Chapter V

Capturing and Reusing Building Maintenance Knowledge: A Socio-Technical Perspective

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Abstract

Knowledge is regarded as the most important asset for sustainable success in today’s knowledge-based economy, and it has become the main competitive tool for many businesses. Proper capture and reuse of knowledge reduces the risk of “reinventing the wheel.” Building surveyors play a major role in building maintenance. Owing to the unique nature of building maintenance, building surveyors need sufficient knowledge and experience to facilitate their decision-making process. Apart from gaining this knowledge and experience by direct participation, learning from others is a sound alternative. However, insufficiencies have been found in the current practice on this aspect, and thus the aim of this chapter is to study whether a proposed Web-based prototype knowledge management system would be a feasible solution for capturing and reusing knowledge and experience in building maintenance. A questionnaire survey was conducted in this research to study the opinions of professional building surveyors on the capture and reuse of knowledge and experience in building maintenance, as well as the requirements of a proposed Web-based prototype system.
Introduction

With the start of the new century, our economy has increasingly become a knowledge-based economy. In such an economy, knowledge is regarded as the most important asset, with many people in the world believing that knowledge is more vital for sustainable success than assets such as capital and land (Kelleher & Levene, 2001).

A vast amount of knowledge is involved in many professions, and managing that knowledge is a critical task. As Rowley (1999) points out: “Knowledge has become the main competitive tool for many businesses” (p. 416). Building surveying, one of the key professions in the Hong Kong construction industry, is no exception.

Building surveyors act as “building doctors” to diagnose defects in buildings, and play a major role in the management and maintenance of buildings after they have been completed (Hong Kong Institute of Surveyors, 2002). In fact, building maintenance is a complex process requiring a vast amount of knowledge, both explicit and tacit, particularly in light of the unique nature of each project. Apart from acquiring such knowledge and experience by direct participation, building surveyors need to learn from others.

In the current situation, it is difficult for a building surveyor outside of a project team to gain the tacit knowledge required and understand the rationale for decisions that have been made, simply by referring to materials kept after the completion of the project, such as written reports and construction drawings. However, it is argued that the “capture, transfer, and reuse of the project knowledge are critical” (Kamara, Augenbro, Anumba, & Carrillo, 2002, p. 63), as properly reusing the knowledge and experience gained while working on a similar project will reduce the risk of “reinventing the wheel.”

Learning Objectives

1. To study how knowledge and experience in building maintenance can be reused in a more effective and efficient way by applying the principles stated in knowledge management.

2. To investigate the opinions of professional building surveyors on the capture and reuse of knowledge and experience in building maintenance.

3. To study the requirements of a proposed Web-based prototype system for capturing, storing, transforming, and retrieving knowledge and experience.

Reusing Knowledge and Experience

As with the reusing of experiences in experience management, reusing knowledge is the ultimate goal of knowledge management. In order to reuse knowledge and experience
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