

Title: Drivers, Capabilities, And Challenges For Adopting Digital Twin In Facility Management: A Profound Qualitative Investigation

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Abstract: Digital Twin (DT) adoption in Built Environment (BE) industry especially facility management (FM) is still slow. DT in FM can offer accurate time information for asset management and building maintenance systems and provide a supporting decision-making process. However, the current FM industry still practices the traditional way of building operation and maintenance, which is inefficient and the principal cause of loss of information due to the lack of digitalization processes and making data inaccessible. Compare to other industries that has effectively applied DT, FM still in infancy due to the ambiguous concept. Therefore, this study aims to profoundly investigate the drivers, capabilities, and challenges for adopting DT in FM. An explorative qualitative approach was employed through semi-structured interviews with eighteen FM professionals to achieve the study objectives. The interview data were analysed using the thematic analysis approach. The study findings suggest that legislation, technology, organization, streamlining operations and stakeholder value are the drivers for adopting DT in FM. Furthermore, findings show that the capabilities needed for adopting DT in FM are manpower, infrastructure, knowledge, and budget. Lastly, the challenges for adopting DT in FM are cost, people, and technology. In conclusion, the study findings provide valuable insights and understanding for the FM industry to motivate further and take action to use DT.

Keywords: Digital Twin, Emerging Technology, Facility Management, Operation, and Maintenance

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