Chapter XIII

A Framework for Managing Knowledge in Requirements Identification: Bridging the Knowledge Gap Between Business and System Developers

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ABSTRACT

This chapter reflects on experiences when traditional IT approaches were used to design large IT systems and ended in failure (Etheridge, 2001). The main reflections focus on the reasons for system failure and how they relate to the diversity of knowledge, managing knowledge, and the understanding gaps that may exist between the business and the system developers. The study reveals that the understanding gaps mainly result from lack of knowledge of business operations on the developer side, matched by lack of technical appreciation and knowledge on the user side. To help address the knowledge gaps,
gap problem, a Knowledge Requirement Framework (KRF), employing soft-systems, diagramming and set mapping techniques, is proposed and described.

INTRODUCTION

This chapter aims to bring together ideas from various disciplines such as Knowledge Management (KM), Information Systems (IS), Software Engineering (SE), Business Process Reengineering (BPR) and Human Computer Interfaces (HCI).

Knowledge and knowledge management fall in the heart of the initial stage (requirements) of the system development process (BS 6719, 1986). The Requirements Engineering Specialist Group (RESG) of the British Computer Society has defined Requirements Engineering (RE) as:

“...the elicitation, definition, modelling analysis, specification and validation of what is needed from a computer system. It is a process which draws on techniques from software engineering, knowledge acquisition, cognitive science and social sciences to improve software engineering practice.”

The theme-map of the discussion in this chapter is shown in Figure 1. The diagram illustrates the important role played by knowledge in determining the initial requirement of the information system (IS) required to satisfy business needs. High-quality initial and agreed requirements form the basis of any successful information technology system (ITS) development (Al-Karaghouli et al., 2002).

The area of applied ITS has been enriched both in theory and in practice by the contributions of those in the fields of hard and soft system methodologies (Avison, 1995), and by experiments to improve the quality of designed systems. We quote Lewin’s dictum that “the most practical thing in the world is a good theory” which has been practised in its fullest sense by sociotechnical system innovations. Our research is a witness to the fact that applied ITS, e.g., soft system

Figure 1: The role of knowledge in determining agreed requirements

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Knowledge

Engineering System Requirements

System Success or Failure
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