Chapter 14

ICT Management and Compliance: An Action Research Project

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ABSTRACT

This chapter presents an action research study for the integrated management of ICT and standards compliance. The case reports on a technological institute with multiple certifications. There are an increasing number of nonprofit organizations that adopt international standards such as ISO9001. ICT becomes critical in this context and must be integrated with the standards requirements, the stakeholders’ needs, and the organizational processes. Moreover, combining digital- and paper-based compliance brings challenges to the organizational users and to external auditors. The proposed approach guides ICT management in highly regulated contexts. In the practical case, ICT and compliance become two sides of a single coin. The findings may assist nonprofit organizations in dealing with the increasing pressure of regulations worldwide.

INTRODUCTION

The nonprofit organizations must comply with a plethora of regulations. Those regulations may be enforced when concerning the law, but may also be voluntary, when a specific standard, guide, or procedure is adopted. One of the most widespread standards is the ISO9001, guiding companies in the implementation of quality management systems. When adopting ISO 9001, the organizations should place the customer as their main concern, adopt a process approach, and evidence a continuous improvement effort (ISO, 2008). ISO 9001 is increasingly adopted by nonprofit organizations, for example, universities, health care, associations, and research institutions. An example of such cases is presented by White, Samson, Rowland-Jones, & Thomas (2009). The standard presents several benefits for management development and process improvement, for instance, identification...
of process weaknesses, task duplications, and ICT adoption to solve data duplication problems (White et al., 2009).

ICT is critical for compliance and must be integrated in early stages of the design (Bonazzi, Hussami, & Pigneur, 2010). The lack of alignment between ICT and regulations may lead to an increase of bureaucracy, non-conformities in process execution, additional costs for ICT changes, and communication difficulties between ICT managers and other business functions. Modern information systems (IS) are socio-technical (Laudon & Laudon, 2007). For this reason, ICT management must include the necessities of the systems users, the processes that an organization performs, and the context that shapes ICT requirements and goals (Laudon & Laudon, 2007). To take full advantage of ICT, the organizations must develop distinct competences (Morabito, Themistocleous, & Serrano, 2010). There are synergies in managing ICT and organizational management suggested by standards. For example, combining IT plans and quality plans (Jabnoun & Sahraoui, 2004), including ICT experts in the improvement teams (Keith, 1994; Spencer & Duclos, 1998), developing a process approach and managing continuous improvement (Garimella, 2006), exploring a similar culture required by quality and ICT (Fok, Fok, & Hartman, 2001).

In spite of the multiple benefits, there are obstacles in combining ICT management and compliance with quality standards. For example, the different vocabularies by ICT and quality managers, the processes documentation detail that ICT requires (Daghfous & Barkhi, 2009; Li, Markowski, Xu, & Markowski, 2008), the difficulties of managing changes in ICT, and process improvement initiatives (Spencer & Duclos, 1998). There are no approaches to guide companies in achieving the integration benefits (Cunha & Figueiredo, 2005). Moreover, implementing one system does not directly improve the other. A study by Casadesús and Castro (2005) found that in spite of ISO 9001 implementation, companies did not adopt practices to enable ICT, and did not achieved an integration of ICT. Inversely, Perez-Arostegui et al. (2012) have showed that ICT by itself does not improve quality.

This chapter addresses the problem of joint management of ICT and compliance, in the context of ISO 9001. Next section provides the background for the research, introducing ISO 9001 and the challenges for ICT management. An approach is presented to assist organizations in managing ICT and compliance, with an application in a technological institute. The approach is illustrated with a practical example for a core process of the institute, concerning design and development. One of the key aspects is the integration between process documentation and the technological tools. The chapter concludes with a discussion of future research and the study limitations.

BACKGROUND

There are positive and negative aspects in adopting ISO 9001. Nevertheless, there is a consensus among the researchers: ICT is a key element for ISO 9001 adoption and organizational compliance.

The Benefits and Pitfalls of ISO 9001

Organizational standards such as the ISO 9001 are used worldwide to improve quality management (ISO, 2012). The first version of the standard was published in 1984, and the current version of 2008, is adopted by over one million organizations, in 180 countries. The standard has eight clauses of requirements, including scope; normative references; terms and definitions; general and documentation requirements of the quality management system; management responsibility and commitment; resource management; product realization; measurement, analysis and improvement. The PDCA is the suggested approach for continuous improvement (ISO, 2008), in four iterative steps: Plan – establish the objectives and processes,
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