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Improving ICT Governance in Australian Companies

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Abstract

This paper begins with the Australian Standard for the Corporate Governance of Information and Communication Technology (ICT) AS8015 (Standards Australia, 2005) and presents research findings that can be applied as recommendations to enhance the effective implementation of this Standard's principles within an organisation. These recommendations relating to the principles outlined within the Standard concern such factors as, identifying and addressing issues surrounding the implementation of this Standard and the actions that could be undertaken to improve the effectiveness of ICT governance by sharply focusing upon the governance aspects of ICT within business, as opposed to the management aspect of ICT.

Keywords

IT Governance, ICT, Australian Standard and principles.

INTRODUCTION

This research investigates and identifies the organisational issues that surround the implementation of organisational governance of ICT, both within the business and in support of business strategies and goals, however before proceeding it is important to note that the terms 'ICT governance' and 'IT (Information Technology) governance' are used interchangeably throughout this paper, depending on the source being cited. Nevertheless, before investigating the issues that impact on organisational ICT governance, we must establish its genesis in relation to corporate governance and development as an associated governance discipline that is coming under greater focus due to recent public failures that have brought into sharp focus the issues of organisational governance and accountability.

Corporate governance is defined by the Organisation for Economic Cooperation and Development (OECD) as an activity which "involves a set of relationships between a company's management, its board, its shareholders and other stakeholders" (OECD, 2004:11), these recommendations were published in the OECD Principles of Corporate Governance (2004). These principles represent a common point of understanding between representative member countries and promote acceptable practices that assist business organisations to deliver transparent and informative reporting to shareholders and ensure boards of management are accountable for their actions (Witherell, 2004). The Australia Standard entitled Good Governance Principles AS8000 (2003) is heavily based on the OECD principles of corporate governance and reflects the Australian perspective of corporate governance as concerned with conduct and relationships between company stakeholders (Standards Australia, 2003).

In relation to corporate governance, IT governance is a subset defined as "specifying the decision rights and accountability framework to encourage desirable behaviour in using IT" (Weill & Ross, 2004:2) and therefore, IT governance focuses on the governance of IT use within the particular organisation. Van Grembergen (2004) further links IT governance to corporate governance by indicating that today's business and business strategies are now dependent to some extent on an underlaying IT infrastructure support. Therefore, corporate governance is responsible for setting high-level organisational strategies and controls, while IT governance provides the information and IT structure to facilitate strategic alignment and support of organisational goals.

Furthermore, the linkage of IT governance and corporate governance is more apparent because of the increasing dependence upon and utilisation of IT to support business operations, which can potentially expose and impinge adversely upon the critical functionality of the IT infrastructure supporting the business. This suggests that poor

application of IT governance can affect corporate governance through loss of business, harm to corporate reputation and a weakening of competitive position (CPA, 2005).

This premise is supported by KPMG (2002) who found that IT failures accounted for 60% of all business interruptions in Australia, resulting in downtime, reduced income and loss of customers. There have also been a number of other cases in Australia and around the world where a lack of IT governance has resulted in significant financial losses. A further example is the widely reported situation at the National Australia Bank (NAB), here it found that employees were able to request changes to the IT systems that enabled them to erase records of their transactions and resulted in notable financial losses for the bank (Mair, 2004).

In response to this and other failures of IT governance, a new Australian Standard within the AS8000 series, namely the Corporate Governance of ICT AS8015 (Standards Australia, 2005) was developed and released in early 2005. This standard consists of six principles applicable to the governance of ICT within a business organisation and forms the initial reference point of this research.

This research seeks to investigate and identify corporate attitudes towards IT governance implementation within their organisations and also in comparison, the opinions of two industry professionals regarding their own professional experiences and attitudes towards the implementation of IT governance based on the Corporate Governance of ICT AS8015 (Standards Australia, 2005) standard.

Initially, we will establish what IT or ICT governance specifically is and investigate some of the existing frameworks applicable to implementing a governance structure across an organisation that takes into consideration IT, before progressing towards addressing IT governance in Australia and the Corporate Governance of ICT AS8015 (Standards Australia, 2005) standard itself.

