Abstract:

The integration of Ergonomics to the global management system is a crucial step to ensure that the results from its practice are useful, practical and applicable. In this sense, the proposal of an Ergonomics management model which overcomes the reactive aspects and point to the proactive ones is the key element to an insertion in a systemic and sustainable way. Therefore, an Ergonomics management model is proposed which is based on a list of good practices suggested by experts responsible for the management of this discipline in large enterprises. The valuation of the set of good practices has allowed their classification and the establishment of a process structure that makes up the Ergonomics Management Macroprocess.

Authors:

Júlio César Bispo Neves
COPPE/UFRJ, Rio de Janeiro, RJ, Brazil

Mario Cesar Rodriguez Vidal
COPPE/UFRJ, Rio de Janeiro, RJ, Brazil

Introduction:

This paper is the result of a research in the organizational design and management area. The purpose was the establishment of an ergonomics management system whose main objective is the integration of the Ergonomics to the global business management in large industrial organizations. The major concern is to share experiences about connections among the practice of ergonomics and governance of such organizations. Ergonomics has been distinctly considered a health discipline at its inner times, more recently as a design discipline. As a health discipline it seeks to clarify the relationship between the dynamics of living and the dynamics of working, it remains a pertinent subject. The movement to the design domain was a logic and understandable upgrade to find this objective. However, it has a considerable decrease when one try to found references to Ergonomics as a management discipline.

Ergonomics as a health discipline did not constitute a consensus, despite being very common to see it located in the health segment of many organization charts. For instance, (Karwowski 2005) only relates Ergonomics and health as the last ten standards of legibility of ergonomics, just limited to assess the impact of products and systems on human health, well-being, system performance, and safety. More pioneers of modern Ergonomics like H. Murrel already explicit some effectiveness criteria beside health considerations. Hence the rise of the current framing of ergonomics as a discipline of design appears as a compromise solution. A variety of distinguished references about the ergonomics’ major senses manifests such understanding of the discipline (Woodson & Conover 1964; Noro & Imada 1991; Broberg 1997; Green & Jordan 1999; Pheasant 2006).

More recently, it has grown, among scientists and practitioners, the conviction that ergonomics become an important discipline for organizations. Its managerial use is related to the challenges to be sustained in design matters, whether the product or service itself (Hendrick 2008; Dul & Neumann 2009). The vision of a discipline of product design (artifacts, machinery and equipment) gains a broader and elaborated perspective whose contribution brings systemically
value to the organization production process (Pikaar 2007; Jensen 2002; Neumann et al. 2010; Dul et al. 2012).

Thus, we may state the assumption that ergonomic actions over existing situations (assessments maintenance and correction) as well as its considerations in the development of new projects (conception) contribute to a significant and positive impact on return on investment and budgetary executions (Beavis 2003; Hendrick 2003; Hendrick 2008; Mafra 2011). If so, the point is: this understanding does not limit Ergonomics merely as a design discipline. Therefore the opportunity to describe the practice of ergonomics as a management discipline in large companies, constitute the core of our research.

Method:

The creation of an ergonomics management model is based in the production and the structuration of good practices. A good practice is a single suggestion sent by one ergonomics manager; here called expert is someone who drives the ergonomics team of the companies where he is attached.

Hence, the suggestion and further election of good practices was done by a group of experts responsible of the ergonomics team in the companies where they are attached. As such, a good practice should be identified as relevant or not to the ergonomics activities performed in an organization, adding value to this one.

Among the ways to produce this result a focus group device for gather contribution was chosen, in other words, that these good practices of ergonomics management came indicated by selected experts who lead this discipline in the organizations where they are attached. Finally by a voting process, with a fuzzy treatment (Hsu and Chen 1996) it was possible to rank the different treated suggestions, to choose the most relevant and also to structure the processes that integers the ergonomics management macroprocess.

The methodological formalism as shown in the Fig. 3 comprises four stages, namely:

(i) The establishment of an expertise focus group.
(ii) the creation of compiled list of good practices for ergonomics management;
(iii) the voting and evaluation of the compiled good practices;
(iv) The establishment of the ergonomics management macroprocess.

Results:

The work data processing with a procedure for aggregating the expert opinions based on fuzzy logic resulted in a management model composed of 50 (fifty) good practices distributed in 08 (eight) processes with the very high degree of importance to integrate the Ergonomics in the company’s global management systems.

Discussion:

After the analysis of the importance degree of each process performed from the arithmetic average of the importance degrees assigned to each respective good practice, it is observed that the management commitment is the process of greater importance followed by the processes governance, integration in design, competence development, communication and documentation, auditable standard, continuous assessment and network organization.
References:


