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BRIEF

## Digital Adoption Challenges and Best Practices in the Construction Industry

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CONSTRUCTION  
INDUSTRY'S  
DIGITAL  
TRANSFORMATION  
IS NOW MORE  
NECESSARY  
THAN EVER  
IN ORDER TO  
VISUALIZE,  
DESIGN, AND  
BUILD THE  
STRUCTURES  
AND CITIES OF  
TOMORROW.



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# INTRODUCTION



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The construction industry has traditionally been conservative towards new trends in digitalization, but it is becoming ever more clear that new action towards change needs to be taken. As reported by the United Nations, approximately 55 percent of the total population currently live in

urban regions; but that figure is going to reach 68 percent in 2050, accounting for approximately 2.5 billion more individuals. As the demand for new structures and infrastructure is expected to rise significantly, the construction industry is

going to face difficulties in order to meet the increasing demand without substantial changes in productivity and operating methods. The sector is aware of the necessity for change to deal with the future demands, yet it lacks of strategy and dynamism. Research revealed that only 25 percent of companies have a digital plan, and only

9 percent seem to be ready to implement them. The industry has not seen any substantial change since the 1970s. As a result, the construction sector is not significantly disrupted, but further transformation is on the way. If organizations are incapable of investing in digital, the gap is going to be filled by others. The main reason for this

small progress is that it is very difficult to gain large profit; around 2 percent in comparison with an average of 30 percent in other sectors. When the profit margins are small, investing 1 percent in technological advancements might seem impossible. Yet, failing to invest in actions which enhance productivity can be harmful. The World



Introduction	Digital Adoption: Level & 8 Challenges	8 Emerging Technologies & their Impact on Construction Work	10 Best Practices for a Successful Digital Transformation	Conclusion
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Economic Forum predicts that an increase in productivity of only 1 percent is able to reach USD 100 billion in savings per year for the construction sector<sup>1</sup>.

Construction industry's digital transformation is now more necessary than ever in order to visualize, design, and build the structures and cities of tomorrow. The time is ripe for organizations in order to adapt a real digital strategy. For continuous success in the coming years, it is crucial to launch a digital customized plan; it will - without doubt - assist companies in achieving operational growth, through cost reduction and margin improvement. The key to success is to fully embrace the projects of tomorrow and invest in technology adoption<sup>2</sup>.

**[1]** Roberts E. (2019). *Can digital secure the foundations of construction?*

**[2]** Deloitte. (2019). *2019 engineering and construction industry outlook.*



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# SECTION

DIGITAL ADOPTION:  
LEVEL & EIGHT CHALLENGES



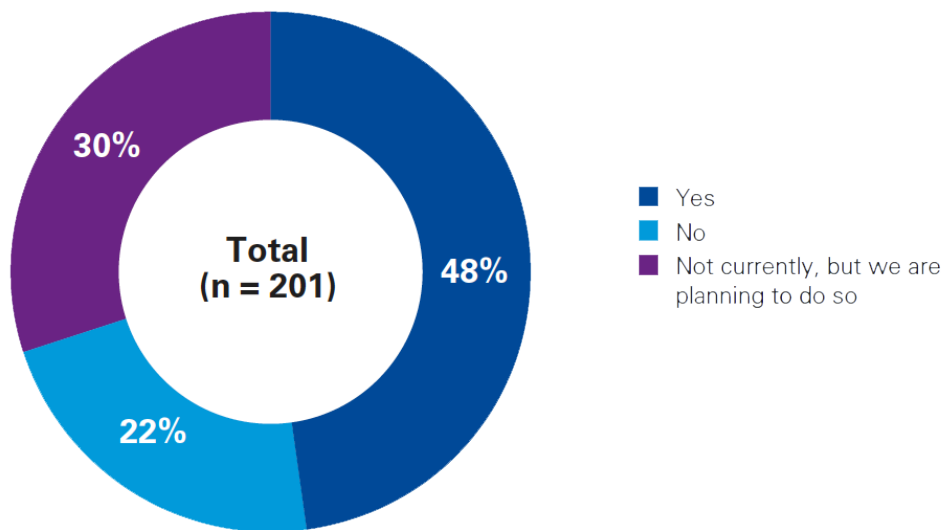
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# LEVEL OF DIGITAL ADOPTION

