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IT governance challenges in a large not-for-profit healthcare organization: The role of intranets

Carla L. Wilkin · Jon Riddett

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Abstract This paper reports on the implementation of IT governance in a not-for-profit healthcare organization and considers how managerial strategies for this governance relate to the progressive management approach commonly called the Horizontal Organization. Discussion includes how IT governance was implemented and the mechanisms by which power and politics in the organization were harnessed to achieve strategic goals. In this case study, CEO support for IT governance was related principally to the need for fiscal accountability regarding IT investment aligned to the strategic goals of the organization. The case study showed real organizational gains in achieving best value for the investment dollar, accountable time-frames and cost-controls. The move enhanced the professional status of the IT Department, including more widespread acknowledgement for fairness and equity in its processes, an outcome commonly associated with horizontal management structures.

Keywords IT governance · Horizontal Organization · Healthcare · Intranet · Project gating · Training and education

1 Introduction

One of the most important challenges for today's organizations is the integration of Information Systems (IS) [8, 9, 15, 71]. As a significant business division in most

C.L. Wilkin (✉)
Department of Accounting and Finance, Faculty of Business and Economics, Monash University, P.O. Box 197, Caulfield East, Victoria 3145, Australia
e-mail: carla.wilkin@buseco.monash.edu.au

J. Riddett
EPO Project Services, Locked Bag 29, Clayton, Victoria 3168, Australia
e-mail: jriddett@yahoo.com

medium-to-large organizations, it is not surprising to find that Information Technology (IT) has increasingly been required to align its projects with defined organizational strategies in order to address the mismatch between performance expectations and reality [54]. To achieve this, the IT division needs to take an active role but in a manner that is inclusive of its customer stakeholders. This has allowed IT to be turned from the credibility-damaged cost centre [51] into the aligned, fiscally accountable strategic business department it needs to be.

In a swiftly moving global economy, with the prominence of factors such as shareholder/stakeholder expectations for fiscal and environmental prudence, customer expectations, competition, and economic conditions [34], organizations are focusing on good governance as the means to achieve accountable outcomes. IT governance is one subset of this. Here the purpose and benefit of IT investment is justified and measured not merely in terms of ROI, but more in terms of its synergies with the financial and strategic goals of the organization. "How IT is applied within the entity will have an immense impact on whether the entity will attain its vision, mission or strategic goals" [31, p. 1]. Organizations have obtained value by implementing IT governance [70], which is the term used to describe the approach by the board of directors and executive management whereby IT becomes "an integral part of enterprise governance and consists of the leadership and organizational structures and processes that ensure that the organization's IT sustains and extends the organization's strategy and objective" [31, p. 1]. For many organizations the real question is not in-principle agreement to such governance, but rather what are the practical issues in doing so, what managerial strategies are involved and what are the related benefits? Such is particularly true for not-for-profit organizations.

This research seeks to answer some of these questions and to reinforce findings related to such adopted strategies by exploring parallels with applicable successful management structures. From a pragmatic viewpoint we attempt to understand the impact on a not-for-profit organization in the public healthcare sector called Alpha (a pseudonym) as it instituted IT governance rather than seeking to address the complex philosophical perspectives in understanding IT governance. In particular we offer practical insights about the role of intranets in enabling organizational structures and processes and the opportunities they provided for web based education and training as IT governance was implemented. Further we suggest opportunities for extending the use of intranets into performance evaluation. While our aims are pragmatic, our findings contribute to broader understanding about foundations for, the challenges faced, and benefits that are achievable by implementing IT governance in not-for-profit organizations such as those in the healthcare sector.

The paper is organized as follows. After discussing why IT governance is needed in a business, we pose our research question. We then detail some relevant options for structures, processes and relational mechanisms that lie at the heart of IT governance and their links to management practice. In discussing these we focus particularly on those related to not-for-profit organizations. We then describe the use of case study research for our investigation and explore how the structures, processes and relational mechanisms were implemented in a large not-for-profit organization where the availability of grants is a core issue. In our final section we discuss contributions, future research and limitations of this study.

2 Challenges for managing IT investment: The relevance of IT governance

For years IT has been viewed as an overhead and hence run as a cost centre. Now pressure is on IT executives to transform IT into a service organization, "run their organization like a business" [40, p. 46], link IT investment and function to organizational strategies and goals, increase the credibility of IT and achieve realization of the fiscal value of IT. But caution is required. Lin [40] suggests it is important to understand four challenges before overhauling IT. These are:

- *Resistance with IT* that requires a change in the mindset of IT staff. Breaking up the monopoly alters how IT operates and moreover how it is perceived. The remedy for IT people being pushed out of their comfort zones is to involve people early on in the process [40, 43].
- *Requirement to have relevant business metrics* to address operations, projects, user demands and finances. If these metrics are presented as an IT Dashboard (where they are shown graphically) there is better opportunity to improve communication and facilitate improvements [47].
- *A prerequisite of business/IT alignment* to ensure that resources and budgets are strategically aligned to achieve the best benefits for the business. This was one of the top three IT management concerns of CIOs in 2006 [45].
- *The need for IT to have business management tools* to help with the business and people aspects, rather than just the technical side. This assists the decision making required to optimize resources, operations and impact on the business, as well as with understanding the impact of IT spending on the business.

The urgency for this transformation is evident from statistics like those contained in the Standish Group's Chaos Report [64], which cites high numbers of projects being challenged or worse failing. This is not dissimilar to the challenges described by Kingdon [35] and Galbraith [24] with respect to large-scale project management where the complexity of a project and the interplay of large numbers of stakeholder sub-contractors created overload, and failures in managing costs and deadlines [12]. What evolved for project management was increasing use of matrix structures: herein a key person would be responsible for a large project, but with strong lateral co-ordination arrangements that required direct functional interaction at the operational level. Whilst project management has steadily adopted such strategies, championing a horizontal dimension and hence fostering what is called Horizontal Organizations (HO), the IT department often stayed outside the structure. This is a surprising outcome given two factors. Firstly, the extent of IT investment makes the IT budget an increasingly significant part of the company budget. Secondly, management research has shown that in implementing HO, IT plays a vital role in achieving structural change and lateral integration [50]. The resultant failures, challenges and disappointments with IT-enabled projects and IT business transformations meant that many companies featured corporate responsibility and IT governance high on their strategic agenda [53]. Like horizontal organizational management, the alignment of business strategy with IT strategy, organizational infrastructure and processes, and IS infrastructure and processes, requires recognition of many varied relationships and specification of roles (particularly for management) related to decision making [12, 28, 59].

The thought is that instituting greater monitoring and control over projects to ensure they are in tune with the direction of the organization allows businesses to acquire greater value from their IT investments. In other words IT governance is seen as key to realizing business value, in particular IT business value. Interestingly though, it is not just IT that needs to be run more like a business, but more holistically Government [3] and non-profit organizations [17] need to be run in the same way. Public healthcare organizations, the focus in this study, fit into this category. In light of these concerns the research question was: *How are not-for-profit healthcare organizations implementing IT governance to run more like a business?*

In Australia, the healthcare system supports universal access to high quality medical, pharmaceutical and hospital services. As an industry sector, healthcare represents a major part of the Australian economy. It is estimated that the ratio of health expenditure to GDP is approximately 9.7% (this rate has risen by between .1 and .2% per year), with more than AUD $86.9 billion being spent on healthcare per annum (2005-06) [1]. Under Australia's federal system, the states are mainly responsible for providing health services, including funding public hospitals. The 1946 referendum gave the Australian Government the power to increasing fund public hospital services. As a result, in 2005-06 the Australian Government provided $10.1 billion for healthcare (including public hospital funding). State and local governments provided $12.4 billion and private sources (private health insurance and payments by patients) provided $1.8 billion. Furthermore, Australia's health inflation has usually outpaced the rate of general inflation.

Healthcare, being a complex industry, has many areas where IT can help e.g. patient management and supply chains. Not-for-profit healthcare organizations are a unique subset in this sector, as grants and beneficiaries consistently offer opportunities to acquire new infrastructure with an IT component that directly impacts the IT Department budget. This is a new twist to IT investment and the realization of IT business value. As the champions for such funding are many and varied in the organization, our interest was in exploring the challenges faced in instituting IT governance in this environment to manage such circumstances. We commence by looking at IT governance and the necessary elements of an IT governance framework with some comment about related findings from management research; then at elements as they relate to a not-for-profit healthcare organization.

