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IT Governance in Public and Private Sector Organisations: Examining the Differences and Defining Future Research Directions

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Abstract

Government agencies constitute a significant component of economic activity in most countries. Like their private sector counterparts, many public sector agencies are struggling to cope with reduced or inadequate IT budgets and are continuously looking for ways to extract maximum value from IT resources. While there are many similarities between public and private sector organisations, there are inherent differences that suggest that a one size fits all approach to IT Governance may not apply in all circumstances. However, despite these differences, there exists a paucity of IT Governance research that distinguishes between the different organisational characteristics found in private and public sector organisations. This paper briefly examines the systemic differences between public and private sector organisations so as to identify the unique IT Governance issues that might arise, and that future research should address.

Keywords

IT Governance, Public and Private sector organisations

Introduction

IT governance is the structure of relationships, processes and mechanisms used to develop, direct and control IT strategy and resources so as to best achieve the goals and objectives of an enterprise. It is a set of processes aimed at adding value to an organisation while balancing the risk and return aspects associated with IT investments. IT governance is ultimately the responsibility of the board of directors and executive management. In a broader sense, IT governance encompasses developing the IT strategic plan, assessing the nature and organisational impact of new technologies, developing the IT skill base, aligning IT direction and resources, safeguarding the interests of internal-external IT stakeholders as well as taking into account the quality of relationships between stakeholders. (Korac-Kakabadse and Kakabadse 2001, ITGI 2003, Kordel 2004). Over the long term, the right IT governance structure can help focus an organisation on the strategic value of IT and ensure that controls are in place for maximum benefits (BearingPoint 2003, ITGI 2003). A number of countries are implementing legislative measures such as the Sarbanes-Oxley Act of 2002 to ensure greater accountability from organisations (Ridley and Liu 2004). More organisations are adopting governance processes that specifically address the governance of important business assets including IT. Consequently, IT governance has become an integral part of governance and should be fully integrated into its structure (ITGI 2003, Van Grembergen, De Haes and Guldentops 2004, AS8015 2005).

In private enterprise, the board, in conjunction with the senior management team, has the responsibility of implementing governance principles so as to ensure the effectiveness of organisational processes and investments (Weill and Ross 2004). However, for many public sector organisations there is a more complex set of accountability relationships in place that spans the electorate, the public service, the government, and the parliament. At the federal government level in Australia, Federal Ministers are ultimately responsible for managing their departments and overseeing delegated responsibilities with secretaries (MAB/MIAC 1993). At the same time, public sector organisations are confronted by ongoing fundamental changes in how they function and relate to business and the wider community. These changes are in turn bringing about a re-evaluation of the appropriateness of governance structures, processes and relational mechanisms in the public sector (Edwards 2002, Gowland and Aiken 2005, Howard and Seth-Purdie 2005). Hence there is a need for more research on IT governance.

This paper contrasts IT governance in the private sector with that in the public sector, basing on available literature. It starts by defining the sectors and then expounds more on the IT governance notion by differentiating between IT management and governance, considering the role of the board in IT governance, and discussing the idea of IT and business alignment in relation to its contribution to IT governance. The paper further highlights

the implications of sector differences to IT governance approaches. In conclusion, it proposes areas for further research.

Defining Public and Private Sector Organisations

Defining what ‘public’ and ‘private’ sectors are has never been easy and delineation will continue to be difficult. Rainey, Backoff and Levine (1976) attribute this ‘blurring’ of differences between the sectors, to an increasing similarity of role, context and function of organisations in the two sectors. Consequently, different approaches have been used to distinguish between the public and private sector organisations. Some investigators have used a ‘denotative’ approach, in which a sector is differentiated from another by listing organisations that fall within its scope or listing its activities, while others use a ‘common sense approach’ which assumes that the reader knows what the sectors mean (Rainey et al. 1976). This paper has adopted an ‘analytic approach’ that attempts to give a definition of the two sectors, although it does not guarantee explicit and absolute explanations of the terms.

In this study, the private sector is defined as entities and enterprises which are not government-controlled and can be profit-making or non-profit-making. The latter are also referred to by some as non-governmental organisations, NGOs, or non-profit organisations, NPOs, or the third sector. Since IT governance is based on corporate governance standards, which are better established in for-profit organisations of this sector, the term ‘private sector’ will be used to refer solely to profit-making organisations. The non-profits will be treated as a sub-sector because their formation and mode of operation are poles apart from the for-profit sector. They are formed to serve members or the public and are based on voluntary membership (Department of Communications, Information Technology and Arts [DCITA] 2005, United Nations Economic Commission for Europe [UNECE] 2005).

