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## Investigation of the Comprehensiveness of the ISO/IEC 38500:2008 Standard in an Inter-organisational Public/Private-sector Context

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### Abstract

*In this study we evaluate ISO/IEC 38500:2008, the Corporate Governance of Information Technology standard, as a design artefact in the context of development and deployment of a large IT system in a public/private-sector context. The findings show that ISO/IEC 38500:2008 has merit as an analytical framework, providing a good basis upon which to objectively evaluate the corporate governance of IT. Further, the study identified specific areas where the standard could be enhanced to take better account of the IT governance requirements of inter-organisational IT systems in public/private-sector contexts. For example, the standard does not adequately address possible agency effects in inter-organisational contexts, the kinds of relational mechanisms that might be needed, or ways to govern the negotiation of diverse and sometimes conflicting stakeholder world views. We conclude by proposing an IT governance model illustrating the need for balance between principle-based and procedure-based approaches for different levels of IT governance.*

### Keywords

ISO/IEC 38500:2008; IT governance; design science research.

### INTRODUCTION

ISO/IEC 38500:2008, which is the standard concerned with corporate governance of information technology (IT), is claimed to offer significant opportunities to explore the effectiveness of corporate governance of IT in inter-organisational scenarios (Calder 2008). Unlike process-oriented standards such as the ISO/IEC 9126.x:2005 family of standards (Software engineering - Product quality), ISO/IEC 38500:2008 is silent on process. Instead it puts forward a governance model and six principles that are claimed to be applicable to most organisations (ISO/IEC 38500:2008, p.6). To date, very few studies have examined the quality of this standard. A major aim of our study was to test this claim through ex-post evaluation of ISO/IEC 38500:2008 as a design process artefact in the context of development and deployment of a large inter-organisational IT system involving private and public sector stakeholders. Assessing the value of IT innovations in public/private-sector contexts is challenging because of different backgrounds, requirements and understandings about system value (Kamal et al. 2011; Raus et al. 2010). Furthermore, there has been criticism in the literature that principle-based standards do not provide sufficient detail and guidance for organisational adoption and use (e.g. O'Donohue et al. 2006).

The objective of this paper was to investigate, using a Design Science Research (DSR) approach, the comprehensiveness of the ISO/IEC 38500:2008 standard as a process design artefact in an inter-organisational public/private-sector context. ISO/IEC 38500:2008 is a principles-based standard derived directly from AS/NZS 8015:2005. It defines corporate governance of IT as the “system by which the current and future use of IT is directed and controlled. Corporate governance of IT involves evaluating and directing the plans for the use of IT to support the organization and monitoring this use to achieve plans. It includes the strategy and policies for using IT within an organization” (ISO/IEC 38500:2008, p. 3). The standard addresses corporate-level governance of IT in an organisation. Particularly the responsibilities of its board to monitor, direct and control ICT activities at the executive and operational levels of the organisation.

DSR is concerned with scientific examination of the design, creation and evaluation of innovative artefacts that are aimed at achieving human-defined goals. These artefacts can consist of *constructs*, *models*, *methods* (Hevner et al. 2004), and *better theories* (Rossi and Sein 2003). *Constructs* define the conceptual vocabulary of a domain; *models* contain an expression of how constructs are related; *methods* provide a description on how to perform some task; and *better theories* are derived from experimental-like proofs of concept or method during the design construction phase. No matter the type of artefact, DSR is based on two fundamental activities – build and evaluate. While these two concepts are relatively straightforward in terms of meaning, their operationalisation in practice can be difficult and complex, particularly when different designs are possible. In an information systems context, DSR involves the study of innovative design artefacts for the purpose of understanding, explaining, and improving the performance and, in our case, the governance of information systems (Gregor 2002).

Our case study involved redevelopment of the complex Employment Services System (ESS) within a large Australian public-sector organisation. Although funded and developed by the public-sector organisation, the ESS was designed to support external organisations contracted to deliver employment service programs on behalf of the Australian Commonwealth Government. Consequently the ESS needed to support the government's employment programs policy and business rules, as well as address the business needs of the employment service providers in terms of operational support and ease of use. External private sector suppliers were reliant on the ESS as it provided the means to service their clients (employers and job seekers) and record activities for payment.