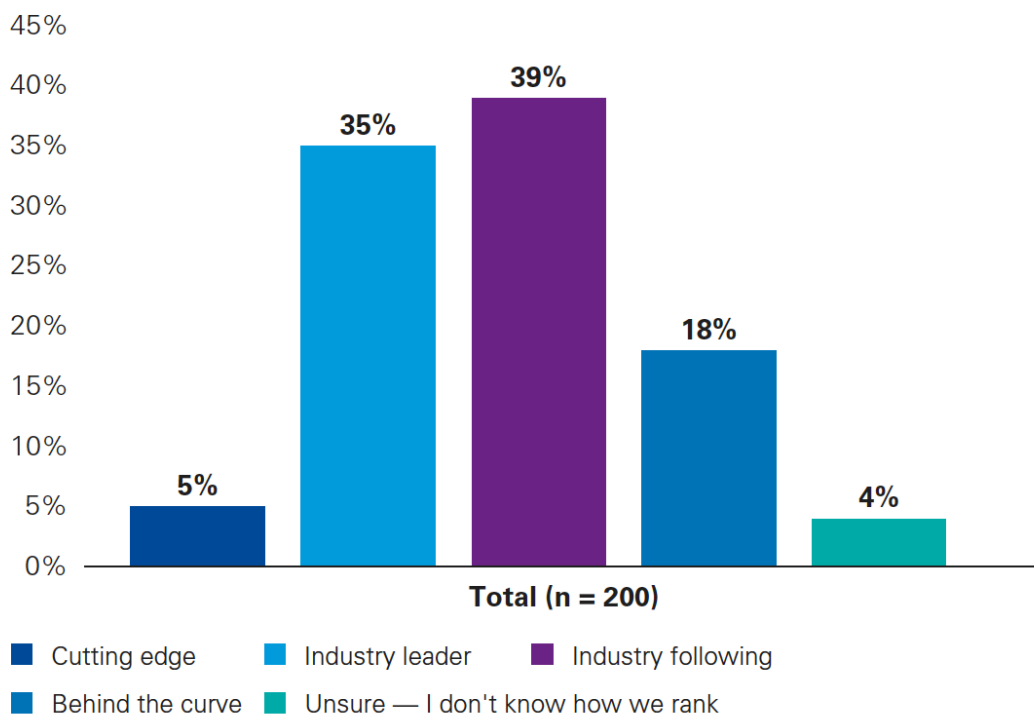
**WITH AMAZING ADVANCEMENTS SUCH AS ROBOTICS, AUTOMATION, DRONES, AND STRONG DATA ANALYTICS TO UPGRADE DESIGNING AND PROJECT MANAGEMENT, THE CONSTRUCTION INDUSTRY SEEMS TO BE IN A PERFECT STAGE FOR ADAPTING TO CHANGE.**

Regarding the rate at which firms adopt technological advancements; only 5 percent could be classified as 'cutting-edge visionaries', with a further 69 percent being grouped as either 'followers' or lagging 'behind the curve'. 57 percent are considered to be 'followers' or be 'behind the curve', and the proportion that viewed their firms as 'cutting edge' reached 5 percent (Figure 1.2). The ones who invest in the appropriate technological advancements have the chance to achieve an improvement in performance, but the sector's deep-seated conservatism appears to discourage from tackling the complex projects. In the Harvey Nash/KPMG CIO Survey 2017, construction firms consider that 'improving operational efficiencies' is only the third most significant technological action to be taken. Robotic process automation and digital labor offer an amazing innovation and are taking off in a variety of other sectors, with machinery and computing operations taking humans' place. A large proportion of firms (83 percent) in the construction sector have stated that their organizations have not yet invested in such technological advancements, with most claiming that it will take a period of around five years before they are significantly prepared to embrace such advancements<sup>3</sup>.

**[3]** KPMG. (2017). *Make it, or break it. Reimagining governance, people and technology in the construction industry.*



**Fig 1.1** Organizations' percentage which have developed a data/technology strategy or road map. KPMG. (2017). *Make it, or break it. Reimagining governance, people and technology in the construction industry.*



**Fig 1.2** Organizations' ranking with regard to technological maturity. KPMG. (2017). *Make it, or break it. Reimagining governance, people and technology in the construction industry.*

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