The public sector, on the other hand, is defined as a nation’s administrative and economic life that deals with provision of services and goods by and for the government. It encompasses the sub-sectors of general government - mostly central/federal, state and local government units - as well as public corporations, i.e. corporations subject to control by government units (UNECE 2005). Therefore, public sector encompasses organisations dependant on government budgetary allocations for their funding (mainly government departments, controlled by Ministers and Government Departmental Directors/Chiefs) – these will be referred to as ‘*public service*’ or just ‘*government*’. It also includes those that are self-funded with a revenue flow independent of government budgetary allocations – these are ‘*semi/quasi government*’. Semi-government organisations sell goods and services for a price because they make them with purchased inputs and have hired workers who need to be paid off. Examples are universities, hospitals, nursing homes, registration boards, regulatory bodies of different types and statutory authorities. Although they may make profit, semi-government organisations cannot distribute it to shareholders since they need to plough it back into the running costs of the institutions (Winston 1997, McLane 2003). Based on this differentiation, the paper deals and considers IT governance in four sub-sectors (as shown in Figure 1), but first it discusses how the concept of governance of IT developed.

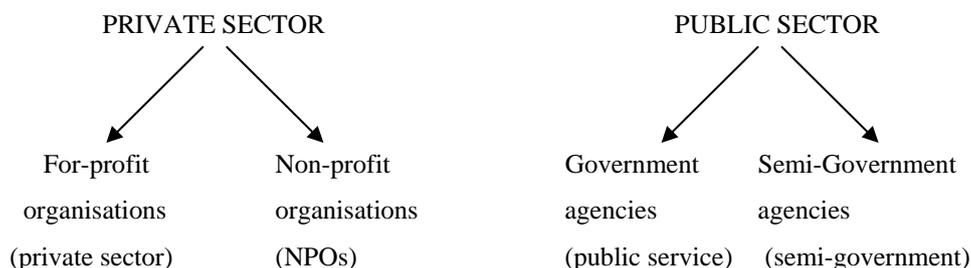


Figure 1: Private and Public sectors entities

Evolution of IT Governance

The formal conceptualisation of IT governance is relatively new. For example, the IT Governance Institute (ITGI) has been established for less than a decade. The concept of IT governance really only began to emerge in the late nineties as a subject matter for academic research (see the works of Brown 1997, Sambamurthy and Zmud 1999, Peterson, O’Callaghan and Ribbers 2000, De Haes and Van Grembergen 2005). Before this

watershed, research on the use, monitoring and control of IT was encapsulated in IT management theories (see Watson 1989). It is therefore appropriate to differentiate between IT governance and IT management.

IT Governance versus IT Management

There is very little literature that differentiates IT management from IT governance and as a result the two are quite often regarded as synonymous, even though they clearly differ (Sohal and Fitzpatrick 2002). IT management focuses on the internal effective operation of IT products and services, as well as the administration of existing IT operations. In contrast, IT governance is seen as being much broader in that it focuses on transforming IT to meet the present and future demands and goals of the business and its customers (Van Grembergen et.al. 2004). The important differentiator, therefore, is that IT management generally has an internal focus and is done at the unit/departmental level, while IT governance has similar aspects located at the corporate level but also has a purposeful external focus (Sohal and Fitzpatrick 2002).

Furthermore, management is concerned with what decisions are made, while governance is concerned with who makes the decisions and how these decisions will be monitored. As a result, a change to an organisation's strategy may well require changes to the management but not the governance of an asset (Weill and Ross 2004). In IT management, the provision of IT services and products can be assigned to an external provider (as in outsourcing), while IT governance is specific for the organisation. Since governance gives direction and control over IT, it cannot be designated to the market, hence it being the direct responsibility of the board (Peterson 2003).