Deployment of the ESS is widely regarded as being successful in delivering value to both public and private sector participants (MMC 2010). This success facilitated examination of how well the governance mechanisms used in the ESS project could be accommodated by the six principles described in ISO/IEC 38500:2008.

Our paper is organised as follows. After providing an overview of corporate governance, ISO/IEC 38500:2008 and DSR, we outline our research method and context. We then present findings that provide examples of structures, processes and relational mechanisms evident in our case study and discuss results from retrospective application of ISO/IEC 38500:2008, which include our investigation of its comprehensiveness from a design perspective. Finally, we outline our limitations and identify opportunities for future research before concluding the paper.

## INVESTIGATING ISO/IEC 38500:2008 AS A DESIGN ARTEFACT

Corporate governance is a system of oversight which monitors, directs and controls organisations (Cadbury 1992; OECD 1999). Derived from corporate governance, Information Technology governance (ITG) is “the term used to describe how those persons entrusted with governance of an entity will consider IT in their supervision, monitoring, control and direction of the entity” (ITGI 2009, p.1; Peterson 2004; Van Grembergen 2002). It also “includes the strategy and policies for using IT within an organisation” (ISO/IEC 38500:2008, p.3).

Researchers, who take a pragmatic/operational perspective to examining ITG implementation, tend to draw on the frameworks and research proposed by the IT Governance Institute and the structures, processes and relational mechanisms outlined by Van Grembergen et al. (2004). Herein structures focus on factors like the deployment of appropriate structural mechanisms to ensure effective alignment of business and technology; processes involve planning, implementation and monitoring; while relational mechanisms include critical success factors like commitment, involvement and effective communication of senior executives (Van Grembergen et al. 2004).

As ISO/IEC 38500:2008 is a relatively new standard, there is little evidence regarding its design quality or suitability for application in complex organisational settings. This research seeks to address this by contributing new knowledge about the applicability of ISO/IEC 38500:2008 in an inter-organisational public/private-sector context. In doing so, we seek to contribute to DSR by examining the relevance of the ISO/IEC 38500:2008 artefact in a real world setting. Hevner's (2007) model of the Design Science Research Cycles identifies this task as a Relevance Cycle Evaluation Process (see Figure 1). As the ISO/IEC 38500:2008 artefact is the mechanism by which expert knowledge about ITG is translated into actionable knowledge by non-experts (Markus et al. 2002), it is important to examine the standard for areas that might require enhancement or redesign. In this sense, by reviewing the standards in a real world setting, we contribute to knowledge about how well the ITG standard is designed, and also how it should evolve if the design is found wanting.

The high-level principles-based approach described in ISO/IEC 38500:2008 provides a useful framework to strategically assess ITG practice. The objectives of the standard are concerned with: (1) assuring stakeholders about an organisation's effective governance of IT; (2) informing and guiding directors in governing the use of an organisation's IT; and (3) “providing a basis for objective evaluation of the corporate governance of IT” (ISO/IEC 38500:2008, p.1). ISO/IEC 38500:2008 identifies the roles played by corporate team(s); aligns these roles with those described in both the OECD Principles of Corporate Governance (2004) and the Cadbury

Report on Corporate Governance (1992). Its six principles for good ITG delineate requirements related to responsibility, strategic considerations, accountability regarding acquisition of ICT, appraisal of performance and conformance as well as appreciation of the human element of the activity (see Table 1).

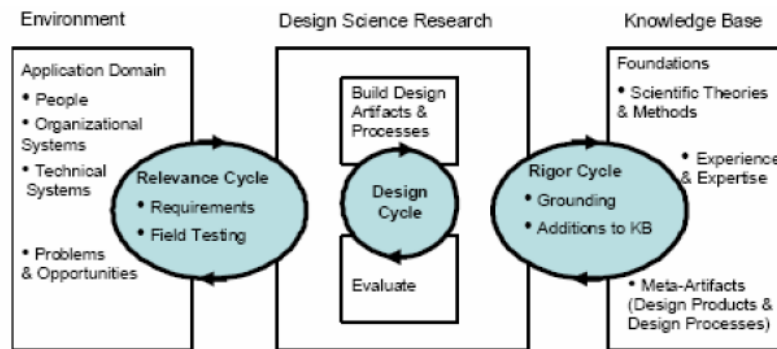


Figure 1: Design Science Research Cycles (Hevner 2007, p.88)

Table 1. Six principles for good corporate governance of IT (source: ISO/IEC 38500:2008, p.6)

