Chapter 7
Cloud Computing Adoption at Quantity Surveying Firms: Are We Ready?

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ABSTRACT

Despite notable technological progress, the construction industry has slowly embraced information and communication technologies (ICT). Cloud computing, a tool potentially enhancing information management productivity, operates through remote servers linked via the Internet. This allows for data storage and application accessibility from any device without requiring prior installation. This research addresses this technological gap by exploring how quantity surveying firms perceive the integration of cloud computing. The study aims to evaluate these firms' inclination to adopt cloud computing and identify the obstacles impeding its implementation. A quantitative approach and questionnaires were adopted to uncover quantity surveying firm's readiness for technological advancement. This study provides valuable insights into how these firms can reshape their operational and communicative practices in the context of IR 4.0, preparing them for the essential technological shifts that will shape future industry standards.

DOI: 10.4018/979-8-3693-1650-4.ch007

INTRODUCTION

The introduction and implementation of IT innovation remain an exciting topic of research. However, with progress in implementing IT innovation, companies can boost potency, improve service, cut back prices, and increase company worth. This is because when the implementation of IT innovation becomes a part of the enterprise, call manufacturers must perceive the facility and style components that build choices concerning the adoption and implementation.

However, within the competitive global business surroundings, decision-makers must create good choices and adopt new IT implementations for investment and institutional ways. Therefore, structure innovations that adopt this technology differ clearly in relation to the emergence of the latest IT technologies, such as cloud computing (Li et al., 2015). However, although cloud computing is said to supply varied advantages to companies, the implementation of cloud computing within companies has been far from expected. Consistent with Sallehudin et al. (2019), the varied firm is considering cloud computing quite warily by taking one step at a time or preferring to 'wait and see.' Therefore, a study on cloud computing implementation within quantity surveying firms must be dispensed to evaluate the perception and barrier factors that influence quantity surveying firms to implement this technology in the Malaysian construction industry. This is because cloud computing serves as a platform for integrating diverse information sources and tools used in quantity surveying. For example, Building Information Modelling (BIM) software, cost estimation tools, and project management systems can be hosted on cloud computing platforms, allowing seamless data exchange and workflow automation. Thus, this integration streamlines quantity surveying tasks, enhances data accuracy, and promotes better decision-making throughout the project lifecycle.

Following that, Kagermann et al. (2013) consider the 4th Industrial Revolution a trend towards automation and data exchange in manufacturing technology. Advancements in technologies such as the Internet of Things (IoT), 5G, cloud computing, data analysis, and robotics will change products, processes, and business models across all sectors, eventually creating new industrial patterns and a shift towards global value (Brussels, 2016). Cloud computing is one of the elements of the industrial revolution. Cloud computing is a trend for most companies worldwide, as it provides cost savings for maintenance and server resources of information and communication technology (ICT). For example, in the context of quantity surveying practices, cloud computing offers scalable and flexible computing resources over the Internet, enabling quantity surveyors to access data and software applications from anywhere with an Internet connection, thus facilitating collaboration among project stakeholders, enhancing data security, and improves the efficiency of quantity surveying processes. Therefore, this study is conducted to understand the acceptance of cloud computing within quantity surveying firms in Malaysia.

Furthermore, Sulaiman et al. (2017) argue that human communication has been in the fifth phase, based on the Internet and computing. Therefore, cloud computing is seen as a means of improving communication within the company. However, management and communication issues in the construction sector are complicated, challenging, and not currently well addressed by existing technologies and applications (Jiao et al., 2013). Similar to the quantity surveying practices, communication among quantity surveyors and project stakeholders is critical to ensure accurate and up-to-date information. This information includes project specifications, material costs, labour rates, and construction methodologies. Moreover, with the advent of digital technologies, vast amounts of data are generated throughout the project lifecycle and shall be communicated respectively. Thus, proper management and communication may enhance information transfer and significantly impact project outcomes, such as cost estimation, resource allocation,