2.1 Overview of IT governance

Given renewed interest in 'transparency' and increased emphasis on effective governance of IT, what is really meant by the term? It seems that business models and IT have become virtually inseparable [53]. So what is needed to manage this integration? The answer is not about "getting IT right", rather about how this process is managed, i.e. IT governance. The challenge is that there is no simple answer concerning how IT should be governed to achieve sustained value. However there are lessons from management that are very relevant.

IT governance has been variously defined. One common definition was presented earlier. Another is: "the organizational capacity exercised by the board, executive management and IT management to control the formulation and implementation of

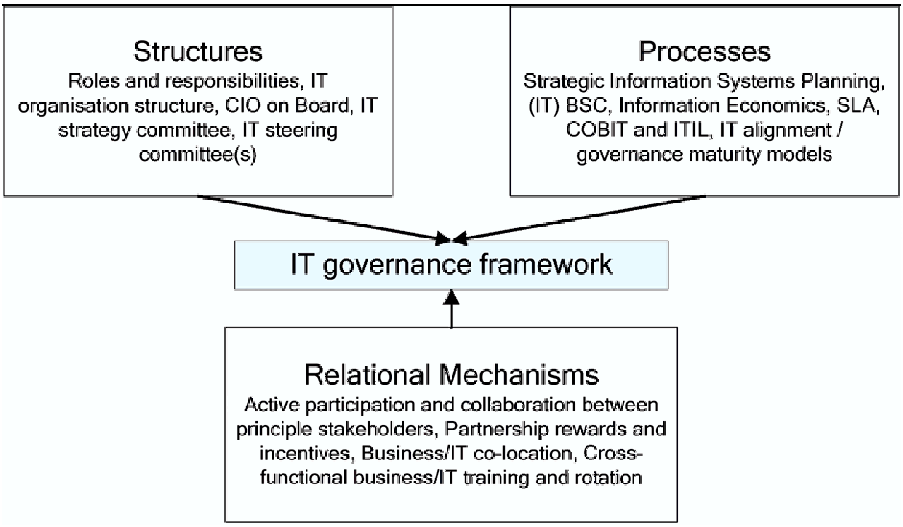

Fig. 1 Necessary elements of the IT governance framework [18]

IT strategy and in this way ensure the fusion of business and IT" [65, p. 1]. Further, Peterson [53, p. 8], in line with what was meant by corporate governance and prior studies [42, 60, 70], defined IT governance as "the distribution of IT decision-making rights and responsibilities among enterprise stakeholders, and the procedures and mechanisms for making and monitoring strategic decisions regarding IT". The theme, it would appear, from these definitions is that *IT governance is the 'enterprise management system' through which the portfolio of IT initiatives for the organization is passed, scrutinized and importantly controlled.*

So what does an 'enterprise management system' or IT Governance framework look like? As Peterson [53] and Weill and Woodham [72] put it, the IT Governance framework comprises a mixture of structures, processes and relational mechanisms. The linkages between these required aspects have been portrayed by DeHaes and Van Grembergen [18] as follows (see Fig. 1).

This is very similar to the distinctive characteristics of HO, which have the same three, namely structures, processes and what that literature calls human resources, plus an over-arching fourth called strategy that relates to the decision to adopt HO and to determining the mix of product and customer (HO have strong ties to manufacturing and project management) [12, 25].

Strategy is also an essential part of implementing IT governance, as organizational-wide commitment to instituting the change is required; and the commitment to funding for training and education of the stakeholders (IT users, and hence customers) about the benefits to be realized by the new controls and why the need to change their modus-operandi. For HO, strategy is sometimes driven by a top down approach and at other times by a more holistic approach by the top management group, but with consensus that implementing the strategy requires "leading change, comprehensive roll-out, managing conflict and linking processes" [12, p. 523]. For IT governance this strategic role is often the province of the company board and CEO.

Once strategy is in place, the lessons from HO research is that success will follow if structure is effectively instituted to ensure that processes are inclusive of customers (for IT this means user stakeholders) and that Human Resource selection and training fosters motivation and commitment [61, 62]. In other words successful relational mechanisms.

2.2 Structures: Roles and responsibilities and the CIO

Interestingly, in the last 20 years, three modes of IT governance have become prevalent:

- *Centralized IT governance mode* where corporate IS assumes responsibility to deal with the infrastructure, its use and project management. Here there is no IT strategy, rather an over-arching business strategy. Weill and Woodham [72] call this a business monarchy. The CIO may be part of this group, but will not act independently of senior management.
- *Decentralized IT governance mode* where authority is assumed by divisional IS and line management can be played out differently due to the allocation of authority for IT [59]. Herein governance rights are localized, with each business leader acting fairly autonomously according to local needs and with separate budgets [72].
- *Organizational (or Federal) IT governance mode* where both the corporate IS and the business units assume the responsibility for the IT activities [5, 20, 37, 38, 55, 59, 67, 78]. This mode allows for multi-skilled teams and cross-functional liaison, with strategy formed (not dictated) and with formulation, analysis and implementation being a more fluid process [21]. Certainly the influence of the CEO is crucial to the success of IT governance, but his/her role does not have to be heavily participatory [33]. Instead the CEO's involvement can shape the context in a manner that predicates success through championing the cause, attendance at selected meetings and selection of key personnel. This approach is closest to that of HO where the focus is on cross-functional processes; decreased hierarchical power and more team decision making; integration of customers with suppliers; and redesigning departments into becoming partners in performance outcomes [50].

Table 1 suggests that the best results from IT governance are obtained from Organizational IT Governance, the structure closest to the successful HO approach. In terms of tradeoffs and the best features of each mode, this table from Brown and Magill [6] and Rockart et al. [56], summarizes these modes by considering five factors: IT synergy; IT standardization; IT specialization; business responsiveness; business ownership; and business flexibility.

Obviously, as organizations are different, and hence their approach to management differs, there is diversity in the relevance and uptake of such modes. What is clear though is that IT governance requires the implementation of structures to manage required change. The key to success in achieving these structures lies in their ownership by the stakeholders involved. In particular, the new governance structures need to produce better appreciation of the costs, risks and results; better likelihood that the best investments will be selected; and increased success rates for achieving

Table 1 Summary of outcomes from differing governance structures. *Source*: Brown and Magill [6], Rockart et al. [56]

	Centralized IT Governance	Decentralized IT Governance	Organizational IT Governance
IT synergy	+	−	+
IT standardization	+	−	+
IT specialization	+	−	+
Business responsiveness	−	+	+
Business ownership	−	+	+
Business flexibility	−	+	+

such investments on time, on budget and with the predicted outcomes [31]. Achieving and managing such structures is the purpose of IT Governance, not just for strategic corporate reasons, nor for economic management reasons: the broader vision, intrinsic to business success and trust by shareholders (or the board), is that strategic goals are realizable in a competitive manner; that management (including IT management) have good control over cost and investment together with accountability; and that the capability of the IT selected to assist end-users (including in this case doctors, nurses, patients, accountants and a myriad of other professionals), is maximized. Positive achievement of all this will produce trust in and ownership of the structure and its related process: the negative will ultimately produce failure [63].

As outlined in Fig. 1, IT management is an important player in instituting IT governance. This includes the provision of clearly defined roles and responsibilities and diversity in committee composition [18]. Similarly the organizational structure to support IT must be defined to ensure appropriate attention is provided. Such may be achieved by providing the IT department with a reporting line that includes senior representation in the leadership team. This representation is typically assumed by either an IT Director or a Chief Information Officer (CIO) who oversees the use of IT in the firm [39], and is central in implementing IT governance. For providers of healthcare, this reporting is distributed across CEO (Chief Executive Officer), COO (Chief Operating Officer) and CFO (Chief Financial Officer), with a slight increase in reporting to the CFO [26].

