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A Framework for the Alignment of Information Technology and Business in South African Development Banks

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Abstract:- Although development banks are not for profit making, they are mandated with providing much needed financial services and assistance to South Africans. Nevertheless, the bulk of South Africa's development banks have recently suffered financial loses, while others have seen their earnings decrease. This paper argues that, to maximise performance and the subsequent success, development banks must align their information technology and business strategies. The argument is that when an organisation's business and information technology strategies are aligned, that improve performance and in turn may increase profits. The business problem is that South African development banks lack a guiding framework for aligning business and information technology strategies. This paper utilises a case study research strategy to describe how business and information technology alignment can be achieved through thorough strategic planning and execution. The paper employs business and information technology alignment models as lenses to show when and how information technology could better enable the business processes in South African development banks, when there is alignment. The paper provides a framework for business and information technology alignment.

Keywords:- *Alignment, Business Strategy, IT Strategy, Development Banks, South Africa.*

I.INTRODUCTION

In recent years, it has become increasingly important to regularly monitor the functioning of development banks and other state owned institutions in South Africa. The vast majority of these organisations have suffered financial losses, while some have seen their revenues fall significantly. South African development banks must align their business strategies with their information technology strategies if they are to improve their performance and make profits. According to research studies, when organisations align their business strategy and operations with their information technology strategy, they improve their overall performance which in turn improves their financial performance. The business problem is that South African development banks do not have a guiding framework for aligning the business strategies with their information technology strategy. This research has conceptualised a framework for aligning business and information technology strategies for South African development banks (often called Development Finance Institutions). Development banks should not be profit making organisations; rather, they receive their mandate from the government or province of government that controls them [1]. To achieve the development mandate established by their majority stakeholder, which is the federal or provincial government, their policies are designed to be as effective as possible.

II.BUSINESS-IT ALIGNMENT

In research, business and information technology alignment refers to the process of aligning the information technology strategy with the business strategy and the procedures that support those strategies. The term "business-IT alignment" refers to the increasing alignment of dynamic business objectives with the specific technological support given by information technology. Business managers and executives have stressed the need to successfully align business and information technology objectives. According to business executives and managers, creating successful alignment between business and information technology is a difficult undertaking that will never be easily achieved [2].

Business-IT alignment is divided into three levels: structural or strategic alignment, functional alignment and social alignment. Structural alignment is by far the most applied in the practice of the three alignment levels [3].

Several studies have been conducted to demonstrate the beneficial effects of business-IT alignment on organisational performance [4], [5], [6], [7]. Harmonizing business and information technology inside a firm has a direct influence on and improves the performance of the organisation [8].

A. Structural Alignment

The process of matching the strategies of multiple business units with the primary business strategy is called structural alignment. It is also referred to as strategic alignment. One significant issue for the business is to ensure that all the various strategies of the business units are in sync with each other, with the primary business strategy and with the information technology strategy [7]. To be competitive, companies must understand and be on the same page when it comes to using information technology to benefit their

business. This means matching information technology to strategies, goals, and needs of the business promptly. Structural alignment refers to the degree to which different company strategies exert influence on one another to accomplish the same goal [9].

B. Functional Alignment

The functional alignment, also known as the horizontal alignment, is concerned with the alignment of a group of various companies under the control of one company or a conglomerate. Business-IT alignment becomes complex when strategies of these various companies have to be aligned with the single information technology strategy. The functional strategy aims to build information technology capabilities that will enable and support the entire business capabilities. Complication rises when the information technology strategy has to be aligned at both the strategic and functional levels [7].

C. Social Alignment

Social alignment is cross-domain interconnectivity that includes both social capitals between business and IT and IT staff's knowledge of the organisation. Relationships between business and IT staff are captured by social capital, whereas the business understanding of IT personnel is captured by the outcomes of these relationships, such as IT staff understanding business processes and having a common language with business staff. Social capital between business and IT is particularly essential for enabling easy collaboration between business and IT technology in the development and provision of the best-possible information technology solutions [10].

