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### Published

2015

### Journal Title

International Journal of IT Business Alignment and Governance

### Version

Version of Record (VoR)

### DOI

[10.4018/IJITBAG.2015070104](https://doi.org/10.4018/IJITBAG.2015070104)

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# Understanding the Dimensions of IT Governance Culture

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## ABSTRACT

*The concept of IT governance culture is relatively new. In this paper, the authors develop an IT Governance culture model based on Detert et al's (2000) framework involving eight dimensions of culture. Each dimension is described in terms of how they relate to the implementation of IT governance initiatives. The authors' contribution is to illustrate the utility of the framework by linking the eight general cultural dimensions to propose a normative model of ITG values and beliefs, that they argue, represent the 'ideal organisational culture' of successful ITG implementations. By doing so, they present a necessary step in developing the dimensions of the concept of ITG culture and moving products such as COBIT5 towards a more comprehensive framework based on systemic empirical research.*

*Keywords: COBIT, Culture, Empirical Research/Study, IT Governance*

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## INTRODUCTION

A current and important topic in IS research is that of IT Governance. According to Debrecey (2013), IT governance (ITG) is defined as the process by which organisations seek to ensure that their investment in information technology facilitates strategic and tactical goals. IT governance is a subset of broader corporate governance, focusing on the role played by information technology within the organisation. The ITG domain is quite well served by guidance and governance frameworks designed to provide structure and good practice statements that organisations can adopt and adapt to enhance their performance. These include ISO 38500 and COBIT (ISACA 2012). These frameworks are themselves potential objects for research in ITG (Debrecey, 2013).

The COBIT framework, now in its fifth iteration, is an influential ITG framework. COBIT5 is designed to provide structure for governance decision making across the complete lifecycle of investment in information technology. COBIT 5, while building on the foundation of earlier versions (e.g., domains, business processes, maturity models, RACI charts), contains some sig-

DOI: 10.4018/IJITBAG.2015070104

nificant changes in its design and implementation. There are, for example, markedly enhanced mechanisms for aligning organisational goals with IT goals and IT delivery (Debreceeny, 2013). While the role of organisational issues was recognized in earlier versions, COBIT5 now explicitly reflects the reality that organisational issues and enablers are important for the successful implementations of IT governance. Successful adoption of ITG is challenging and yet we know very little about what constitutes a successful path to ITG (Debreceeny, 2013).

According to the ISACA (2012), their latest version of COBIT contains an acknowledgement that efficient and effective governance and management of enterprise IT require a holistic approach. According to the ISACA, this approach takes into account several interacting components: processes (to ensure tasks are coordinated and integrated), structures (organisational unit and functions), and attention to people and relational aspects (culture, values, beliefs, etc). According to the ISACA, culture and behaviour of individuals and of the enterprise are very often underestimated as a success factor in governance and management activities. Given this acknowledgement, and the limited academic research that leverages or explores the concept of IT Governance culture as the unit of analysis (Wilkin and Cenhall, 2010), this paper's aim is to develop the concept of ITG culture and propose a model based on systemic empirical research.

Research suggests it is important that there is a fit between the ITG framework and the organisation's culture if there is to be a smooth implementation (El-Mekawy et al, 2012; Janssen et al, 2013). Thus, organisational culture is potentially a very important factor in ITG implementations and deserves further study. However, existing research has largely focused on culture at the national level (Leidner and Kayworth, 2006) which has left gaps at the organisational level for work which can investigate how an organisation's culture can affect the successful implementation of ITG implementations. The limited research to date also falls short of identifying what elements of culture are important in affecting ITG implementations.

This research explores how differing dimensions of culture can potentially influence a successful ITG implementation. The study contributes to the body of information systems knowledge by synthesizing data from the literature and a focus group, to develop a cultural configuration that shows the dimensions of culture that facilitate an ITG implementation initiative. This cultural configuration provides a theoretically grounded basis upon which future research about the role of culture in ITG implementation can be built.

The organisation of this paper flows from general to specific and from descriptive to normative. The remainder of this article is organised as follows. The next section provides necessary background to the types of factors that can influence IT governance effectiveness. A discussion of organisational culture is used as the basis for constructing the proposed ITG culture framework. The following section provides the conceptual framework by over-viewing the cultural terms we use, including a description of Detert' *et al's* (2000) eight dimensions of culture. Based on the literature and a focus group, we propose a model based on normative dimensions that have been used to define the ideal culture of an IT Governance organisation. The last section provides our enhancements to the IT governance culture enabler in COBIT5.

