

# EDITORIAL ON CONSTRUCTION INFORMATION TECHNOLOGY IN EMERGING ECONOMIES

PUBLISHED: March 2007 at <http://www.itcon.org/2007/10/>

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## SUMMARY OF THE SPECIAL ISSUE

In the near future a major part of global construction will take place in what is often called emerging economies. This term covers both developing countries and nations in rapid transition to become major global industrial powers. In terms of geography Latin America, Africa, the middle East and most of Asia as well as Russia and the new and candidate members of the EU are included in this group. Nevertheless the vast majority of construction and construction IT research is carried out in a few countries in North America and Western Europe and deals primarily with problems high up on the agenda in these.

Construction activity in general and Construction IT in particular is showing great promise in emerging economies. The construction industry of developing economies suffers many problems (e.g. delays, cost overruns, and miscommunication of information within organizations). Further, the impact of globalization, the advance of technology and the cultural changes are just a few of the issues that are affecting the industry. Hence, the construction industry around the world, both in developed and emerging economies is facing the challenges created by these issues. The identification of the issues more critical for emerging economies would help to make the research efforts to address them more effective.

The objectives of this special issue are as follows:

- To share and highlight the new issues and priorities that concerns the construction IT in emerging economies.
- To explore and discuss how emerging economies should address these challenges, what can they learn from developed economies and how to get their cooperation to carry out joint efforts.
- To present and demonstrate how research and innovation can be used to help companies and countries to address current and future demands.
- To share the initiatives that are being carried out in developing countries and the experiences obtained from these undertakings.

We received an overwhelming response at early stages of the call for this special issue in terms of abstracts submission. After careful review process we selected only sixteen papers for the full-length submission of the paper. Two independent reviewers selected from various academic institutions and industry reviewed each full-length paper. Finally we have selected a total of nine papers for this special issue.

Lee and Egbu present a paper on IT tools for capturing and communicating learning and experiences of construction small medium enterprises (SMEs) in developed and developing countries. The paper highlights the results based on 18-month research project funded by the UK Department of Trade and Industry (DTI), which aimed at improving knowledge management in small medium enterprises (SMEs). The paper demonstrates the challenges faced by project participants during knowledge management process in developing countries.

Chan and Liu present a paper on the corporate portals for the construction industry of Hong Kong and nearby regions of China. The paper discusses about the customized and personalized corporate information, search service, collaboration tools and web services. Discussions are provided as to how corporate portals can be used

as extranets to support the construction industry. In addition, the requirements of the corporate portals were identified. The design and setup of the corporate portals for construction industry are proposed.

Scheer, et al. present a case study and outcome from an enterprise management project conducted during a building design and construction process with the help of web based environment for project management. The process was managed using web collaborative project management system. This helped for better communication between the technical teams, and improved information flow among them. A critical review study of the system was carried out and based on the study; benefits as well as shortcomings were identified.

Zhu and Wang highlight the problem related to the Chinese construction industry. The need to develop an effective and efficient organizing system for large number of information standard is emphasized. Discussions are restricted to the development of the system, which provides valuable information to researchers and practitioners because of the unique social, technical and political context reflected through the organizing system. It also provides a systematic introduction of the organizing system and share major issues related to the development and implementation aspects of the system.

Scheer et al share a review of scenario and trends in the Brazilian IT construction applications. They highlight that many small companies, which develop customized proprietary system face problems of inter-operability. Also, a few large contractors have started using ERP systems. They suggest the list of measures in IT education for AEC professionals for construction companies.

Ugwu and Kumaraswamy discuss the problem related to successful implementation of IT projects in Construction Organization. The paper provides research study carried out in China, during 2000-2004. The results showed reasons of project success and failure due to certain characteristics and features of projects. They have identified the critical factors in the context of emerging economies such as Nigeria and Sri Lanka.

Jacoski and Lamberts present the issues in the context of lack of interoperability. The results are reported based on the case study of design offices in south of Brazil. They found that an average percentage of losses in the design process as high as 22%. Finally, they have demonstrated with the help of prototype, the technical integration of information to related agents of design process.

Oladapo discusses the survey study of ICT for the emerging economy such as Nigeria. The study identified the factors impacting the use of ICT in Nigerian construction industry. The results highlighted that internal factors were directly related with the level of ICT use in the industry. On other hand none of the external factors were significantly related with the level of ICT use.

El-Mashaleh reports the findings of conducting a modified version of the IT barometer survey in the construction industry in Jordan. The study collects data from 207 firms. The participating firms are involved in the construction of buildings, roads and bridges, water and sewage projects, and electromechanical projects. The paper benchmarks the current IT usage, availability, and perceived impact in the construction industry in Jordan.

We see this special issue as an opportunity to share experiences, knowledge and ideas in the domain of construction IT from both, developed and developing countries. We hope the information it contained will motivate other researchers in developing countries to pursue new ideas and develop additional knowledge that will produce the necessary growth of this important topic in our countries. Finally, we take this opportunity to thank our reviewers for their quality review for high standard papers of this special issue.