Chapter 15
Unbundling Cloud Computing and Emergent Technologies:
Construction Industry in Perspective

Sururah Apinke Bello
https://orcid.org/0000-0002-2689-9953
Obafemi Awolowo University, Nigeria

Mistura Laide Sanni
https://orcid.org/0000-0001-9206-4009
Obafemi Awolowo University, Nigeria

Lukumon Oyedele
University of the West of England, UK

Khadeejah Adebisi Abdulsalam
University of Lagos, Nigeria

Akinropo Musiliu Olajumoke
https://orcid.org/0000-0002-4571-1864
Obafemi Awolowo University, Nigeria

ABSTRACT

The construction industry, an important sector of the global economy, with large data generation and huge employment opportunities, requires automation for enhanced productivity and contribution to the Gross Domestic Products (GDP). The integration of Cloud Computing (CC) with Building Information Modelling (BIM),

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however cannot deliver the future construction, hence, the need to explore the other specialised Emergent Technologies (ET). In this chapter, critical appraisal of existing literature to identify the application domain, problem areas and intersections between CC and ET were carried out. Case studies were cited to demonstrate the benefits of the adoption of CC and ET such as, BIM, Internet of Things (IoT) and Intelligent Analytics. The reluctance of this industry was also identified and some suggestions were proffered to mitigate the potential risks. However, the adoption is believed to have the potential to open up issues. Hence, the adoption is conjectured to be viewed as an asset.

1.0 INTRODUCTION

The construction industry contributes substantially to the world economy with its high volume of job opportunities. However, it is the second least digitised industry after Agriculture (Alaloul et al., 2022). This has made it difficult for the professionals in the industry to leverage on the versatility of computer application in the planning, materials acquisition and execution of projects. The industry with its low-profit margin desperately needs to improve on its efficiency and productivity for higher contribution to the Gross Domestic Products (GDP) of global economy (Blanco et al., 2016). In order to tackle this productivity problem, construction policy formulators have suggested the adoption of emerging technologies in the construction industry (Khahro et al., 2021). Since the construction industry has been adjudged by the (World Economic Forum [WEF], 2016) to account for approximately 13% of the global GDP, its transformation would be a significant developmental catalyst for enhanced productivity (Karim et al., 2023). It is conjectured that the adoption of such emerging technologies will turn around the construction processes (Uusitalo et al., 2024). This is particularly important to project managers who need to schedule the supply of materials, and manage the proper site layout. It should be noted that an ideal site layout will consider and integrate the functionality of site access, fencing, storage area, offices and accommodation; temporary services and plants. A typical construction site is shown in Figure 1.