Then we will briefly outline the research questions and applied method of research, before providing a broad summation of our initial findings. With further elaboration regarding the specific recommendations that have arisen from our research concerning the implementation of IT governance and due diligence structures within Australian organisations, for which the findings may prove advantageous for those organisations considering future adoption of the Corporate Governance of ICT AS8015 (Standards Australia, 2005) standard.

WHAT IS IT GOVERNANCE?

Depending on the business situation and the perceived interpretations, there are various definitions of IT governance, each of which subtly encompasses different areas of the topic. For example, Van Grembergan (2004:4) states that "IT Governance is the organisational capacity exercised by the board, executive management and IT management to control the formulation and implementation of IT strategy and in this way ensure the fusion of business and IT." This definition highlights the role of the executive in ensuring governance of IT and the importance of ensuring alignment between business strategies set by the Board and the IT strategy itself.

Broadbent (2003) adopts a similar top-down focus for IT governance but proposes that good IT governance is the effective combination of three components: what decisions have to be made (leadership), who makes them (accountability) and how they are enacted (oversight). In this interpretation, the focus of accountability and decision making rights aligns closely to that of the Weill & Ross (2004) definition mentioned previously and is one of the more commonly adopted definitions within the literature.

The IT Governance Institute (ITGI) asserts that "IT governance is the responsibility of the Board of Directors and executive management and is an integral part of enterprise governance that consists of the leadership and organisational structures and processes that ensure that the organisation's IT sustains and extends the organisation's strategies and objectives" (ITGI, 2003:10). This definition includes the role of the Board and again the need for the alignment of IT aspirations with the organisation's strategies and refers to leadership, organisational structures and processes as a means of achieving this.

These views interpret IT governance differently, but commonality exists in the need to establish structure and processes that ensure appropriate leadership, accountability and oversight. We can now determine that IT governance leadership, relates to the setting of long term strategies for IT, and ensuring that goal alignment exists with those set by the organisation that require frequent dialogue between the Board of Directors and the managers in the IT department (Alter, 2004). The accountability in IT governance, is the assigning of decision rights and creation of an accountability framework that encourages desirable behaviour in the use of the organisation's IT (Weill & Ross, 2004), which includes definitions of organisational rules and regulations, who sets them and how compliance is monitored (ACS, 2005). Furthermore, IT governance can be concerned with the appraisal and critical review of major IT projects, technology architecture decisions (FedEx, 2005), the measurement metrics that quantify the performance of IT (Weill, 2003) as well as encompassing the management of technology-related business risks and determination of the financial value returned by enterprise' IT (ITGI, 2003).

Therefore, IT governance can be regarded as a business activity undertaken at high-level management that ensures: alignment of IT strategies with those of the business; ensures the responsible use of IT; clearly defines roles and accountabilities and continually monitors IT assets and projects to ensure they are performing effectively in support of the organisation. However, the implementation of IT governance objectives and controls to address IT governance activities specifically, is not always immediately apparent, but there are a number of practical governance frameworks that can assist business organisations in the delivery of an effective governance structure that in-part incorporates IT governance.

CURRENT IT GOVERNANCE FRAMEWORKS

Factors such as the increased organisational controls implemented after the introduction of the Sarbanes Oxley (SOX) Act in the United States (U.S.) and the pressure on IT departments to demonstrate their contribution to the organisation, are influencing directors to consider the value of a framework for the governance of IT. The use of a framework enforces a consistent approach throughout the organisation and this delivers the ability to develop reports and apply measurements to gauge performance (Worthen, 2005).

The two primary IT governance frameworks are the American-based Control Objectives for Information Technology (COBIT) and the English-based Information Technology Infrastructure Library (ITIL). Both COBIT and ITIL are utilised extensively in the implementation of an IT governance framework within organisations but their individual focus remains broadly different. Generally, COBIT is utilised where there is a need for auditing functions, while the ITIL is better suited to operational process improvement (Alcyone Consulting, 2005).

COBIT

The Information Systems Audit and Control Association (ISACA) also established the IT Governance Institute (ITGI) to serve as a "think tank" *[sic]* for principles and concepts of IT governance and instituted COBIT in 1998. This not-for-profit organisation performed the original research on emergent IT governance issues and developed the COBIT framework that is globally recognised and adopted as a set of best practice and management guidelines for effective control of IT (Guldentops, 2004).

COBIT consists of several documents including an Executive Summary, Framework, Control Objectives, Audit Guidelines, Implementation Tool Set and Management Guidelines (ISACA, 2005). The main document is the Framework, which consists of thirty-four high level IT processes that come under 4 different control domains: planning and organisation controls; acquisition and implementation controls; delivery and support controls and monitoring controls (Barnett, n.d.).

Each of these 34 organisational processes has a number of control objectives, with critical success factors that are required to successfully implement the process that incorporate specific numerical metrics that gauge improvements in quality and a maturity model to define the extent of business process automation. Altogether, these 34 processes can be further broken down into 318 specific control objectives for implementing the framework, including Key Goal Indicator and Key Performance Indicator measures as part of the continuous improvement cycle existing within the COBIT framework (Morency, 2005).

COBIT enables organisational wide implementation of IT governance through its strong top-down auditing and control perspective and has become particularly popular in the U.S. since the introduction of the SOX legislation, as its comprehensive framework now ensures SOX compliance-related regulations and legislations are adhered to within the organisation (Symons, 2005).

ITIL

Conversely, the ITIL is a collection of best practices with an IT operational focus first developed by the British government some 20 years ago and has become the most widely used best practice reference for IT Service Management. Having long been preferred in Europe, ITIL is now gaining acceptance in the U.S. and other countries (ITIL, 2005), because ITIL delivers operational benefits to IT departments by enabling improved quality of service, reduced downtimes, swift resolution of problems and greater security (Worthen, 2005).

The ITIL framework consists of a series of eight books, each of which details a different aspect of the information framework required for implementation:

  o   Planning to Implement Service Management (Symons, 2005);

  o   The Business Perspective (Turbitt, 2005);

  o   Software Asset Management (Software Management Network, 2005);

  o   Service Support (Symons, 2005);

- o Service Delivery (Mercury, 2005);
- o Security Management (TSO, n.d.);
- o ICT Infrastructure Management (OGC, 2005);
- o Application Management (Symons, 2005).

The ITIL is based upon the principles of service management and takes a bottom-up approach, while in comparison the COBIT focus is primarily a top-down, high-level focus on audit and control. As a result, these two frameworks tend to compliment each other with COBIT providing managerial processes and objectives that are applicable from the Board level perspective; whilst the ITIL delivers operational best practice that can be applied from the help desk level upwards in the implementation of IT governance within an organization (Symons, 2005).

IT Governance in Australia

The corporate failure of OneTel is an example where despite having spent large amounts of money on IT, good quality management information to support the business was not being produced. This highlights the fact that while IT can be functioning well on its own, a lack of goal alignment with the organisational strategic goals it is supporting is where problems can begin (Bushell, 2002). In response to this and similar events, together with the recent focus on IT governance, Australia became the first country in 2005 to formulate and publish a Standard addressing the governance of ICT to meet the concerns of ICT and business managers (ACS, 2005).

The Corporate Governance of ICT AS8015 (Standards Australia, 2005) standard is designed to be implemented in an organisation of any size with the aim of providing guiding principles for Directors of such organisations to implement regarding the governance of their ICT. A 'Director' could be an owner, board member, director, partner, senior executive, or similar depending on the titles of the relevant positions within an organisation and its size (Standards Australia, 2005).

Principles of the Corporate Governance of ICT AS8015 Standard

This Australian Standard consists of six principles for promoting good corporate governance of ICT. The application of these principles is applicable to any organisation regardless of size; however the implementation of them will differ slightly. The following list briefly outlines the six principles Standard (Standards Australia, 2005):

- o Principle 1—Establish clearly understood responsibilities for ICT. The first principle addresses the need for Directors to clearly define the roles of people in their organisation and ensure that they are responsible for their tasks as assigned.

- o Principle 2—Plan ICT that best supports the organization. This principle relates to ensuring ICT plans are in line with the corporate plans, strategies and goals of the business.

- o Principle 3—Acquire ICT validly. This principle relates to the acquisition of ICT components and ensuring that purchases will always provide value to the organisation by following a defined process for each proposed acquisition.

- o Principle 4—Ensure that ICT performs well, whenever required. This principle is concerned with the performance of ICT by ensuring user availability and that it supports the goals of the business.

- o Principle 5—Ensure ICT conforms to formal rules. This principle addresses the issue of compliance with legislation, laws and industry standards as well as ensuring adherence to internal policies of the organisation.

