

IT Governance Landscape: Toward Understanding the Effective IT Governance Decision-Making

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ABSTRACT

In recent years, IT governance has made it possible for organizations to meet and realize their IT business value, and mitigate the risk associated with IT to fulfill different strategic objectives. However, the challenges for effectively governing an organization's Information Technology (IT) remain a major concern for the Board and executive management in many organizations today. A number of researchers have attempted to develop holistic IT governance frameworks but there is still much room for improvement in fusing IT governance into one process. More considerable work is needed to further the understanding of IT governance, and to develop a successful holistic instrument of IT governance. The aim of this paper is to provide an understanding of IT/ Business decision-making based on IT governance perspective and offers more precise insights into how the decision of IT and IT governance correlate to investment. Most organizations are currently searching for methods and practices for the solution of decision-making, optimization of IT processes with a key of IT governance component. We proposed an instrument of ITG decision-making called '*Effective ITG landscape*'. It can help managers to have a good understanding of IT governance and provides guidance for IT governance implementing.

Key-Words: - Governance, Corporate Governance, IT governance, IT decision-making, Management levels.

1. Introduction

Information Technology (IT) has become crucial function for the success, support, enable enterprise goals, growth of the business and that approach to IT is becoming one of the main key assets of organizational today (Park, H.Y., et al, 2006). Thus, the vital role of IT in enterprises has led to the view that IT governance must be implemented to sustain and enable business objectives and to mitigate associated risks. Some studies have shown that companies with good IT governance models present superior returns on their IT investments than their competitors, especially because they make better IT decisions (Weill P., 2004), while Weil & Ross (2004) point out IT governance directly influences the benefits generated by organizational IT

investments. Thus, ITG is the integrated arm of corporate governance that is focused on IT related investment decisions driven by corporate and business unit needs (Brisebois, et al., 2007).

According to the IT Governance Institute (ITGI, 2006), the term can be defined as “an integral part of enterprise governance and consists of the leadership and organizational structures and processes ensure that the organization’s IT sustains and extends the organization’s strategies and objectives”. However, the mechanisms of IT governance are applied much more extensively in large enterprises than in SMEs (Huang, Zmud, et al., 2010). Since, Effective IT governance have increase stakeholder value (Henderson & Venkatraman, 1999) by generate real business benefits (such as reputation, trust, competitive positions, product leadership, time-to-market, and prevent higher than expected costs, lower-than-expected quality, and/or failure of IT initiatives).

Weill P., (1998) declare that IT governance encompasses mechanisms that enable business and IT executives to formulate policies and procedures, implement them in specific applications, and monitor outcomes. Existing mechanisms of IT governance, such as the way critical IT processes are conducted, the creation of management guidelines to accompany these IT processes, and the assignment of responsibilities and accountability seem to fail in SMEs, where decision-making is mostly centred round one person (Levy & Powell, 2008). Weil & Ross, (2004) figure out that committees, budgeting and approval processes, and participation of IT area in strategy development are a few of the IT governance mechanisms that encourage behavior consistent with the organization's mission, strategy, values, norms, and culture.

It is therefore essential for a company to have a proper Information Technology Governance plan. As IT is an integral part of Corporate Governance, any Information Technology Governance model (plan) must reflect the characteristics of Corporate Governance. This paper presents ‘Effective ITG landscape’. We start of by identifying some principles of Corporate Governance, and then integrate these core principles into the presented landscape.

2. Literature Review

Corporations make huge investments in IT in order to support, sustain and grow of business. Despite the current economic slowdown, (Gartner 2010) indicate that worldwide IT spending reached \$3.4 trillion in 2010, a 4.6 percent increase from 2009; and large portion of IT investment does not guarantee high returns. Many organizations realize IT increasingly represents not only a significant expense but also one of their main organizational assets, decisions regarding IT adoption, implementation, and management are still complex and lot of money is wasted on bad IT acquisitions (Jeffery& Leliveld, 2004), (McAfee, 2004).