III.SURVEY OF SCHOLARSHIP

Reynolds and Yetton [7], in their article titled "Aligning business and information technology strategies in multi-business organisations", looked at the implications of existing business-IT alignment models and proposed an alternative theory with explanations for how business and information technology alignment creates value. With an emphasis on structural alignment and functional alignment, this study utilises route dependency and resource-based theory to form IT strategic alignment for multi-business organisations. With the help of the Commonwealth Bank of Australia, which was used as a case study, the research team utilises Makadok's [11] four profit theories to construct a theory of value creation based on three strategic drivers: competence, governance, and adaptability. Known as the "Functional and Structural Alignment Model in multi-business organisations," Reynolds and Yetton created a hypothesis that depends on these fundamental concepts: functional alignment and structural alignment.

The method through which the company strategy is aligned with the strategies of strategic business units is defined by Reynolds and Yetton as structural alignment. Making synergy between the two initiatives is the business issue. The functional alignment is concerned with the alignment of the multi-business organisation and information technology strategy. The aim of the functional strategy is to build information technology capabilities that will enable and support business capabilities. When the information technology strategy has to be linked with both levels, there is a degree of difficulty.

Although the link between the three forms of alignment is not postulated in Reynolds and Yetton's study, it is uncertain whether or not they influence an organisation's ability to function as a whole. Furthermore, the validity of Reynolds and Yetton's model has not been empirically verified to ensure that it is true.

Jonathan et al. [12] examine the dearth of business-IT alignment research in underdeveloped nations. Those who oppose the study point out that the majority of the research has been finished and conducted in industrialised countries.

Jonathan et al., [12] examine the Strategic Alignment Model (SAM) and its capacity to evaluate and assess business-IT alignment. These researchers find that SAM is inappropriate for practical use in the study. The Strategic Alignment Maturity Model (SAMM) is then used in the research, which solves the inadequacies of existing business-IT alignment models by addressing their deficiencies. Additionally, SAMM outlines six characteristics that have been demonstrated to improve the alignment of business and information technology. The most noteworthy improvements to the dimension that SAMM introduces are the social alignment and industry-specific structural alignment components of the dimension.

Jonathan et al. [12] used a case study research approach to explore the numerous intra-organisational elements that influence business-IT alignment in this study. The goal of the study was to evaluate the relationship between information technology professionals and their counterparts in other areas of the organisation.

The Jonathan et al. [12] study was conducted in a private bank in Ethiopia. It is widely considered to be one of the most technologically sophisticated financial organisations in the world today. A non-probability sampling approach was used to choose the respondents for this study. Through the use of internal organisational papers, internet posts, organisational annual reports, and other publicly available information, the data collecting procedure entailed building the organisation's reality. Two interviews were conducted with the same subjects. Although the first interview was semi-structured and focused on the study's objectives, the second interview was semi-structured and focused on the bank's culture and operations. During the interviews, six business-side directors, four IT-side directors, three business-side managers, and one business-side officer were asked questions. The interviews were transcribed and analysed using thematic analysis techniques.

They observed that one of the most important things that is lacking when seeking to connect the business strategy with the IT strategy is effective communication between the two parties. Also observed was that information technology leaders lack a thorough grasp of the business to effectively communicate how IT contributes to the organisation's overall goals and objectives. Furthermore, the survey revealed a lack

of coordination between business and information technology. Besides, it uncovered that the information technology department lacked the essential capabilities to offer the services required to support the business strategy.

According to the findings of the study, environmental issues such as a lack of qualified personnel and a shaky infrastructure are among the most significant impediments to business-IT alignment in developing nations. In a developing country, the following obstacles to business-information technology alignment were identified: uncertainty about the relationship between business and information technology, inefficient use of available IT personnel for the right task, inadequate training of business personnel to use existing IT systems and failure to capitalise on learning opportunities from outside providers. In addition, they include a lack of formal metrics and oversight to measure IT value; and a lack of time for personal skill development are all issues that have been identified.

The study might have been broadened to include other banks to increase the richness of the findings. When a single bank is used, it is more difficult to generalise to other banks in developing nations. The authors also emphasise that each example may be distinct from the others, which is an important factor to keep in mind while looking at development banks in South Africa.

In a study Schlosser et al. [10], "Achieving social alignment between business and IT – an empirical evaluation of the efficacy of IT governance mechanisms", the authors developed a theory-based model of operational social alignment that takes into account social capital between IT and business units, as well as IT staff's understanding of the business. Also examined in depth are the mechanisms of informal and formal IT governance that result in the development of social alignment and commercial value, among other things. A survey of banks in the United States of America was used to demonstrate how social alignment can be achieved at various levels through a variety of IT governance mechanisms including top-level support, IT representation on the executive board of directors, joint IT planning, and IT training, among other measures.