- o Principle 6—Ensure ICT use respects human factors. The final principle addresses the issue of abiding by the needs of stakeholders within ICT process.

Lewis (2005) believes that this Standard will assist Directors in performing their responsibilities, through ensuring proper use of ICT, setting direction for IT specialists, allocating the resources needed for ICT, checking to see that ICT is providing what the organisation requires, and providing leadership for the successful introduction of changes brought about by ICT. The ACS (2005) agreed, further emphasising that the Standard is to assist business directors with asking the appropriate governance questions of their respective IT departments, contractors and vendors to ensure adherence to the organisation's governance values.

Therefore, in light of the introduction of the Australian Standard for the Corporate Governance of ICT (Standards Australia, 2005) this now presents a research opportunity to investigate the implementation of the ICT governance by Australian companies.

RESEARCH METHOD AND DESIGN

The aim of this research is to develop a number of recommendations that will assist Australian organisations with the implementation of the Australian Standard for the Corporate Governance of ICT AS8015 (Standards Australia, 2005), based on the responses to the following research questions:

- Which aspects of the AS8015 Standard do organisations find most difficult to implement?

- Which areas are being implemented at present?

- Which areas are being neglected?

In seeking answers to these questions the intention was to derive an understanding of the current situation and identify where improvements can assist with the implementation of the Corporate Governance of ICT AS8015 (Standards Australia, 2005) standard within business organisations. The findings from these supporting questions are used to further progress the investigation into the primary research question:

- How can organisations improve their implementation of ICT governance principles as recommended by Standards Australia?

In order to gather applicable research data, an attitudinal survey questionnaire and a set of targeted interviews would be the most appropriate approach to gather the information required to answer the research questions posed. The survey component of this research enabled the gathering of a wide range of views from various sized organisations throughout Australia, thus enabling conceptual generalisations to be drawn from the data collection in regard the ICT governance traits of the chosen organisations and facilitate the development of a broader characterisation of the adoption issues surrounding ICT governance, as situated within Australia.

The survey component consisted of two classes of organisational participants, namely SME's (Small to Medium Enterprises) and large organisations within Australia and from each of these two groups, 150 representatives were randomly chosen from the business directories within each class and forwarded the survey for completion. In return 37 responses were received equating to an overall survey response rate of 12.3% and of the 37 responses, only 10 identified themselves as SME's with the remaining 27 being from large organisations.

Following the survey a set of targeted interviews gathered more in-depth experiential information, allowing greater discussion and also enabling the ability to digress outside the interview structure to pursue subject perceptions more deeply. The interview subjects consisted of an IT governance software vendor representative and an IT professional body representative resulting in a total of 2 hours recorded interview material.

The interview research method chosen enabled that the anonymous information captured in the survey component could be utilised to enhance interview question content for deeper investigation during the interview process. This enabled a comparison of the various opinions of Australian organisations surveyed to those opinions of the interviewee' from the IT governance software vendor and the IT professional body respectively.

OVERVIEW SUMMARY OF RESEARCH FINDINGS

The following summaries of the research findings give an overview of issues identified by the survey and the interview subjects in relation to the implementation of IT governance and indicates where commonality existed between the respondent data of the survey questionnaires and interviews.

Summary of Survey Findings and Comparison

The survey indicated that most organisations had basic processes in place that addressed each of the six principles of the Corporate Governance of ICT AS8015 (2005) standard. However, this did not necessarily mean that they have effective IT governance, as most of the answers given were from a management perspective rather than a governance perspective. Thus, highlighting some confusion as to whether the Standard is either addressing management as well as governance, or is too high level, vague and can therefore be misinterpreted. The IT professional body representative interviewee surmised that the difference between management and governance is the premise that it is the responsibility of governance to specify who the decision makers are, whilst it is management who actually take the decisions. The survey results indicated that some confusion between management and governance is common and that the contextual meaning of the terms is somewhat blurred. The IT governance software vendor interviewee indicated that this may be the result of the marketing campaigns for IT governance software tools, but also indicated in their interview that they do not necessarily see a difference between management and governance anyway.

However, as the majority of the survey questions were answered from a management perspective, the most informative IT governance question was the one which asked respondents, how they ensured that IT plans were in line with those of the organisation? Whilst each respondent said that the business did have some kind of input into

the process, less than half of the respondents explicitly stated that an IT representative met with the business to discuss IT planning.

