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A knowledge management approach for ergonomics implementation within organizations

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Abstract

The current economic and social environment suffered major changes in the last years, mainly driven by technological and cultural innovations and trends. One of the most interesting changes is the development of knowledge management (KM) and its increasing diffusions in all economic sectors. There is no activity that can be performed without some type of knowledge transfer, irrespective of whether it is tacit or explicit. At the same time, every organization must implement health and safety objectives in order to achieve business effectiveness and efficiency. Through ergonomics working conditions and occupational health and safety (OHS) objectives can be achieved more efficient. Considering that ergonomics is an interdisciplinary science, KM appears as extremely necessary for superior knowledge transfer among expert groups in the organization. The paper aims to demonstrate the usefulness of KM science in the ergonomics approach by highlighting key focus areas to support efficient implementation within organizations. By analyzing the consulting services offer by six Unites States consulting companies in the filed of ergonomics, we shall underlined the trends and challenges of the KM implications in ergonomics approaches.

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1. Introduction

Today's economic and social context is characterized by rapidly changing technologies and larger amounts of information that became difficult to manage for those unable to keep the pace with all the novelties. These facts

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affect businesses and generate the necessity of creating management systems aimed at improving every aspect of their activity.

On the one hand, knowledge became the most important asset of an organization and knowledge management (KM) is of high importance to organizational profitability, efficiency and sustainability. All the top businesses developed KM systems that enable both effective use of knowledge and creation of new solutions to problems, as well as new knowledge (innovations).

On the other hand, people are also a very important asset of an organization. From this perspective, their workplace safety and well-being is a key factor to efficiency. Ergonomics is aimed at developing solutions to workplace issues and activity interruptions generated by accidents, and at optimizing machines and work equipment. Human stands at the heart of ergonomics, as no system can operate without the presence of a human being.

In order to achieve the best results of its activity, an organization should combine specific goals regarding knowledge, ergonomics, finance and economics, human resources and so on. The authors focus on the connection between KM and ergonomics, as these two domains have in common the human being and its capabilities. Without humans, knowledge is bare information stored on physical or virtual devices and ergonomics becomes a set of theories regarding design and engineering of machines and workplaces. Thus, the importance of KM in implementing ergonomics throughout organizational activity relies in the knowledge employees have and are able to use for performing efficient work and creating new knowledge to fructify across the organization.

2. General overview on knowledge management and ergonomics

2.1. Knowledge management

The concept of knowledge management (KM) appeared in the first decade of the 1990s as a necessity of dealing with larger amounts of data and the digitalization of information. According to KMWorld (a US-based magazine and KM- related content publisher) website, in 1994 Davenport defined KM as “the process of capturing, distributing, and effectively using knowledge” (KMWorld, 2012). Despite its simplicity, this definition encompasses the most important character of this concept: knowledge must be collated and put into a form that is comprehensible to all its users.

The most cited definition for KM was offered by The Gartner Group (a US-based consulting and IT research company founded in 1979): "Knowledge management is a discipline that promotes an integrated approach to identifying, capturing, evaluating, retrieving, and sharing all of an enterprise's information assets. These assets may include databases, documents, policies, procedures, and previously un-captured expertise and experience in individual workers" (KMWorld, 2012). This definition highlights organizational necessity to bring together all forms of knowledge in order to create a comprehensive database which can be available and user-friendly for all its current and future users. It is highly important when regarding KM in connection with other domains and activities.

In order to have a comprehensive overview of the concept, there are a few clarifications to be made. The success of KM implementation in an organization is dependent upon people, processes and technologies. In an integrated KM system, these are the entries that go through four basic steps: create/generate, represent/store, access/use/re-use, and disseminate/transfer. According to (Mathew et al., 2012), a successful KM initiative is based on consideration and interactions between all these elements and steps (see Figure 1).

KM is a multidisciplinary domain with various applications from industry to business administration and information systems (Ahram et al., 2012). Nowadays, its major utility stands in the management of data collated using information technology (IT) methods, as well as in the transmission of knowledge from an employee or a group of employees to the other (also known as knowledge transfer).

Many companies make serious efforts to develop KM systems that can last for long periods of time, aiming to meet sustainability objectives. The competitive landscape stimulates businesses to invest resources in the development of probably the most important of their assets: knowledge.

As a conclusion, the essence of KM is to improve organizational performance by successfully managing processes such as acquiring knowledge, transforming it into a comprehensible set of information, using it, storing and protecting it through internationally-recognized systems (such as copyright). At the same time, organizational

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