



Universidade do Minho
Escola de Engenharia

Semana da Escola de Engenharia October 24 - 27, 2011

ARTICULATION BETWEEN INFORMATION SYSTEMS AND QUALITY MANAGEMENT SYSTEMS

Sílvia G. G. Ferreira
Departamento de Sistemas de Informação
E-mail: silviaggf@gmail.com

KEYWORDS

Organization, Information System, Quality Management System, ISO 9000, Synergy, Initiatives.

ABSTRACT

Due to increasingly demanding markets, interventions for organizational improvement through the adoption of quality management are more and more frequent. Organizations on the one hand, are concerned with developing and implementing Information Systems (IS) suitable for their specific needs instead of purchasing software applications on the market, on the other, organizations acquire licensed software at the market that can support some specific requirements of Quality Management Systems (QMS), such as, auditing and document management.

Synergies between the IS and QMS according to ISO 9001, allow the association between those two systems. A IS, which can support and influence the processes associated with the QMS, not limited only to collection and document management.

In this PhD project, we intend to develop or extend an existing organizational method of intervention combining/articulate organizational improvement interventions motivated by the adoption of IT/IS with improving interventions involving the QMS in order to provide an alignment between IS development and implementation of the QMS.

RESEARCH QUESTION

Considering the problems in question, reflect on issues relating to the relationship between IS and QMS, and reflecting on (i) interventions for organizational improvement through the implementation of QMS, supported by software certification; (ii) organizational improvement interventions involving the adoption of computer applications; (iii) the integration of standards

associated to quality management with IT/IS; (iv) potential synergies between IT/IS and QMS; (v) the lack of alignment between IS development and implementation of QMS; (vi) the potential organizational benefit of active participation of IS in the processes associated to the QMS; (vii) the combination between the organizational improvement interventions related to IT/IS and organizational improvement interventions related to the QMS and (viii) the absence of a joint project between IS and QMS, This PhD project aims to search scientific contributions anchored in the following research question: How to conciliate the organizational improvement interventions driven by IT/IS with organizational improvement interventions motivated by the SGQ?

RESEARCH OBJECTIVES AND RESULT

Starting from main question, we have other key issues to manage the research (i) What are the cares, initiatives and organizational methodologies around the IT/IS and the QMS?; (ii) What kind of processes and documentation result from the IS and QMS and (iii) How new interventions for organizational improvement through IT/IS can be combined with QMS?

The answer to these questions will lead to the intended result of investigation: Develop a method or extend an existing one of organizational intervention that combines / articulate, the improvement interventions motivated by the IT/IS with improvement interventions motivated by the QMS.

RESEARCH METHOD

The phenomenon to investigate fits into the area of IT/IS, a field which involves technological aspects (hardware and software) and social aspects, thus the research will be based primarily on qualitative methods. The research-action method is the research method selected for the process, by its fitness for research purpose and intended outcome and its applicability in



Universidade do Minho
Escola de Engenharia

Semana da Escola de Engenharia October 24 - 27, 2011

practice. Possible difficulties are associated with the use of this method of investigation, such as, long research, loss of critical distance by the researcher about the value of their own contribution, and lower honesty on the part of most subjects in the organization, of passing information to the investigator when there is lack of interest by those in the intervention. These difficulties will be taken into account during the selection of the investigated organizations.

DATA COLLECTION TECHNIQUES

For the selected research method, were chosen the interview and questionnaire as data collection techniques.

The interview and the questionnaire will be applied to a panel of experts in order to collect information regarding the feasibility of the presented solution to the problem in question - Method of organizational intervention that combines / articulate improvement interventions driven by IT / IS with improvement interventions motivated by the QMS.

RESEARCH DESIGN

The issue to investigate in the Information Systems and Technologies Doctoral Program - Linkage between IS and QMS is part of a research paradigm in Technologies and Information Systems.

The first phase of the research plan brings together a set of general application researches related to the theme around concepts like TQM, QMS and IS as organizational strategies. From this research resulted in a set of words and ideas related to the themes: "Organization", "Information System", "Quality Management System", "ISO 9000", "Synergy" and "Initiatives", that led to a raising of authors and the most relevant publications. Researches were conducted through Google Scholar, Web of Knowledge and Scopus and documents search through the catalog of UM, B-on, RCAAP, IEEEExplore, Colcat. From the set of collected scientific articles were also selected those that specifically correspond to the issue in question.

After the collection of authors and works, book chapters, articles presented at conferences, published articles in scientific journals relevant to the issue under study, identified the ideas and concepts of each

document, proceeding to a comparison between them, in order to identify different approaches related to the topic. As results from the first stage we have, the identification of the problem, the purpose of research, the main issue of research, and issues arising from the identifying of the artefact to be developed.

Second stage will last 10 months (September 2011 to July 2012). Parallel to the state of art achieved in the first phase, will be added a review of the literature more focused on certain aspects of the problem, a framework of interventions for organizational improvement, either by the adoption of IT / IS or by adoption of QMS and selected a panel of experts for the interviews. As result of this second phase, we will have the first version of the method, desired artefact.

The evaluation will mark the third phase, which will take place over a period of 10 months. It will be evaluated the developed method (research solution), through the applicability of the method of action - research in one or more organizations. The use of the method, allows demonstrating applicability to practice and refine the hypotheses initially defined.

Several iterations between the stages of problem identification and solution design should take place, and with them, different versions of the method will be evaluated (version + evaluation). Using a panel of experts at this stage, will show the interest on the issue under study, forcing this idea, since the research method chosen (action - research), usually represents a limited sample, speaking about size. The expert panel will be useful in presenting discussions and workshops on the issue and the applicability of a questionnaire in order to achieve results around the following main question - What is the feasibility of the presented solution? Still at this stage, we will make an interview.

The last phase of this PhD project will include the analysis of the results obtained in previous phases, and the publication of these results through articles in scientific journals and international conferences. At this stage will be prepared the final report of the thesis. The publications may take place throughout the research process.