The challenge in creating the required structures is that IT governance is subject to multiple pulls and pressures rather than single strategic forces [6, 59]. Consequentially the potential for stakeholder influence is manifest. This influence is related to stakeholder attributes of power, legitimacy and urgency [49]. According to Foucault [23, p. 220], "what defines a relationship of power is that it is a mode of action which does not act immediately and directly on others. Instead it acts upon their actions: an action upon an action, on existing actions or on those which may arise in the present or future". As such, a stakeholder has power in a relationship to the extent that they can impose their will upon others in the relationship. Legitimacy is often coupled with power, but is a distinct attribute [69] because it defines the extent to which the stakeholder is recognized as possessing socially desirable attributes. Urgency relates to the degree to which the stakeholder can command immediate attention [49]. When stakeholders possess all three attributes (as is the case with senior clinicians in healthcare

organizations like Alpha) they become very influential stakeholders. This influence is noticeable in a number of ways including agenda setting, decision making and in the shaping of felt needs [14, 16, 27, 32, 44, 57]. Increasing use of the Internet, intranets and computer networks to facilitate communication, cooperation and collaboration (see Sect. 2.4 for how these were used in a not-for-profit healthcare organization) creates virtual structures, which are significant in both business and social activities [30]. Communication of information through these virtual structures alters the power relationships and structures in firms.

IT governance alters stakeholder relations as it forces new structures, processes and relational mechanisms on individuals that subsequently alter the roles participants play. For example, an individual may be an expert in their own field, such as a medical specialist, but in the context of IT governance their role may have less legitimacy and may change to that of subordinate in contrast to that of the CEO. These shifts mean it unsurprising to find that "where there is power, there is resistance" [22, p. 95]. Herein individuals may try to circumvent processes i.e. avoid stages in the gating process (see Sect. 2.3). This may afford the individual short-term gains, but such projects are often the worst performing ones (see Sect. 4.2). Situations like this reinforce the need for effective processes to recognize and engage with these stakeholders to ensure the greatest good for the organization. The next element of the IT Governance Framework is the role of processes and the form they may take.

2.3 Processes: Implementation, planning and monitoring

Generically processes include Strategic Information Systems Planning (e.g. [41]), monitoring through the IT balanced scorecard [66], Information Economics [52], Control Objectives for Information and Related Technologies (COBIT) [31], service level agreements and the like. In the past IT governance required each business to identify and establish its own procedures and processes by which to manage the flow of information related to the initial proposals, business plans, documentation and approval processes for IT investment [72].

Now in practice IT governance often uses a gating process to manage the flow of projects. Frequently the industry framework Project Management Body of Knowledge (PMBOK) is prescribed. Developed by the Project Management Institute in 1981, it contains standards and guidelines for the practice of project management, with a lateral focus and inclusivity regarding customers (as HO grew from Project Management's need to develop new ways to manage increasing business complexity, it is quite unsurprising that IT governance built around PMBOK-type principles has many similarities to HO). By taking accepted frameworks like PMBOK and placing them into the context of a Gating System, not only is a certain standard of IT project management assured, but through the incorporation of checklists into the Gating process, adherence to the methodology is ensured and processes are enacted. Such Gating Systems are effective ways to implement IT governance and ensure projects remain attuned to the organization's strategy.

With structures and processes in place, the last element to explore is relational mechanisms. This is where IT plays an important facilitation role.

2.4 Relational mechanisms: The role of the Project Management Office and intranets

Even when the structures and processes are in place, relational mechanisms are crucial in IT governance to ensure the alignment of business and IT [4, 10, 41]. The effectiveness of such mechanisms are partially contingent upon the governance approach adopted (see Sect. 2.2). Further they are vital to lateral linkages in terms of facilitating collaboration and cross-functional business/IT training and understanding. In the same way, for implementing and sustaining HO, the management of human resources is vital to successfully achieving acceptance of and ongoing commitment to the lateral structures so characteristic of HO [50].

The Project/Program Management Office (PMO), arguably the fastest growing concept in project management today [34], is central to effectively implementing strategic IT management across the organization by overseeing IT project management, control, support and alignment [29]. In fact, it is prophecied that organizations will progressively move their PMO along a continuum from simply being a project office, where it assumes responsibility for project oversights, to being a center of excellence, where it plays a crucial role in strategic alignment for the organization [29]. In doing so, the PMO will progressively demonstrate competency and advancement in functionality, although obviously not all PMOs will achieve the ultimate of strategic alignment. In general the PMO has a number of tasks:

- facilitating the selection of projects based on strategic criteria, not ad hoc;
- allocating resources based on the priority of the initiative;
- optimizing the business value to the organization by effectively managing the delivery of multiple projects and programs;
- continually monitoring the portfolio of activities to maximize business value;
- rejecting projects failing to meet the criteria/stopping non-performing ones; and
- communicating with executive-level management (i.e. [29, 46]).

Given such roles, the PMO requires structure, which can be provided through the use of a framework. Importantly, if the framework is carefully implemented, the individuals using it do not need to be experts in it. Furthermore, it provides training and forges improved relationships between stakeholders. Two common industry frameworks are PRINCE2 (PRojects IN Controlled Environments) [2] and PMBOK (Project Management Body of Knowledge) [73, 75]. PMBOK emphasizes the disciplines of project management, such as how to execute the deliverables and is rigorous, but doesn't teach the organizational context. PRINCE2 prescribes in specific detail the steps required for a project to pass between defined phases. For IT governance, the PRINCE2 Gating concept provides a valuable framework with stages/gates that are essentially divisions of 'implementation' in the product life span [73].

With the structure of relational mechanisms created, the focus then shifts to how can IT governance be effectively managed and stakeholders educated on the deployment of these methodologies? The lessons from HO are that "people are critical to achieving integrative effort and they must be trained to make the lateral dimension their focus" [12, p. 529]. Indeed, as already mentioned, HO research has demonstrated that IT is vital to achieving strong communication.

A great vehicle for managing this across an organization is an intranet, or an "interconnected network within one organization that uses Web technologies for the sharing of information internally" [74, p. 1]. Previous studies (e.g. [19]) have identified the Intranet as a preferred tool to get past the common work focus of how to perform a task and to educate about why something should be done in a new manner. This means that once strategic requirements are identified, there is an opportunity for the intranet to be used to motivate individuals about the shared purpose, to inform about the steps required to implement changes, to educate about new policies and procedures, and to inform about the shared benefits of the outcomes so achieved.

The hard benefits include: less paper; less hardware; less headcount; and increased sales. The soft benefits include: increased employee productivity; better customer satisfaction; faster time to market; and improved employee retention [68]. Business value comes through money savings and process simplification [48]. For organizations implementing IT governance, intranets are important in facilitating active participation and collaboration between principal stakeholders, and in training individuals about the processes and frameworks deployed.

Having considered the structures, processes and relational mechanisms that are relevant for a complex not-for-profit healthcare organization such as Alpha, the next task, before reporting on how they played out, is to describe the research method pursued and a little bit of background about the company.

3 Case study

3.1 Method

The research presented in this paper can be classified as a longitudinal interpretative case study. Given that case study research focuses on addressing the 'how' and 'why' questions about "a contemporary set of events over which the investigator has little or no control" [77, p. 171], the chosen method enabled us to focus on the contemporary approaches taken by an organization to implement IT governance in its social and organizational context. Data was collected in accordance with these principles, using a combination of unstructured interviews and observation of the journey as IT governance was implemented at Alpha. By permitting us to systematically gather in-depth information [11] and to understand the complexities of the organization (real-world situation) and the challenges faced over a period of time [7], we were able to address our objective of exploring the journey and understanding of the changes and learning that took place during the process.

Detailed empirical material was collected through observation; unstructured interviews with directors and/or those charged with the responsibility of implementing IT governance; and a review of written materials like reports and articles about Alpha.

3.2 Company background

Alpha operates in the healthcare sector and is located in a capital city in Australia, with funding provided by the Australian and State Government bodies. As such, the

company works through an Annual Health Services Agreement with its State Government. Alpha is governed by a board of directors that is appointed by the State Minister for Health on three year terms. This board of directors sets the strategic direction for the company, has the power to appoint the CEO and Senior Management and oversees management of the services. In this way the major funder has strategic influence on the management and performance of the hospital and the CEO.