Principle	Description
1. Responsibility	"Individuals and groups within the organisation understand and accept their responsibilities in respect of both supply of, and demand for IT. Those with responsibility for actions also have the authority to perform those actions."
2. Strategy	"The organisation's business strategy takes into account the current and future capabilities of IT; the strategic plans for IT satisfy the current and ongoing need of the organisation's business strategy."
3. Acquisition	"IT acquisitions are made for valid reasons, on the basis of appropriate and ongoing analysis, with clear and transparent decision making. There is appropriate balance between benefits, opportunities, costs, and risks, in both the short term and the long term"
4. Performance	"IT is fit for purpose in supporting the organisation, providing the services, levels of service and service quality required to meet current and future business requirements."
5. Conformance	"IT complies with all mandatory legislation and regulations. Policies and practices are clearly defined, implemented and enforced."
6. Human Behaviour	"IT policies, practices and decisions demonstrate respect for Human Behaviour, including the current and evolving needs of all the 'people in the process'."

These six principles are reviewed through a model that examines an organisation's ITG in terms of three main tasks, namely to:

- Evaluate – both the current and future use of IT.
- Direct – prepare and implement plans and policies that have been created to ensure that the way in which IT is used meets organisational objectives.
- Monitor – how well IT conforms to policies and how well IT performs compared to organisational plans.

Prior research has largely focused on IT value in single-firm private sector contexts (Irani and Love 2008). Therefore, investigation of ITG practices in a public/private-sector inter-organisational context offers new insight into how the desired outcomes of stakeholders can be managed so value can be co-created (Kohli and Grover 2008). This is more complex in an inter-organisational context, such as the ESS, where a *principal* organisation consults and delegates work involving use of an IT system to its *agent* counterparts. Herein conflict may arise between the desires or goals of the principal and the agent. Also, there is difficulty verifying what the agent is actually doing (Eisenhardt 1989). While various mechanisms may be used to try and align stakeholder interests (such as profit sharing and commissions), in a not-for-profit context these mechanisms are less feasible and often not available. Differences can also arise when partners of different sizes and political influence are involved (Saraf et al. 2007). When deployments like these are successful, it is important to understand the reasons why. Successful deployments also provide an opportunity to examine how well ISO/IEC 38500:2008 accounts for these pressures.

## RESEARCH METHOD AND CONTEXT

We used an interpretive case study approach in order to achieve in-depth analysis of this complex case. This approach allowed us to study the social issues (Walsham 1995), as well as the “how” and “why” questions, related to understanding the co-creation of value and ITG practices in a natural setting (Yin 2003). This is important as the ITG literature lacks some currency with practice (Wilkin and Chenhall 2010). Herein, through the lens of ISO/IEC 38500:2008 we focused in detail on the contemporary approaches taken and the subtle interactions that took place between the government department and subordinate participants involved in deployment of the new ESS. In doing so we sought to understand how ITG was practised and value co-created in an inter-organisational context. Therein, we drew on evidence collected over an 18 month period, including agendas, minutes of meetings, web releases and reports such as an independent review of the existing system (the concerns about which were subsequently incorporated into deployment of the new ESS). These documents were available in the public domain and were supplemented by discussion with the key stakeholder. The researchers independently reviewed and classified the available data, making inferences from the texts that substantiated conclusions and then for validity cross-checked their conclusions with one another. Conclusions were again validated through discussions with the key stakeholder.

As discussed above, the case study was situated in the Department of Education, Employment and Workplace Relations (DEEWR), a large Australian public-sector organisation. DEEWR’s Employment Services (ES) have existed in some form for more than 10 years. However, following extensive consultation with service providers, the Australian Commonwealth Government undertook deployment of a new model, Job Services Australia (JSA). JSA seeks to provide greater focus on the individual needs of both job seekers and employers instead of a ‘one size fits all approach’ to job placement and recruitment. For job seekers, JSA aims to deliver more tailored assistance to securing employment; whilst for employers, there is greater emphasis on finding work-ready and appropriately skilled job seekers. Table 2 summarises the shortcomings of the old ES and resolutions provided by JSA through the implementation of the new ESS.