The study makes use of social capital theory to investigate the effect of a social viewpoint on business-IT alignment, as well as the role of IT governance systems on alignment in the company. The research investigates the operational links that exist between business and information technology. This is the stage at which the alignment of business and information technology plans should be executed and coordinated to have an impact on the performance of the organisation. One of the goals of the research is to operationally integrate business and information technology so that business and information technology alignment may be facilitated.

When it came to putting the social capital theory's hypothesis to the test, information was obtained through a survey of more than 1500 banks in the United States of America. The poll was only open to managers who were in charge of certain business operations at the time. As a result, the survey was limited to a particular business process to guarantee that respondents were aware of business-information technology collaboration. Only 1213 respondents consented to take part in the survey, out of 1500 responses. Only individuals who expressed an interest in taking part were sent questionnaires, and only 149 people returned them. Only 132 of the 149 questionnaires were able to be examined since17 of them were incomplete.

Among other things, the findings revealed, that social capital between business and information technology has a beneficial impact on information technology personnel's grasp of business and, as a result, on the performance of the business.

Although the findings are supported by the bulk of the literature, the study is restricted in that it only investigates one component of business-IT alignment. Furthermore, it is restricted by the fact that it is limited to a particular business process. Additional business processes and other aspects might have been taken into account in this study, which would have been beneficial. Furthermore, the study's list of IT governance methods is quite restricted and does not include all of the available options. There is no mention of other dimensions such as past IT success, communication between business and IT executives, or links between business and IT planning in the research, which only looks at one social obstacle to business-IT alignment on the social dimension: domain knowledge exchange.

The data for the study came from a single country, a single industry, and a single business procedure. The findings' generalisability is limited as a result of this restriction on their scope.

IV. THEORETICAL FRAMEWORKS

This paper looks at the existing business-IT alignment models and proposes an alternative framework that focuses on both the structural, functional and social alignment aspects of business and information technology.

A. MIT90s framework

The MIT90s framework helps professionals to comprehend the processes of change as well as the development of new technological capabilities. This process framework represents the interactions between five essential structures: strategy, structure, technology, people and management processes. The MIT90s Model was developed by the Massachusetts Institute of Technology in the 1990s.

The MIT90s framework describes the actions that must be taken to achieve business-IT alignment, including the usage of culture, external influences, IT knowledge, information, as well as IT success. Following the creation of the MIT90s framework, Liao and Teo [13] published a paper on it. In their assertion, Rockart and Morton [14] say that it was evolved from Leavitt's 1965 model, which they refer to as the Diamond hypothesis. The Diamond theory was made up of

four interconnected constructs: the tasks of the organisation, its people, structure and technology.

B. Strategic Alignment Model

The knowledge of how business strategy influences IT strategy and vice, versa is provided by the Strategic Alignment Model. To integrate business and information technology, the Strategic Alignment Model (SAM), which is based on the MIT90s [15], is widely utilised for this purpose [7]. For its intuitively persuasive thesis illustrating the necessity and relevance of business-IT alignment for organisational performance enhancement [16], it has been widely cited.

SAM provides four alignment constructs for business and IT strategies: business strategy, business infrastructure and processes, information technology strategy, and information technology infrastructure and processes [17]. The concepts of structural and functional alignment [18] serve as a connection between these structures. SAM was never meant to be a tool for assessing the alignment of business and information technology. Its goal is to uncover a new way of thinking about information technology strategy, as well as to determine if business strategy impacts information technology strategy or vice versa [19].

C. Strategic Alignment Maturity Model

The Strategic Alignment Maturity Model is a tool for evaluating business-IT alignment and identifying opportunities for enhancement. Most of business-IT alignment models are industry-specific and cannot be easily transferred to other industries, making them challenging to execute. Furthermore, because these models are static, they do not provide information on how well or poorly tactics are matched with one another [12]. As described by Luftman [9], the Strategic Alignment Maturity Model (SAMM) provides assessments that may assist businesses in increasing the degree of business-IT alignment maturity [20]. To determine the maturity of business-IT alignment, SAMM covers six concepts. The following are the conditions that must be met and they are: communication, evaluation of competencies and values, governance, collaboration, technology scope, and skills.