It provides comprehensive healthcare services, including: public hospital services; aged inpatient, community and home care services; and inpatient and community mental health services, to people living in and visiting its catchment area. Alpha operates at over forty locations; employs over 10,000 staff; and has an annual turnover of approximately $700 million. As a teaching hospital, Alpha provides undergraduate and postgraduate medical eduction for doctors and nurses in alliance with one of Australia's largest universities. This adds complexity and additional costs to the running of the hospital.

In the last year Alpha had in excess of 100,000 inpatients, provided over 650,000 outpatient occasions of service and assisted in the birth of over 6,000 babies. Alpha's sheer size, spread of locations, and increasing reliance on IT regarding medical services, all contributed to an almost ad hoc approach to IT investment with little focus on the alignment to other than immediate needs. So what have been the challenges and effects of implementing IT governance in Alpha?

4 IT governance at Alpha

In common with Xue et al. [76], the problem with IT investment at Alpha was that it was fundamentally decentralized with new initiatives brought to the fore by powerful stakeholders with healthcare expertise and passion. The result was that IT implementation paid little heed to systemic competencies like ROI, system reliability, maintenance costs, value-added services and strategic alliances. In essence the problem was lack of attention to strategic fit.

An upside was that the business structure at Alpha was essentially monarchial [72]. Further the CEO could see the fiscal risks of maintaining past practices, and the Board of Trustees was concerned with a Government audit report that highlighted the risks for Alpha without improved control around IT investment. Accordingly the CEO and the Board were united in adopting IT governance with processes that ensured informed alignment of top management and IT management to effect strategic goals. There are similarities here to findings regarding HO, where vertical structures have been retained at a very senior level to consider strategic issues, monitor and respond to the external situation with regard to opportunities and threats, and review finance and operations [12, 58].

In their quest to achieve IT governance, Alpha was concerned with empowering individuals and creating even greater integration and unity within the organization. At the same time Alpha wished to introduce control, which it thought achievable through the introduction of a transparent and efficient, yet sufficiently flexible model of IT governance to ensure the greater good for the organization. The challenge it faced concerned appropriately handling the pulls and pressures from multiple strategic forces [6, 59]. These were, in part, created by the size and spread of operations

and by the power and politics of key stakeholders. With this in mind we now report on Alpha's selection of appropriate structures, processes and relational mechanisms that addressed its circumstances as the organization rolled out IT governance.

4.1 Role of the CIO

As already alluded to, senior executive commitment is a critical success factor. Being a healthcare facility, Alpha's key stakeholders were top management (strategic/financial focus); administration (customer/operational/financial focus); healthcare professionals (operational/customer focus) and IT management (implementation/maintenance/financial focus). With IT governance, individuals must become accountable to a higher authority and conflicting priorities rationalized for the benefit of the greater good. This requires enforcing policies on potentially unwilling parties.

Alpha realigned the IT function, removing its answerability to Finance and requiring the CIO to report directly to the CEO. Alpha also created a forum to facilitate the operation of IT governance by means of a management committee (referred to as the IT Governance Committee or ITGC) chaired by the CEO. Committee members included the CIO and selected executives who represented the most significant IT stakeholders at Alpha. This included a senior clinician who utilized their 'non clinical hours' to contribute medical expertise to the decision making process. Further, the CEO routinely used clinicians to backfill senior IT roles in order to cover leave arrangements. These initiatives had a two-fold outcome principally related to generating trust: clinicians learnt firsthand about the complexities of IT investment which they could convey to their fraternity; and the IT governance function gained champions who brought practical clinical knowledge to the decision making process. With this established, Alpha then focused upon its relational mechanisms through the PMO and its processes.

4.2 Establishment of the PMO and the gating process

To facilitate the roll out of IT governance. Alpha committed to establishing a PMO and the CEO with the CIO's support, recruited a senior level project manager (PMO Director). The PMO Director had experience in implementing PMOs via different frameworks including PRINCE2 and PMBOK derivatives.

The next focus was upon process. Alpha created a 5 step Gating System with defined criteria that a project must possess to pass through each gate (see Fig. 2 below). The pipeline can be conceptualized as a funnel with a large number of project requests being poured in at the top and a limited number of projects been delivered out the bottom due to finite resources and budget. The slope on the funnel represents the lessening number of projects that will pass each gate.

The Gating System allowed Alpha to manage the projects as a portfolio. By insisting upon mandatory criteria about each project, data was then available to rank projects, group and prioritize them, analyze their strategic alignment and gain an overview of all projects in the workload pipeline with respect to organizational strategies, budgets and available resources.

The essential attribute of Alpha's Gating System was that the ITGC could stop a project at any gate. Gate 1 applied criteria that assessed the fit of the project against

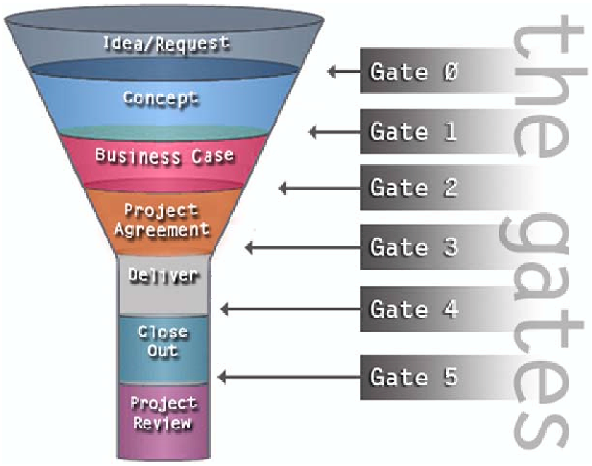

Fig. 2 Gating System at Alpha

strategy, synergy of the project with other initiatives, and the relative importance and urgency of the project. It also ensured effort was invested in estimating costs and benefits to a moderate level of confidence. This helped in assessing each project's ROI and allowed the committee to determine whether the project should progress at all before any significant expenses were incurred.

The subsequent gates ensured that greater levels of rigor and diligence were applied to projects as they continued through the lifecycle. Importantly, each project was required to continually perform against criteria or it was cancelled. For example, a project with runaway costs could be stopped before it went too far. Moreover, project teams remained accountable for delivering what had been claimed.

As Alpha's Gating System was developed around industry approaches like PMBOK, Alpha's ITGC was able to ensure a certain standard of project management. Furthermore, criteria checklists in the gating process assured adherence to methodology, and its regular forums with defined agendas provided valuable discipline in reviewing projects as they reached specific goals. Alpha found that project managers quickly learnt to work around the timeframes of the ITGC meetings and individual project schedules were not unduly impacted.

For the large part IT governance is now an integral part of the financial process. This has meant that those who have tried to avoid the Gating System have often been left to fail and when they have submitted purchase requests for services and equipment, the CEO has typically declined authorization. Such requests are forwarded to the Project Director who is tasked with directing the applicant to the Gating System. This demonstrates trust, which is a primary tool for a sound business operating environment. Without such trust power, opportunism and self-seeking are destructive elements that can destroy not only the economic, but also the human resources of a business.

Accordingly has the provision of IT governance structures enhanced trust that investment and management is fair and transparent? For the large part the answer is yes, but unfortunately there have been exceptions where power has been used to avoid the governance process, or at least initial gates. Here, with the CEO's blessing, powerful

stakeholders have bypassed the initial gates in the Gating System. These projects are typically the worst performing projects as they lack definition. Interestingly, many are soon brought back into the Gating System to assist in putting them back on track and ensure that they conform to Alpha's strategic and financial requirements.

4.3 Complexities caused by funding for IT projects

As a public sector healthcare provider, Alpha's IT project portfolio is very different from other sectors including private enterprise. In the private sector, a competitive advantage is often derived by investing in the right IT projects. The speed needed to reach the market often drives ambitious schedules requiring greater and greater resource investments. In Alpha's case an effective IT governance model must take into account very different commercial variables. For example, healthcare is often funded by government and not driven by profit. In extreme cases funding shortfalls may result in the need to reduce costs by reducing services, such as closing wards. The healthcare sector is also impacted by politics. This means that some funding opportunities are driven by the 'political priorities of the day', rather than alignment with the best organizational returns. Yet it is important that the organization is fiscally responsible, and for Alpha's top management, this risk management was strategically attractive.

