
		Recognition of challenges facing a CAS	Analyst role has burst into many roles with no one with overall understanding
			Challenges in mapping processes in a complex environment
			Complex Nature of Orgs requires complex system thinking skills
			Implications of Org as a CAS
			Indications of need to operate as a CAS
			Recognition that EAM can be used for alignment in CAS
			Requirements for coherence require adjustments to Org Design
		Requirements for Pragmatic Approach	Business need for agility needs to be reflected in agile SDLC processes
			Differentiated SDLC required to deal with packages vs. bespoke
			Processes relating to projects and SDLC require more flexibility
	Recognition of Impact on People	An architect is required to be skilled in both Bus and IT	
		Bus Architects operating at level of project	

		designers	
		CIO has identified person impact as NB for future	
		Design for flexibility requires different operational skills	
		Frustration in IT due to exclusion from solutioning	
		Level of granularity of business knowledge has changed	
		Need to recognise impact on BA role	
			Aim for engineering excellence rather than fit for purpose
			Frustration in non 3I projects with Waterfall approach
			Hierarchical behaviour means that important stakeholders are excluded
			Hiring resources without the necessary soft skills
		Recognition of Requirement for Collaborative Community to deal with Paradoxes	Insufficient maturity in business for intro of Business Design capability
CONVICTION	Difficulties with Compliance		
CONSENSUS	CONSENSUS (Inhabited Space of Strategy) essential for successful IS Strategy (Teubner, 2013)	Bus and IT architecture blaming each other for non delivery	
		CIO vision for enabling the business not based on business	

		strategy	
		Conflicting views between IT and Business on required Solution Architect Approach	
		Culture is not to think about things at an org level	
		IT Strategy to enable business?	
		IT Transformation imposed on business rather than agreed to?	
		Lack of clarity on different roles and responsibilities	
		Lack of EXCO level support for bus design concept	
		Quote indicating that CIO pushed Bus Design on his own	
		Triangulation of issue with IT focussed transformation strategy	
	CONSENSUS on need for Collaborative Community required	Collaboration between business and IT is essential	Approach to EA Principles at SASure incl. contradictions in terms of documentation
		EA Principles	EA Principles regarded as extremely difficult to formulate and constantly gotten around
			Need for transparent EA Principles that embody strategy
			Opinions on Architecture Principles at SASure

			Principles equated to a saving of money!
		Hierarchical behaviour in organisation overrides good governance	
		Lack of consensus on roles of Bus Architects and Solution Architects caused conflict	
		Lack of consensus on use of ARIS	
		Learning School SISP based on Consensus for Action	Consensus required in order to overcome political manoeuvring
			Lack of Shared Understanding
		Architects are by nature not collaborative	
		CMMI as the aspiration for introduction of governance by ARIS	
		Collaboration Issues	Collaboration view of Business Architects
			Collaboration view of PMO
			Collaboration view of Solution Architects
			Collaboration view of Team Leader
			Collaboration view of the Business
			IT EA didn't accept Bus Arch from the COO space
			Lack of collaboration leading to alienation and unhealthy competition
COMMITMENT	Commitment to Collaboration		Smart IT resources who don't collaborate disable

			business
			Surprising Collaboration view of Project Manager
		Continued lack of collaboration as SASure's downfall	
		Culture impedes collaboration because people hoard their space	
		Issues affecting Organisation Wide Collaboration	Business doesn't understand EAM and its role
			Business kick-back in design results in sub-optimal solutions
			Business lacks belief in the contribution of Business Design & EAM
			Importance of having a shared vision for EA coherence
			Lack of Coherence Management
			Lack of expertise in implementing processes
			Lack of feedback mechanisms
			Need for more Architectural Resources
			Need to tolerate the dissenting voice
	Importance of human commitment for innovation to be successful DIETZ		
	Importance of taking ownership and seeing project through to completion		
	Mechanisms for Supporting culture of Commitment and avoidance of	Move to put BAs altogether in IT space	

	inertia		
		Bus Architects and Solution Architects going to business for same info	
		Bus vs. IT Architecture required common Mgmt e.g. Chief Strategy Officer	
			Acknowledgement of EAM constraints on design freedom
			Business avoidance of EA buy-in as a mechanism to avoid standardisation
			Business expected to sign off on things they don't understand
			Culture of power rather than collaboration
			Desire for standardisation ignores existing capabilities
			Difficulty in finding resources that can span both business and IT
			Dominance of IT related skills in the Design Space
			EA as a position of power
			EAM is delivering to IT rather than to Business
			Focus on SDLC without taking organisational impact post implementation into account
			Historical mistrust of IT by business is difficult to dissipate
CONGRUENCE	Coherence issues overcome by Collaborative Community	Lack of Alignment between bus and IT	Impact of lack of bus and EA collaboration

			Imposition of standard processes foreign to business
			IT costs related to standardisation assigned to business projects
			IT skills moved to bus to do Business Design therefore Bus vs. IT conflict perpetuated
			Lack of professionalisation of a cross bus and IT skill-set
			Lack of resources skilled in both IT and Business
			Project approach puts emphasis on time and money not quality
			SASure EA not aligned to business as yet
			Severe indictment of character and ethics of IT Management
			Soft Skills lacking in individualistic architects and designers
			The structure of relationship between bus and IT not balanced
			Theoretically correct EA takes too long
		Lack of coherence due to maturity differences in Business Architects and rest of EA	
	Coherence issues overcome through inhabited space of strategy	Lack of change management at an organisational level	
		Lack of clear shared vision and values thru lack of Business Design	

		Bus vs. IT divisions are perpetuated through structure	
	Coherency through Mature EAM Function in Service of Org	Business don't have access to process models	
		EA as providing coherence in structures	
	Lack of overall architecture accountability at Enterprise Level		
	Lack of published principles affecting coherence		
	Lack of understanding of new roles and functions and processes		
	Manner in which Business Design was introduced to Org lacked Business Design thinking		
	Need for Transparency in Architectural Thinking		
	Need to garner feedback once design is in action		
	SASure needs to control its culture change		

This third data analysis was used to compile a thematic map of the '*overall conceptualisation of the data patterns, and relationships between them*" (Braun & Clarke, 2006, p. 89). This map was refined in order to produce the **Sensitising Framework to Successfully Enable Business Design within Enterprise Architecture Management** (see Figure 16).