The Main Concepts Behind the Dematerialization of Business Processes

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INTRODUCTION

Currently, Information and Communication Technologies (ICTs) represent an important tool for all the organizations that intend to improve their performance through a better management of their information processes. The dematerialization of business processes emerges as one solution that promotes a clear, structured and transparent process, especially when the problems are associated with the existence of documentation in a paper format. It comprises a range of practices, such as electronic document management, workflow management and reengineering of business processes, aiming the elimination of inefficiencies caused by the circulation of information in paper format, as well as the elimination of resources associated with the maintenance and retrieval of information in that format. The increase in productivity that often is expected to result with dematerialization of business processes comes from the (i) decrease in the amount of time to perform the tasks, (ii) effectiveness of human resources allocated to those tasks, (iii) quick access to information, and also (iv) improvement of communication flow between different services.

The dematerialization of business processes is not a new concept. It is already implemented in different areas, particularly in the public sector. However, due the lack of a theoretical framework, each organization makes its own interpretation of the concept and adopts its own methodologies and technologies. In this context, it is very important to clarify the concept of dematerialization of business processes in order to achieve a common understanding.

This chapter aims to contribute to this knowledge domain, providing an overview of the main concepts behind the dematerialization of business processes, giving special attention to the vital role of ICTs, through the analysis of some tools that can be used to support the dematerialization of business processes. In this way, the main goal is to help organizations understanding the benefits and commitments that can arise from the modernization of their processes.

INTRODUCING THE DEMATERIALIZATION OF BUSINESS PROCESSES

The dematerialization of business processes is a relatively new concept in the domain of scientific research. Nevertheless, it is possible to find evidences of its implementation, namely in the public sector through the topic known as "e-governance".

Usually, the concept of dematerialization can be defined as the process of scanning paper documents to obtain electronic documents, in order to eliminate the circulation of paper. According to Siatiras (2004), currently the information is probably one of the most important assets in the organizations, and therefore its efficient management is very important.

However, the dematerialization of business processes is not limited to scanning and managing documents, it also allows the organization to manage its workflows. In this sense, the dematerialization of business processes refers to the optimization of information circuits through technological applications, where the information is communicated and stored in digital format in order to expedite and facilitate the monitoring of processes, always ensuring the legal value of those electronic documents (Ávila, Teixeira, & Almeida, in press). The main gains associated with the dematerialization of business processes are the facility in search documents (Ashby, 2011; Schnitzer, 2010; Want, 2009), and the concurrent access by multiple users to the same document regardless their geographic location (Ashby, 2011; Downing, 2006). This is even more important for organizations that are active in different locations and need to exchange information in a regular basis.

The dematerialization of business processes can also be a mean to improve customer service, since the information is readily available on the computer without the need for search in paper files, allowing an immediate response to customer requests and a greater flexibility to respond to a variety of needs (Burns, 2009; Downing, 2006; Medina & Fenner, 2005). Other consequences are the savings in time and costs (Johnston & Bowen, 2005; Schnitzer, 2010; Want, 2009) and the improvement in the quality of processes and their outcomes (Ashby, 2011; Johnston & Bowen, 2005). At the human resources level, it can encourage greater communication and collaboration between people, creating a more harmonious work environment (Ashby, 2011; Siatiras, 2004; Want, 2009).

Despite the benefits pointed to a project of dematerialization of business processes, it should be noted that this type of project requires some efforts to understand and manage the factors (difficulties), arising from the implementation of this type of projects. One of the most prevalent factors is the time of a transition to a dematerialized environment. The implementation of a dematerialization project must be preceded by a comprehensive and detailed planning process. The transition should be progressive, because it is a slow and gradual process, along which there are a large number of small steps that should be performed (Ashby, 2011; Burns, 2009). In addition, the large investment required in the initial phase (software, scanners and, eventually, new computers) and the resistance of some employees to change, should be considered. The existence of some instability feelings among workers due to the possible feeling of greater control by the managers (Downing, 2006; Medina & Fenner, 2005) may also appear as a result of the dematerialization of business processes, often seen as an obstacle to its acceptance.

Organizations must understand that the dematerialization of their business processes may involve significant organizational changes, so its implementation should not be motivated by the simple desire for eliminate the use of paper and be environmentally friendly (Ashby, 2011). Thus, the dematerialization of business processes is a complex concept emerging from the interception of other related concepts that have been more explored in the literature such as the electronic documents management, the workflow management and the reengineering of business processes. The use of ICTs is common to all these domains, playing a determinant role in the implementation of the dematerialization of business processes, justifying the greater emphasis on this topic (Figure 1).

In the following section, we will present the concepts in order to discuss in which extent they are related with the main topic that is been analysed in this chapter, i.e. with dematerialization of business processes.

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