The Role of the Board and Senior Management in IT Governance

As alluded to earlier, IT governance is part of the corporate strategy and thus the responsibility of the board, which has an obligation to ensure that various roles and responsibilities are known by all concerned. The board is an overseer of business compliance, and is the body that establishes strategic plans and policies, while the Chief Executive Officer (CEO) ensures that they are carried out (Van Grembergen et.al. 2004). However, the board has to corroborate evidence as reported by senior management on procedures used in running the organisation, ensuring that they are appropriate and effective (Trites 2004). Although the board does not need to be experts, they are expected under the duty of care to be conversant with legalities of IT hardware and software use, including software licensing concerns. They have a duty to enquire and inform themselves of pertinent issues relating to the nature and type of business. If they are not familiar with an issue or not content with its handling, they have to query it until they come to a sufficient level of comfort that the situation is well under control (Trites 2004). In a study involving 55 CEOs, Jarvenpaa and Ives (1991) found that organisations where the CEO actively participates in managing IT were more progressive and advanced in their IT usage and impact. Nath (1989) avows the importance of top management support and believes that a lack of senior management interest in IT is one of the signs of misalignment of IT and business strategy.

As a conscious move, there should be close and cordial working relations between the CEO and the Chief Information Officer (CIO) for IT to progress well. ITGI (2003) even advises that the board should appoint an IT strategy committee as an effective mechanism to help govern IT and oversee related issues. The committee would also be responsible for tabling IT issues at board meetings, and ensure that the board has all the information it requires to achieve the fundamental objectives of IT governance (ITGI 2003). However, the board must retain paramount responsibility for the governance of IT, even though this task is still evolving and becoming increasingly complex (Kambil and Lucas 2002).

Another one of the fundamental responsibilities of the board is to ensure that business gets value from its assets. Hence alignment is of critical importance in IT governance. Strategic alignment is a driving force to achieving business value through IT investments by ensuring that IT contributes to the achievement of business objectives. Unlike IT governance, elements of the strategic alignment debate have long attracted attention from scholars and practitioners alike (De Haes and Van Grembergen 2005). Alignment of IT with business strategy is very important as it can enable, inhibit or drive an organisation's daily activities. Henderson and Venkatraman (1999) postulate that a lack of alignment contributes to a failure to realise the true economic potential of IT investment. Subsequently, they developed a strategic alignment model to conceptualise and guide the study of strategic alignment of IT and were the first to show a clear relationship between business and IT strategies (Van Grembergen et.al. 2004). Whether this relationship is existent in the different sectors is a matter of discussion in the next sections.

Differences between Private and Public Sectors

The public sector appears to trail behind the private sector in IT development and implementation, not to mention governance, and this could be explained by the fact that the two sectors are significantly different in a

number of ways (Caudle, Gorr and Newcomer 1991). One significant difference is that the public sector provides 'public goods', not services for sale, while the private sector is profit-making and can more easily justify expenditure on cutting-edge technology as long as the investment provides competitive advantage and subsequent financial gain (Rocheleau and Wu 2002). The non-profit sector also lags behind significantly and DCITA (2005) attributes this to the fact that the sector depends entirely on volunteers for its funding. On the other hand, the semi-government organisations can afford some expenditure on IT because they make profit which they have to put back into the running of the organisation (Winston 1997). Although private sector organisations sometimes face similar difficulties, budgetary constraints can be more challenging for non-profits and public sector organisations. Consequently, projects that are perceived as being risky are less likely to be considered – even if these projects are, on balance, worth taking on (Rocheleau and Wu 2002). This is worse for non-profit organisations, which usually have a non-technology culture. In their case, IT managers often have the arduous task of proving IT value over the need to respond to the demand for the organisation's services (DCITA 2005).

The public sector has multiple, mostly intangible or conflicting goals, with programs that have numerous stakeholders whose interests may be competing too (Dawes et.al. 2004). However, it provides a system that allows scope for achievement of these goals (Gregory and Boland 1999). In contrast, the private sector is guided by market signals and profit. For that reason, problems in government 'must' be addressed (like provide education or supply public health services), while those in the private sector are driven by feasibility considerations. Consequently, the overarching objectives of private sector organisations are often expressed in terms of financial profitability and efficiency while public sector organisations are frequently judged on their political efficiency and achieving their policy mission (Kraemer and Dedrick 1996). This obligation to attain goals makes the sector to be less affected by cyclical movements in the economy, maybe due to decision-makers smoothing out 'employment fluctuations to achieve equity or macroeconomic policy objectives' (Gregory and Boland 1999). Non-profits also operate programs that have multiple stakeholders to whom they are accountable and their efficacy is measured by their ability to deliver services to the communities (Choudhury and Ahmed 2002).

