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Does Culture Matter? Cultural Influences and IT Governance Integration Mechanisms

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ABSTRACT

This paper aims to contribute to the conceptualization and contextualization of IT governance (ITG) by exploring the potential influences of national culture on ITG integration mechanisms. We address the lack of understanding towards the influences that culture may have on ITG in previous literature and present a framework to examine whether and how cultural intervention effects ITG performance. Conventional themes in ITG studies pay more attention to the structure of decision-making authorities. This paper focuses on the paradigm of integrative coordination. Through the lens of the resource-based view (RBV), we conceptualize ITG as a systemic set of firm-specific resources in IT value creation; whereas the complementarity of national culture to ITG is conceptualized as a type of country-specific resource. The propositions presented are expected to enrich the understanding of ITG integration mechanisms and IT value creation and benefit the cross-country transfer of ITG concepts and practices.

Keywords

IT governance, integration mechanism, IT value, national culture, resource-based view

INTRODUCTION

Information technology governance (ITG) has become essential for the strategic competitive advantage of many organizations in the era of rapid IT development and globalization. The increasing proportion of capital expenditures devoted to IT and the risk of IT failures intensify a firm's expectation of deriving value from ITG and for making ITG an inevitable responsibility for the board of directors (ITGI, 2003; McKay, Marshall, & Smith, 2003). Successful ITG facilitates a firm's strategic competitive advantage by building up its efficiency (De Haes & Van Grembergen, 2004), firm's reputation (Guldentops, 2004), and return on investment (McKay, et al., 2003). Exploiting these strategic values is a distinctive characteristic of ITG and is what separates it from IT management (Peterson, 2004b; Weill & Ross, 2004).

ITG is an integral subset of corporate governance (ITGI, 2003). Surprisingly, despite the predominant role of culture in predicting the selection of corporate governance systems (Breuer & Salzmann, 2009; Licht, Goldschmidt, & Schwartz, 2005, 2007), ITG literature seldomly considers the influences of national culture and the differences it presents in various national contexts. Similarly, a number of information system (IS) studies indicate that interactions between national culture and a firm's IT use differ the outcomes (Leidner & Kayworth, 2006). In the global diffusion of ITG concepts the socio-cultural aspects of ITG are neglected. Considering the enthusiasm of introducing "best practices", it is also doubtful that ITG can be standardized globally and diffused worldwide without considering the different characteristics of each country. Peterson (2004b) indicates that ITG involves a lot of complex firm-specific coordination and social activities; which is inimitable, untradeable, timely dependent, and socially complex, thus can be seen as distinctive capabilities (Mahoney & Pandian, 1992). The resource-based view (RBV) regards distinctive capabilities as important sources of heterogeneity that is the key determinant of superior performance (Bharadwaj, 2000; Mahoney & Pandian, 1992). However, not only these distinctive capabilities, but also social intervention determine the performance of ITG (Ribbers, Peterson, & Parker, 2002). Inappropriate interaction between ITG and contextual factors may lead to unanticipated consequences rather than expected value. Thus, ignoring the strong implication of socio-cultural influence in ITG can be risky for firms seeking to achieve effective ITG. Through an examination of the congruence between ITG

and the cultural context of different countries, this paper aims to answer the following research question: “Does national culture influence ITG performance, and, if so, how is this influence demonstrated?”

This paper is based on a two-stage literature review. The thematic stage was an extensive review to extract the typology and themes of contemporary ITG literature mainly from journals and conferences recommended by Levy and Ellis (2006); in the evaluative stage arguments in cross-culture studies in IT and corporate governance are coded based on content analysis. Throughout this paper the authors follow the conceptual paradigm of ITG integration mechanism which refers to the lateral coordination capabilities in dealing with the cross-hierarchy and cross-section coordination of corporate IT, as it represents the current trend in the evolution of the ITG concepts (Peterson, 2004b; Peterson, O’Callaghan, & Ribbers, 2000). As ITG is not adequately theorized, the authors conceptualize ITG as a set of firm-specific resources and justify the value-adding attributes of these resources by framing the discussion around the RBV and culture theory. Following this we conceptualize the complementarity of culture as a country-specific resource and examine this complementary effect to ITG integration mechanisms. Thereby, we present a holistic framework of both conceptualization and contextualization of ITG.