A number of strategic risks can result if IT is not appropriately integrated, including failure of major projects, competitive disadvantage, and regulatory problems. Other risks include lack of business prioritization on IT projects resulting in wasted IT investments, the failure of IT to deliver business value, and loss of revenues and market share (Peterson R., 2004). According to Maizlish & Handler, (2005), 72% of IT projects were late, over budget, lacked functionality, or never delivered; of the “successful” projects (28%), 45% were over budget and 68% took longer than planned. Furthermore, they reveal that 50% of managers said they could have achieved the same results at 50% of the cost, and only 52% of the projects resulted in increased strategic value. These numbers are particularly alarming because IT projects and initiatives are supposed to boost growth, modernization, and organizational competitiveness.

IT investments making up a significant portion of corporate budgets and increased external pressure to control and monitor costs, effective IT governance is seen as a vital way to ensure returns on IT investments and improved organizational performance (Jacobson, 2009). Concern about how IT and investments in IT are

managed led executives to recognize that “getting IT right” this time will not be about technology, but about the way IT is governed (Peterson R., 2004). Thus, IT is fundamental for managing enterprise resources, dealing with suppliers and customers, and enabling increasingly global transactions (Eric, J.B & William 2009) and therefore uncoordinated IT investments have the potential to waste government resources.

Subsequently, ITG has been raised in priority of higher returns on assets at a time while business increasingly invests money on technology. Several definitions have been consensus on the ITG and the need for good IT governance.

2.1 Corporate Governance (CG)

Contemporary enterprises rely on IT to improve the business activities and to get or even support a competitive advantage in order to achieving their mission and goals. IT always is governance discussion. The concept of Governance has several meanings. Better understanding of corporate governance principle have high impact on well articulate the IT governance framework perform.

Cutting, B. & Kouzmin (2001) presents the following generic meaning to the governance meaning:

- Governance is a system, pattern or structure of participants in such a way that they are a distinctive unit with some notion of a shared purpose.
- It roles played by the individual participants or elements and its applicable at each level of the individual, the group, organization or company, society or nation.
- In other words; It’s relate to the rule, management, regulation, direction, control or leadership of the affairs or participants of such units.

Edwards, (2003) identify corporate governance (CG) from organizational perspective as concerned with how entities are structured and managed in such a way as to lead to effective performance in achieving desired outcomes and satisfaction of stakeholders. Also the (King report 2, 2002) indicates that Corporate Governance includes two important aspects – that of ‘directing or planning’ and ‘controlling or monitoring’ the organization. In other words, Governance closely link to controlling and regulating in order to create a sense of order, and compliance for standards and fair practices.

(Turbit, 2005a) declares that effective governance will provide the following benefits:

- Standardized processes and procedures allowing for better IT management
- Maximized return on investment
- A closer alignment with the business and corporate objectives and therefore more effective IT
- Consistency with IT strategies and policies
- Accountability and transparency in decision making regarding IT.

While, Rossouw, (2006) presented the corporate governance model using the direct-control cycle based on (King 2, 2002) who indicates the important aspects of corporate governance. In addition, he also indicates the purpose of governance is to set standards and procedures and ensure they are being followed as well metrics should collect to ensure the goals of the initiative are met. Majority of governance definition focus on two elements: decision- making and authority. Anyway; in the chart, (Turbit, 2005b) illustrates various components of the process to which governance applies.

| <i>Component</i> | <i>Governance applies through</i> |
|------------------|--|
| Roles | <ul style="list-style-type: none"> • Defined responsibilities • Accountability |
| Forums | <ul style="list-style-type: none"> • Purpose of each forum or communication tool • Authority to make decisions· Participants who should contribute |
| Methodologies | <ul style="list-style-type: none"> • Compliance with standard processes • Use of standard documentation |
| Standards | <ul style="list-style-type: none"> • Reference documents for the consistent use of IT. |
| Tools | <ul style="list-style-type: none"> • Tools to support projects • Tools to support operational areas |
| Compliance | <ul style="list-style-type: none"> • Collection and analysis of metrics • Audits of projects |

Table 1: Governance Process measures.

Therefore, Governance answers the questions: What decisions must be made? Who should make these decisions? How decisions will be made? What is the process for monitoring results?”. In order for decisions to be made, governance must also identify the arrangement of authority patterns over IT activities across an organization. The three most common authority patterns in the governmental context are (1) centralized, (2) decentralized, and (3) federated.

2.2 Overview of IT Governance (ITG)

Since the 1990s, ITG has been raised as priority and contribute to higher returns on assets at a time while business increasingly invests money on technology. The pervasive use of technology has created a critical dependency on IT that calls for a specific focus on IT governance which been by the need for the transparency of enterprise risks and the protection of shareholder value (ITGI, 2003). Therefore, IT governance has been identified as an appropriate solution to deal with increasing IT changes and complexity.

Weil & Ross, (2004) introduced a widely used definition of IT governance as ‘specifying the decision rights and accountability framework to encourage the desirable behavior in the use of IT’. Similarly, IT Governance is the process by which firms align IT actions with their performance goals and assign accountability for those actions and their outcomes. In other words, they declared IT governance as dealing with the "distribution of IT decision-making rights and accountability framework for encouraging desirable behaviours’ in the use of IT. They focused on the implementation of structures and processes in an IT system.

Peterson R., (2004) defined *IT governance* as “the system by which an organization’s IT portfolio is directed and controlled”. He also adds that "IT governance describes the distribution of IT decision-making rights and responsibilities among different stakeholders in the enterprise, and defines the procedures and mechanisms for making and monitoring strategic IT decisions". Van Grembergen & De Haes, (2009) stated that “IT governance is the organizational capacity exercised by the board, executive management, and IT management to control the formulation of and implementation of IT strategy and in this way ensure the fusion of business and IT”. In addition, Sambamurthy & Zmud (1999) stated, “IT governance refers to the locus of enterprise decision-making authority for core IT activities”. Sambamurthy & Zmud (1999) describes IT governance as a measure of organizational authority for IT activities.

The Information Technology (ITGI, 2005d) defined IT governance as ‘the responsibility of executives and the board of directors, and consists of the leadership, organizational structures and processes that ensure that the enterprise’s IT sustains and extends the organization is strategic and objectives’. While; (Schwartz, 2007) defined ITG as ‘an organizational body or group focused on aligning the strategy of an IT department with the overall organizational goals and strategies’. In addition to decision-making, Schwartz, (2007) stressed the need of the governance body implementing mechanisms to measure performance of the IT department (such as whether an IT investment is worth the return, whether performance is being properly measured by the IT management, and whether the IT department functioning well overall.

All these definitions emphasize on the responsibility of the executive-level decision makers within the organization implementing IT governance. Many of these definitions focus on the primacy of alignment between the business, operational portion of the organization and its IT portfolios while other seen IT governance as a framework for decision making which moves the entire organization toward making perfect decisions affecting strategic use of IT, both currently and in the future (Weil & Ross, 2004).

According to Weil & Ross, (2004), good IT governance is a subset of good corporate governance, and at its core, a good IT governance framework will cause the organization to use specific structures and mechanisms to align its enterprise IT strategy with its business performance goals. They developed robust IT governance framework thru a matrix that defined five interconnected IT decisions that firms make in conducting good IT governance, namely ‘IT principles’, ‘IT architecture’, ‘IT infrastructure’, ‘business application needs’, and ‘IT investment and prioritization’. The IT decisions represent one axis of the IT governance matrix. The other axis represents the political model of IT decision rights within an organization. These six political models of decision accountability include:

- ✓ Business monarchy, which is represented by corporate business groups or individual executives,
- ✓ the IT monarchy, which is made up of groups or individual IT executives,
- ✓ with the feudal style represented by “business unit leaders, key process owners, or their delegates”,
- ✓ the ‘federal archetype’, which may include a combination of business and IT executives,
- ✓ the ‘IT duopoly model’, which primarily includes IT executives and “one other group” (such as a member of the corporate staff, a business unit leader, or “process leaders,”), and
- ✓ Finally, the “anarchy” model, where each individual user has decision rights.