There is also the issue of political influences and changes within the public sector which can unsettle long-term planning. Political cycles can cause periodic changes in the top-level management and, consequently, program priorities in the departments change with each new leader. Unfortunately, these management changes also result in data discontinuity (Bozeman and Bretschneider 1986). While similar changes can occur in private sector organisations, it is more the exception than the rule.

Environmental factors also make these sectors different (Caudle et.al. 1991). For instance, the public sector is said to have less market exposure and therefore less explicit incentive mechanisms for productivity and effectiveness, but more legal and formal constraints. As an example, purchasing in the public sector is subjected to many bureaucratic constraints and consequently there is a tendency to prefer 'state of the art' technology, possibly to ensure that the systems are not obsolete by the time they are installed since the process of acquiring new hardware/software is lengthy (Kraemer and Dedrick 1996). Generally, public policy choices and management processes can make investments and decision-making difficult for IT managers (Dawes et.al. 2004). Unfortunately, these politically expedient methods of subjecting IT projects to various litmus tests are "antithetical to implementation success" (Peizer p. 87:2003).

Other differences are organisational, where the public sector comes through as taking more mandatory actions because of government's coercive powers. However, the actions have to be in the interest of the public because mistakes in this sector can have overwhelming repercussions and usually affect larger sections of the population (Kraemer and Dedrick 1996). For instance, a failure by a newly installed system to allocate pension payments on time will have far-reaching consequences within the community. Various internal structures and processes may also contribute to sectoral differences. For instance, managers have less autonomy for decision-making in the public sector and they face difficulties in developing meaningful incentives for individual performance. Moreover, there is evidence that some public sector employees have less work commitment and job satisfaction (Caudle et.al. 1991). Together with unfavourable salary differentials between the public and private sector, this may inevitably contribute to government's high staff turnover in certain skill areas – a significant setback in a sector that reputedly has more clerical and professional jobs than technical ones (Gregory and Borland 1999, Dawes et.al. 2004). As a result, the temptation to outsource IT functions can be high in public sector, non-profit and semi-government organisations due to skill shortages in house.

Despite these nuances, all the sectors (especially public service, NPOs and semi-government) require effective IT governance as IT investments now play an essential role in the economic and social life of citizens (Loukis and Tsouma 2002). This is even more imperative in an era when the reality of globalisation is 'redefining the role and state of sectors and changing the nature of governance', and the need for IT governance in practice and research is substantial (Choudhury and Ahmed 2002). The contrasting views on sector differences suggest that

they are worth considering. Some contend that the rapid development of technology over the past decade has narrowed the differences between the sectors and have, therefore, proposed similar governance structures. Others argue that implementing similar structures in all sectors will be unsuitable application of theory which does not fit the reality of other sectors (Robertson and Seneviratne 1995, Rocheleau and Wu 2002). From a broader corporate governance perspective, Nicoll (2005) argues that the accountability required of public sector entities is generally greater than for the private sector. Consequently, public sector governance systems that mirror the private sector could arguably diminish accountability. This is particularly important in an environment where procedures for assessing governance arrangements are not in place and there is general resistance for a central authority to oversee governance practices (Howard and Seth-Purdie 2005). Table 1 summarises these sectoral dissimilarities.

Table 1: A summary of differences between sectors

Attribute/factor	Sector			
	Public		Private	
	Public service	Semi-Government	Non-profit	Private
Goals	Multiple and intangible	Multiple and tangible	Multiple	Specific and tangible
Product	Provide services and public goods	Sell services	Provide services	Profit
Achievement measured by	Political efficiency & achieving policy mission	Sustainability of service provision	Achieving mission	Financial profitability and efficiency
Environmental	Less incentives for productivity	May have more incentives than government	No incentives, uses volunteers	More incentives
	More legal and formal constraints – red tape	Less formal constraints	No red tape	No red tape
	Political influences	Some political and market influences	Free of influences	Market influences
Proprietary versus shared IT	Shares IT resources, applications and technical help	IT is proprietary to give an edge	Lacks in sharing of resources	Treats IT as proprietary to stay ahead and competitive

(Sources: Caudle et.al. 1991, Kraemer and Dedrick, 1996, Dawes et.al. 2004, DCITA 2005)