LITERATURE REVIEW

Defining IT Governance

The earliest use of the term ITG can be traced back to the early 1990’s. Henderson and Venkatraman (1993), for example, described ITG as the selection and mechanisms for obtaining required IT capabilities. ITG concepts are mainly derived from corporate governance (ITGI, 2003). Thus, some researchers define ITG by contrasting it to IT management (Peterson, 2004b; Weill, 2004). IT management focuses on the products characteristic of IT and the purpose of providing IT services (Peterson, 2004b); whereas ITG focuses on enterprise-wide decision-making and corporate performance goals (Weill, 2004). Despite the diversity of ITG definitions, the following holistic definition presented by the IT Governance Institute (ITGI) will be applied throughout this paper (2003, p. 7): “IT governance is the responsibility of the board of directors and executive management. It is an integral part of enterprise governance and consists of the leadership and organizational structures and processes that ensure that the organization’s IT sustains and extends the organization’s strategy and objectives”.

Although the goals of ITG are often vaguely defined, exploiting value (e.g., strategic competitive advantage) from IT is the commonly accepted objective in the majority of ITG definitions (ITGI, 2003; Van Grembergen, 2004). Thus, contemporary business’s dependency on IT leads to the board’s responsibility to yield value from IT assets by successful ITG (Wilkin & Chenhall, 2010). Weill and Ross (2004, pp. 3-4) assert that “effective IT governance is the single most important predictor of the value an organization generates from IT”. While IT is a type of organizational resource, ITG is concerned with using such resource strategically in order to attain corporate value. Thus, this paper focuses on value creation as a fundamental outcome of ITG.

Main themes of ITG research

The allocation of IT decision-making authorities, which is typically termed ITG structure (e.g. (Weill, 2004)), used to be the most dominated theme in ITG literature (Brown & Grant, 2005; Peterson, 2004b). Weill and Ross (2004) categorized the decision-making patterns in the following ways: IT/business monarchy; IT/business duopoly, federal; and feudal. They stressed that the ITG structure should be contingent on the firm’s strategies. However, Wang (2010) adopted Weill and Ross’s (2004) paradigm in a survey of Chinese listed companies and found the vast majority of these companies applied only the IT monarchy and business monarchy models in regard to their decision domains. This applied centralization implies a potential countrywide pattern in ITG structures. On the other hand, Peterson et al. (2000) believed that a hybrid structure is more likely to gain superior advantage from ITG. However, although ITG in Japanese companies is dominated by the feudal model, it is reported that its average performance is better than that is the US (Itakura, 2007). Thus, decision-making structures may not be sufficient for predicting ITG outcomes.

Today’s ITG concepts are far more comprehensive than simply structures of decision-making. The role of ITG is more about the coordination of complementary business and IT competencies to delivery organizational value in a complex and dynamic environment (Peterson, 2004b). The integration mechanisms of ITG can often be operationalized as the combination of three types of capabilities: structure; process; and relational mechanisms (De Haes & Van Grembergen, 2009; Peterson, 2004a). ITG requires integration to unify the organizational resources to yield distinctive capabilities to support the firm’s competitive strategies (Peterson, et al., 2000). Multiple needs of value, dynamic environment, and stakeholder conflicts in ITG lead to power struggles and culture clashes. Thus, as asserted by Peterson (2004a, p. 21), “without integration, IT governance is sure to drift”.

Culture and ITG

Along with formalized methodologies, social capabilities are also identified as essential determinants of ITG performance (Ribbers, et al., 2002). From the perspective of corporate governance and IT, individual dimensions of ITG integration mechanisms can be influenced by national culture. For example, hierarchy cultures tend to depend on vertical

communication (Martinsons & Davison, 2007) and are more likely to adopt centralization of IS decision-making (Martinsons & Westwood, 1997). The difference between the culture from which IS practices are developed and the one in which the practices are applied leads to conflict (Leidner & Kayworth, 2006). In the corporate governance domain, national culture is often viewed as an important predictor of a corporate governance system (Breuer & Salzmann, 2009; Licht, et al., 2005, 2007). The norms of corporate governance correlate systematically and strongly with differences in the scores on cultural dimensions (Licht, et al., 2007). As such, culture acts as a key driver in the design of corporate governance systems (Breuer & Salzmann, 2009). However, ITG researchers have often neglected the influence of national culture on ITG.