| | | DECISION | | | | | | | | | | | |
|----------------------|-------------------|---------------|------------------------|-----------------|------------|------------------------------|------------|----------------------------|------------------------|--------------------------------|----------|---------------------------|--|
| | | IT Principles | | IT Architecture | | IT Infrastructure Strategies | | Business Application Needs | | IT Investment | | | |
| | | Input | Decision | Input | Decision | Input | Decision | Input | Decision | Input | Decision | | |
| GOVERNANCE ARCHETYPE | Business Monarchy | | | | | | | | | | | | |
| | IT Monarchy | | | Arch. team | IT leaders | Comp. center | IT leaders | | | | | | |
| | Feudal | Business unit | | | | | | | Business leaders | | | | |
| | Federal | | | | | | | | | Senior execs. Business leaders | | Corp. IT Business leaders | |
| | Duopoly | | Senior execs. Corp. IT | | | | | | Senior execs. Corp. IT | | | | |

Most common pattern for all firms.

Fig.1 ITgovernance matrix.

Their Studies have conducted confirm that firms with only a few number of well-articulated IT principles perform consistently better than those that do not have a well-articulated plan. Weil & Ross (2004)

concluded that a firm's IT architectural decisions provide the "organizing logic" that leads to a "road map" for the IT principles, the IT infrastructure decisions provide a "foundation" for providing the firm's current IT resources and future potential, the decisions for business application needs foster strategic IT and business alignment, and IT investment and prioritization decisions provide the appropriate funding levels that communicate to the entire firm the specific importance various projects have in helping to achieve the organizations objectives.

Thereby, we forage our definition to IT governance as following "IT Governance is an oversight system of decision-making and accountability for benefits realization over three level of organization; strategic level (leadership), management level (organization structure) and operation level (process). It involves overseeing of plans, operations and delivery of services to ensure that lead to an effective performance in achieving desired outcomes and satisfaction of stakeholders".

3. Representation Landscape solution for the IT governance

Most IT systems, applications, infrastructure and large-scale computer networks computer networks were becoming more complex and sophisticated and that have major impact of change perception to accept IT governance that would give their organizations significant competitive and strategic advantages. Meanwhile; IT Governance has emerged as an important issue for government organization, and there are many ways to govern IT and many standards developed by IT professionals, there is still not one size fits all way to IT Governance. The business must take accountability for business information technology decisions by governing IT and when the business does not step up and govern IT, then IT must advocate and foster this IT governance. Thus, IT governance has become a major control framework of concern to both the private and public sectors, including governments around the world such as COBIT, ITIL. However, IT Governance in large organizations cannot be compared to SMEs, since we are dealing with a completely different economic, cultural and managerial environment. Organizational structure, theories and practices and organizational behaviour may not be valid for each other. Also, companies differ in size, location, ownership structure, financial performance, maturity and management style. It would be ideal to clearly define a company before starting any research on them, but this is not straightforward.

4. Effective ITGovernance Landscape Aspect.

IT governance is a shared decision-making process used by corporate executives and focused specifically on ensuring that investments into IT can generate business value (Brisebois, et al., 2007), (Winniford, et al., 2009). The IT governance process can take on various forms within different companies, depending upon whether IT management is a centralized organization, decentralized, or a hybrid of both within the corporate entity. Forming to previous definitions, an IT governance decision require a committee consisting of boards and executives from all internal business units. IT governance is the responsibility of the board and executive management as an integral part of overall enterprise governance. Governance reflects the leadership and organizational structures and processes that ensure IT sustains and extends the organization's strategies and objectives. This approach, while not specifically mandating board-level control of IT, highlights the importance of integrating IT management and direction with the rest of the firm. IT governance implementation requires defining structure (roles and responsibilities), processes and relational mechanisms at each of the operational, management and strategic levels within an enterprise.

We propose '*Effective ITG landscape*' which is a decision-making instrument of IT governance' for organizations (as shown in Fig.2) stating approached how the decision-making be made and what role and responsibilities of each level of organization and the process of sorting decisions and assigning them to particular levels of government.

'Effective ITG landscape' reflects the pattern of authority and responsibility for organizing to the key IT functions in an organization. It refer to the reality that IT governance involves all levels of activities in a company. It's covers three well known levels of management – 'Strategic', 'Tactical' and 'Operational'. The three levels are not clearly delineated – actually they do overlap in most cases. This is normal, and reflects reality. Across these three levels, two directions of distinctive 'action'. These actions are: 1- 'Direct or top-down' and 2- 'Control or Bottom up', "Effective ITG landscape" as shown in (Fig 2 and Fig 3).

