Overview of Emerging Technological Innovations in Construction Management.

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ABSTRACT: It is probably fair to say that most construction companies persist in relying on traditional methods for construction management. However, economic downturn and the ever changing nature of the construction industry necessitated innovations in computer technologies in order to be financially sound and to maintain a competitive advantage in the market. Currently, the most prominent technologies can be categorized as: 3-D modeling programs, 4-D scheduling packages, 5-D modeling, on-line program-management systems, surveillance systems, and software that integrates data systems.

Despite the industry’s past reluctance to incorporate these advanced practices, there are many proven benefits to these technologies. Some of the most prominent areas benefiting from these emerging technologies include procurement policies and the investment risk that traditionally relied on heuristic approaches and subjective assessments. Although experience is valuable, it is not infallible. Computers can offer a more analytical and often more accurate assessment. This document provides a description of these innovative technologies, their benefits, the resistance to implement them, and strategies to build a technologically innovative construction company.

Keywords:
Construction Management, 3-D Modeling, 4-D scheduling, 5-D Modeling, Building Information Modeling, BIM, Data Integration, Online Program Management, surveillance systems and decision support systems (DSS), IT Strategy, Technological innovation in construction.

INTRODUCTION

Building construction has traditionally been viewed as a relatively immutable process with little change in techniques or administrative procedures. Fortunately, innovations in computer technologies for construction management have emerged. This emergence of technology is due to advances in computers and society’s views shifting towards a more economical and technology-driven world. Cost is the driving factor in most major decisions for construction companies, Therefore, these innovations have been created with specific goals of cost reduction, improved building quality, and enhanced productivity.

The limitation imposed on this study is the deliberate attempt to focus on only those technologies that, in the authors’ view, directly affect the management process. Numerous innovations in construction management computer technologies have become prominent in the industry. These technologies include 3-D modeling programs, on-line project-management programs, surveillance systems, and software that integrate data systems. These technologies increase construction performance and enhance the quality.

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