There is a scarcity of ITG research conducted on cross-cultural comparison in a wide range of countries. In general, the majority of ITG research still focuses on countries with Anglo-Saxon populations, which focuses on the single culture cluster. The above mentioned empirical studies on decision-making structure also imply that national culture features significantly in the way it affects ITG performance. Compared to Australian organizations, Tanzanian (Nfuka & Rusu, 2010) and Korean (Lee, Lee, Park, & Jeong, 2008) firms care less about documentation and explicit principle setting. Therefore, when ITG researchers are enthusiastic in the standardization or best practices, they also need to consider whether these ITG frameworks should be adapted for different countries. Moreover, prior studies have discussed cultural congruence on some individual managerial activities that may also involve in ITG (e.g (Martinsons & Davison, 2007)), however, the fit between culture and the joint effect of the whole ITG integration is still lacking. This paper, therefore, examines the holistic ITG integration framework and its value creation under the influence of national culture.

THEORETICAL FOUNDATION

Culture

Culture is defined as “the collective programming of the mind which distinguishes the members of one category of people from another” (Hofstede, Hofstede, & Minkov, 2010, p. 6). National culture can be categorized and measured by a set of dimensions (Hofstede, 2001; R. House, Javidan, Hanges, & Dorfman, 2002; Schwartz, 1994). As a dominant culture framework, Hofstede’s five cultural dimensions and measures is illustrated in Table 1. Drawing upon Hofstede’s dimensions, House et al. (1999) focused more on the manager’s value in relation to Global Leadership and Organizational Behavior Effectiveness (GLOBE). However, they rephrased and specified some of the prior dimensions, such as when they separate in-group collectivism from institution collectivism. Myers and Tan (2003) argued Hofstede’s model did not adequately explain cultural values and culturally-influenced work-related values and attitudes. They also pointed out that Hofstede’s dimensions tend to employ the notion of national culture as an explanation for variation in attitudes toward IT rather than seeking to demonstrate the mechanisms by which these attitudes are expressed or shaped. Nonetheless, Hofstede’s dimensions are the comparatively well accepted and widely used as a paradigm (Søndergaard, 1994). Thus, this paper will focus its discussion on the dimensions proposed by Hofstede.

Dimensions	Indicator	Description
Power Distance	PDI	The extent to which the less powerful members of organizations and institutions (like the family) accept and expect that power is distributed unequally.
Individualism /collectivism	IDV	The degree to which individuals are integrated into groups.
Masculinity /Femininity	MAS	The distribution of emotional roles between the genders; which is another fundamental issue for any society to which a range of solutions are found.
Uncertainty Avoidance	UAI	The extent to which a culture programs its members to feel either uncomfortable or comfortable in unstructured situations.
Long-Term Orientation	LTO	The fostering of virtues oriented toward future rewards; in particular, perseverance and thrift.

Table 1: Hofstede’s culture dimensions; (adapted from (Hofstede, 2001))

Hofstede (2010) bridged national culture and organizational practices and illustrated the cultural influence on planning, control and accounting. Newman and Nollen (1996) referred to culture fit as the congruence between cultural perspective and management practices. Within the scope of this research, culture fit refers to the degree to which socio-cultural characteristic are congruent with ITG integration mechanisms, which may be of value for the performance of IT. Dimensional analysis is generally the main approach used in IT-culture studies, however, it is necessary to adopt these dimensions selectively for different context (Hofstede, et al., 2010).