- a) 'Top down'- a component that clearly directs activities, in the sense that it must be very clearly specified, through a series of strategic direction, what must be done. This is indicate by the arrow on the left hand side pointing downward.
- b) 'Bottom up'- a component where compliance to the execution of the strategic direction are measured, monitored and reported. This is indicate by the right hand side pointing up.

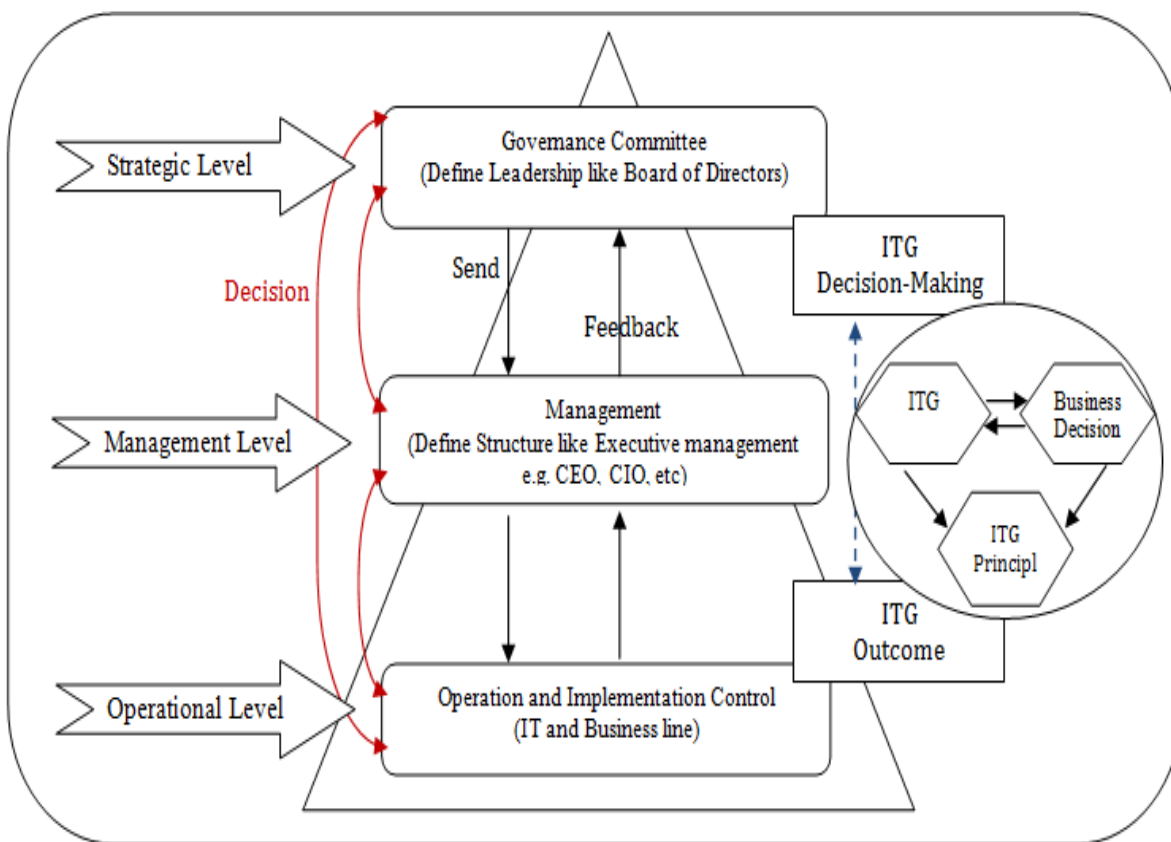


Fig.2 'ITG Landscape'.

Most of the organizations' leadership team has been presented in three major layers. IT governance is presented in each of these layers, which indicates that both IT and business parties have to be involved in the IT governance processes and their roles and responsibilities should be defined within the framework.

