IT Governance Practices in a Public Organization in Ghana

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ABSTRACT

The strategic importance of information technology (IT) in today’s organizations and dependence on IT to support e-government strategies has increased the interest in IT Governance (ITG) in public sector organizations. From this perspective, this paper examines ITG practices in a public organization in Ghana (that has a responsibility to mobilize revenue for national development) in order to gain an insight into IT governance structures, processes and relational mechanisms and understand how this contributes to adding value through IT. The findings have revealed that this public organization has a centralized approach to IT governance, with inadequate board involvement concerning how IT investments can bring value and improve organizational performance. Furthermore, there are no IT steering and strategy committees to oversee IT governance as best practice requires.

INTRODUCTION

The importance of strategic use of IT in today’s organizations has resulted in significant IT investments by public sector organizations to take advantage of its numerous benefits. Many organizations from the public sector are increasingly relying on IT to support e-government strategies in order to facilitate efficient and cost-effective service delivery. Accordingly, there is interest to find effective governance mechanisms for the management of IT resources in public sector organizations (Nfuka, Rusu, Johannesson, & Mutagahywa, 2009).

According to the IT Governance Institute (ITGI, 2011), IT Governance (ITG) is part of the corporate governance and uses corporate governance principles and mechanisms to support the effective management of IT to achieve organizational goals (Weill & Ross, 2004a). The general purpose of ITG is to facilitate the delivery of value by aligning IT with organizational goals, generate a return on IT investments through exploiting opportunities, efficient use of IT and the mitigation of risks associated with IT (ITGI, 2011; Van Grembergen & De Haes, 2008; Weill & Ross, 2004b). In the opinion of Weill & Ross (2004a) there is a difference between IT management, which is about how specific decisions are made, and ITG, which relates to systematically defining who makes each type of decision (decision right), who has input in...
the decisions (an input right), and accountability of people (or groups) for their role. Moreover, an effective ITG aligns IT investments with overall organizational goals.

In spite of growing interest in ITG as a research area (Ridley, 2008), there is limited research examining the subject, particularly in public sector organizations in developing countries (Nfuka & Rusu, 2010). In order to address this gap, this paper uses an interpretive case study to examine the ITG practices in a public sector organization in Ghana. Through this approach we tried to understand IT decision-making structures, ITG processes and relational mechanisms and to gain insight into ITG practices. The findings of this study are useful to IT professionals and academics interested in ITG research with a focus on developing countries. The paper’s structure is the following: first we introduce a short review of the ITG research literature, followed by a presentation of the theoretical framework used in the study. Next, the research methodology is described, followed by a presentation and discussion of the findings. Finally, the conclusions of this research are presented.

Literature Review

Empirical studies have examined various aspects of ITG in both private and public organizations. According to Weill and Ross (2004a), organizations with effective ITG generally have 20 per cent higher profits than their counterparts that employ similar strategies. While there is no best formula for implementing ITG (Rau, 2004; Van Grembergen & De Haes, 2008; Weill & Ross, 2004a), research shows that ITG require careful design, implementation and monitoring to provide formal direction to managers (ITGI, 2011; Sambamurthy & Zmud, 1999).

According to Ali and Green (2007), the nature of an organization (public or private) determines the effectiveness of ITG mechanisms. Public organizations are administrative and economic institutions that provide services for and on behalf of government. Unlike private organizations, the public sector is characterized by intangible or conflicting goals, numerous stakeholders as well as competing interests. They rely on governmental funding and budgetary allocations and directed by politically appointed ministers. Furthermore, public sector organizations are bureaucratic, full of legal constraints and are guided by government policies and directives rather than the profit motive. They are subject to political influences, interferences and changes, this has the tendency to frequently disrupt governance practices and programs (Ali & Green, 2007; Campbell, McDonald, & Sethibe, 2010). While both public and private organizations have similar issues and challenges regarding the management of IT, there are contextual differences. Consequently, the public sector organizations may require different governance structures, processes and mechanisms. Moreover, political interference in public sector governance and periodic changes to top level management in each political cycle usually affect public sector ITG (Campbell et al., 2010).

