ECONOMIC FEASIBILITY OF WEB-BASED PROJECT MANAGEMENT SOLUTIONS

Miroslaw J. SKIBNIEWSKI 1 and Lei ZHANG 2

1 Professor of Civil Engineering, Construction Engineering and Management, Purdue University, 550 Stadium Mall Drive, West Lafayette, IN 47907-2051, USA.
2 Project Manager, PhD, Bovis Lend Lease, 10F Akasaka Twin Tower, 2-17-22 Akasaka, Minato-ku, Tokyo 107-0052, Japan.

Abstract
Recently, Web-based Project Management (WPM) systems attracted a significant number of construction industry applications worldwide. These implementations, actual and potential, pushed many construction companies to the front of WPM investment decision-making. This paper reviews IT investment evaluation methods and concludes that a single economic analytical method or a simple combination thereof is insufficient to justify or decline an investment in WPM. To fulfil the practical need of many construction companies to implement WPM systems, the paper puts forward a multidimensional decision-making approach that the authors believe is closer to the style of decision-making in the construction business world.

BACKGROUND
The impact of Information Technology (IT) on the construction industry is visible in all aspects of project activity. Among the relatively new trends in IT in construction, web-based project management (WPM) is one of the foci of current IT efforts. WPM denotes project management activities conducted through the Internet, which means that the procedures remain the same but will be carried out electronically. Thus, WPM significantly improves the speed and quality of communication among project participants. Construction is a unique industry in the sense that every project is a single product that involves multiple disciplines both temporally and geographically. Even within a single company, employees are scattered to job sites and home offices. Communication has been a critical element impacting progress and quality of a project, relationships between all the parties, and finally the profits of them.

The growth of the popularity of WPM pushes many construction companies to a decision: “Are we ready to implement a WPM system?” This paper aims at helping to answer this question through identifying factors important to implementing WPM and establishing decision approach using the factors identified.

There are three choices available in current market for companies to implement WPM. The first option is to develop the system in-house. The second is to purchase packaged software from vendors and install it on company’s own server. The last choice is to subscribe to an application service provider (ASP) from a service provider. Most construction companies do not have in-house IT personnel professional enough to develop in-house systems, simply because they have not had that need to keep such resources on their payroll. Therefore, the first choice is not applicable to the majority. The second choice does not require high level IT