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Construction Sector Disruption

BUILDING INFORMATION MODELLING

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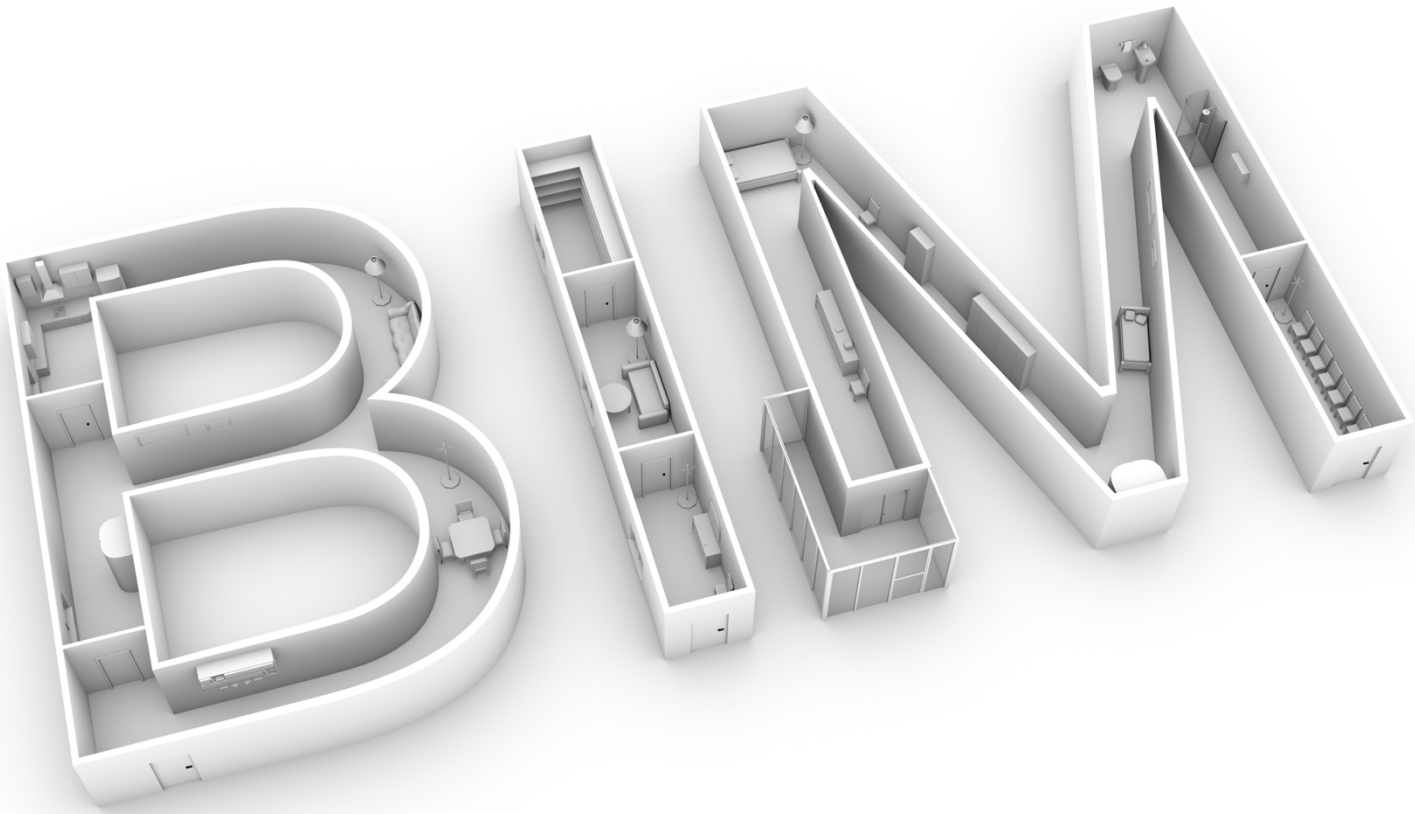

Construction Sector Disruption: BUILDING INFORMATION MODELLING

Construction has traditionally resisted digital adoption when compared to other industries, nevertheless, Building Information Modeling (BIM) technology could represent a major driver on the path to further digitalization.