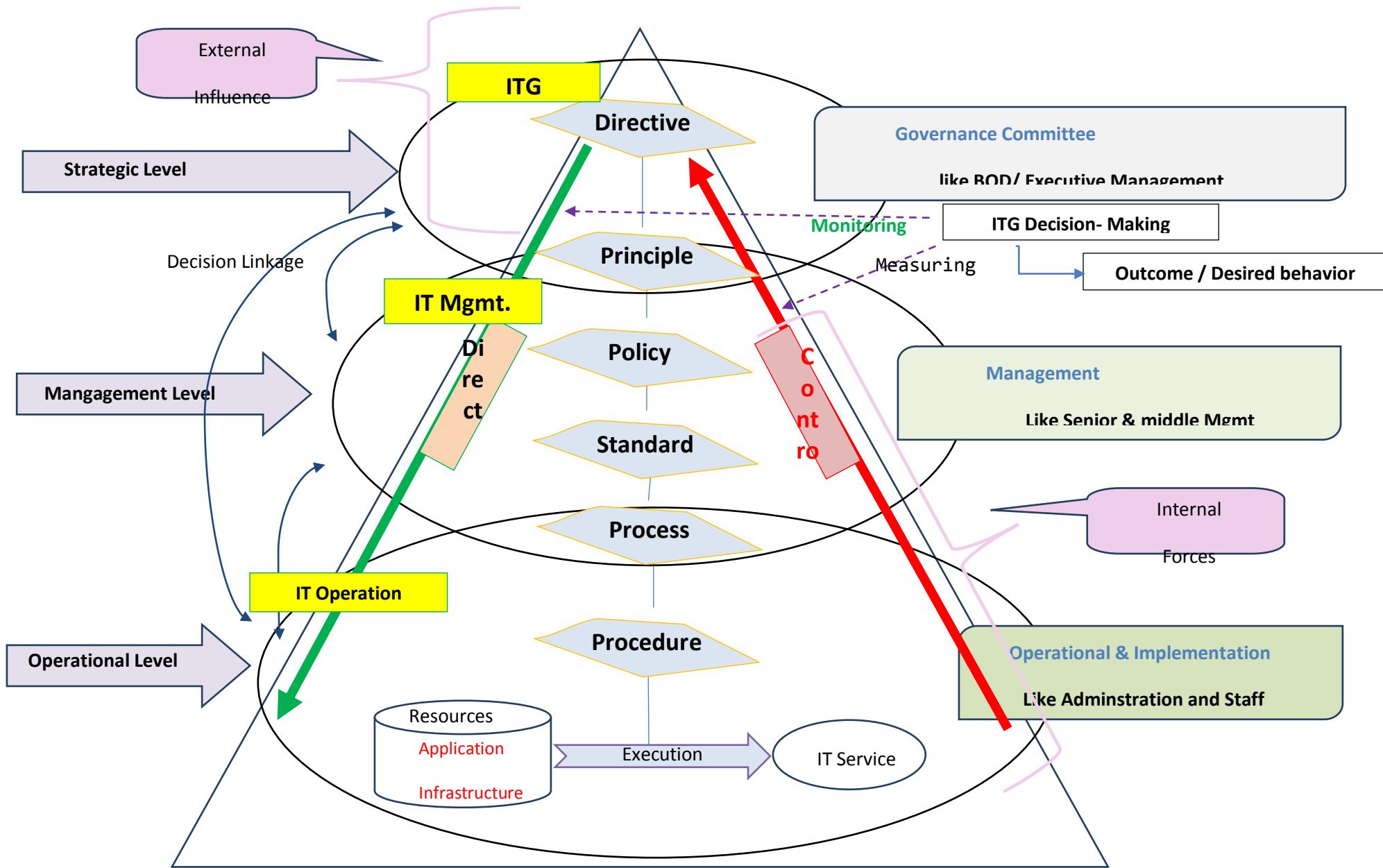


Fig3 'Effective ITG decision based on ITG Landscape'.

Corporate Governance includes two important aspects – that of directing and controlling the organization which take place over all management levels of company and Corporate Governance consists of the set of policies and internal controls by which organizations, irrespective of size or form, are directed and managed. Therefore; principles of ‘directing or planning’ and ‘controlling or monitoring’ outcomes are clear. In other words; the three management levels are indicating the governance aspect of ‘director or planning’ and ‘control or monitoring’ occurs on all three management levels. This will be discussing according to management levels in more details.