Some previous studies have examined ITG in public sector organizations. For example, Nfuka et al. (2009) studied ITG in public sector organizations in Tanzania, and established that none of the five organizations examined used best practices in ITG. The authors also found a catalogue of problems, including a lack of or inadequate IT plans, policies or procedures; poor monitoring and enforcement of governance mechanisms; and also a lack of clear roles, responsibilities and accountability. Other problems identified by Nfuka et al. (2009) are a weak risk-based approach in designing and operation IT-related services; inadequate IT budget; lack of accountability; and fragmented IT initiatives amongst others. In a study of IT governance practices in two hospitals in Tanzania, Rusu and Tenga (2010) found a lack of IT governance awareness among the executives in Tanzanian hospitals, leading to negative consequences in strategic alignment. In addition, other researchers like Ali and Green (2007) have found a statistically significant positive relationship between the existence of an IT strategy committee and organizational communication systems and the overall level
of effective ITG in a research done into ITG mechanisms in public sector organizations in Australia. Moreover, Ridley (2008) has noticed that failures of e-government initiatives were due to the lack of effective ITG.

THEORETICAL FRAMEWORK

According to Van Grembergen and De Haes (2008), ITG is implemented in practice through a combination of structures, processes and relational mechanisms (see Figure 1).

Structures denote the presence of IT executives and committees within the organization with decision-making responsibilities. Processes are management techniques for safeguarding extensive and effective participation in the governance decision-making and monitoring of IT such as strategic information systems planning. Relational mechanisms consist of strategies that foster good working relationship, communication, and effective collaboration between the business and IT functions of an organization. The relational mechanisms are important because they meant to facilitate the strategic alignment of organizational goals with IT strategies to improve organizational performance. In general, organizations employ uniquely different structures, processes and relational mechanisms depending on a variety of internal and external factors some of which are often conflicting.

For ITG to be effective, it requires that roles and responsibilities of all parties to be clearly defined and understood throughout the organization. In fact, ensuring effective ITG is the responsibility of the board, Chief Executive Officer (CEO), head of IT as well as the business and IT functions in the organization. Moreover, Van Grembergen and De Haes (2008) emphasize that the organization of the IT function within an organization is a determinant of effective ITG. Other important determinants of effective ITG include the presence of an IT strategy committee and an IT steering committee. The IT steering committee comprises board and non-board members with the responsibility of overseeing an organization’s IT-related issues. The IT steering committee is an executive level

Figure 1. The Key Elements of an IT Governance Framework (Adapted from Van Grembergen & De Haes (2008, p.25))
committee to assist executive management in the implementation of IT strategy, managing IT priorities, overseeing IT projects, IT costs and resource allocation.

We also adopted the matrix approach to ITG by Weill and Ross (2005) to analyze IT decision-making and input rights in this paper. The framework defines who makes and should be held accountable for ITG decisions in five key IT decision domains, which are:

- **IT Principles**: High level decisions about the strategic role of IT in the business.
- **IT Architecture**: An integrated set of technical choices to help the organization meet its objectives.
- **IT Infrastructure**: Centrally coordinated and shared IT services that provide the foundation for the organization’s capabilities.
- **Business Application Needs**: Business requirements for purchased or internally developed IT applications.
- **Prioritization and Investment Decisions**: Decisions regarding the kind of IT investments to make and where to make them.

Decisions regarding the five domains above are usually taken at the corporate level, the unit level or the functional level or in some combination of corporate, unit or functional levels. Three key stakeholders typically have different amounts of decision-making authority related to ITG. Consequently, three principal approaches of ITG (centralized, decentralized and federal) have emerged based on the degree to decision-making authority assigned to a central organizational body, business or functional unit.

In a strictly centralized approach, decision-making authority for IT infrastructure management, IT use management, and project management is vested in a central body within the organization. On the other hand, strictly decentralized ITG places decision-making authority within individual business units. Both the centralized and decentralized governance arrangements have their relative advantages and disadvantages. For example, centralized governance allows for greater standardization of IT and resulting in economies of scale for the organization. However, the decentralized approach permits customization of IT solutions to meet the needs of individual business units (Brown & Grant, 2005). Under the federal approach, decision-making rights are shared between a central body and individual business units. Therefore this arrangement combines the benefits of the centralized and decentralized designs by sanctioning a central body to deliver core IT services, but allowing business units to control some aspects of IT.

While the most popular approaches to ITG are centralized, decentralized and hybrid, Weill and Ross (2005) have identified and categorized five different archetypes of decentralized and federal approaches to ITG, which are:

- **Business Monarchy**: A senior executive or a group of senior managers makes all IT decisions for the organization.
- **IT Monarchy**: Decisions are made by individual or a group of IT executives.
- **Federal System**: Executives and business representatives collaborate with the IT department to make decisions.
- **IT Duopoly**: A two party decision-making approach involving IT executives and a group of business leaders representing the operating units.
- **Feudal System**: Business unit and process leaders make separate decisions on the basis of unit or process needs.
- **Anarchy**: Each individual user or small group pursue their own IT agenda.