## BACKGROUND

Over the years, researchers have been building upon the work of Brown (1997), and Sambamurthy and Zmud (1999) to further examine the types of factors or mechanisms that will influence IT governance effectiveness (Ali and Green, 2009; Bowen et al., 2007; Huang et al., 2010). In particular, according to Chong and Tan (2012) the literature has identified three characteristics that can have an impact on the effectiveness of IT governance in an organisational context. The

first aspect is associated with the structural perspective of IT governance. It focuses on identifying the typical IT governance arrangement for a specific organisational group (Peterson, 2004) as well as the structuring and distributing IT related decision making rights (Brown and Grant, 2005; Weill and Ross, 2004). The second aspect takes a process approach that emphasizes the control and risk features of IT governance. Typically, IT governance researchers (such as De Haes et al., 2013; Merhout and Havelka, 2008) have proposed the use of Control Objectives for Information and related Technology (COBIT), Information Technology Infrastructure Library (ITIL) and IT Balanced scorecards to provide more detailed guidelines and best practice standards so that better alignment between IT and organisational strategy can be achieved. The last aspect focuses on the relational characteristic of IT governance which entails critical factors such as commitment, involvement and trust (Van Grembergen et al, 2004; Van Grembergen and De Haes (2009) and how to “to encourage desirable IT behaviours” (Weill, 2004). The key point is that the intra-organisational IT governance framework has to incorporate relational mechanisms which play an important role in fostering an effective collaborative partnership.

Accordingly, this paper proposes a socio-technical perspective on IT governance. According to Chong and Tan (2012) organisational work systems are facilitated by both technical and social systems. The technical system refers to the technology that is needed to carry out the organisational tasks while the social system consists of the people who are responsible for carrying out those organisational tasks. This paper proposes that IT governance can be envisaged as a socio-technical system. For example, IT governance processes can be considered to be technologically constructed because they involve the effective and efficient use of IT resources to support IT strategies and policies in ensuring the alignment of IT and organisational strategy; while IT governance structure and relational mechanisms are related to the social system as they include the roles and responsibilities of different organisational groups and the desirable human behaviours to perform and co-ordinate the organisational work system.

Prior research has explored how socio-technical factors can have an effect on IT governance structures, processes and relational mechanisms. For instance, studies have examined the impact of organisational size, appropriate allocation of IT related decision making and a balance of responsibilities and accountabilities between business and IT (Huang et al., 2010; Sambamurthy and Zmud, 1999; Weill, 2004) on IT governance structures. On the other hand, Bowen et al. (2007) and Weill and Ross (2004) emphasized that effectively communicated IT strategies and policies and involvement of IT committees can affect the IT governance processes. Lastly, other social factors, such as organisational culture, commitment and collaborative behaviours, also have a great impact on the deployment of relational mechanisms in supporting the alignment between business objectives and IT (El-Mekawy et al, 2012; Aasi et al, 2014).

To date, there is little understanding of what influences IT governance implementations in a collaborative or organisational context (Croteau and Bergeron, 2009; Hekkala et al., 2010; De Haes, Grembergen and Debreceny, 2013). In terms of culture, Leidner and Kayworth (2006) found that culture at the national or organisational level exerts a subtle yet powerful influence on people and organisations, and that culture theory has been used to explain an extensive range of social behaviours and outcomes in organisational settings. Organisational culture has also been shown to play a significant role in information technology management processes (Cabrera et al, 2001), while a number of related studies involving TQM implementations have highlighted that cultural variables drive TQM success and that such programs are more likely to succeed if the prevailing organisational culture is compatible with the values and basic assumptions proposed by the TQM discipline (Kujala and Lillrank, 2004). In a review of the influence of culture on

IT governance, Aasi, Rusu and Han (2014) concluded essentially the same: that the successful implementation of ITG mechanisms depends heavily on the prevailing organisational culture. Accordingly, the paper therefore proposes to examine the role of cultural factors in the effectiveness of IT governance in collaborative or organisational contexts.