Table 2. Shortcomings with the old ES and improvement provided by the new JSA

Shortcomings of the old ES	Improvement provided by the new JSA
• Poorly targeted assistance	• Redistributing assistance to the most disadvantaged and giving wider access to the EPF <sup>a</sup>
• Continuum too rigid	• An EPP <sup>b</sup> based on the needs of the individual job seeker
• Lack of incentives for skills and training in areas of skill shortages	• Bonus on outcomes achieved after accredited training and provision of 238,000 training places
• Employment services too complex and fragmented	• Combining seven contracts into one
• Excessive red tape	• Streamlined programs and simplified EPF administrative arrangements
• Insufficient employer focus	• Higher outcome payments for provider brokered outcomes and creation of specialist employer brokers
• Inadequate services for remote job seekers	• 1.7 multiplier for service fees and EPF to reflect broader definition of outcomes to encourage further education
• Under-utilised	• More flexible use of EPF
• A counterproductive compliance system	• Greater use of compliance systems based on ‘No Show, No Pay’
• Poor performance management	• Streamlined contract management and monitoring based on a Charter of Contract Management (to be developed with providers)
• System not regarded as ‘fit for purpose’	• IT system rebuilt in consultation with users

Source: DEEWR 2009

a. EPF Employment Pathway Fund; b. EPP Employment Pathway Plan

The new ESS is a windows-based application that is accessed by approximately 40,000 government employees and external JSA provider staff who are geographically dispersed around Australia. Users of the ESS include employment consultants, case managers, site managers, operational managers, performance managers and trainers within the employment-service organisations. Further, the ESS is used internally by DEEWR staff and also has an interface with Centrelink, which is the Australian Government statutory agency charged with delivering related Commonwealth support services to the Australian community. The ESS contains a number of modules that support additional government programs such as Job Capacity Assessment (the assessment of an individual job seeker’s ability to work) and the New Enterprise Incentive Scheme (support for eligible job

seekers interested in starting and running a small business). The navigation menu follows a work process structure that organises and provides access to the information and functionality that exists within the system, which is presented according to the major entities that are managed by the system (i.e. job seeker, contracts, payments, etc.). It also includes system utilities and additional functionality that allows users to customise navigation.

## RESULTS

We commenced investigation into the ITG practices used in our case study by looking at the blend of structures, processes and relational mechanisms (Van Grembergen et al. 2004), which were evident (see Table 3). Herein it is apparent that in acknowledging the previously reported weak levels of ITG and consequential sub-optimal outcomes (Gershon 2008), DEEWR introduced control in deploying the ESS to support JSA through a transparent and efficient model of ITG. For example, although the size and spread of operations created some challenges, DEEWR initiated strategies to handle the pushes and pulls from the multiplicity of strategic stakeholders involved in the project (Campbell 2007; Sambamurthy and Zmud 1999).

Table 3. Examples of structures, processes and relational mechanisms used by DEEWR

Structures	Processes	Relational Mechanisms
<ul style="list-style-type: none"> <li>Involved a Group Manager, particularly in deployment</li> <li>Established an advisory group and transition reference group</li> <li>System agents were called upon to voice issues</li> <li>Tender process required providers to have an IT contact person</li> <li>No obvious CIO reporting</li> </ul>	<ul style="list-style-type: none"> <li>Independent review highlighted a need for stakeholder engagement</li> <li>Social Inclusion Agenda led to a review that determined the strategic direction of JSA</li> <li>Evidence of strategic planning including a consultation plan</li> <li>Policy requirements aligning employment services and business needs</li> <li>Alignment with objectives one-sided</li> <li>No obvious assessment of business value</li> </ul>	<ul style="list-style-type: none"> <li>Minister wrote to service providers, employers, welfare organisations and others seeking views on the direction of JSA</li> <li>Consultation sessions, meetings, satisfaction surveys and program evaluations involved all stakeholders</li> <li>Renewed training for service providers</li> </ul>

To ensure success in development and deployment of the ESS, DEEWR targeted a number of formal relational mechanisms, including the use of inclusive stakeholder consultation strategies. These assisted in identifying how red tape could be reduced, how the business needs of employment service providers could be satisfied, and how the requirements of government policy could be addressed. Provider consultations were conducted using a combination of LiveMeet technology and face-to-face sessions. All sessions were recorded and published on the ESS IT Consultation website, thereby ensuring that the information was publicly available to both existing and potential service providers. As discussed below, these consultation activities were scheduled around the five major phases of the project.

