Digital Delivery of Infrastructure Projects; Impact and Management

Issues Within a Project-Based Engineering Firm

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Abstract

The use of digital technologies for engineering design is receiving rising interest by both academia and the architecture-engineering-construction (AEC) industry. In the UK the government’s new construction strategy to achieve fully collaborative BIM projects by 2016 is a further catalyst. Research in the field is too often focused on digital technologies and associated digital practices as implemented in major projects. Longitudinal case-study research is used to understand the impact and management issues associated with digital delivery of projects within a large international engineering firm. The data shows that technologies to manipulate and manage engineering data, communication and information infrastructure, and digital data standards are emerging as digital infrastructure for the firm’s engineering design work; this digital infrastructure is in-complete and it takes the form of foundation systems to enable standardized ways of working across the different parts of the project-based firm, while leaving room for customization to meet the specific needs of different market sectors, projects and clients. The findings of this research improve our understanding about the digital infrastructure for project delivery and the tension between standardization and flexibility within project-based environments, and hence contribute to research on technology and organizations.

Keywords

Digital technology, infrastructure, management, project delivery