The Board needs to provide strategic direction or guidance in the way the organization should operate. These strategic direction need to be expanded into policies, company standards and procedures. Typically, the strategic direction should lead to organizational policies, these policies to organizational standards and these standards to operational procedures. This ‘expansion’ of company directives into company policies, standards and procedures does provide the lower levels of the organization with concrete plans to align organizational operations, and covers all levels of management in the company. The Board also needs to control the organization. This means that the Board should ensure that the organization comply with all applicable country and industry laws and regulations as well as all organizational strategic direction, policies, company standards and procedures defined. Compliance to organizational procedures, standards, policies and directives should be ensured otherwise the Board could not claim that it is in ‘control over its affairs’ (King Report, 2002). Again, such control should take place over all management levels of the company.

A. Strategic level

❖ *Direct (Send)*

On the strategic level, the Board must clearly indicate how important these strategic direction of the company, and what part they play in the strategic vision of the company. Therefore, they must indicate how important objectives are to the company. Such decisions are based on several, factors (drivers) which the Top Management must take into account.

❖ *Control (Feedback)*

The arrow on the right hand side, from the bottom upwards, indicating that reports at the bottom are reflecting compliance and conformance to relevant strategic direction are extend on this level. Such reports should therefore reflect the relevant risk situations. While reports get less and less detailed as the process moves upwards through the levels. This indicates that reporting become progressively less detailed and high levelled.

B. Management level

❖ *Direct*

On the tactical level, the strategic direction coming from the Board, acts as inputs and are ‘expanded’ into sets of relevant decision which are policies, company standards and procedures. Set of documents mention above is the output of this level and reflect the expectations of middle management of how they want more detailed and specific that those provided by the Board’s strategic direction, but mutual alignment is again essential.

❖ *Control*

Tactical Management reports, indicating levels of compliance and conformance, are produced for line and business management on these two levels (parts of this may already happen on the Operational level. The measurement data is then aggregated or abstracted to perform measurement against the requirements of the Top Management Directives. The operational measurement data is compiled and integrated to perform measurement and monitoring against the requirements of the relevant policies, procedures and standards. Top management reports, indicating levels of compliance and conformance, are produced.

C. Operational level

❖ *Direct*

On the operational level, the input to this level is the set of policies, standards and procedures coming from middle management. These inputs are now again expanded into sets of administrative guidelines and administrative procedures – again totally aligned with the input documents (in some cases, this final refinement is done on the tactical level). The output on this level is therefore these low-level administrative documents. These outputs now reflect the operating procedures of precisely how things must be done, and form the basis of execution on the lowest level.

❖ *Control*

Anyway, report of measurement data is extracted from a wide range of entities. This can be done electronically where possible from log files of operating systems, databases, firewalls and many other forms of utility and specialized software sources. Some data which cannot be sourced electronically is collected via interviews, questionnaires, inspections, etc.

External Influences- Six key external environments to the dynamic system that shape the overall business environment. These six external forces create change to in the relationships between business, government, and societies. These six forces: (1) the Economic environment, (2) the Technological environment, (3) the Cultural environment, (4) the Government environment, (5) the Legal environment, and (6) the Natural environment (John F., George A., 2014).

Internal Forces- corporations have internal influences that shape their actions. The forces may affect the power of leadership style on three layers of management and hereby today work forces are identified by six forces: (1) demographic change, (2) technological change, (3) structural change, (4) competitive pressures, (5) reorganizational of work, and (6) government intervention (John F., George A., 2014).

6. Conclusion

IT governance is about assigning decision-making accountability and constructing control frameworks, but it can be so much more. If enterprises set aside the committees and the policies and standards for a moment, they could see the enormous potential of the principles of IT governance. If everyone, reply on the five principles of IT governance it would have a huge influence on their day-to-day behaviours and their resulting decisions. We hope that the contributions of this paper useful to both scholars and executives striving to understand the effective IT decision-making based on IT governance style. This paper will therefore be the start for a new area of research within the rich field of ITG and may hopefully be a basis for new insights to come.

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