### *Phase 1 – High Level Analysis (July to September 2008)*

Phase 1 involved the identification of provider issues, preferences and priorities associated with the existing ES. During this phase, face-to-face meetings were held with provider CEOs to present the consultation plan, introduce the Advisory Group and gather input on system priorities. LiveMeet sessions were undertaken with operational staff to discuss the consultation plan and gather input on system issues.

### *Phase 2 – Detailed Analysis, Design and Construction (July 2008 to March 2009)*

Phase 2 ran in parallel with the High Level Analysis Phase and involved development and presentation of the detailed options for system solutions. The detailed analysis of business and provider requirements enabled detailed system prototypes to be developed, which were subsequently presented at LiveMeet consultation sessions for review and verification by operational staff. These stakeholders provided detailed feedback on functionality like system work flow support, data input and display.

### *Phase 3 – Testing (January 2009 to May 2009)*

Phase 3 involved providers reviewing and discussing (via LiveMeet and face-to-face consultation sessions) the proposed final versions of system functionality. Providers were also invited to participate directly in usability testing of the system using DEEWR's System Usability Laboratory located in Canberra.

*Phase 4 – Training (December 2008 to July 2009)*

In Phase 4, providers were given the opportunity to provide input into the training strategy and system training arrangements. The training strategy used a combination of LiveMeet sessions, interactive training via computers, and other training resources accessible via the DEEWR Learning Centre website.

*Phase 5 – Deployment (April 2009 to July 2009)*

Finally, in Phase 5, the Advisory Group reviewed alternative cut-off dates for processing using the legacy system, and the associated impacts that this had on providers' operational arrangements. DEEWR conducted both high-level and detailed LiveMeet consultation sessions that were designed specifically for the IT support staff employed by the providers. The sessions included an overview of the ESS, the deployment plan and support arrangements. Provider IT support staff were able to ask specific questions of DEEWR's IT specialists during these sessions.

Drawing upon the principles and tasks associated with effective ITG outlined in ISO/IEC 38500:2008, and aligning these with DEEWR's IT governance approach (see Table 3), we were able to map the two as they relate to this case study (see Table 4). Our mapping not only demonstrated the practical value of using ISO/IEC 38500:2008 to analyse real-world applications, but also highlighted possible areas for improvement in the standard.

## DISCUSSION

ISO/IEC 38500:2008 claims to provide a basis for exploring the effectiveness of corporate governance of IT in inter-organisational contexts (Calder 2008). As outlined in the introduction, a major aim of this study was to test this claim through an ex-post evaluation of ISO/IEC 38500:2008 in an inter-organisational public/private-sector context. Thus, drawing on the material contained in Table 4, it is apparent that deployment of the new ESS co-created value:

- For DEEWR, the system was delivered on-time and on budget, with functionality that facilitated the sharing of data between service providers in a seamless manner thereby creating service efficiencies.
- For service providers, information on jobseekers was more accessible and payment from DEEWR was easier to access and hence timelier.
- For jobseekers, employment services were better tailored and delivered more accurately and quickly.
- For employers, job candidates were more work ready, with appropriate skills for advertised vacancies.

Given that the new ESS was successfully deployed on time, on budget and to the satisfaction of stakeholders, the question that emerged was what governance strategies contributed to this? In essence success was dependent on an inclusive approach that balanced the needs and wants of all stakeholders, thereby facilitating strong commitment to the new ESS. Whilst it may be difficult, at times, in an ITG exercise to articulate these, in this project all parties were invited to contribute to careful analysis of the old ESS. This established a common baseline and provided a springboard from which new goals could be derived. Further, the contextual influences that impacted ITG success included: the presence of a strong consultation strategy and sound reporting structure (e.g. consultation sessions, CEO information sessions, face-to-face sessions, live meet sessions), training, an IT advisory group and transition reporting. All of these contributed to transparency and confidence by the stakeholders that the new ESS would deliver what was promised. Furthermore, the identification of an IT contact person for each service provider facilitated transition to the new system, which when coupled with the renewed training that was funded by DEEWR, contributed to a smooth transition to the new ESS.

Whilst successful, conflicts were apparent between the desires and goals of the two primary stakeholders, namely DEEWR and its service providers. This is an issue in co-creating value. Given the system was driven and funded by a Government mandate and implemented by a powerful principal, clear strategy to enhance transparency and minimise the impact of this power through the use of governance structures and relational mechanisms was important and this was evident in the ITG practices employed. The requirement that each service provider had an IT contact person facilitated the transfer of ideas and actions. Likewise, the surveys and regular feedback mechanisms ensured that all stakeholders were aware that the principal sought genuine engagement.