## ORGANISATIONAL CULTURE

The culture of an organisation is basically its personality (Corriss, 2010). It includes the goals, assumptions, beliefs, values, norms, behaviours, customs, rites, history, and even the style of dress of the people who work for the organisation. It is what makes employees feel like they belong and what encourages them to work collectively to achieve organisational goals. There is a difference of opinion as to whether culture is something an organisation “has” or what the organisation “is” (Corriss, 2010). Either way, an organisation’s culture evolves slowly, generally growing stronger over time. Changing culture is hard. It might be difficult to move an organisation’s culture in a different direction or to make major changes, but actually change is occurring all the time due to a variety of influences, internal and external to the organisation.

Probably the most well-known and simplest definition of organisational culture is “the way things are done here” (Lundy and Cowling, 1996). Organisational culture can be seen as the personality of the organisation (Robbins, 2001) and is the social glue that binds the members of the organisation together (Kreitner and Kinicki, 1995). Thus organisational culture develops on the basis of certain activities in the organisation, such as the vision adopted by management and the behaviour that employees exhibit on an individual, group and organisational level (Robbins, 2001). According to Robbins, organisational behaviour is about what people do in an organisation and how their behaviour affects the performance of the organisation. The organisational culture that develops, based on the exhibited behaviour, is evident in artefacts (locked door), values (“employees are valuable assets”) and basic assumptions (“the Information Technology department is responsible for the security of CIS”).

For this paper we adopt Schein’s formal definition of culture because it integrates many of the various concepts of culture found in literature. Schein defines the culture of a group as:

*[a] pattern of shared basic assumptions that the group learned as it solved its problems of external adaptation and internal integration, that has worked well enough to be considered valid, and therefore, to be taught to new members as the correct way to perceive, think, and feel in relation to those problems (Schein, 1997:12).*

For the purpose of understanding and analyzing culture Schein’s three-level model of culture (Schein 1997) has proven to be valuable (Leidner and Kayworth 2006). On the surface level culture is manifested through visible *artefacts* like organisational structures, technologies, myths, language, rituals etc. The problem with artefacts is that while they are observable, it is hard to decipher their underlying cultural meanings. On the intermediate level, *espoused values* and beliefs define what is important in a particular culture and thus what ought to be done in an organisation. Values can be represented as strategies, goals, or philosophies. These values are to a certain extent visible and debatable with individuals. Values finally are a reflection of the *basic underlying assumptions* on the deepest level. These “basic assumptions are at the core of culture and represent the belief systems that individuals have toward human behaviour, relationships, reality, and truth” (Leidner and Kayworth, 2006:359) without being aware of them.

Leidner and Kayworth (2006) contend that it is difficult to study basic assumptions because they are invisible and unconscious. It is also difficult to study artefacts, while being visible, because they are not easily decipherable. Therefore, Leidner and Kayworth (2006) conclude that the majority of research aiming at analyzing culture focuses at the respective group's values. Groups is also the level our paper focuses on, building on the Detert et al (2000) model of organizational culture as our theoretical lens.

## **Exploring the Concept of an IT Governance Culture**

### *Detert et al's (2000) Model of Organisational Culture*

In the organisational culture literature, a values focus is evident in national level studies which have examined a select group of values (e.g. Hofstede, 2001). However, organisational level studies have found a much greater number of cultural values (Leidner and Kayworth, 2006). Following the quantitative traditions, there have been many efforts to develop cultural frameworks aimed at the organisational level (e.g. Hofstede, 2001). A qualitative alternative is work by Detert et al (2000) who integrated much of the existing cultural literature into eight dimensions of organisational culture (Table 1). A competing model of organization culture involves the X-model proposed by Smit (2008), which like Detert et al (2000) is based on a literature survey as well as validation through qualitative research. However, the X-model has limited exposure in the IS literature with the noted exception of El-Mekawy et al, (2012) and the original author and colleagues. On the other hand, Detert's cultural framework has been widely used by researchers in information systems (e.g. Jones et al, 2006; Ruighaver et al, 2007; Stuart et al, 2010; Aier, 2013) because it can provide the basis for broad cultural analysis while being relatable to past work.