Effectively the manner in which organisations in these sectors govern IT differs and there is no consensus as to the causes; some believe that the disparities are due to a single factor like organisation size (Brown and Magill 1994) while others suppose that they are the effect of multiple, interacting factors like organisational structure, corporate governance structure, absorptive capacity of IT, organisational IT competence, market competition and stability, government regulations and policies (Brown 1997, Sambamurthy and Zmud 1999, Chin et.al. 2004). In addition, the primary role of IT as a factor may differ depending on the objectives or strategies pursued by an organisation. These may include reduction of costs and duplication of tasks, provision of support services to individual departments or to facilitation of future business strategies (Weill and Woodham 2002, Chin et.al. 2004). On the extreme end, if an organisation does not consider the role of IT as either one of these, it tends to have more complex governance patterns that mirror its haphazard use of IT. It is important for organisations, then, to adopt governance structures that encourage desirable behaviours in the application of IT which are suitable for their setting and operations (Weill and Ross 2004). Table 2 gives an overview of who takes responsibility for IT in the various sectors.

Table 2: IT decisions in different organisation types

Sector		IT Investment	IT Architecture	IT principles	IT infrastructure
Public	Public service (e.g. Australian Tax Office) (Weill and Ross, 2004b)	IT monarchy	Feudal /Business monarchy	IT monarchy	Business & IT monarchies
Private	For-profit (Weill and Ross, 2004b)	Federal	Feudal/Business Monarchy	Anarchy (business unit managers)	Business monarchy
	Non-profit (e.g. Smith Family) (DCITA, 2005)	Business monarchy	IT monarchy	IT monarchy	IT monarchy

Implications for IT Governance in Public Sector Organisations

Be it in the public or private sector, IT governance can be deployed using a combination of processes, structures and relational mechanisms. Processes could be monitoring, decision-making, service level agreements (SLAs), balanced IT scorecards; structures may include IT councils, committees (like IT strategy committee, IT steering committee); while mechanisms could be business partnerships, shared learning, stakeholder participation and collaboration between functional areas or workgroups. Figure 2 shows how these elements relate to form an IT governance framework. Each aspect is indispensable to successful IT governance (Weill and Woodham 2002, Van Grembergen et.al. 2004).