The effectiveness of ITG depends on the strategic objectives and the structure of the organization. Moreover, effective ITG mechanisms encourage desirable behaviors and accountability regarding IT.

**RESEARCH METHODOLOGY**

Whether a research method is suitable or not is contingent on the research topic and the research objectives (Avison, Lau, Myers, &
Nielsen, 1999). This research sought to advance understanding of ITG by exploring the ITG mechanisms in a public organization in Ghana. The exploratory nature of the research makes the single case study approach suitable. A case study is an empirical inquiry that “investigates a contemporary phenomenon in-depth and within its real-life context, especially when the boundaries between the phenomenon and context are not clearly evident” (Yin, 2008, p. 18). The adopted an interpretive case study, which attempts to understand phenomena through accessing the meanings participants assign to them (Walsham, 2006).

The data collected in this research was done through semi-structured telephone interviews with managers of the case study organization in Ghana. According to Walsham (2006) interviews are an important method of accessing the interpretations of informants in research. The interviews collected qualitative data because it provides a thick description of ITG in a less structured way that is suitable to the nature of the research. Furthermore, the study is interested in exploring in discovering patterns in the research data, in order to understand and explain ITG practices (Fitzgerald & Howcroft, 1998).

In order to explore ITG in our case study organization – Ghana Revenue Authority (GRA) we conducted five interviews. The interviewees include, a senior IT officer of the customs division, a project manager of one of the major e-government projects currently being implemented at the GRA, one senior officer and two junior staff from the domestic tax revenue division. The average length of the interviews was between 30 and 45 minutes. The interviews have contained open-ended questions about ITG mechanisms relating to the kind of IT decisions made, how the decisions are made, who makes the decisions, and how are the decisions implemented and monitored based on the five key IT decision domains proposed by Weill and Ross (2005). Some of the questions also examined the decision-making structures, ITG processes and relational mechanisms. Secondary information emanated from internal GRA documents (e.g. presentations) and the GRA website.

The analysis of the data was based on Miles and Huberman (1994) model for qualitative data display and analysis. The model proposes three elements of qualitative data analysis: data reduction, data display, and conclusion drawing and verification. Data reduction is the process of selecting, focusing, simplifying, abstracting and transforming the data transcripts. Data display is an organized, compressed assembly of information that permits conclusions to be drawn. Drawing conclusions involved considering the meanings embedded in the data analyzed and examining their implications, while verification consisted of revisiting the data several times to double-check or confirm the conclusions. Follow up emails were sent to interviewees to validate some of the information collected via the interviews.

Case Study Background

GRA is a public organization with a responsibility to mobilize revenue for national development in a transparent, fair, effective and efficient manner. It is currently one of the largest public organizations in Ghana, following the merger of three pre-existing revenue collection institutions (Customs, Exercise and Preventive Services, Internal Revenue Service and Value Added Tax Service). The merger followed the adoption of the semi-autonomous revenue authority tax administration model in 2009 that introduced a holistic approach to the administration of taxes and customs. The goal is to modernize, improve information flow, and reduce administrative costs. The GRA has three main divisions: Domestic Tax, Customs, and Support Services. The Domestic Tax Division is responsible for trade facilitation and the collection of customs duties and taxes. The Support Services Division deals with support functions (human resource, finance, research, planning and monitoring as well as IT).

The importance of tax and customs revenue for national development has encouraged the Government of Ghana to adopt innovative
techniques, particularly, the application of modern information technology to facilitate the work of GRA. For example, the Customs Division of the GRA currently runs TradeNet, an Electronic Data Interchange (EDI) platform and Ghana Customs Management System that permits trade documentation to be submitted to a single location or ‘single window’ to synchronize and regulate customs process all customs documents (Adaba, Rusu, & El-Mekawy, 2010). Furthermore, a World Bank supported project to modernize tax administration has due to the implementation of information systems in a public-private partnership under the eGhana project (Prichard, 2010). The project involves the building e-government infrastructure and applications for the GRA and other government agencies as part of a broader effort to enable public organizations deliver e-government services. The project is currently implemented in partnership with a private company and when complete, it is expected to facilitate the registration and electronic submission of tax returns to deliver efficiency and better contact between tax payers and GRA.