Based on retrospective application of ISO/IEC 38500:2008, we found that the weaknesses in ITG in this case study lay predominately in the monitoring task component and, to some extent, in the evaluation and direction tasks. This is a common issue in public sector contexts because when public organisations like governments agencies decide to make changes to a public program, the decision in itself becomes the business case. One obvious weakness was the lack of a publicly available performance management framework, which would have allowed the implemented ESS to be reviewed against business strategy and desired outcomes. Other specific weaknesses included: (1) a lack of overt CIO reporting; (2) that alignment with objectives seemed to be one-

sided; (3) no evidence of comparisons against the business strategy/investment mix; (4) no evidence of external assessment of business value; (5) a lack of real evidence of a budget based on full economic life-cycle costs; (6) a resultant lack of need for budget refinement and sign-off; and (7) no evident consideration of interdependencies in resource requirements.

Table 4. Evidence of ISO/IEC 38500:2008's principles in the ESS case study

Task → Principle ↓	Evaluate	Direct	Monitor
<b>Responsibility</b>	<ul style="list-style-type: none"> <li>Establishment of an advisory board</li> <li>Agents involved via public consultations</li> </ul>	<ul style="list-style-type: none"> <li>Advisory board established new roll out and a transition reference group facilitated changeover</li> <li>Direction provided through boards/groups</li> <li>No obvious CIO reporting, but a gov.<sup>a</sup> mandate</li> </ul>	<ul style="list-style-type: none"> <li>Regular ES<sup>b</sup> IT Advisory Group meetings reviewed/advised on progress to Advisory Board</li> <li><i>No obvious CIO reporting, but project was important as it was a gov. mandate</i></li> </ul>
<b>Strategy</b>	<ul style="list-style-type: none"> <li>New ES = gov. mandate to ↑ employment participation, address skills in demand &amp; sustainable employment.</li> <li>Gov. needed to ensure all functions in the new ES were supported in the new ESS</li> <li>Agents were invited to respond to the Minister's call on ES future direction – &gt;260 submissions</li> <li>Limited priorities for reengineering were based upon feedback – but driven by gov. Requirements</li> </ul>	<ul style="list-style-type: none"> <li>JSA<sup>c</sup> and ESS<sup>d</sup> arose from reviewing the gov's Social Inclusion Agenda + deficiencies with ES</li> <li>Consult: CEO, face-to-face &amp; live meet sessions</li> <li>Provider consultation via a 3<sup>rd</sup> Party Software and Data Integration Survey</li> <li>Public consultations with providers &amp; stakeholders</li> <li>All JSA functions supported in redeveloped ESS</li> <li>Feedback via the transition reference group</li> </ul>	<p>This was evidenced by:</p> <ul style="list-style-type: none"> <li>The project being deployed on-time</li> <li>Gov. and provider requirements being addressed</li> <li>Regular Advisory Board meetings which reviewed feedback on discussion papers, consultation sessions and monitored progress</li> <li><i>However, there is no apparent assessment of business value</i></li> </ul>
<b>Acquisition</b>	<ul style="list-style-type: none"> <li>Tender process: ES must have an IT contact person</li> <li>Gov. mandate, therefore guaranteed budget of \$4.9 billion over the next 3 years</li> </ul>	<ul style="list-style-type: none"> <li>Appropriateness via public and advisory boards, a discussion paper, exposure draft, job seeker sat. surveys, program evals and auditor-gen. reps</li> </ul>	<ul style="list-style-type: none"> <li><i>Historically systems were evaluated infrequently</i></li> <li><i>Following ESS roll-out, there weren't any obvious reviews against business strategy/investment mix</i></li> </ul>
<b>Performance</b>	<ul style="list-style-type: none"> <li>Current system was basis for the new ESS, so analysis of deficiencies formed a base line</li> <li>Advisory Board planned, resourced and commissioned the project</li> <li>Renewed training of service providers was seen as a risk</li> </ul>	<ul style="list-style-type: none"> <li>Redev. funded by gov's Social Inclusion Agenda</li> <li>Roll-out was built on gov. public IT services, assets and resource portfolios</li> <li>New ESS refers eligible job seekers to providers efficiently &amp; sensitively + providers have more flexibility</li> <li><i>No evidence of a budget based on full economic life-cycle costs, thus no refinement or sign-offs</i></li> </ul>	<ul style="list-style-type: none"> <li>Solely gov. funded so assessment of value one-sided</li> <li>Outcomes measured in terms of cost savings and improved ESS functionality</li> <li>Deployment on schedule, <i>but no obvious comparisons against the business strategy/investment mix</i></li> </ul>
<b>Conformance</b>	<ul style="list-style-type: none"> <li>Regular meetings of the ES IT Advisory Group reviewed and advised on progress of the ESS</li> </ul>	<ul style="list-style-type: none"> <li>Change management and training were put in place to facilitate achievement of benefits</li> <li>Policies to ensure all ES functions in new ESS</li> <li>Tender process: ES to have an IT contact person</li> <li>Conformance through public and advisory boards, a discussion paper, exposure draft, job seeker sat. surveys, program evaluations and auditor-general reports</li> </ul>	<ul style="list-style-type: none"> <li>Regular meetings of the ES IT Advisory Group reviewed and advised on progress of the ESS</li> </ul>
<b>Human Behaviour</b>	<ul style="list-style-type: none"> <li>Consult to ensure job seeker &amp; provider needs app.</li> <li><i>No public information on current/future demand for HR to support IT-enabled investment or shortfalls</i></li> <li><i>Resource requirements specified but interdependencies were not</i></li> </ul>	<ul style="list-style-type: none"> <li>New ESS refers all eligible job seekers to contracted providers efficiently and sensitively</li> <li>Impacts on resources were taken into consideration e.g. training service providers</li> </ul>	<ul style="list-style-type: none"> <li>Evidence of extensive stakeholder participation</li> <li><i>Existence of formal policies not evident in project documentation.</i></li> </ul>

