ICE: A PROTOTYPE SYSTEM FOR IMPLEMENTING COLLABORATION ENVIRONMENTS IN CONSTRUCTION

Bilge Erdogan, Chimay J. Anumba, Dino Bouchlaghem, Yasemin Nielsen
anumba@engr.psu.edu, B.Erdogan@salford.ac.uk, N.M.Bouchlaghem@lboro.ac.uk, ynielsen@metu.edu.tr
SCRI, School of Built Environment, University of Salford
Department of Architectural Engineering, Pennsylvania State University
Department of Civil and Building Engineering, Loughborough University
Department of Civil Engineering, Middle East Technical University

ABSTRACT

This paper describes a prototype software, ICE prototype, which was developed to enable the parties collaborating on a construction project to capture and integrate the needs and expectations of all collaborating parties and to guide them in planning and implementation of collaboration environments. The user interface of the prototype was developed using vb.net; which inserts the data into the database developed in Microsoft Access and the output is created as a report in Microsoft Word.

The methodology, development, operation and evaluation of the prototype are discussed, and it is concluded that, the ICE prototype is potentially useful in the successful planning and implementation of collaboration environments and change management.

Keywords: Collaboration environment, prototyping, IT implementation, construction project

INTRODUCTION

Much of the recent research in construction investigated the delivery of Web-based technological solutions, collaborative visualisation, virtual reality and CAD applications, and knowledge management systems and technologies. The rapid developments in Internet and Web-based technologies have led construction research to focus on the development of collaboration solutions for globally dispersed project team members. Many collaboration tools (i.e. extranets, meeting programs) and systems are currently in use and the industry is constantly searching for new, more efficient and effective IT-based collaboration methods. Analysing the adoption of collaboration technologies in terms of the traditional product lifecycle approach, Wilkinson (2005) argued that the construction industry had successfully passed the development and introduction phases and by the mid-2000s had gone on to the growth phase. Likewise, in a case study-based research conducted by Ruikar et. al (2005) in UK, all construction companies were found to be early adopters of extranet technology for collaboration. However, although there have been some successful examples, the benefits of collaboration tools are not yet proven industry wide (Allen et. al, 2005). The problem in the construction sector is not a lack of technology but more