Detert et al. (2000) synthesised the general dimensions of organisational culture using current organisational culture research on areas such as Organisational Culture and Leadership (Schein, 1997), Competing Values (Cameron and Freeman, 1991) and Organisational Culture Profile (Klein et al., 1995). Detert et al. (2000) illustrate their framework by linking it to a set of values and beliefs that represent the 'cultural backbone' of successful Total Quality Management (TQM) adoption. One of their goals was to provide a basis upon which future theoretical and empirical work on organisational culture could be conducted. This framework supports assessment of dimensions of organisational culture and the practices or artefacts that arise out of those dimensions. It focuses on organisational culture as a system of shared values that define what is important and that guide organisational members' attitudes and behaviours.

The eight dimensions of organisational culture are briefly identified in Table 1.

### *Current Research on ITG Culture*

Although aspects of culture and their relationship to IT governance have been analyzed (e.g. business unit autonomy in Brown and Magill, 1994) and organisational culture is commonly referred to as a contingency factor for organisational design (Smircich 1983), we are not aware of any research specifically analyzing the relationships between IT governance and Detert et al's (2000) model of organisational culture. Brown and Grant (2005) have pointed out that researchers may wish to analyse the impact of organisational culture on IT governance implementation, and Debreceeny (2013) pointed out that given the relatively immature state of research on ITG there is a need for qualitative research.

Table 1. The organisational culture framework (Detert et al., 2000)

<p><b>1. The basis of truth and rationality</b></p> <p>Focuses on the degree to which employees believe something is real or not real and on how the truth is discovered. This dimension may affect the degree to which people adopt either normative or pragmatic ideals. In other-words, the extent to which organisations seek truth through systemic, scientific study using hard data (the use of data for decision making) or through personal experience and intuition. <b>(Hard data v. Personal experience for decision making)</b></p>
<p><b>2. The nature of time and time horizon</b></p> <p>The concept of time in an organisation has bearing in terms of whether the organisation adopt long-term planning, strategic planning and goal setting, or focus primarily on the here and now, reacting on a short time horizon. Meaning, the extent to which organisations focus on the long-term or the short-term. <b>(Short term v. Long term commitment)</b></p>
<p><b>3. Motivation</b></p> <p>Beliefs about what motivates humans are fundamental. Within an organisation motivation is a fundamental management principle. The identification of how employees are motivated; whether they are motivated from within or by external forces is important. Furthermore, how senior management believe in a technology's worth determines its role in an organisation. In short, the extent to which an organisation believes that IT is a cost or that IT is seen as an asset and can deliver value for an organisation. <b>(Cost v. Value)</b></p>
<p><b>4. Orientation to change/innovation</b></p> <p>Stability and change are closely linked to motivation. Some individuals are open to change (risk-takers), whereas other individuals have a high need for stability (risk-averse). This can also apply to organisations. Risk-taking organisations are said to be innovative with a push for constant, continuous improvement. Risk-averse organisations tend to be less innovative, with little push for change. Essentially, it's the extent to which organisations have a propensity to maintain a stable level of performance that is 'good enough' or to seek to always do better through innovation and change. <b>(Stability v. Change)</b></p>
<p><b>5. Orientation to work, task or process</b></p> <p>The centrality of work in human life and the balance between work as a production activity and as a social activity. Some individuals view work as an end in itself and are, concerned with work accomplishment and productivity. Other individuals see work as a means to other ends, such as having a comfortable life and developing social relationships. Issues such as the responsibility employees feel for their position and how they are educated in terms of their roles and responsibilities are important here. In brief, the extent to which individuals in organisations focus on work as an end (results) or to which they focus on the process by which work is done as a means to achieve other ends. <b>(Process v. Results)</b></p>
<p><b>6. Isolation versus collaboration/cooperation</b></p> <p>Focuses on how employees can work, either alone, or collaboratively. Underlying beliefs about the nature of human relationships and about how work is most effectively and efficiently accomplished. In some organisations the majority of work is accomplished by individuals, and collaboration is often viewed as a violation of autonomy. Other organisations welcome collaboration and foster team work, often organising work around groups of employees. Simply put: the extent to which organisations encourage collaboration among individuals and across tasks or encourage individual efforts over team-based efforts. <b>(Isolation v. Collaboration)</b></p>
<p><b>7. Control, coordination and responsibility</b></p> <p>Organisations vary in the degree to which control is concentrated or shared. Where there is firm control there are formalised rules and procedures that are set by a few, to guide the behaviour of the majority. Where there is less control there is flexibility and autonomy of workers, with fewer rules or formal procedures and shared decision making. Meaning, the extent to which organisations have decision making structures centred on a few vs. decision making structures centred around dissemination of decision making responsibilities throughout the organisation. <b>(Centralised v. Autonomous decision-making)</b></p>
<p><b>8. Orientation and focus – internal and/or external</b></p> <p>The nature of the relationship between an organisation and its environment and whether or not an organisation assumes that it controls, or is controlled by, its external environment. An organisation may have an internal orientation (focusing on people and processes within the organisation) or external orientation (focusing on external constituents, customers, competitors and the environment), or have a combination of both. The extent to which organisational improvements are driven by a focus on internal process improvements or by external stakeholder desires. <b>(Internal v. External)</b></p>