In a project sense, for organizations like Alpha, the emphasis is shifted away from schedule to budget. The finite variables then become budget and available resources, with scope and schedule somewhat more fluid. Kudos and political intent behind the funding source create a challenge in managing these variables. For Alpha this meant its approach to managing its project portfolio needed to suit these circumstances, take account of these variables and ensure appropriate analysis and diligence.

These requirements shifted the emphasis of Alpha's IT governance, resulting in process changes to ensure fiscal accountability. Specifically, self-funded projects were given priority and executive sponsors claiming business gains from proposed projects were asked to execute cuts to their operational budgets to reflect these savings. Subsequently it's not surprising that many sponsors became reluctant to support wild ROI claims, meaning these projects did not pass the gates. This prioritization process also protects the constrained resource budget by queuing projects for when resources are available (i.e. after government budget announcements). Self funded projects are not subject to this restriction.

Grants are a key source of funding for IT initiatives in organizations like Alpha. They are provided by benevolent organizations, charities, benefactors, research and government. Whilst they offer a much welcomed resource, they also create certain challenges e.g. grants are time sensitive and need to be spent in a finite time. In establishing IT governance, Alpha's PMO realized that projects initiated as a result of grant funding were problematic for several reasons.

1. There's a perception that grant-funded projects should not have to be governed because they don't need to show a financial return to justify themselves. Grants do not come from the organization's operating budget. Therefore the IT governance process has difficulty in evaluating the project in terms of ROI and benefit, given it already has funding. Consequently, stakeholders in such projects are typically reluctant to engage in the IT governance process.

2. Grants are often applied for and given without any IT involvement. This normally results in projects that have not considered the IT infrastructure impact or specific organizational IT requirements.
3. Grants are often provided with timeframe conditions. These timeframes often correspond to the end of a financial year and place pressure on the organization to make significant procurement decisions. Appropriate planning and diligence is often not possible causing these projects to start with a less than appropriate budget. Moreover, divisions within Alpha have been approached to conduct tenders for complex expensive systems with little notice (typically days or weeks). These projects have characteristically later run into problems as issues arise that were not visualized in the planning stages.
4. The medical champions who secure grant funding often have very little understanding of the total cost of ownership. As clinicians their primary focus is on patient care, with investment in IT seen as a tool that can facilitate this. As a result the significant ongoing costs that should be included in the budgets of these projects (i.e. the costs beyond the capital purchase price) are overlooked. Consequently, these projects become prone to failure. However, because the success of the hospital is significantly dependent upon the clinicians' successful performance, they are prestigious stakeholders with power, legitimacy and urgency. Accordingly when implementing IT governance it was a major challenge to gain their trust and understanding in circumstances where their legitimacy was reduced. This is an ongoing achievement and without it compliance would be impossible (see Sect. 4).
5. Grants are frequently provided for capital purchases not implementation and ongoing operational impacts, like maintenance and consistent use of technology. Historically, in healthcare, grants have been used to purchase expensive medical devices and equipment. Increasingly the modern convergence of technologies has meant these medical devices manifest as complex information technology systems.
6. Typically, projects funded by grants reduce the amount of operating budget available to Alpha in subsequent years. This is caused by the new cost overheads from these projects not being budgeted for as part of the grant process.

To address the challenges posed by grant-funded projects, Alpha required conformance to an IT Governance Framework. This meant:

- Grant-funded projects were required to pass through the Gating System like any other project so power was made answerable to process and lateral relationships.
- Specific criteria were added to the gates to determine the total cost of ownership including capital purchase, implementation costs, organizational impacts (processes, staffing, housing etc.) and ongoing operational costs (licensing, maintenance, staffing, etc.).
- Opportunities to capitalize certain costs and include these in the grant were detailed.
- The extended costs of implementing the grant-funded projects were assessed against other projects in the IT Portfolio. This overcame the problem of other projects being unable to proceed due to scarcity of resources after expenditure on grant-funded projects.

- The projects needed to demonstrate a linkage to organizational and IT strategies.
- Procurements must allow time for due diligence and the Governance process.

This represents a significant cultural shift wherein the IT Governance Committee may opt not to take up a grant if the impacts are considered excessive. Obviously problems did arise. Grants are an essential mechanism to fund much needed initiatives, and management overheads like those detailed above are difficult to accommodate without risking the loss of badly needed funds. Moreover, applying the IT governance process to grant-funded projects once the grant has been provided is not the best approach. As a result, to achieve the best of both worlds, Alpha is planning to implement processes to ensure IT governance requirements are factored into the grant application process. This activity is a significant undertaking given the diverse number of grant providers and grant recipients within an organization the size of Alpha.

4.4 Facilitating IT governance: The role of the intranet

Alpha used IT resources, particularly an intranet, to facilitate the relational mechanisms for the delivery/execution of IT governance. Through careful planning, design and execution, Alpha created an environment where project workers (i.e. those actually executing the framework) were guided through the organization's framework by an intranet site with a minimum amount of support and training. Designing workflow into the intranet proved crucial as it meant lower skilled project workers could take projects through the lifecycle without close supervision.

Because Alpha based the project management theory on industry frameworks like PRINCE and PMBOK, training widely available in the market place was accessed. Further, by embedding their project management certification programs into the context of the organization where employees, as part of their training, specifically used Alpha's own templates that were linked to the organization's intranet, its programs were much more effective and employees felt more at ease as they knew subsequently where to find the required information. Moreover, this meant that employees could run through the programs themselves without supervision. This offered resource savings. Alpha estimates it was able to save the salaries of two full-time personnel in the PMO by designing the intranet to complement these certification programs and deliver the workflow of the organization's project management methodology.

So what investment was required to implement such an approach?

1. The intranet needed to be developed. At Alpha this involved 3 resources over 2 months or a total of 6 person months of effort.
2. The intranet needed to be promoted and marketed to members of the organization. Past experiences, news headlines and poorly designed systems mean people tend to be skeptical of IT. Consequently the PMO Director used an innovative approach to popularize the resource for this new approach to IT governance. A competition required users (participants) to find images on various pages that represented different navigation dynamics and work flows. This competition ensured users searched through all material. A series of road show presentations supported the concept, with the PMO team visiting sites throughout the organization for an

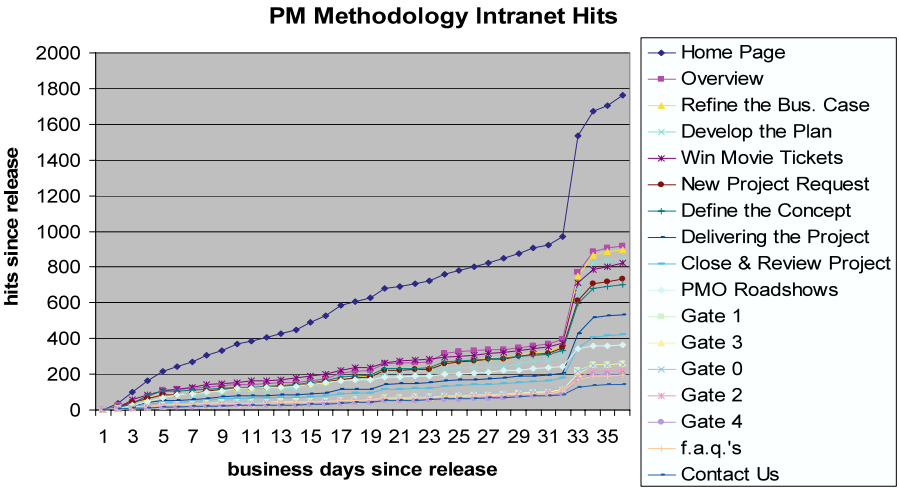

Fig. 3 Hits on the intranet site in the business days after its release

informal afternoon tea in order to meet the project community. In total the competition ran for a few weeks and regular communication (announcements, emails etc.) ensured continued enthusiasm and interest with the closing date being the same deadline date set for submission of agenda items to the ITGC. Winning entries were drawn by the CEO at the committee meeting. In total 18 modest prizes totaling less than $200 were awarded.