BIM encompasses both the production and management of information generated by a construction project. The final outcome is a digital file which consolidates all the various aspects around each project and encourages decision-making during the construction process. BIM and other similar technological advancements are capable of operating more than just a 3D (width, height, and depth) overview, but can also incorporate further dimensions such as 4D (time), 5D (cost), and even 6D (as-built operation), 7D (sustainability), and even 8D (safety)[1].

[1] Smith, P. (2014). BIM Implementation - Global Strategies. Retrieved from: https://www.sciencedirect.com/science/article/pii/S1877705814019419

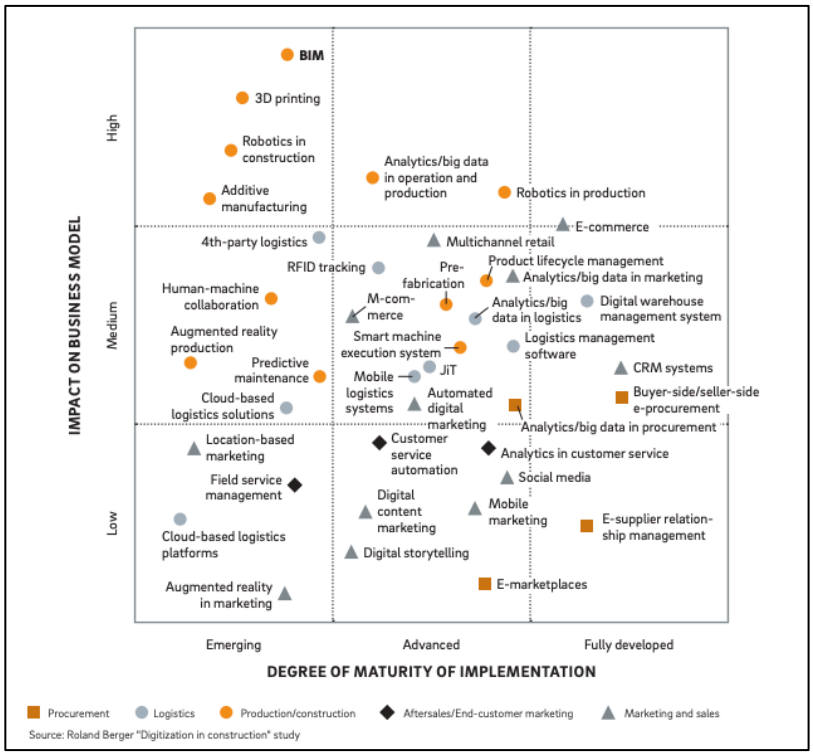

Figure 1[2] BIM's strong impact on players' business models

BIM is projected to have a major impact on the construction sector by 2025, as an increasing number of firms realize its growth dynamics. Global infrastructure spending is projected to surpass USD 9 trillion annually by 2025[3]. BIM is capable of reducing project costs by 10 percent. For example, BIM helped Swedish construction firm Skanska deliver a hospital expansion project in the US sixty days earlier than expected. German rail operator Deutsche Bahn is using BIM for infrastructure projects, expecting 10 percent lower costs[4].

[2] Roland Berger GMBH. (2017). Turning point for the construction industry. The disruptive impact of Building Information Modelling (BIM). Retrieved from: https://www.rolandberger.com/en/Publications/Disruptive-impact-of-Building-Information-Modelling.html

[3] Oxford Economics. (2017). Global Infrastructure Outlook. Retrieved from: https://www.oxfordeconomics.com/recent-releases/Global-Infrastructure-Outlook

[4] Ibid 1.

BIM benefits the construction sector in a variety of ways. It offers higher quality as it provides companies with the ability to explore or change the project's design or documentation at any phase. Through such means, time is saved which can be used by the design team to deal with real architectural issues. Design execution can be better tested as BIM's modelling tools enable close control over technical and specific decisions. Furthermore, BIM increases the overall work performance and offers the capability of simultaneous design and documentation. Plans, figures, drawings, calculations, value engineering and other features of work communication are generated instantly during the work process. In addition, using BIM demands fewer individuals in order to deliver an equal amount of work. As a result, expenditure and miscommunication decrease. Less time and resources are needed throughout the project's process, while administration improves as document quality increases and construction planning becomes easier[5].