We use the eight dimensions of culture included in Detert et al.'s (2000) theoretical framework to identify behaviours related to cultural values that underlie ITG implementation in order to inform theory about the way these cultural dimensions facilitate or impede ITG implementation.

To apply Detert et al.'s, (2000) general cultural dimensions framework to our specific initiative, our first step was to scan the ITG literature to determine what normative dimensions have been used to define the ideal culture of an ITG organisation. The second step of our approach was to focus on translating the eight dimensions originally proposed by Detert and to link them to the cultural values underlying ITG. For instance we re-interpreted dimension #1 truth and rationality (the degree to which employees believe something is real or not real and on how the truth is discovered), as the extent to which organisations seek truth through systemic, scientific study using hard data (the use of data for decision making) or through personal experience and intuition.

We interpreted dimension #2 the nature of time and time horizon in terms of whether the organisation adopt long-term planning, strategic planning and goal setting, or focus primarily on the here and now, reacting on a short time horizon. We interpreted dimension #3 motivation as to how senior management believe in a technology's worth will determine its role in an organisation. We see motivation as the extent to which an organisation believes that IT is a cost, or alternatively that IT is seen as an asset and can deliver value for an organisation; and so on. Likewise we interpreted dimension #8 orientation in terms of whether an organisation assumes that it controls, or is controlled by, its external environment. The remaining translations are shown in Table 1.

The third step, in order to validate the 8-dimensional framework of an ITG culture framework, we sought feedback on our initial summary table from a focus group (Tremblay et al, 2010) of eight comprised of practitioners and consultants in ITG who attended an advanced seminar on Cobit5 at the Antwerp Management School in 2013. The authors provided the focus group with draft working definitions of an ITG culture based on the work of Detert et al (2000), and our translation of what each value meant in an ITG context (see Table 1). Based on recommendations of Van de Ven and Delbecq (1972) the focus group members were then asked to articulate aspects of ITG culture that they believed to be critical. The ITG practitioners were informed that their input would assist in validating the conceptualisation of an ITG culture. The practitioners then read each culture value and made written changes or confirmations. This procedure rendered minor corrections and enhancements to our initial conceptualisation of the eight dimensions of ITG culture and are presented in Table 2. We suggest that the outcome of the expert focus group's input significantly adds to our understanding of the ITG culture phenomenon.

As shown in Table 2, our approach yielded a set of specific ITG values for each of the eight dimensions.

## **ENHANCING THE IT GOVERNANCE CULTURE ENABLER IN COBIT 5**

As mentioned in previous sections, the COBIT framework stresses the importance of managing "culture" in a broader IT governance system. Together with managing other related enablers such as IT governance structures and processes, managing culture around IT governance is an important enabler to achieve alignment between business and IT and in the end more IT enabled value creation (ISACA, 2012).

