Digital Transformation

three ways digitization could change the construction industry

If you've followed the predictions of construction industry technologists over the last decade you could be forgiven for skepticism about the current hype. Similar to Chicken Little's warning about the falling sky in the children's fable (turns out it was just an acorn), the promised mass reckoning for industry laggards and Luddites has not yet materialized. But just because a prediction hasn't come true yet doesn't mean it won't. The growing demand for built infrastructure and Silicon Valley's generous subsidization of innovation seem to indicate that the construction industry will soon reach its tipping point.

HARBINGERS OF CHANGE

Another key driver for this change will be a critical mass of savvy owners implementing new approaches to planning, procuring, building, and operating their built assets. The incremental efficiency gains within siloed project stakeholder groups will compound and then accelerate, as clients increasingly require a more integrated design and construction supply chain. What will this digital transformation look like for the construction industry? The results of this will look a lot like the future the technologists have been promising.

Construction tech insiders are seeing a number of trends that will soon pose real risks to unprepared firms. Miners would bring canaries to work to warn them if they needed to evacuate when conditions became unsafe (they warned them by dying).

Here are three canaries to watch and how to prepare for their eventual demise.

Access to skilled resources.

The construction industry skews disproportionately older, and we will soon feel the impact of lost technical expertise as the Baby Boomer generation retires. Additionally, young people are increasingly picking professions in different industries, depriving the industry of new blood. Companies should be prepared to adjust to a new reality in which expertise is increasingly scarce and distributed. A critical success factor will be the ability to leverage technology to capture knowledge that until now existed in the brains of the most seasoned workers, and to implement systems that can automate the application of it. Another factor will be the ability to leverage new technologies to scale operational processes and best practices, so that companies can still grow even with a shrinking talent pool.

Design-bid-build projects.

Owners are adopting project delivery methods that better align team incentives and facilitate improved collaboration, such as Design Build, Construction Manager at Risk, Design Assist, and Integrated Project Delivery. Many of the features of a successful design-bid-build engagement for an individual operator in the supply chain—the hoarding of information, the allergy to risk, the change order—cannot be maintained in a contracting method where project success is defined by the absence of those features. A key enabler for these delivery methods are modern systems that leverage the cloud, are flexible enough to accommodate unique user requirements, and are predisposed towards integration. Companies must embrace these systems and the transparency it brings to projects, or will increasingly find itself on the outside of these new contracting approaches favored by its clients.

As processes go digital and project teams become more integrated, the industry will see increased scrutiny of what activities add value to the design and construction process. This will not just touch the more easily automated administrative and oversight activities on projects, it will even impact professional services resources who must justify pricing paradigms based on old ways of doing business. As owners begin to recognize the possibilities of greater visibility and more control of their project delivery supply chain, organizations will need to adopt Lean principles and be prepared to reevaluate how they should be compensated for their work.

CLOSING THOUGHT

When the Dutch sailors arrived on Mauritius in the late 16th century, they weren't the first humans the Dodo Birds had ever encountered—but they were the ones that drove them to extinction. There are real reasons to believe we are approaching the long promised digital transformation of the construction industry. Firms that will thrive in today's economy and the coming years will be the ones able to not only spot the risk, but to seize the opportunity it presents. It will be these companies that succeed.

About the authors

Sean Olcott, technical director at Gafcon (www.gafcon.com), has been at the bleeding edge of industry innovation since 2006. Prior to joining Gafcon in 2013, Sean worked at industry start-ups that brought emerging solutions to the market for Building Information Modeling, business process outsourcing, managed service cloud platforms, and digital twin technologies. At Gafcon, he helps project owners make sense of the expanding alphabet soup of industry technology acronyms (PMIS, VDC, BI, EDMS, CMMS, BI, IoT, UAV, AR, VR, and more!) to design and implement solutions that enhance collaboration, drive accountability, and increase predictability on their capital building programs and projects.

Scott Unger is the co-founder and CEO of Kahua (www.kahua.com), the creator of the world's only collaborative network for real estate and construction project management. He helps the world's leading owners, contractors, architects, and engineers to profitably deliver the highest performance capital projects at the lowest possible cost. Prior to Kahua, Scott was co-founder, president, and CEO of Constructware, the first cloud-based SaaS project controls solution. Constructware was acquired by Autodesk in 2006, and he served on the Autodesk executive team following the acquisition. Scott has served as chairman of the Board of Directors for Associated Builders and Contractors.