Resource-based view

Wernerfelt (1984) linked organizational resources to organizational performance by using the RBV. The author states that the firm's competitive advantage is primarily based on the application of the bundle of valuable resources. The IT related capabilities are a subset of firm-specific resources which can be categorized as technological IT resources, human IT resources, and IT enabled intangibles (Bharadwaj, 2000). Heterogeneity is the key source of superior performance. It incorporates the following value-adding attributes: value; rarity; inimitability; and organization (VRIO) (Barney & Hesterly, 2006). However, as resources rarely effect alone, the complementarity between IT related resources is also essential because a firm's performance depends on how IT is integrated with other resources (Melville, Kraemer, & Gurbaxani, 2004; Wade & Hulland, 2004). Aiming for value generation by way of ITG integration and its congruence with contextual factors, this paper thereby adopts the RBV as the underpinning theoretical lens through which to analyze the roles of ITG integration (Table 2) and the intervention of culture fit. By doing so, we are able to interpret the research question as the change of value-adding attributes of ITG integration mechanisms under cultural influences.

Layer	ITG integration dimensions		Resource	Description
Structural integration	Formal	Planned formal integration	Human IT resource	IT infrastructure: comprise of computer and communication technologies and sharable technical platform and database Human IT resource: comprise of technical IT skill and managerial IT skill. IT enabled intangibles: comprise of customer orientation, knowledge assets, shared resources and capabilities across organizational divisions.
	Network	Staff-skill professionalization	Human IT resource	
Functional integration	Formal	System of decision making	Human IT resource / IT enabled intangibles	
	Network	Informal communication between stakeholder	Human IT resource / IT enabled intangibles	
Social integration	Formal	Stakeholder participation	Human IT resource / IT enabled intangibles	
	Network	Stakeholder understanding	Human IT resource / IT enabled intangibles	
Overall measure	Formalization, complexity, hybrid, comprehensiveness,		Value, rarity, inimitability, organization	

Table 2. Mapping ITG integration mechanisms and organizational resources

(Based on Peterson (2000) and Bharadwaj (2000))

del Aguila, Bruque, and Padilla (2002) suggested that national culture can be seen as a country-specific source in IT value creation. Based on the overlap of national culture groups and corporate governance systems (Licht, et al., 2005, 2007) and the cross-cultural conflict in IT transfer (Leidner & Kayworth, 2006), we would argue that cultural factors need to be taken into account in ITG cross-country research. The RBV is useful to explain IT use in different countries by nominating country-specific factors, thus, researchers can trace the effect of resources that are complementary to IT, such as fluid internal communication, absence of conflict and manager's supports as they may be moderated by country-specific factors (del Aguila, et al., 2002). According to the RBV, a firm's institutional and historical pathway towards competitive advantage is embedded in national culture (Morosini, Shane, & Singh, 1998). Formal methodologies and social capabilities of ITG integration and their potential interplay with socio-cultural factors are expected to be more inimitable and dynamic, and, as a result, can operate as highly distinctive competencies. Thus, national culture should be regarded as a country-specific factor that is complementary to distinctive capabilities in ITG. Then the complementarity of culture to ITG can be measured as culture fit.

The integration mechanism paradigm

The integrated mechanisms paradigm has been applied in this paper because it represents a trend to unite various orientations and coordinating efforts in achieving common values (De Haes & Van Grembergen, 2004; Peterson, 2004a, 2004b). These integrated mechanisms combine differentiated business and IT capabilities and can be categorized into three layers: structure integration; functional integration; and social integration (Peterson, 2001; Peterson, et al., 2000) (see Table 3). However, Peterson (2004b) and De Haes and Van Grembergen (2009) believed that the cross-country context is important for the generalizability of integration mechanisms. Moreover, Ribbers et al. (2002) conducted a study to discuss the role of social intervention influence and argued that the use of structural and formalized ITG methodologies are insufficient for effective ITG in a dynamic environment. Therefore, the combination of structural, functional and social integration plays the role of distinctive capabilities. In turn, according to the RBV, the distinctive capabilities can lead to superior IT performance, however, these value-adding attributes are influenced by country characteristics (Melville, et al., 2004).