a. gov = government; b. ES = Employment Services; c. JSA = Job Services Australia; d. ESS = Employment Services System; NOTE: *Italics = Insufficient evidence or areas for improvement*



During development and deployment of the ESS, DEEWR targeted inclusive formal relational mechanisms, which enhanced human agency and were a major contributor to system success. DEEWR achieved this through inclusive stakeholder consultation and by encouraging reflection on past deficiencies and desirable outcomes in a responsible manner. The process undertaken in development and deployment of the ESS suggests that DEEWR understood that what was good for service providers (employment agents) was good for it in terms of achieving cost effectiveness and good employment outcomes. Thus, in this case study there is evidence that the principal partner purposely subordinated its power in order to co-create value in the new ESS.

### Comprehensiveness of the ISO/IEC 38500:2008 Standard from a Design Perspective

Investigation of the ISO/IEC 38500:2008 standard in an inter-organisational public/private-sector context revealed that there was need for enhancement of the standard. For instance, the findings demonstrated that:

- The choice of labels for the three main tasks (evaluate, direct and monitor) was confusing as the term evaluate was used to refer to an initial scan of practice, not a final assessment.
- The ordering of principles was not straightforward. The first principle, *responsibility*, related to the supply and demand for IT whilst the second, *strategy*, was where consideration was given to what was actually needed. Also, *performance* preceded *conformance*.
- There was need for greater balance between the statement of principles and specific procedures for achieving ITG particularly at the operational level.

While the standard itself appears well aligned to the broader principles of corporate governance, our findings show that it is not, as it claims, readily “*applicable for all organisations, from the smallest, to the largest, regardless of purpose, design and ownership structure*” (ISO/IEC 38500:2008, p. v). With regard to our ESS case study, the standard did not address specific governance issues found within a public/private-sector inter-organisational system development and deployment context. The wording of ISO/IEC 38500:2008 was clearly directed at a single organisational context. Consequently, the six governance principles were not readily adaptable to contexts like those found in our case study. In particular, none of the principles addressed the kinds of structures and processes that might be needed to overcome agency effects, resolve conflicts of interests, and ensure the co-creation of value in such complex environments. Our case study highlighted the importance of robust and transparent mechanisms that support stakeholder consultation for the life of the project and beyond. However, ISO/IEC 38500:2008 provided little guidance about the kinds of relational mechanisms required for effective ITG in this context.