Research Findings

ITG Structures

The management of the IT function in an organization determines the effectiveness of ITG (Nfuka et al., 2009; Van Grembergen & De Haes, 2008). ITG structures outline the location of the IT function relative to an organization’s structure. At the top of the decision-making structure of GRA is a board of eight-members. The administrative head of the organizations is the commissioner general, who is also a board member. The decision-making structures are organized around the three major divisions (Domestic Tax Revenue, Customs and Support Services), and each of these divisions is headed by a commissioner. The overall head of corporate IT is a deputy commissioner, who reports to the commissioner in charge of support services.

The IT decision-making is generally centralized and revolves around the head of IT and team of assistant commissioners. The deputy commissioner for corporate IT and a team of assistant commissioners are responsible for decision-making involving IT and IT projects. For example, one interviewee explained: “On the GRA organizational structure, IT represented at the level of management. Responsibility for making-decisions about IT and IT projects is vested in the head of IT (deputy commissioner) and a team of assistant Commissioners. Depending on the scope of the decision, top management is sometimes involved.”

It is worth noting that the three division of the GRA used to exist as autonomous institutions, therefore some of the old decision-making structures have not been completely eliminated. Under a temporary and transitional arrangement, each division still retain deputy commissioners for IT that report to the Commissioner Support Services Division. However, these arrangements are expected to change in the future when full integration is accomplished.

The importance of IT in an organization is determined by the reporting level of the most senior IT executive (ITGI, 2003). In GRA, it is clear that the importance of IT has not been well acknowledged, even though there is an increasing reliance on IT. The head of IT reports the commissioner for support services rather than the commissioner general or the GRA board as the best practice requires.

ITG Processes

ITG processes encompass the application of management techniques and procedures in harmony with established IT strategies and policies (Bowen, Cheung, & Rohde, 2007). The GRA has processes to support effective governance decision-making and monitoring. For example, they currently use some of the elements of ITIL, which is a framework for IT service management. Regarding the management of IT projects, the decision-making processes involve an identification of a sponsor for the project, selecting a project manager, establishing an organization structure for managing the project, agreeing on the communication methodology, creating an
implementation team and creating of a project steering committee, based on the scope of the project. The monitoring of IT project decisions usually involves several steps which starts with the discussion and documentation of the scope of work and leads to the development of an estimated budget. Depending on the scope of the project, a project manager is then selected and the project resources identified and a project plan is developed. A project sponsor is identified and the organization structure responsible for managing the project and the methodology for communications is decided. Further on regular meetings are held between project implementation committees with representation from key stakeholders.

As we have noticed, some aspects of IT projects are usually outsourced to third parties. For example, some of the key deliverables of the eGhana project are being executed with private sector project partners. The scope of work and timelines are usually discussed and the contracts are signed before execution. For example, the project manager of the eGhana project is responsible for the daily management of the project. Therefore techniques such as resource use audit, IT needs assessments and feedback are used to involve stakeholders in the effective management and use of IT. Regarding the effective management of IT projects, one of the interviewees gave the following response: “We use cross-functional-teams since most IT projects cut-across many departments and also require different competencies of staff within the organization.”

Relational Mechanisms

Relational mechanisms are essential for knowledge sharing across the organization and for attaining and sustaining the alignment of business and IT strategies (De Haes & Van Grembergen, 2004; Van Grembergen & De Haes, 2008). The large size of the GRA makes it particularly important for effective relational mechanisms. The use of cross functional teams for managing IT projects is one of the relational mechanisms to facilitate collaboration between business and IT in project implementation. There are occasional training platforms on effective tax administration and the use of IT systems.

Both formal communications and informal interactions between business and IT staff is an important mechanism for the realization of effective IT governance and to inform employees across the organization of the ITG processes and decisions and to boost desirable behaviors (Weill & Ross, 2005). Communications are also essential to support strategic alignment of IT strategies with organizational goals. Concerning formal communications at the GRA, an interviewee from the Domestic Tax Revenue Division said the following: “Information and communication from management is usually sent through memos or notices, which are put on the notice board for staff to read. Sometimes staff meetings are called at the behest of management when there are important issues to discuss….. We have also created a corporate email account for our branch to improve communication”.

Pervasive communication is still a challenge, given that internal email, web portals and other electronic communications are not used effectively across the organization. This may partly be the result of the fact that GRA is existed as three different institutions with different organizational cultures and communication styles.

ITG Decision-Making and Input Rights

The data collected from the interviews with managers in GRA has looked also to decision-making and input rights in this public organization. The analyses of this data including other internal documents indicate that the GRA has a centralized ITG. This result is in fact in accordance to what one of the interviewee has mentioned us that: “Overall, IT decisions are taken in a centralized way for budgetary, accountability, and security reasons”. Concerning the decisions involving IT principles and the strategic role of IT across the organization, these
are usually decided by an IT monarchy, where the senior IT executives, headed by the deputy commissioner for IT and a team of assistant commissioners are responsible (with input from the deputy commissioner (head of IT)). Similarly, we have noticed that the decisions about IT infrastructure and IT architecture in GRA are made by an IT monarchy. However, these decisions are often made with the acquiescence of the commissioner of the Support Services Division.

On the other hand, decisions on business applications needs are the preserve of the deputy commissioner responsible for IT, with input from a team of assistant commissioners done in consultation with the top management. In fact, each division has different IT business applications requirements, therefore the federal decision-making archetype makes it possible for each division to meets its specific needs. Furthermore, IT investments decisions are the preserve of a team of senior executives headed by the commissioner general. However, it is worth noting that some investment decisions are usually initiated by the Government of Ghana on behalf of the GRA. For example, under the eGhana project, the Government of Ghana through a public private partnership mandated GCNet a private company to design, finance, build, operate and transfer ownership of an e-Government system for the GRA and the Registrar General’s Department.

The organizational structure of GRA and evidence from the interviews confirm that IT is not adequately represented at the board level. However, according to the IT Governance Institute, ITG is the responsibility of the board of directors and executive management (ITGI, 2011). The inadequacy of representation at the highest level of authority (the executive board) may be an indication of that in GRA is not fully embraced the strategic role of IT. This situation is not unique to the GRA, and is in line with Andriole (2009) that has noticed that many organizations do not have the IT planning and decision-making at the board’s level.

In the ITG literature is clearly mentioned the importance of the formation of a board level named IT steering committee to oversee and advice concerning the strategic alignment of organizational goals with IT strategy. According to ITGI (2003) the IT steering committee is a team of high level executive managers with representation from various divisions and functions of the organization with the task of aligning business and IT strategies. For example, Ali and Green (2007) have reported a positive correlation between the existence of a strategy committee and ITG. However, the findings of this study confirm the absence of a strategy committee in the GRA. Moreover, the non-existence of an IT strategy committee also suggests an inadequate board level support for having an effective governance of IT. In fact, the ITG structures of the GRA may be a reflection of the high level of bureaucracy and the many layers of authority that exists in public sector organizations (Campbell et al., 2010). We also have noticed that ITG structures, processes and communications vary in every organization and are influenced by multiple factors (Sambamurthy & Zmud, 1999). For example, the organization’s operating environment and whether it is within the private or public sector affect ITG practices (Ribbers, Peterson, & Parker, 2002). According to Weill & Ross (2004a) other factors that influence ITG structures in public sector include strategic and performance goals, organizational structure, governance experience, size and industry. The evolution of ITG is in fact the result of interactions between the nature of the organization and its historical context (Willson & Pollard, 2009). Therefore we believe that the evolution of ITG in GRA is influenced by the colonial historical antecedents and the context of Ghanaian public organizations. In fact, the public organizations in Ghana are in general hierarchically with a penchant for a centralized organizational structure. Moreover, the political influences and periodic structural changes may have affected the ITG practices in this public organization.
CONCLUSION

This article has examined the ITG practices in GRA a public organization in Ghana. The findings has revealed that in GRA there is a centralized governance structures with inadequate board level involvement in the planning and oversight of ITG which is a major problem in adding value through IT in the organization. In fact in GRA the head of IT has the responsibility for most IT decision-making in this organization. However, in GRA there is no steering committee or strategy committee dedicated to the governance of IT. This implies a lack of consideration concerning the value that IT investments can bring in improving organizational performance. Moreover communications for cascading ITG issues down in the organization are inadequate, and there is a need for the increase of the board level involvement regarding ITG as well as the formation of an IT steering and strategy committees in order to have an effective governance of IT. In our view the ITG practices at the GRA are emergent and not the result of the deliberate efforts of management. The current IT governance practices may be the result of the interplay of two main factors: first, the GRA is relatively new in the use of IT. Secondly, the historical context has played a significant role in the current ITG practices in GRA. In opinion of Weill & Ross (2004a) historically public organizations favor centralized organization structures and decision-making and this is apparent in the centralized IT decision-making in GRA. Therefore, we believe that GRA cannot continue to neglect ITG or leave it to chance; on the contrary it needs to develop formal strategies that promote effective ITG based on a consideration of the best practices and the organizational context.

REFERENCES


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