Mechanisms		Formal Organization	Network Relationships
Structural integration	Upper layer	Integration Structures Planned formal integration: – direct supervision/hierarchy – liaison role – task force and teams – integrating role (full-time) – cross-functional units and committees (full-time)	Staff-Skill Professionalization Indirect informal integration: – Colocation (physical working arrangements) – Cross-functional rotation (job-rotation) – Cross-functional events (training) – Performance reviews and rewards (incentives)
Functional integration	Increasing integration capability	System of IT Decision Making Define, prioritize, select and review IT decisions: – comprehensiveness of IT decision-making (systematic, exhaustive) – formalization of IT decision-making (formal rules and standard procedures)	System of Communication Informal communication between stakeholders: – strategic dialogue (critical inquiry) – intensity (ad-hoc, regular) – direction (vertical, horizontal) – media (personal, written, electronic)
Social Integration	Lower layer	Stakeholder Participation Active participation by key stakeholders in IT decision-making: – Corporate Executive Management – Corporate IT Management – Business-unit Management – Division IT Management	Stakeholder Understanding Shared understanding of business-IT objectives and plans between: – Corporate Executive Management – Corporate IT Management – Business-unit Management – Division IT Management

Table 3. Integration mechanisms for IT Governance. (Peterson, 2004b; Peterson, et al., 2000)

CONCEPTUAL MODEL

Given that ITG is distinctive from IT management because it involves the complex configuration of decision-making authority, board level coordination, and stakeholders’ commitment, we conceptualize ITG as a set of organizational resources with high VRIO attributes. Melville et al. (2004) admitted that even managerial and technical skills and capabilities in relation to IT can be outsourced, which, according to the RBV, means they are not sufficient for sustainable value generation. By contrast, ITG is a set of firm-specific coordination mechanisms that cannot be delegated to the market (Peterson, 2004b). These mechanisms are highly distinctive capability in the value generation because they are inimitable, untradeable, time-dependent and socially complex (Peterson, 2004b).

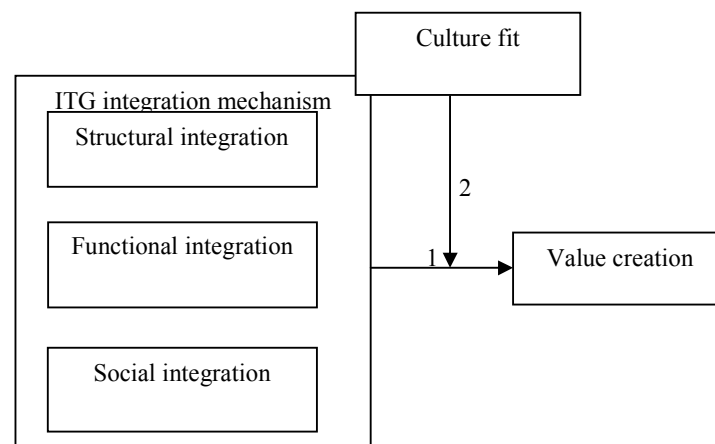


Figure 1. Conceptual framework of ITG value creation (adapted from Melville, et al., (2004); Peterson, et al., (2000))

According to the principle of the RBV, within the scope of ITG, neither ITG “best practices” nor transferable IT resources necessarily lead to the generation of organizational value. Instead, the commitment of the board and stakeholders to resource allocation, as well as integrated coordination, improve the complexity and the sustainability of institutions. ITG thus represents the configurational combination of IT resources and complementary organizational resources (i.e. human resources and IT enabled intangibles), which constitute a firm’s highly distinctive capabilities for IT value creation. Therefore, this paper proposes the following conceptual model (Figure 1) which illustrates the link between ITG integration and value creation. Furthermore, the macro environment plays a fundamental role in IT value delivery. Ribbers et al. (2002) illustrated that ITG performance is affected by contextual uncertainty, which, in this research, translates to a focus on cultural variation. Thus, to establish a holistic understanding of how ITG integration

works in a given cultural context, the fit between culture dimensions and ITG integration mechanisms are adopted as an important moderating factor(s) of ITG value creation.

ITG Integration and IT value creation

According to Peterson et al, (2000), the complexity of integration is positively associated with ITG performance. Thus, ITG integration can be operationalized as a series of objectives and tasks through which the complexity and the level of network coordination are improved (see Table 3). For example, improving formal and informal structural mechanisms for better accountability to stakeholders and IT and business personnel, establishing strategic dialogue and informal communication, achieving low levels of formalization while high levels of stockholder participation and shared understanding. An awareness of the social capability in IT value studies appears to be increasing. The diverse value of stakeholders, multi-layer ITG coordination, and social capabilities may provide more complex allocations and combinations of resources that are contingent on the firm's environment and strategies. These characteristics can be a type of highly influential resource as they span sections and cross hierarchies to build a firm's core competency as a whole (Peterson, 2004a). As such, ITG involves comprehensive and complex managerial activities that assemble the firm's core competencies to achieve optimal strategic value. Thus:

Proposition 1: The integration mechanisms of ITG shape the firm's ability to create and capture strategic organizational value from IT.