By basing the PMO intranet on PMBOK principles, the project management disciplines were placed into the context of the organizational methodology. This meant new project managers could be easily inducted into the PMBOK based Project Management certification program. Such a strategy gave the PMO a huge number of hits on its intranet site with significant organizational awareness (see Fig. 3, with the spike representing the last days before the close of the competition). Further, transparency and clarity around the staged process was enhanced by posting the manuals and documentation required for submission as it applied to each "gating stage" on the intranet.

It is worth noting that this growth is not sustainable and the level of interest quickly dropped off after the marketing campaign was over. However, the initiative built a level of awareness and the hits continued to grow organically as the intranet was used as a reference tool by the project management community. Figure 4 shows the same metrics taken weekly over a longer period. Alpha intends to market the PMO intranet again as it embarks on some very large work programs.

Interestingly, in terms of ROI, Alpha estimates that it recovered the costs of the intranet in a relatively short period and required project management support is significantly reduced to a level that equates to almost a full time employee in the PMO. In terms of impacts on the IT budget, as already mentioned, IT governance is now an integral part of the organizational financial process, which has made it much more controlled. Further, projects need to fund their IT requirements from benefits that

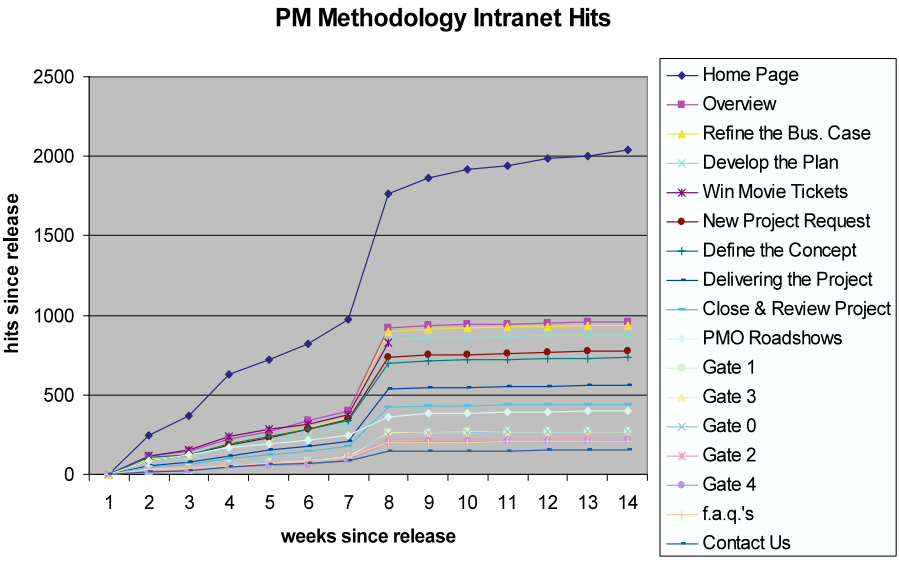

Fig. 4 Hits on the intranet site in the weeks after its release

would be acquired or from grants or mandates from organizations like government agencies.

Accordingly is there now a better focus on managing existing IT investment rather than looking for new IT options? Alpha has certainly made good inroads into instituting IT governance and the benefits acquired have been greatly appreciated by the executive. The new structures around IT governance at Alpha have aimed to address the issue of uncontrolled investment and maintenance costs in IT by regulating what would be allowed. This is one side of balance. The other side of balance is the obligation of the IT people to understand the needs of healthcare professionals so that there is mutual agreement that the best decisions have been made (not just for those who can make the best case on paper, but for the needs of the business). This power balance is crucial to retaining trust in the process and demonstrates the value of Alpha's investment in strategic change.

Whilst this has streamlined IT in the organization, unfortunately this is only one dimension. Alpha is now trying to leverage off these processes and capabilities to assist them in rolling out governance across all projects in the organization (these include building, marketing, and research projects). The challenge Alpha faces here is that the increase in workload has not been acknowledged. Instead, Alpha is trying to push other projects through the same processes using the same resources. This is creating problems as the criteria for these projects are different from the criteria used to assess IT projects so existing templates don't apply and more planning about structure, processes and relational mechanisms is needed before the stakeholders are forced to engage with the control. In other words, lateral flows are not embedded.

5 Conclusions and implications for further research

5.1 Comparative analysis of IT investment at Alpha before and after IT governance

The impacts Alpha experienced both before and after creating the PMO and implementing IT governance are summarized in Table 2 below. The story is overwhelmingly positive.

5.2 Conclusions about the applicability of findings and benefits to other organizations

By making a pragmatic attempt to understand the impact on a not-for-profit organization in the public healthcare sector as it instituted IT governance, we have sought to provide insight into how IT governance can be instituted, the challenges faced and the benefits that are possible. Moreover, their situation demonstrates some of the power and politics that organizations face from multiple strategic forces in implementing IT governance. In terms of the challenge of running IT with the discipline of a business, Alpha's IT division has certainly responded positively. Evidence of this can be found

Table 2 Summary of the impacts on Alpha from implementing the PMO and IT governance

Before the PMO	With the PMO
Projects lacked defined processes and followed various methodologies inconsistently, if at all	Projects followed a standard methodology and used consistent processes facilitated by the PMO and intranet
Poorly performing projects just kept on going—"the never ending project"	Predetermined gate criteria helped to assess the initial and continuing viability of each project. The ITGC had the power to "kill" projects at any Gate
Without monitoring projects their performance was unknown until the project began to visibly fail	The PMO reviewed projects objectively and mentored and coached project owners to help assure quality
Projects were selected based on the "squeaky wheel gets the most oil"	Projects were tied to strategies and prioritized by the ITGC
Projects operated in isolation of each other with no understanding of impacts and clashes	Projects were selected for organizational synergy with clearly defined and understood dependencies
No support was provided for project managers trying to do the right thing	Project managers were given a mandate to employ professional disciplines in project management
No repository or source of guidance for project managers existed	The intranet deployed educated and supported the methodology, while guiding the user through the workflow of the project lifecycle
Lack of fiscal accountability. Some projects did not properly account for ongoing and maintenance costs	Ongoing and maintenance costs were factored into business plans prior to approval
Inconsistent cross-functional relationships between healthcare and IT professionals	Improved cross-functional appreciation and understanding

in their alignment to the organization's strategies, the way they have positively addressed the prerequisites for success [40] and their demonstration of organizational and technological benefits.

In re-visiting the theoretical framework for IT governance, what practical conclusions can be drawn from the Alpha experience? The Board of Trustees, with their strategic role, were influential in the selection of the CEO and in turn the CIO. Through appointing a CIO and PMO Director, and establishing direct reporting lines to the CEO, the IT *organizational structure* was established to implement IT governance successfully. Given that IT governance committees are a further tool used to foster understanding and acceptance of how to access the IT investment process and additionally help breed trust, it would appear that Alpha's use of these was a factor in its success story. For the *relational mechanisms*, central to success was the PMO and its achievement in building the intranet around tried frameworks like PRINCE2 and PMBOK. The use of these frameworks to implement the *processes* meant that documentation and surety of process could be established with some speed.

A key lesson is that strong lateral communication is crucial to retaining trust in the process. New structures usually aim to address imbalance. IT governance at Alpha aimed to address the issue of uncontrolled investment, power as a means to gain desired outcomes and uncontrolled maintenance costs in IT. That is one side of balance. The other side of balance concerns the obligation of those charged with administering IT governance, to understand the needs of healthcare professionals so that there is mutual agreement that the best decisions have been made (not just for those who can make the best case on paper, but for the needs of the business).

Further, what are the gains from instituting IT governance? At Alpha risk management was one such outcome and the literature would suggest that this is a focus for organizations. Firstly, IT governance addresses the issue of financial risk by ongoing control of IT investment costs. Secondly, the CEO is better positioned to comply with the reporting requirements of the Corporations Act through detailed documentation of all material off-balance sheet expenditures. Thirdly, there is reduced exposure to the risk of out-sourced contracts that jeopardize the intellectual property of the organization (a key issue with privacy provisions in the healthcare sector) [19].

Trust is the primary tool for a sound operating environment for business. Without it opportunism and self-seeking are destructive elements that can destroy not only the economic resources of an organization, but also the human resources. So, have the provisions of IT governance structures enhanced trust that investment and management is fair and transparent?