The COBIT 5 framework identifies four dimensions that organizations should understand to better manage IT governance culture, ie. its stakeholders, goals, lifecycle and good practices

Table 2. A proposed model of ITG culture

Organisational Culture Dimension (Detert et al, 2000)	ITG Value
1. The basis of truth and rationality in the organisation	Decision making regarding capital expenditure on new systems and IT architecture should rely on as much factual information available, a transparent process, taking into account the risk appetite of the organisation.
2. The nature of time and time horizon	Improvement to IT processes, an improvement in process maturity, and alignment of IT with Business requires a long-term orientation, although a flexible approach at the tactical level and short-term is a must.
3. Motivation	Organisations need to move their thinking away from seeing IT as a cost, towards focusing on the value of business co-creation with IT.
4. Stability versus change / innovation	IT process improvement is continuous, and can be improved with resources. Organisations will be seeking to optimize and change through process improvements.
5. Orientation to work, task or process	The main purpose of IT is to transform the strategic direction of the organization: to be more business / customer focused, while holding itself (IT) responsible for operational excellence in getting there (results).
6. Isolation versus collaboration / cooperation	Cooperation, collaboration and mutual understanding between IT and Business is essential for alignment.
7. Control, coordination, and responsibility	The Board is accountable for implementing an IT governance framework. Business and IT management have a responsibility to implement appropriate controls. There is benefit in controlled and coordinated action, with room for initiative and levels of personal responsibility.
8. Orientation and focus – internal and/or external	IT should be business oriented, customer-focused and IT systems should support organisational strategy. IT has a role advising Business and propagating external technological trends.

(ISACA, 2012). In Table 3, we combine insights from COBIT 5 with our Detert's based conceptual development, to explore a deeper understanding of these four dimensions.

In a recent study, IT governance culture was reported as the least managed enabler of COBIT around IT governance, as compared with the management of other enablers such as structures, processes, skills etc (De Haes et al., 2015). The development of the COBIT dimensions of the IT governance culture enabler, as proposed in Table 3, could contribute to providing organizations more guidance in this area.

## SUMMARY

IT governance is a complex construct and implementing it in organizations requires the management of a holistic set of enablers including organizational structures and processes. More recently, culture is also seen as an important but challenging enabler in improving IT governance models. In this paper, we aimed to develop a better understanding of the different dimensions of the IT governance enabler, based on Detert's conceptual model. These insights can be used as input to further grow and develop advice for organizations as indicated in the COBIT model.

*Table 3. Development of COBIT 5 dimensions of ITG culture*

Stakeholders	Goals	Lifecycle	Good Practices
<p>As stated in COBIT 5, The stakeholders for IT governance culture can be internal (business, IT) or external (e.g. regulators). Their stakes can vary from the need to “comply” or “absorb” the new or emerging IT governance culture or the accountability to build policies and enforce IT governance expected behavior and culture.</p>	<p>The goal of managing IT governance culture is to establish clarity, focus and direction on the eight dimensions as developed by Detert:</p> <ol style="list-style-type: none"> <li>1. The basis of truth and rationality in the organisation</li> <li>2. The nature of time and time horizon</li> <li>3. Motivation</li> <li>4. Stability versus change / innovation</li> <li>5. Orientation to work, task or process</li> <li>6. Isolation versus collaboration / cooperation</li> <li>7. Control, coordination, and responsibility</li> <li>8. Orientation and focus – internal and/or external</li> </ol>	<p>As stated in COBIT 5, the achieving of the goals in previous columns has a life cycle, i.e. to be created from scratch or to be improved / changed starting from an existing (satisfactory or unsatisfactory) culture.</p>	<p>Our conceptual translation of Detert’s dimension has led to the identification of specific practices to manage the IT governance culture enabler:</p> <p>Decision making regarding capital expenditure on new systems and IT architecture should rely on as much factual information available, a transparent process, taking into account the risk appetite of the organisation.</p> <p>Improvement to IT processes, an improvement in process maturity, and alignment of IT with Business requires a long-term orientation, although a flexible approach at the tactical level and short-term is a must.</p> <p>Organisations need to move their thinking away from seeing IT as a cost, towards focusing on the value of business co-creation with IT.</p> <p>IT process improvement is continuous, and can be improved with resources. Organisations will be seeking to optimize and change through process improvements.</p> <p>The main purpose of IT is to transform the strategic direction of the organization: to be more business / customer focused, while holding itself (IT) responsible for operational excellence in getting there (results).</p> <p>Cooperation, collaboration and mutual understanding between IT and Business is essential for alignment.</p> <p>The Board is accountable for implementing an IT governance framework. Business and IT management have a responsibility to implement appropriate controls. There is benefit in controlled and coordinated action, with room for initiative and levels of personal responsibility.</p> <p>IT should be business oriented, customer-focused and IT systems should support organisational strategy. IT has a role advising Business and propagating external technological trends.</p>

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