ITG integration and culture

Only through computerizing the business process is inadequate for a firm to achieve the best IT performance, its cultural context need to be taken into consideration (Martinsons & Davison, 2007). Likewise, ITG integration shapes the firm-specific capabilities (Peterson, 2004a), but it is not sufficient in predicting the outcomes without considering the potential moderation of socio-cultural factors. The consideration of IT value creation in the context of a country's characteristics leads firm-specific resources to be considered from a contextual perspective. Ribbers, Peterson and Parker (2002) claimed that social intervention moderated the performance of ITG process. Similarly, Wade and Hulland (2004), on the basis of the RBV, indicated that despite the difference in the value-adding attributes, all types of resources show improvement in their value-adding effect when encountering environmental complexities.

IS resources have a joint effect and the complementarity between them ensures the likelihood of strategic benefits (Melville, et al., 2004; Wade & Hulland, 2004). The fit between a firm's ITG integration mechanisms and national culture can be conceptualized as the complement between firm-specific capabilities and country-specific capability. Furthermore, because it involves more complex social coordination, it thereby produces higher distinctive capabilities than ITG itself. In the context of ITG cross-country transfer, we would argue that the cultural differences between the country where ITG integration mechanisms are developed and the country where these mechanisms are deployed differentiate the effect of ITG methodologies. Given cultural difference can be regarded as a source of environmental complexity, and there is turbulence caused by cross-country transfer of ITG deployment and integration mechanisms, this paper presents the following proposition:

Proposition 2: National culture moderates a firm's ability that is shaped by ITG integration mechanisms in creating and capturing strategic organizational value from IT.

Cultural dimensions present different degrees of congruence with each layer of coordination involved in ITG integration mechanisms, thus demonstrate different complementarity to the performance of these capabilities. For example, cultures with high scores in Hofstede's PWI dimension facilitate vertical communication to maintain the *status quo*, whilst inhibit horizontal communication, formal IS planning, and participation (Martinsons & Davison, 2007). On the other hand, Ribbers, et al (2002) argue that social capabilities will be more effective while formalized methodologies will be ineffective when there is unpredictability and variability resulting from environmental dynamic. This implies that there might be more difficulties for formalized methodologies and structural decision-making in low UAI cultures.

CONCLUSION

It is therefore our assertion that national culture influences ITG performance, because the congruence between culture and ITG mechanisms may improve the likelihood of effective ITG performance. ITG plays an essential role between IT assets and the expected performance of value creation by providing complex structural, functional, and social coordination. We conceptualized ITG as a set of firm-specific resources and considered culture, as a highly influential determinant of ITG performance. Thus, we propose a holistic framework of ITG value creation, which demonstrates that the combination of structural, functional, social capabilities and the moderation of culture fit leads to strategic value creation. Hence, this paper significantly improves the understanding of how ITG could effectively operate in different socio-cultural contexts. Moreover, this research is possibly one of the earliest studies to consider national cultural influences in the ITG domain. In an era of IT dominance and globalization, it is anticipated that the research on ITG-

culture interaction will be of benefit to the growing body of knowledge on IT value, strategic IT use, and corporate governance.

LIMITATION AND FUTURE RESEARCH

There are a series of limitations in this paper. First, empirical evidence is essential to validate the conceptual model proposed. ITG researchers are struggling with the scarcity of empirical literature. We invite researchers to test the framework proposed in different cultures and by incorporating a rich set of cultural values and dimensions through the use of survey or case study research. We intend to also pursue this in the near future. Second, the antecedents of the integration mechanism need to be further clarified. Third, although ITG components can be mapped as individual contributors of value creation, linkages between these components are not well understood. Further analysis based on organizational economics paradigms should be encouraged as it may improve the applicability of the framework proposed in this research.

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