Furthermore, the survey results also indicated a lack of interest or knowledge regarding IT governance from a SME perspective. There were few surveys returned from this demographic and those received, generally contained answers that either stated that such questions were irrelevant to them or that they did not have or need to have processes in place to address IT governance issues. This indicated that even though the Corporate Governance of ICT AS8015 (Standards Australia, 2005) standard is for organisations of all sizes, ICT governance was not applicable from a SME perspective. This finding was further supported by the IT professional body interviewee and the IT governance software vendor interviewee, who both mentioned that they believed IT governance, was much more important in larger organisations, because IT from the SME perspective was regarded less as a strategic asset and more as a cost burden to the business.

Summary of Interview Findings and Comparison

In summarising the interview findings, both interviewees identified similar barriers to the implementation of IT governance in larger organisations, with the main issue centring around that IT does not attract enough attention from senior management, which they thought was perhaps mostly due to their lack of education about IT. Therefore, without an understanding of how an investment in implementing IT governance can bring benefits to the organisation, directors do not consider it a priority and will therefore invest time and funds elsewhere. The IT professional body interviewee also indicated that quite often there is no-one on the Board of Directors with sound IT expertise and therefore it becomes necessary to countenance IT advice to address the board regularly. It can also be useful to bring in an external board member who can demonstrate the benefits of IT governance to the Board with examples from other organisations that indicate the benefits in language that they may understand and appreciate.

Another barrier identified was the apparent reliance of organisations on software and consultants to impose and implement IT governance for the organisation, rather than in consultation with it. Both interviewees said that without initially changing the attitudes and culture within the organisation and putting processes into place to support change, any plans developed by a consultant or software delivered would just sit on the shelf. These tools are part of the process, but cannot deliver the single answer to IT governance alone. The IT professional body interviewee said that software is very good at ensuring compliance, as it enables data tracking as proof of process adherence, but often lacks in the management performance area of IT governance. The software vendor interviewee believed that software could offer improvements in performance, but if attitudes and cultural changes were not forthcoming that encouraged people to embrace IT governance properly, then the underlying IT governance processes to which the software was tailored, would not work.

Responses to the survey and interviews indicated some problems with the Standard itself and highlighted the confusion often found between management and governance. The results of both the survey and interviews were further analysed for major findings and differences of opinion. These findings included the identification of a lack of knowledge surrounding IT governance, especially from a SME perspective. Another outcome was that getting the attention of the Board was a major barrier to championing IT governance, and that success depended on the changing of attitudes and culture within the organisation, which consultants and software could not achieve alone.

While these summaries represent an overview of the research findings, deeper analysis of the survey and interview results presented two general recommendations that organisations can adopt to assist in promoting and establishing IT governance within an organisation. Additionally, a number of relevant recommendations were identified that will assist an organisation with the implementation of IT governance in concert with the Corporate Governance of ICT AS8015 (2005) standard.

IT GOVERNANCE GENERAL RECOMMENDATIONS

The two general IT governance recommendations arising from this research study were that:

1. Organisations must regard IT as a strategic asset that is core to their business, to benefit commercially from the ICT Governance Standard principles;

2. When attempting to initiate cultural change in attitudes within the organisation, this requires stakeholder' acceptance of governance principles and cannot be solely driven by consultants or software.

The intention of the general recommendations is to assist with the general implementation of IT governance within an organisation and while they do not relate specifically to any of the Corporate Governance of ICT AS8015 (2005) standard principles, these recommendations can be used in conjunction with the Standard to improve and prepare the organisation for the effective implementation of IT governance.

General Recommendation One:

The survey responses revealed that in general terms SME businesses did not place a great focus on IT governance within their organisations and therefore did not regard IT as a strategic asset. Whilst these organisations may benefit from the implementation of an IT governance framework or the Corporate Governance of ICT AS8015 (2005) standard, the cost of such a move may outweigh the benefit. SME's generally rely on IT for the day-to-day operations of the business rather than leveraging major organisational plans and competitive strategies. This is principally due to their lack of financial resources and expertise in this area and even for simple implementations of IT governance, the diversion of funds without a foreseeable return on investment is inappropriate as this money could be better utilised in core areas such as customer service or product development.