The Gating System enabled Alpha to better control projects via individual project accountability. With regular reporting about projects at ITGC, Alpha was able to collect business metrics to determine the health of its IT. The competition timed with the release of the intranet enabled Alpha to counter the resistance to IT [40, 43] and achieve similar successes as AXA and QAS [36], where employees experienced significant time savings and streamlined workflows. These changes suggest Alpha is moving towards a hybrid of what Sambamurthy and Zmud [59] call a Centralized IT Governance Mode and Federal (or Organizational) IT Governance Mode or as the project management literature would argue, a Horizontal Organization (HO).

The limitation of this study is that it comprises a single case study. Future work in other organizations in the public healthcare sector and possibly other not-for-profit

organizations would provide interesting comparisons. With this large sector so reliant on grants as a source of infrastructure, such work is informative and timely.

5.3 Implications for future research

Finally, what implications can be drawn from this exercise? Firstly, in the Processes component of their IT Governance Framework, DeHaes and Van Grembergen [18] refer to Strategic Information Systems Planning, monitoring through the IT balanced scorecard, Information Economics, Control Objectives for Information and Related Technologies (COBIT), service level agreements and the like. This relates to past practices by organizations to identify and establish their own procedures and processes by which to manage the flow of information related to the initial proposals, business plans, documentation and approval processes for IT investment [72]. With the established credibility of PMBOK and the structure provided by the Gating System, efficiencies of proven practice can be readily accessed. Consequently there would seem to be merit in including reference to this in the Processes component of the IT Governance Framework.

Secondly, the study has shown that this successful implementation of IT governance fundamentally has strong parallels to the successful approaches found in HO. Proper planning and CEO support have enabled positive outcomes in the IT governance framework that Alpha successfully implemented. Demonstrated and transparent rigor for IT projects has strengthened the perceived professionalism of the IT Department. Similarly, the institution of reporting lines directly to the CEO; improved communication and interaction within the IT Department and also externally to its stakeholders who champion infrastructure developments (including IT infrastructure developments) in Alpha has meant that the worth of projects is properly delineated; and IT is now able to be a fiscally and strategically responsive arm of the organization. All of these governance characteristics are closely related to what makes HO so distinctive. There is merit in exploring these commonalities further to see how real they are and what lessons can be learnt from each.

Thirdly, despite the undoubted success to date, IT governance shares one problem with HO. For both, financial success is readily demonstrated, but the longer term goals need evaluation too. As with findings from HO research [12], Alpha must ensure that short term goals are not achieved at the expense of strategic longer term IT investment; that quality is not sacrificed to cost; and that lateral communication remains open and frank. Approaches using Balanced Scorecard offer some insight but need refinement [13] and HO appears reluctant to embrace these. Given the crucial component of lateral communication and transparency regarding treatment of all stakeholders, 360 degree performance evaluation is probably the best option and here again intranet tools are probably the way forward. Such measurements are crucial to demonstrating the ongoing and transparent success of such strategies and herein perhaps IT governance may yet lead the way.

References

1. Australian Government, Department of Health and Ageing (2008). The State of our Public Hospitals, June 2008 Report, http://www.health.gov.au/internet/main/publishing.nsf/Content/health-ahca-sooph-index08.htm.
2. Bentley, C. (2002). *Prince 2: A practical handbook*. Amsterdam: Elsevier.
3. Box, R. C. (1999). Running government like a business. *The American Review of Public Administration*, *29*(1), 19–43.
4. Broadbent, M., & Weill, P. (1989). *Leveraging the new infrastructure: how market leaders capitalize on information technology*. Boston: Harvard Business School Press.
5. Brown, C. V., & Magill, S. L. (1994). Alignment of the IS function with the enterprise: Toward a model of antecedents. *MIS Quarterly*, *18*(4), 371–4-03.
6. Brown, C. V., & Magill, S. L. (1998). Reconceptualizing the context-design issue for the information systems function. *Organization Science*, *9*(2), 176–194.
7. Bryman, A. (2004). *Social research methods* (2nd ed.). London: Oxford University Press.
8. Byrd, T. A. (2001). Information technology, core competencies, and sustained competitive advantage. *Information Resource Management Journal*, *14*(2), 27–36.
9. Byrd, T. A., Lewis, B. R., & Bradley, R. V. (2006). IS infrastructure: The influence of senior IT leadership and strategic information systems planning. *Journal of Computer Information Systems*, *Fall*, 101–113.
10. Callahan, J., & Keyes, D. (2003). The evolution of IT governance @ NB power. In W. Van Grembergen (Ed.), *Strategies for information technology governance*. Hershey: Idea Publishing Group.
11. Cavana, R. Y., Delahaye, B. L., & Sekaran, U. (2001). *Applied business research: qualitative and quantitative methods*. New York: Wiley.
12. Chenhall, R. H. (2008). Accounting for the horizontal organization: a review essay. *Accounting, Organizations and Society*, *May-July*, 517–550.
13. Chenhall, R. H., & Langfield-Smith, K. (2007). Multiple perspectives in performance measures. *European Journal Management, September, 2007*.
14. Clegg, S. R. (1989). *Frameworks of power*. Thousand Oaks: Sage.
15. Cooper, B. L., Watson, H. J., Wixom, B. H., & Goodhue, D. L. (2000). Data warehousing supports corporate strategy at first American corporation. *MIS Quarterly*, *24*(4), 547–567.
16. Corbitt, B., & Thanasankit, T. (2002). Acceptance and leadership-hegemonies of e-Commerce policy perspectives. *Prometheus*, *20*(1), 39–57.
17. Dart, R. (2004). Being "Business-Like" in a nonprofitorganization: A grounded and inductive typology, nonprofit and voluntary sector quarterly (33), available online at http://nvs.sagepub.com/cgi/content/abstract/33/2/290.
18. De Haes, S., & Van Grembergen, W. (2006). Information technology governance best practices in Belgian organizations. In R. H. Sprague, Jr. (Ed.), *Proceedings of the 39th Hawaii international conference on system sciences*, Kauai, Hawaii (pp. 1–9). Los Alamitos: IEEE Comput. Soc.
19. Denton, K., & Richardson, P. (2006). Intranets for implementing strategic initiatives. *Competitiveness Review*, *16*(1), 3–11.
20. Dixon, P. J., & John, D. A. (1989). Technology issues facing corporate management in the 1990s. *MIS Quarterly*, *13*(3), 247–255.
21. Earl, J. M. (1993). Experiences in strategic information systems planning. *MIS Quarterly*, *17*(1), 1–24.
22. Foucault, M. (1978). *The history of sexuality volume 1: An introduction*. New York: Pantheon Books (first American edition ed. vol. 1).
23. Foucault, M. (1982). Michel Foucault: Beyond structuralism and hermeneutics. In H. L. Dreyfus, P. Rabinow (Eds.), *The subject and power* (pp. 208–226). New York: Harvester Weatsheaf.
24. Galbraith, J. (1973). *Designing complex organizations*. Reading: Addison-Wesley.
25. Galbraith, J. (2005). *Designing the customer-centric organization, a guide to strategy, structure, and process*. San Francisco: Jossey Bass.
26. Glaser, J. P. (2005). Working with the CIO. *Healthcare Financial Management*, *59*(7), 108–110.
27. Halford, S., & Leonard, P. (2001). *Gender, power and organizations*. New York: Palgrave.
28. Henderson, J. C., & Venkatraman, N. (1999). Strategic alignment: Leveraging information technology for transforming organizations. *IBM Systems Journal*, *38*(2&3), 472–484.
29. Hill, G. M. (2004). Evolving the project management office: A competency continuum. *Information Systems Management*, *Fall*, 45–51.