Our findings also have implications for the six component principles that constitute the standard. The existing standard was intended to “*inform and guide those involved in designing and implementing the management system of policies, processes, and structures that support governance*” (ISO/IEC 38500:2008, p. v). Based on our study, it is difficult to envision how the six IT governance principles can be operationalised in situations where the value of IT is to be co-created and shared between different organisational stakeholders. This is a significant gap in the standard as inter-organisational systems are increasingly the norm rather than the exception.

A significant advantage of principles-based standards such as ISO/IEC 38500:2008 is that such broad principles allow organisations to customise and adapt their governance practices to suit unique operating contexts. However, a major disadvantage is that the lack of explicit guidelines and procedures can produce inconsistent approaches to governance within an organisation. This can make it difficult to compare governance outcomes across projects and programs, which over time can inhibit organisational learning and opportunity for improvement. Further, guidance is required either within the existing standard or through the development of ancillary standards or technical reports regarding how the six principles of good governance can be operationalised particularly during the deployment of inter-organisational IT systems.

Figure 2 illustrates how the need for principle-based and procedure-based guidance changes depending on the level of governance in an organisation. A principle-based approach is highly desirable at the corporate level. However, greater clarity around how to implement these principles in specific program and project contexts is required at both the executive and operational levels. Recognition of these variations would allow for stronger linkages between the higher level principles contained in standards like ISO/IEC 38500:2008, and the existing process-oriented approaches commonly used by many organisations to support ITG at the operational level such as ISO/IEC 9126.x (Software engineering - Product quality), ISO/IEC 20000 (IT Service Management), COBIT and ITIL. Greater reliance on procedures at the operational and executive level can help reduce ambiguity, provide auditable measures of performance, and valuable longitudinal data about ITG compliance in projects and programs.

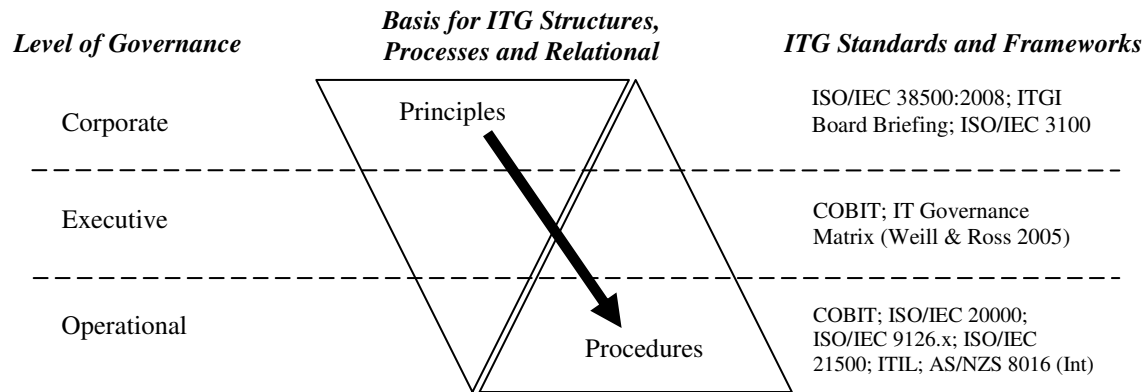


Figure 2: Principle and procedure based approaches to ITG by level of governance

## CONCLUSION

Few studies have examined the environmental relevance of a formal standard from a DSR perspective. Akin to Pries-Heje et al. (2008), reflecting on our ex-post application of the design product ISO/IEC 38500:2008 in a naturalistic setting, we make a contribution to knowledge by suggesting areas where the artefact needs to be evolved. Further, by examining the comprehensiveness of the ISO/IEC 38500:2008 artefact in a real world setting, our study identified specific areas where the standard could be enhanced to take account of the ITG requirements of inter-organisational IT systems in public/private-sector contexts. A framework was also presented that, contingent upon the level of governance, illustrates the need for balance between principle-based and procedure-based approaches to ITG

There are three limitations related to this study, which create opportunities for future research. Firstly, our analysis is limited to a single case study. Thus, further case studies are warranted. Secondly, our reliance on publicly available information imposes some limitations on our mappings and associated conclusions. Follow-up interviews with all stakeholder groups involved in development and deployment of the ESS would strengthen our findings. Thirdly, retrospective application of a standard presents its own limitations and the opportunity exists for an action research approach to investigate how ISO/IEC 38500:2008 can be applied in particular organisational settings.

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