

## **How Technology Can Transform The Construction Sector In The UAE**

**Technology is the solution for the many challenges faced by the construction industry in the region, but first there needs to be a change in mindset, says Mohammad Khader Al Shouli, Managing Director and Head of Contracting Finance at Mashreq Bank.**

With Expo 2020 around the corner, it isn't surprising that the U.A.E.'s construction industry is expected to grow between 6 % and 10 % in 2020. However, it would be accurate to add that there are hurdles to achieving this growth, the most prominent being the urgency to meet shorter deadlines and cost overruns. According to a KPMG survey of construction executives in the U.A.E., the biggest opportunity to overcoming these ongoing challenges is through the use of new technologies in traditional construction practices.

In essence, the U.A.E.'s construction companies need to better plan their long-term investments to sustain the transition towards a technology-driven construction landscape. In my opinion, it is imperative for the region's construction industry to lead in terms of quality, productivity and safety. In the U.A.E. alone there are more than \$820 billion-worth of major projects planned, so clearly there is a lot at stake here. Then, there is the heightened scrutiny of the value of public sector spending, where every dirham spent now needs to deliver value. This is increasingly apparent in the region's projects sector, where late delivery and greater-than-expected costs are draining large sums of money.

This comes down to the core issue of culture in the industry, where clients look to complete projects as quickly and cheaply as possible. Tenders are still awarded to the lowest bidder and there is very little thought given to the long-term value of the project to its stakeholders. This undermines sustainability and is damaging in the long-term. This mindset needs to change.

That said, there is hope. Technology now permeates every aspect of our lives, and is key to reforming the construction sector in revisiting the way projects are delivered. In fact, there are project teams across the country that are taking bold steps towards the digitalization of construction planning and delivery.

Technologies such as drones, virtual reality, 3D printing and generative design are enabling a rethink of the construction sector. However, it is important to note that this will require a much keener focus on quality from project clients. They must recognize that bringing best practices to the U.A.E.'s construction sector requires investment. However, even though the up-front capital investment may be larger in this case, it can massively improve quality and cut operation and maintenance costs throughout the life cycle of a project. Most importantly though, this digital transformation will drive much-needed efficiency and transparency in the sector.

For instance, the greater use of offsite manufacturing, prefabrication, modularization and onsite assembly in the U.A.E. can help substantially reduce construction time. The use of drones for surveying work, for example, can noticeably reduce planning costs. In fact, there are even more opportunities to use technology for site monitoring and inspection, which will reduce labour costs further.

Additive manufacturing and 3D printing can also create efficiencies on site. Take 3D-printed molds, they can replace expensive formwork, thus cutting costs. Additional efficiencies can also be eked out by printing fit-out components and spare parts. It's a long-term sustainability approach that needs to be embraced in the construction sector.

It also goes without saying that these technologies require a workforce trained to be able to extract the most out of these innovations. This can be achieved through initiatives such as permanent or long-term visa for professionals in the sector based on their experience rather than merely their academic qualification. To retain talent there is a need for conducting graduate recruitment programs. Even though it is possible to overcome the challenges of losing younger talent to more lucrative professions, it can only be achieved through collaboration between the industry players.

Finally, there is also a case to establish professional development bodies for technical workers and a unified accreditation committee for built environment professionals. These development bodies would work closely with renowned international civil engineering entities, to drive innovation and bring global best practices to the sector.

However, while hurdles remain, the right regulations are key to accelerating the adoption of new technology, thus reinvigorating the construction sector. It's no secret that emerging technologies such as robotics and artificial intelligence will play a key role in the industry in the future. It is critical that there are regulations that will enable companies to legally test these technologies on site, which in turn will spur innovation.

There is also a need to specify common standards and requirements for technology and data to harmonize processes across all sectors and authorities. A set of clearly defined rules that everyone would have to play by will enhance transparency—also much needed in the industry.

While we are not there yet, I am certain that the digital transformation of the construction industry is well underway. However, it will require a much greater push from all parts of the industry, particularly from project owners and construction clients, to make innovations the norms in the future. This is the only way the construction sector can ride out the stagnancy of a shaky global economy and create a robust future for the industry, and the country.

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