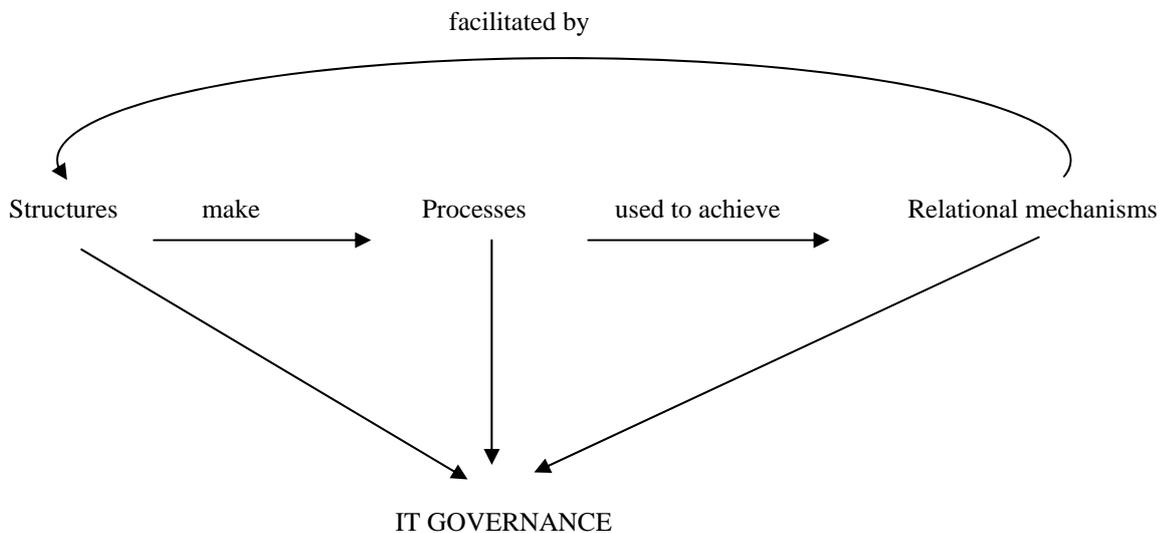


Figure 2: Main elements of an IT governance framework

IT Structures

The structure of the IT function and the position of the decision-making authority in an organisation to a large part determines the efficacy of IT governance (Weill and Ross 2004). De Haes and Van Grembergen's (2005) study based on a Belgian financial services organisation (private sector) found that, the organisation had the CIO reporting directly to a member of the executive committee; it also had an IT strategy committee that operated at the strategy level as well as an IT/business steering committee that decided on new investments. A different steering group existed for maintenance of the IT projects. All these formed part of an effective governance structure. In a different case study by Weill and Ross (2004b) on London's Metropolitan Police Service (public service), the executive body is the Management Board and directly supervises various strategic committees, including the Information Management Steering Group. This committee makes recommendations for IT investments and suggests to the Management Board how to start, stop and fund projects, whose proposals are supervised by designated business sponsors right up to completion. Evidently, the use of steering committees is a

popular way of monitoring and reporting progress, and is commonly used in all sectors (Sohal and Fitzpatrick 2002).

Considering the observable differences between the public and private sector organisations, the implications to IT governance relating to organisational structures are bound to cause systemic variations. One of the challenges facing all sectors is dwindling funds (Rocheleau and Wu 2002, BearingPoint 2003). In the public sector, IT spend can sometimes be reduced through a shared services approach or by re-using systems and technologies between other agencies in the public sector. This sharing is feasible as the public sector has been found to have greater organisational interdependence than the private sector (Rocheleau and Wu 2002). Unfortunately the same cannot be said of non-profits which, DCITA (2005) notes, are deficient in sharing resources, best practices, infrastructure and forming strategic partnerships with other sectors. However, private sector organisations largely must continue to maintain their autonomous stance since they operate in competitive markets which diminish the value and opportunity to share IT knowledge and applications unless there are large network externalities available.

IT governance structures in the public sector must balance between effectiveness and efficiency in their service provision. As Shiller (2004) notes, the private sector should provide goods and services that people can afford, while the public sector should provide only those goods and services that people must have regardless of their ability to pay but cannot be provided under the same terms by a profit-oriented business. Therefore, investment decisions in the public sector should be based on the multiple viewpoints of internal process development and good service provision (Rivenbark, Fitzgerald and Schelin 2003).

IT Processes

These refer to strategic decision-making and monitoring. A process as discussed by De Haes and Van Grembergen (2005) starts by identifying a project, which is then proposed to the consultative group. This committee facilitates preliminary work like a pre-study that involves business and IT. The project proposition is then passed on to the IT/business steering committee and finally the executive committee which prioritises projects based on budgetary considerations and the business case complimented with an 'information economics' assessment. This is an assessment model that covers both financial and non-financial criteria of return on investment. Through out this project development, business and IT work together as they are both represented in the committees that are involved, ensuring alignment. Another process that this organisation uses is the IT balanced scorecard, although it is implemented as a measurement tool rather than a management or alignment tool. Finally, it also uses ITGI's IT governance maturity model, and has managed to go up to level 3. In other studies, organisations formulated strategic plans while others did not and were opportunity-focused. Some addressed this planning at the corporate level while others included it in the business unit vision (Sohal and Fitzpatrick 2002).

Another illustration is a case study of partnerships and alliances within the Australian Tax Office (ATO), which underscores the implications of the differences between sectors. The ATO has gone completely online on individual tax return submissions – which it managed by forming strategic alliances with tax agents. Since the undertaking involved external organisations, ATO had to consider a number of issues like compatibility of external systems with internal systems and adherence to internal standards. This highlights the dilemma for IT decision makers and governance in the public sector – the potential of alliances to invest in standard compliant systems is dependent on the willingness of external partners to cooperate (Weill and Ross 2004b). Moreover, the ATO now has another challenge to face – how much should the alliance be represented within the IT governance decision-making mechanism, considering that it is now so closely linked with the government structure?

As the public sector has many layers of authority, this may lead to fewer opportunities as decisions take longer to be finalised. Therefore bureaucracy, public policy limitations and management decisions can make investments and decision-making difficult for the CIO and associated committees. Quite often, getting IT funds entails showing that the investment will lower costs somehow as fund allocations are less flexible. This presents a complex market-for-service that influences IT decisions (Suomi and Tähkäpää 2004, Weill and Ross 2004b). Conversely, opportunities may be more easily acted on in the private sector as organisational structure may not be as complex.

