

Cloud Computing Awareness in Malaysia Construction industry

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Abstract: *The construction industry has been treated by fragmentation, lack of integration and complexities in processes and activities which could ultimately bring a negative impact to the construction project success. Therefore, collaboration is very important with the purpose to improve the productivity and effectiveness of construction management and to ensure the efficient utilization of resources. Cloud computing is the latest technology which has acted as a platform to support access to applications, information and services by using only an internet connection. However, it is doubt that the construction stakeholders are aware and use the cloud computing. Thus, the purpose of this research is to determine the awareness of cloud computing and identify the reasons of engagement with cloud computing in Malaysia construction industry. This research was focused on the main contractors within Johore Bahru only. In this research, the research method used quantitative approach and descriptive analysis includes frequency analysis and mean score to interpret the data. From the finding of the research, the Malaysian construction professions have the awareness on cloud computing. However, their level of knowledge is at low level. The concept of cloud computing is still new and it is still in the infant stage of its development in Malaysia construction industry.*

Index Terms: Construction Industry, Awareness, Construction Collaboration Tools, Cloud Computing

I. INTRODUCTION

Integration, collaboration, and communication within a multidisciplinary team of project stakeholders are the key to achieve the goals of a construction project. Therefore, these indicators serve to improve the productivity and effectiveness of construction management and to guarantee the efficient utilization of resources.

Construction is an informative-intensive industry since information delivery is the key to guarantee the success of construction projects in achieving their specific objectives [2]. However, the use of traditional paper document delivery systems can obstruct the way information is communicated

and exchanged between various stakeholders involved in the entire building lifecycle [11]. Besides, these problems cause friction, financial expense and delay.

In order to overcome problems in construction management, modern project management approaches and tools have been invented. The technological advancement is seeking for the improvement to reduce the project duration and costs along with the better productivity, efficiency and effectiveness in the entire building lifecycle [15]. Cloud computing is the latest technology as the next revolution that will influence how efficiently and effectively the internet and information systems could operate and be used worldwide. In the construction industry, cloud computing is also an emerging technology that promotes a collaborative process.

II. LITERATURE REVIEW

Cloud Computing is the latest technology which has been established by the IT industry [5]. Basically, it can be defined as a timely, cost effective and energy-efficient technology which supports access to applications, information and services, such as storage, networks, hardware infrastructures and servers, without restrictions of time and place using only an internet connection.

According to [3], there are three broad types of cloud computing include Infrastructure as a Service (IaaS), Platform as a Service (PaaS) and Software as a Service (SaaS). Besides that, there are four delivery models (deployment models) of cloud computing including public cloud, private cloud, community cloud and hybrid clouds.

There are five main benefit of using cloud computing in the construction industry [13].

Mobile Accessibility - The ease with which cloud-based services may be accessed enables field staff to get the information they need at anywhere.

Scalability - The resources can be deployed very fast from the cloud, cloud computing makes it easier for companies to scale their services, whether up or down [3]. Therefore, this in turn results in more efficient use of resources.

Reduced Need for In-house IT - Cloud computing can also reduce the stakeholder's need for in-house IT staff [12]. Construction stakeholders can save operational costs, maintenance costs and purchasing costs.

Lower Fixed Costs - Cloud computing is economical as the customers pay only what they used in the cloud computing [12]. Fixed costs associated with software and hardware has been eliminated since capitalizing on cloud

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