Conversely, in the majority of larger business organisations with a more complex IT architecture, there is often the budget, expertise and competitive pressure for IT to perform well and support organisational strategy as well as manage the day to day running of the business.

General Recommendation Two:

IT governance can only work if it is embraced by all staff within the organisation as attempting to instigate major changes within the organisation will be met with resistance or ignored if people cannot see the benefits that the changes will bring. By involving stakeholders in the process of implementing an IT governance framework including people from different levels within the organisation that are passionate, then people will to make decisions to ensure that the IT governance processes are strategically appropriate, supported and that everyone understands the value of governance for IT goal alignment with organisational goals. This ensures that IT governance is more likely to be successful when adopted in this manner rather than if new rules and processes are imposed upon staff by consultants or software products.

ICT GOVERNANCE SPECIFIC RECOMMENDATIONS

After deeper analysis of the survey and interview results, several key points were identified that are listed as further specific recommendations that are designed to act as a companion to the standard principles to improve the effectiveness of their adoption and are discussed in further detail in relation to the six principles alluded to in the Corporate Governance of ICT AS8015 (Standards Australia, 2005) standard.

Principle 1—Establish clearly understood responsibilities for ICT

Assigning decision rights accountabilities was identified by the IT professional body interviewee as one of the fundamental areas of IT governance and indicated that if this was followed through, then other areas such as goal alignment, compliance and performance would also fall into line.

Recommendation: Clearly Define The Areas Where Decisions Should Be Made:

Prior to delegation of decision rights, the areas where decisions are required must be identified with boundaries established. Weill and Ross (2004) clearly identify the following areas in which IT decisions must be made: IT Principles; IT Infrastructure Strategies; IT Architecture; Business Application Needs, and IT investment and Prioritisation. These decision domains are applicable in most organisations, some modifications may be made where appropriate, as different sized organisations have different levels of focus upon IT.

Recommendation: Discuss and Determine Who Is Accountable For Each Area Of Decision Making:

The research suggested that the best decisions about who should be accountable for each area were most effective when a group of the related stakeholders were able to hold passionate discussions raising any suggestions and develop a consensus decision that addresses the issues. Even though the ultimate decision lies with Directors, this consensus method was preferred, rather than having a delegated group of people dictate IT decisions, because the consensus decision management style drew on the knowledge and expertise of all decision area stakeholders as opposed to a few.

Recommendation: Implement An Exception Process:

After the identification of decision areas and the assignment of accountabilities, an exception process will enable dispute resolution and enable decisions where the current processes do not suit a particular problem. Having an exception process enhances the refinement of IT governance, ensuring controlled flexibility and the opportunity to identify and address governance weaknesses and enhance the governance process.

Principle 2—Plan ICT to best support the organization

The survey result analysis indicated that the large organisations surveyed claimed that the business had an influence over the decisions made regarding IT. Most indicated that business plans dictated IT plans and generally

IT plans had to go through an approval process before implementation. Although many survey respondents said the business exerted control over IT, very few indicated from what knowledge base their decision-makers had taken their technical decisions, thus casting doubt on the apparent level of IT knowledge, expertise and understanding.

Recommendation: Bring In External Board Members To Address Lack Of IT Knowledge:

The limited IT knowledge of some Board members or decision-makers can inhibit the adoption of IT governance, because they simply do not fully understand or comprehend the benefits that IT can offer their organisation. Whilst IT representatives may have the opportunity to address the Board, they are unable to offer truly objective advice, as there is a perceived biased related to the IT departmental functions of their job. Seconding an external Board member or independent advisor with IT knowledge can address this issue in two ways. First the external person can bring advice, past experience and expertise to the business and offer examples of success that educate and inform the Board of Directors and secondly if there is no affiliation with the organisation, they can offer truly independent advice without fear or favour.

Recommendation: Allow IT Representatives To Address The Board Regularly:

Whilst the CIO does not necessarily require a seat on the Board of Directors, the Board still needs to know what their IT department is doing by ensuring that channels of communication are open, therefore a representative from the IT department of the organisation should have a regular opportunity to update the board.

Principle 3—Acquire ICT validly

The data analysis revealed that this principle identified as a management issue rather than as a governance issue. The respondent from the IT professional body believed that whilst assigning a party to make decisions about the procurement process is management, ensuring directive adherence is governance and the specification of a process for acquisition and enforcement of this is the job of IT manager. This research did not offer any additional recommendations for the implementation of this principle.