[5] Goubau, T. (2016). What is BIM? What are its Benefits to the Construction Industry? Retrieved from: https://www.aproplan.com/blog/quality-management-plan-construction/what-is-bim-what-are-its-benefits-to-the-construction-industry

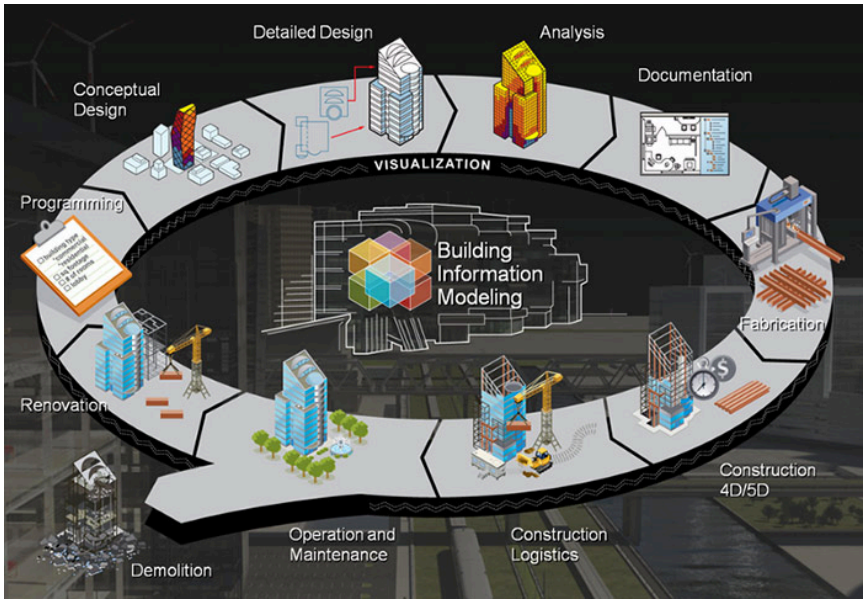

Figure 2[6] Building Information Modeling (BIM) in the construction sector

Despite BIM's positive impact, several concerns appear to put pressure upon construction organizations, including governance issues, a lack of standards, and a great shortage in BIM expertise. This is the reason why BIM adoption varies significantly across the globe[7].

Building Information Modeling (BIM) can offer consequential opportunity to the construction industry, driving it to a significantly higher and sophisticated level. By simulating a wide spectrum of data options with instant cost advice and performing throughout the designing, constructing, and operating phases; BIM will undoubtably place construction process at a higher value[8].

[6] Sanner, J. (2019). What Is BIM in Construction? Retrieved from: https://connect.bim360.autodesk.com/what-is-bim-in-construction

[7] ibid 1.

[8] ibid 6.


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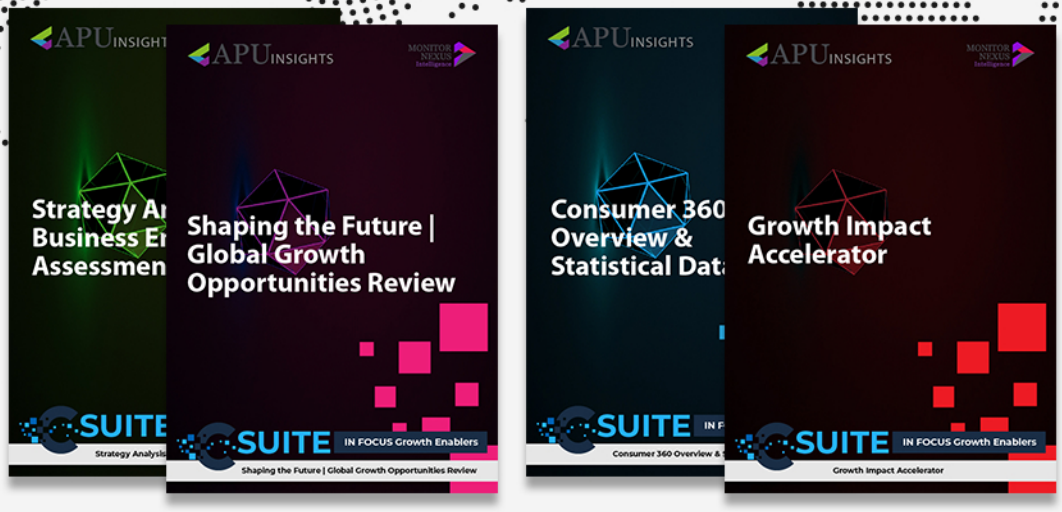
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