Since the private sector is guided by market signals while the public sector is guided by societal obligations, it suggests that the former has a dynamic and turbulent environment while the latter has a less dynamic and less turbulent environment. Consequently, decision-making for the two sectors differs - in the public sector it is comprehensive and methodical whereas in the private sector decision-making is sometimes based on more ephemeral considerations (Ribbers, Peterson and Parker 2002, Suomi and Tähkäpää 2004).

Relational mechanisms

It is possible that an organisation can have all structures and processes in place but if the relational mechanisms are not working, they will not be effective as it means that business and IT do not understand each other, neither do they work together. As mentioned earlier, good collaboration and two-way communication are essential elements in IT governance (Henderson and Venkatraman 1999). When the Commonwealth Bank of Australia outsourced its IT services, it retained internal relationship managers who facilitated the liaison between the business and its contractors to help the business convey its needs and minimise IT costs. The bank noted that this management of relationships needed high-level IT managers who could gain the respect of senior business unit managers (Weill and Ross 2004b). This is one of the most important mechanisms in implementing IT governance.

In De Haes and Van Grembergen's (2005) study, the financial services organisation used an IT charter to implement relational mechanisms. This charter explained roles between IT people and business people, who must interrelate directly. Moreover, the organisation sponsored account management meetings that focused on the relational aspects of projects to bridge the gap between business and IT. The company also used mechanisms such as training sessions on business activities, job rotations, use of simple, non-technical language as well as a web-based portal for communicating with or educating staff. All these were done to attain active contribution, teamwork and shared understanding between IT people and business people, and the authors reported positive results.

In another study by Sohal and Fitzpatrick (2002) on large Australian organisations, results showed that many IT functions are either partially or fully outsourced. According to Weill and Ross (2004b), sometimes senior management see outsourcing as a quick fix to IT problems, not knowing that its success depends on its proper management. As a short term fix that is costly in the long run, outsourcing also deprives an organisation learning and competitive positioning through mastering IT (Suomi and Tähtikää 2004). This tendency to outsource appears likely to continue for all sectors leading to smaller IT units and the remaining staff will be required to take on more strategic roles (Weill and Ross 2004). Whether IT is fully or partially outsourced, IT governance structures must accommodate formal and informal relationships between the outsourcing organisation and the service provider – a task that is often overlooked (Luftman, Bullen, Liao, Nash and Neumann 2004).

Having established the importance of structures, processes and relational mechanisms in governing IT, it is worthy of note that identifying the *most appropriate* IT governance model is not feasible. It is even more difficult to identify all the factors that influence the choice of these elements (De Haes and Van Grembergen 2005). The best possible mix of structures, processes and relational mechanisms will differ for each organisation and depends on multiple contingencies, as mentioned earlier, including sector and operating environment of the organisation (Ribbers et.al. 2002).

Conclusion

Bozeman and Bretschneider (1986) first hypothesized that the differences between the public and private sectors require different principles in the fundamental management of organisational information systems. It is imperative that further research is conducted to capture and better understand these fundamental differences, even as they relate to IT governance. Evidently, a 'one-size-fits-all' approach is not appropriate when studying the two sectors, and failure to address the differences will be 'a mistake' (Khalfan and Gough 2002) when studying IT governance. Acknowledging the scarcity of empirical research done in this area, further studies are clearly needed to establish the IT governance approaches that work best in a public sector context and whether the adopted approach depends on the functions of a government agency. A study on the contribution of IT governance to service delivery in government will be another important area to investigate, as well as the extent to which IT is aligned with the objectives of different government agencies. Another possible area of research could be investigating what threat is posed by shrinking IT funds to IT governance in the public sector, the influence this might have on service delivery and possibly how it can be avoided.

It is also necessary to examine organisational activities and the mechanisms necessary for effective implementation of IT governance in the public sector. Subsequent research could replicate prior studies from the private sector in the public sector, and thereby provide empirical evidence for the differences between IT governance in the two sectors as discussed in this paper. Also, an investigation could reframe the underlying IT governance theories and develop alternatives to a public service organisation. It is hoped that this paper has highlighted some of the significant differences between the public and private sector, which are pertinent to consider when addressing IT governance. Hopefully, the issues raised will provide motivation for empirical research to examine what is currently an under researched area in IT governance.

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