These concepts are important for determining the degree to which business and information technology are aligned. More importantly, according to the research, over 55% of publications claim that these criteria are the most relevant factors to use when evaluating business-IT alignment [21].

V.RESEARCH METHOD

A. Research Strategy

This paper utilises a single case study research strategy, comprising of a number of case units. Case studies can be either complete or integrated into a larger study. Unified approaches such as the embedded method [22], identify components (case units) inside the principal instance; they analyse each case unit separately and they combine the findings to offer a holistic picture. One way to analyse a case comprehensively is to embed it inside the case components that make up or contribute to the case [23]. This has been a case study of a development bank with many business divisions, each of which has been treated as an independent case unit. Each section of the firm was looked at as a separate case unit and investigated individually to generate a complete picture of the phenomena of business-IT alignment inside a development bank.

Twelve case units were examined in order to better understand an organisation that offers financial assistance to the agricultural sector's expansion, commercial farming, and agribusiness operations. It makes appropriate financial solutions available to new entrants into agriculture who come from historically disadvantaged backgrounds to make access to financing more convenient for them. A real South African development bank that serves all farmers equally and works solely inside South Africa's boundaries was the case in this study.

B. Research approach

In this study a qualitative research approach was followed. Because of its inductive reasoning, a qualitative method's primary objective is to attempt to make meaning of some observable occurrence in the world, which necessitates an interpretative approach, therefore linking it with the interpretivism research paradigm [24].

C. Sampling for research

Purposive sampling was employed in this study. This research purposefully chose one of the three major national development banks to examine how business and information technology are matched in that organisation. Purposeful sampling is advantageous because it allows the researcher to select a unit of analysis that possesses the characteristics required of sample units, is thought to be applicable to the research issue, and is easily available to the researcher. The participants, who were chosen to represent the corporation, were carefully selected based on their knowledge and experience in the areas of business and information technology strategy. Forty participants representing various business divisions participated in the study, which was conducted using case units as its framework. Executive managers, general managers, line managers, and operational staff were among those that took part in the event.

D. Data Collection and analysis

For data collection, semi-structured interviews were conducted with 40 participants. Semi-structured interviews were able to produce high-quality data. The data gathered served as a guide during the data analysis process. Data were analysed using thematic analysis.

VI.DISCUSSION OF FINDINGS

The following findings are discussed as causes of misalignment between business and information technology.

Information technology is critical for the organisation, yet the financial commitment made to the organisation's information technology budget is insufficient to fulfil the need of the organisation from a technology point of view. The difficulty that banks are experiencing is a lack of commitment to the budget for business-IT alignment, or even to IT

investment in general [18]. And per literature, banking institutions must allocate more budget to the technology that powers their information technology since it is a critical component for customer centricity and operational effectiveness. IT must be given top priority as part of the organisation's overall strategy [25].

The bank's business strategies are a blend of defender and reactor approaches. As a result, they argue their case by attempting to strengthen the business by preserving their position in the market [26]. As a result, they are reactionary in that they only respond to the position of competition. According to the literature, business plans should adapt to external social, economic, political, and technical developments while also considering internal elements of how they may expand their firm to be successful. Business strategies might follow the same line-of-business technique of growth, such as market penetration, market expansion, or product development, or they could be different. As a result, both literature and findings are in agreement since the bank's strategy is clear on these points, in the sense that they employ the legislation that controls them to focus on both the internal and external parts of their strategy [27].

The findings suggest that the IT strategy was developed in response to the need to support the organisation's business plan, as well as to address the concerns and issues raised regarding IT by the CEO, the EXCO, and other case units within the bank. Because the majority and current systems within the bank were internally focused, the IT strategy was specifically designed to emphasise the development of systems that would be focused externally to facilitate additional channels for accessing the bank.

According to the literature, the IT strategy should be expanded beyond its traditional internal focus to include external concerns such as how effectively the firm is positioned in the rapidly changing world [16]. It is further argued in the literature that the information technology strategy should be a framework that allows the organisation to leverage its technology to discover and exploit opportunities as well as gain a competitive edge over its competitors [28]. The findings reveal that the bank's information technology strategy does not place a strong emphasis on the larger problems of placing the organisation in the information technology marketplace, nor does it strive to identify and exploit possibilities for a competitive edge in the IT marketplace.

