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Assessment of IT governance in organizations: A simple integrated approach

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ABSTRACT

There are various methods available for dealing with IT governance. These methods are diversified, and in some cases lengthy and complicated. This paper is concerned with providing a unified simple approach for IT governance assessment. The approach is developed and tested through the following three main steps: (1) highlighting the basic requirements of IT governance considering key available methods; (2) designing the target approach that integrates these requirements and uses knowledge management principles; and (3) illustrating the use of the approach through a typical illustrative application. The approach uses the "STOPE: Strategy, Technology, Organization, People and Environment" view to integrate the issues involved, the knowledge management principles as an added value, and the six-sigma phases as a cyclic improvement process. The work provides "fifty" main IT governance controls; and these enable finding key strengths and weaknesses of IT governance in organizations from which development directions can be derived. It should be noted that considering knowledge management, and people as a main domain in the integration view, illustrate special emphasis of the human factor in IT governance.

1. Introduction

This section provides an entrance to the work presented in this paper through four main steps. In the first step, it attempts to clarify the confusion between the terms "IT: Information Technology" and "ICT: Information and Communication Technology", and also to emphasize the importance of IT and ICT use. In the second step it introduces IT governance as a mean for an efficient and effective use of IT. In the third step it considers the correlation between the knowledge management principles and IT use and consequently IT governance. Finally, in the fourth step, it introduces the work presented in this paper.

1.1. IT and ICT and their benefits

The terms: "IT" and "ICT" are becoming of interchangeable nature. The "ISO: International Standards Organization" defines IT, in its recommended standard (ISO 38500, 2008), as "resources required to acquire, process, store and disseminate information". It adds that this includes "CT: Communication Technology" and consequently ICT. Like the ISO standard, this paper will use IT to mean both IT and CT or ICT.

The use of IT has proved to deliver various benefits at various levels including: personal, business, government, and society as a whole. These benefits have been viewed as consisting of "five" main features. The first is saving time and leading to "faster" achievements; the second is saving cost through "cheaper" business activities. The third is providing services with "better" quality; while the fourth is opening new opportunities by introducing "different" capabilities. The fifth is enhancing trust by providing new "security" measures that are not feasible without IT. These benefits are summarized in the abbreviation "FCBDS" (Bakry, 2004).

1.2. IT governance controls

For efficient and effective use of IT, various national and international organizations have issued a number of documents concerned with providing IT governance recommendations. In this respect, the key documents among these include: "COBIT: Control Objectives for Information and Related Technologies" of the American "Information System Audit and Control Association" (Bakry & Alfantookh, 2006; COBIT 5, 2013); "ITIL: Information Technology Infrastructure Library" of the British "OGC: Office of Government Commerce" (Alfantookh & Bakry, 2009; ITIL, 2013); "ISO 20000" standard concerned with IT services management (ISO 20000, 2005); "ISO 38500" standard associated with the principle of IT governance (ISO 38500, 2008); and "MIT: Massachusetts Institute

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of Technology" work on IT governance (Weill & Ross, 2004). These recommendations are useful as references to the assessment of IT governance in organizations, where the outcomes of such assessments support planning and future improvements.

1.3. Knowledge management and IT use

Knowledge management has been associated with the use of IT in different fields for two main reasons. On the one hand, the use of IT supports the effectiveness of the knowledge activities required by knowledge management including: knowledge production, diffusion and utilization. On the other hand, the use of the knowledge management principles in IT governance enhances the effectiveness of IT use (Bin-Abbas & Bakry, 2012). Therefore the knowledge management principles need to be emphasized in IT governance for enhanced IT benefits in organizations working in different fields.

1.4. The presented work

The problem with using the available IT governance recommendations, as assessment references is that they are: diversified; and in some cases based on lengthy and complicated methods. In addition, these recommendations do not provide enough attention to the knowledge management principles. Here therefore comes the need to unify and simplify IT governance assessments, and also to enhance such assessments by considering the knowledge management principles.

This paper provides a new approach that attempts to integrate the main controls associated with the basic IT governance requirements, using the available key recommendations; while also emphasizing adherence to the knowledge management principles. This approach would enable finding the key strengths and weaknesses of IT governance in organizations, upon which future development directions can be derived.

For the development of the target approach, the following phases have been considered:

- highlighting the basic requirements of IT governance considering the key available methods and recommendations mentioned above;
- designing a simple unified structured assessment framework that integrates these requirements and considers knowledge management principles; and
- illustrating the use of the framework through a typical application.
- The following parts of the paper address each of these phases.

2. Key IT governance methods

The key available IT governance methods mentioned above are addressed in the following. The basic principles, issues and requirements of each of these methods are emphasized.

2.1. COBIT

IT governance according to COBIT is concerned with providing "support to the business requirements" of the organization concerned (Bakry & Alfantookh, 2006; COBIT, 2013; ITGI, 2005). COBIT provides its governance directions according to Schwartz-Deming process of "PDCA: Plan, Do, Check, Act" (De Feo & Barnard, 2004) considering the available IT and IT related resources, and emphasizing required performance criteria. A general view of COBIT is presented in Table 1.

2.2. ITIL and ISO 20000

ISO 20000 is concerned with IT service management is a trimmed version of the British ITIL concerned with IT services in organizations (Alfantookh & Bakry, 2009; ITIL, 2013; OGC, 2005). As we are concerned with the basic requirements, ISO 20000 is emphasized here (ISO 20000, 2005). Its target is to provide "effective management and implementation of IT services". Like COBIT its continuous development process is that of Deming's "PDCA" (De Feo & Barnard, 2004). It associates its governance directions with the basic needs and management requirements given in Table 2.

2.3. ISO 38500

ISO 38500 provides guiding principles on "effective, efficient and acceptable use of IT" (ISO 38500, 2008). These principles are associated with six basic issues on the one hand, and with a development process on the other. The basic issues include: "responsibility, strategy, acquisition, performance, conformance and human behaviour". The development process is not that of Deming's five phases considered by the above methods, it includes instead the three main cyclic phases of "evaluate, direct and monitor". A general view of the standard is given in Table 3.

2.4. MIT IT governance method

The IT governance research group of the MIT has published a book on its work (Weill & Ross, 2004). It considers the work of IT governance to be "toward desirable behaviour in the use of IT". It specifies three-phase mechanism for this purpose; and it draws a framework for the required activities based on the assets of the organization concerned. It emphasizes decision making concerned with IT to be based on the level of responsibility on the one hand, and the IT issues concerned on the other. It considers IT performance measures to be associated with IT business support. Table 4 summarizes the principles and requirements of MIT IT governance views.

3. An integrated simple approach

The target IT governance assessment approach is described below in terms of the following:

- the **basic principles** upon which the approach is based;
- the **assessment** method used; and
- the basic IT governance **control** requirements considered.

3.1. Basic principles

The targeted IT governance assessment approach is based on the following five main principles:

- *Continuous development*: responding to change and to rising issues and opportunities.
- *Integration of key requirements*: viewing collectively according to a comprehensive scope the basic generic requirements considered by the key methods addressed above, while also emphasizing human involvement.
- *Simplification*: emphasizing basic generic requirements, while leaving details to individual situations.
- *Knowledge management*: activating the role of knowledge and supporting knowledge sharing and collective wisdom among the people involved.