Principle 4—Ensure that ICT performs well, whenever required

Ensuring that IT performs well is a management issue rather than a governance issue. For example, it is not the job of the Board of Directors to ensure that there is sufficient data storage space on the system or to identify that technical capabilities are not performing or need upgrading. However, it is their job to ensure that the people who are accountable for these decisions are making valued decisions and following the governance checks to continue making good decisions so that IT can perform well whenever it is required.

Recommendation: Ensure That There Are Tools That Provide Accurate Reporting On IT Performance:

Whilst IT governance is an activity accompanied by changes in people and processes, measures must be in place to report and accurately appraise IT performance against the set performance indicators. Although directors are generally not interested in the lower level statistics, as it is the job of management to rectify these issues, being able to identify which areas are having problems enables them to see weaknesses in their decision-making processes and address these to improve performance. The large organisations surveyed indicated that they found ensuring performance to be the most difficult aspect of the Corporate Governance of ICT AS8015 (2005) standard, as there is no performance criteria stipulated. However, by having sufficient monitoring in place, the identification of problem areas becomes easier, thus enabling organisations to decide how to address these issues.

Principle 5—Ensure ICT conforms with formal rules

According to the IT professional body interviewee, IT governance is about two things, performing and conforming. This principle of the Corporate Governance of ICT AS8015 (Standards Australia, 2005) standard deals with conforming, to internal business rules and external regulations. It is therefore essential that competent people are accountable for each area in the IT governance framework as this recommendation expands upon.

Recommendation: Ensure That Decisions Follow The Specified Framework To Ensure Accountability:

Once a decision-making framework is in place, it is important that there is adherence to responsibly obligations and that careful consideration given to who are the most appropriate people to be accountable for each decision domain, failure to follow this may result in inexperienced people making poor decisions without having all the required knowledge. Additionally, enforcement of the decision-making processes within the organisation can also reduce the risk of poor decisions by performing a regular governance audit on the process. This aims to highlight variation from the decision framework and allow directors to look at reasons for this, redress the issue and make possible amendments to the governance framework to overcome this problem.

Principle 6—Ensure ICT use respects human factors

The determination of appropriate recommendations related to this Corporate Governance of ICT AS8015 (Standards Australia, 2005) standard principle was not particularly forthcoming from the research conducted. However, as the interviewee from the IT professional body pointed out, this is a strange principle to have on an IT governance standard, as it is more like a core value most organisations that should apply to everything, not just IT.

CONCLUSIONS

The major outcome of this research was a set of two general and seven specific principle recommendations to accompany the Corporate Governance of ICT AS8015 (Standards Australia, 2005) standard and improve its implementation. Originally it was planned that the recommendations would be developed for each of the six Corporate Governance of ICT AS8015 (Standards Australia, 2005) principles, however as this research progressed and greater understanding of the topic increased, it was realised that implementing certain recommendations would automatically result in improvement in the other principles being addressed.

The principles in the ICT Governance Standard (Australian Standards, 2005) have a high-level, top-down organisational focus and as the survey results indicated this can be easily misinterpreted. The recommendations developed in this study intentionally point an organisation towards the important aspects of the topics that each of the governance principles addresses to ensure that the focus is on the governance of ICT rather than its operational management, to ensure maximum benefit.

The recommendations developed from this research have yet to be tested. In an organisation considering implementing the Standard, two approaches are applicable here: an experimental or action research approach. Experimental research can be utilised to compare results between two organisations implementing the Corporate Governance of ICT AS8015 (Standards Australia, 2005) standard, one which has the recommendations from this research to utilise as a guide and one which does not. This kind of research could be useful to determine and measure the true value of the recommendations uncovered in this research. Utilising an action research approach would enable the refinement of these recommendations by having a researcher become involved in the implementation of the ICT governance Standard (Australian Standards, 2005) and following the effect of the recommendations drawn from this research. Any flaws discovered in the recommendations would be addressed through cyclical improvement until the IT governance structure is working effectively. Application of either of these approaches will determine the effectiveness of the recommendations developed in this research in a practical IT governance environment, but this element of the research still remains to be undertaken.

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