The findings reveal that there is a lack of communication and knowledge sharing throughout the bank from the CEO and EXCO to the rest of the workforce. There is also a dearth of formal communication mechanisms between business divisions, which is a concern.

Alaceva and Rusu [29] recognised "common domain knowledge" and "IT success" as important facilitators of business-IT alignment [30]. They concluded that without these two factors, an organisation would be unable to achieve effective alignment. The ability to communicate effectively greatly supports the sharing of information. It follows that organisational alignment will result from the development of common domain knowledge between IT and the business as a result of efficient communication between these two groups [5].

VII.FRAMEWORK FOR THE ALIGNMENT OF BUSINESS AND IT IN SOUTH AFRICAN DEVELOPMENT BANKS

The current theories, models, and frameworks for aligning business and information technology goals do not adequately address the specific problems that South African development banks face in their operations. Also, Charoensuk et al. [30] mentioned in their analysis that there is a vacuum in the literature when it comes to business-IT alignment. According to Charoensuk et al. [30], the vast majority of alignment models do not take into account both the strategic and operational elements of alignment simultaneously. The model presented here fills this gap.

The proposed framework for harmonising business and information technology strategy in South African development banks is depicted in the diagram below in Fig. 1.

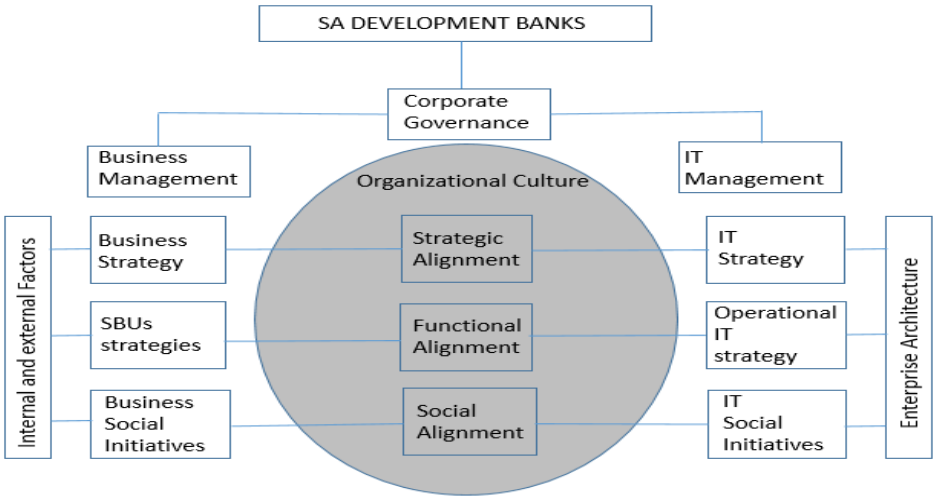

Fig 1. A framework for business-IT alignment in SA development banks

Described below, Table 1 are the elements of the conceptualised framework.

TABLE 1. ELEMENTS OF THE CONTEXTUALIS ED FRAMEWORK

Business Strategy • IT Investment • Executive Management • Organisational Scope and Architecture • Organisational Competency	Strategic Alignment	IT strategy • IT Mandate • IT Governance • IT Management • IT Scope and Architecture • IT Capability • IT Budget Control
SBUs strategies • SBU Capability • SBU Infrastructure • SBU Structure • SBU Operations • SBU Skills • SBU Processes	Functional Alignment	Operational IT strategy • IT Capability • IT Infrastructure • IT Structure • IT Operations • IT Skills • IT Processes
Business Social Initiatives • Knowledge sharing practice • Formal organisational communication networks • Business partnership forums • Development of organisational skills • Inclusive strategic and functional alignment planning • Relationship between CIO and executive team	Social Alignment	IT Social Initiatives • Position IT as strategic partner • IT Value and ROI • IT Implementation Success • Common language between business and IT • Formal and informal integration • Development of IT skills

VIII.CONCLUSION

The most significant research problem identified in South African development banks was a mismatch between the business strategy and the IT strategy. Development banks are struggling with the "what" and the "how" of aligning information technology and the business. . The mismatch often results in significant loss in profits and performance for the banks because IT does not support and enable the business accordingly. To this point, this paper argued that there was a need for a framework that may help business and IT alignment in South African development banks. The paper provided a context sensitive framework that may assist the South African development banks to align information technology with the business, and subsequently improve performance.

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