30. Hiltz, R. S., & Turoff, M. (1993). *The networking nation: Human communication via computer*. Reading: Addison-Wesley.
31. ITIG (IT Governance Institute) (2000). Board briefing on IT governance (2nd ed.). Available on-line at www.itgi.org.
32. Introna, L. D. (1997). *Management, information and power*. London: Macmillan.
33. Jarvenpaa, S. L., & Ives, B. (1991). Executive involvement and participation in the management of information technology. *MIS Quarterly*, *15*(2), 205–277.
34. Kendall, G., & Rollins, S. (2003). *Advanced project portfolio management and the PMO: multiplying ROI at warp speed*. Fort Landerdale: J. Ross Publishing.
35. Kingdon, D. R. (1973). *Matrix organization*. London: Tavistock.
36. Kirby, E. (2006). Helping AXA employees to live the company values through the intranet. *The Business Communicator*, *7*(2), 8–9.
37. LaBelle, A., & Nyce, H. E. (1987). Whither the IT organization? *Sloan Management Review*, *28*, 75–85.
38. LaPlante, A. (1991). Here come the hybrids. *ComputerWorld*, *June*, 57–61.
39. Laudon, K. C., & Laudon, J. P. (2005). *Essentials of management information systems: Managing the digital firm*. Upper Saddle River: Pearson Education.
40. Lin, G. (2003). Challenges of running IT like a business. *ComputerWorld*, *37*(39), 46.
41. Luftman, J. (2000). Assessing business-IT alignment maturity. *Communications of AIS*, *4*, 1–50.
42. Luftman, J., & Brier, T. (1999). Achieving and sustaining business-IT alignment. *California Management Review*, *42*(1), 109–122.
43. Maglitta, J. (1994). Rocks in the Gears: Reengineering the Workplace. *ComputerWorld*, *28*(40), 94–97.
44. Markus, M. L. (1983). Power, politics and MIS implementation. *Communications of the ACM*, *26*(6), 430–444.
45. McGee, M. K. (2006). What keeps CIOs awake at night? Old and new worries, says survey. *Information Week, September 18*.
46. Microsoft Enterprise project management—IT governance and the program management office. Available on line at http://www.microsoft.com/Office?project/prodinfo/EPM/.
47. Miller, A. R. (2006). *Driving Monro muffler brake with an IT dashboard, graduate capstone project cross-disciplinary professional studies program—Partial fulfillment of a master of science degree in cross-disciplinary professional studies at the Rochester Institute of Technology*, Spring.
48. Miller, P. (2006). Well-designed intranets prove their worth. *IT Week*, *October 9*, 24.
49. Mitchell, R. K., Agle, B. R., & Wood, D. J. (1997). Toward a theory of stakeholder identification and salience: Defining the principle of who and what really counts. *Academy of Management Review*, *22*(4), 853–886.
50. Ostroff, F. (1999). *The horizontal organization*. London: Oxford University Press.
51. Overby, S. (2004). How to run IT like a business. *CIO Magazine*, *17*(14), 1.
52. Parker, M., Benson, R., & Trainor, H. (1988). *Information economics: linking business performance to information technology*. New York: Prentice Hall.
53. Peterson, R. (2004). Information strategies and tactics for information technology governance. In W. Van Grembergen (Ed.), *Strategies for information technology governance*. Hershey: Idea Publishing Group.
54. Raghupathi, W. (2007). Corporate governance of IT: A framework for development. *Communications of the ACM*, *50*(8), 94–99.
55. Rockart, J. F. (1998). The line takes the leadership—IS management in a wired society. *Sloan Management Review*, *Summer*, 57–64.
56. Rockart, J. F., Earl, M., & Ross, J. W. (1996). Eight Imperatives for the New IT Organization. *Sloan Management Review*, *38*(1), 43–55.
57. Romm, C. T., & Pliskin, N. (1998). Electronic mail as a coalition-building information technology. *ACM Transactions on Information Systems*, *16*(1), 82–100.
58. Romme, G. L. (1996). A Note on the hierarchy-team debate. *Strategic Management Journal*, *17*(5), 411–417.
59. Sambamurthy, V., & Zmud, R. W. (1999). Arrangement for information technology governance: A theory of multiple contingencies. *MIS Quarterly*, *23*(2), 261–290.
60. Sambamurthy, V., & Zmud, R. W. (2000). The organizing logic of IT activities in the digital era: A prognosis and a call for research. *Information Systems Research*, *June*, 105–114.
61. Schonberger, R. J. (1996). *World class manufacturing: The next decade*. New York: The Free Press.

62. Schonberger, R. J. (2001). *Let's fix it, overcoming the crisis in manufacturing*. New York: The Free Press.
63. Suomi, R., & Tahkapaa, J. (2004). Chapter XIV governance structures for IT in the health care industry. In W. Van Grembergen (Ed.), *Strategies for information technology governance*. Hershey: Idea Group.
64. The Standish Group (2004). Third quarter research report: Chaos demographics.
65. Van Grembergen, W. (2002). Introduction to the Minitrack IT governance and its Mechanisms. In R. H. Sprague, Jr. (Ed.), *Proceedings of the 35th Hawaii international conference on system sciences*, Big Island, Hawaii. Los Alamitos: IEEE Comput. Soc.
66. Van Grembergen, W., & De Haes, S. (2003). Linking the IT balanced scorecard to the business objectives at a major Canadian Financial group. *Journal for Information Technology Cases and Applications*, *5*(1), 23–50.
67. von Simson, W. (1990). The centrally decentralized IS organization. *Harvard Business Review*, *July-August*, 158–162.
68. Ward, T. (2007). Does your intranet pay its way? *Strategic Communication Management*, *11*(2), 10.
69. Weber, M. (1947). *The theory of social and economic organization*. New York: Free Press.
70. Weill, P. (2004). Don't just lead, govern: How top-performing firms govern IT. *MIS Quarterly Executive*, *3*(1), 1–17.
71. Weill, P., & Vitale, M. R. (1999). Assessing the health of an information systems applications portfolio: An example from process manufacturing. *MIS Quarterly*, *23*(4), 601–624.
72. Weill, P., & Woodham, R. (2002). *Don't just lead, govern: Implementing effective IT governance* (CISR Working Paper no. 326).
73. Wideman, R. M. (2002). *Comparing PRINCE2 with PMBoK*. AEW Services Vancouver, BC Canada.
74. A Glossary of Distance Education Terms, www.tamu.edu/ode/glossary.html.
75. Wysocki, R. K., Beck, R. Jr., & Crane, D. B. (1995). *Effective project management*. New York: Wiley.
76. Xue, Y., Liang, H., & Boulton, W. R. (2008). Information technology governance in information technology investment decision processes: The impact of investment characteristics, external environment, and internal context. *MIS Quarterly*, *32*(1), 67–96.
77. Yin, R. (1994). *Case study research: design and methods* (2nd ed.). Thousand Oaks: Sage.
78. Zmud, R. W. (1988). Building relationships throughout the corporate entity. In J. Elam, M. Ginzberg, P. Keen, R. Zmud (Eds.), *Transforming the IS organization: The Mission, the framework, the transition*. Washington: ICT Press.

Carla L. Wilkin is a senior lecturer in the Department of Accounting and Finance, Faculty of Business and Economics, Monash University, Australia. Prior to this she was with the Department of Accounting and Business Information Systems at The University of Melbourne; Carla has also held teaching positions at Deakin University. Carla holds a BCom (Hons) and a Ph.D. from Deakin University and a GradCertHigherEd from Monash University. Her research interests concern: system use and appropriation of information systems; measurement of the business value of IT; innovation and IT acceptance in SMEs; outcomes from IT investment; ERP in Accounting education; and project management and IT governance. She is an active researcher and has published in journals including: Communications of the ACM; IT & People; International Journal of Business Information Systems and International Journal of Education and Development Using Information and Communication Technology. Carla also serves on editorial boards and is an Associate Editor of the International Journal on IT/Business Alignment and Governance.

Jon Riddett is an IT industry professional specialising in corporate IT and Project Governance implementations. Most recently on contract as the Director of Project Services for a large Australian public healthcare network, Jon's international experience in Financial Services, Fast Moving Consumer Goods and Healthcare includes several greenfield PMO setups, some PMO "rescues" as well as the establishment and management of large projects and programs of work. Complimenting over twenty years of industry experience, he has recently completed an IT related Masters Degree (MeCom), is certified by the Australian Institute of Project Management to the level of Master Project Director (MPD) and holds an advanced diploma in Project Management (AdvDipPM).
His latest assignment has seen him successfully implement IT Governance into a greenfield Healthcare provider while tackling the context specific challenges presented by a not-for profit environment. Further, his passion for project management has also seen him lecturing to postgraduate students at several universities, delivering corporate training and publishing papers at international conferences.