Beyond technology: Surbana Jurong's digital journey

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Digital technologies such as Building Information Modeling (BIM), Machine Learning and Mixed Reality are set to disrupt the global construction sector over the next few years, raising productivity, boosting efficiency and providing better outcomes for clients. Businesses like Surbana Jurong (SJ) recognize that to succeed, industry must go beyond just introducing new technologies, and focus on changing traditional practices.

The global construction sector stands at the brink of exciting change; ripe for major digital disruption and with the opportunity to embrace new technologies that will transform productivity levels, modernize project delivery and bring the industry into the 21st Century.

Yet for many, this journey into unchartered territories will herald an era of uncertainty. To borrow a phrase from Charles Dickens' classic The Tale of Two Cities, "It was the best of times, it was the worst of times…"

While the opportunity in terms of greater efficiency, customer service, safety and value for money is compelling, the challenge is monumental for an industry which has remained largely unchanged in the past 2,000 years.

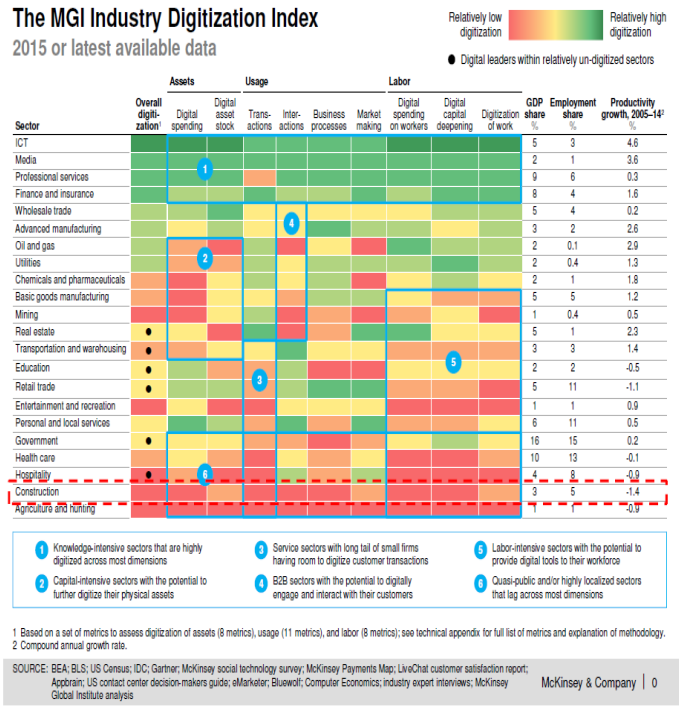
Technology holds the key_

In its latest report, Reinventing construction: A route to higher productivity, the McKinsey Global Institute highlights digitization as a key to unlocking a $1.6

trillion opportunity in the sector alone. Construction, it points out, continues to evolve at a "glacial pace".

And as McKinsey's December 2015 digitization index shows, when compared to all other industry sectors across the US, construction is rooted at or very near to the bottom when it comes to embracing the opportunities of digital technology. (see Exhibit 1 below).

Exhibit 1



1 Based on a set of metrics to assess digitization of assets (8 metrics), usage (11 metrics), and labor (8 metrics); see technical appendix for full list of metrics and explanation of methodology.
2 Compound annual growth rate.

SOURCE: BEA; BLS; US Census; IDC; Gartner; McKinsey social technology survey; McKinsey Payments Map; LiveChat customer satisfaction report; Appbrain; US contact center decision-makers guide; eMarketer; Bluewolf; Computer Economics; industry expert interviews; McKinsey Global Institute analysis

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While there is clear evidence that this slow start is holding back the sector, it does present a significant opportunity to disrupt from the status quo: for construction to move away from its traditional paper-based and labor-intensive practices, and benefit from the falling cost of technology, higher quality information and enhanced collaboration through better information sharing and visualization.

Business as usual is not enough_

Regardless of the opportunities that can flow from new digitized working practices, navigating change on this scale requires fundamental review of the way companies operate and significant adjustment to the way staff think and work.

Success means putting in place strategies and resources to understand and master not only the technology required for change but also the cultural challenges that will be met along the way. A case in point has been the introduction of Building Information Modeling (BIM) technology to the sector. Despite significant benefits to productivity, companies have dragged their feet in implementing them, forcing governments to now make the use of BIM mandatory for submissions.

A different mindset and an open culture is clearly needed to break away from the norm. Fundamentally, it is not about the technology itself, but rather how we change businesses operations to embrace the benefits that technology brings, and how we collaborate with one another as a result.

People connect the dots_

SJ embarked on its own digital journey about a year ago. It has been an interesting journey not least because the organization has grown three-fold – by headcount and by revenue – and many more times in terms of business complexity.

Recognizing that people are at the core of our business, we chose a more people-centric approach to our digital transformation journey rather than adopting a pure technology-centric play. The idea was to engage the business units and bring them along, help them understand and experience the value of digital, thereby helping the organization to gain traction on its transformation. This was done through repeated engagement sessions, idea generation workshops and probing business units to share their clients' and their biggest pain-points.

We also avoided creating an isolated team to develop new digital tools for the business on its own. Instead the innovation team works across the organization – creating a mindset that is essential to sustaining the digital journey and motivating people to embrace new ideas and come forward with more.

As we look back on this journey so far, three program design choices have made a clear difference to the success of our transformation:

1) Journeys not solutions_

As we established our digital plan together, we initially found ourselves focused on the technology - discussing what to implement, which tools were cutting edge, and how to apply them.
However, what really helped was to reverse this thinking, and start our transformation by looking at the journey of our customers. The goal was to understand the problems that needed to be solved so that our clients could have a more intuitive and engaging, yet more efficient approach to understand proposed designs and provide their inputs, and in the

process significantly better experiences and outcomes.

We applied this approach to good effect, for example, when we introduced a Hololens design collaboration solution. Rather than simply using a new – admittedly 'cool' – devices just to view digital building models, we also sought to raise the quality of our design exchanges with our clients.

Once we understood the challenges, we could redesign our processes. Today, instead of using physical models and paper-based floorplans to explain designs at face to face meetings, which were time-consuming and tedious to follow up, we now conduct design walk-throughs in virtual environments, allowing colleagues and clients to join these design sessions from multiple locations around the world.

Thus, we did not just develop point solutions looking for problems, but came up with holistic ways to solve problems in which digital technologies and optimized processes offered our clients a better value proposition.

The technology brings our virtual design center capability to a new level and gives us the edge against our competitors. But it is also key to delivering a better client experience, at lower cost, and is completely aligned to our designers' processes.

The outcome was a higher quality impact that was more easily embraced and "absorbed" by our business units and so was also more valued by clients.

2) Returns, not budget_

Going digital can be costly, and we have found that traditional budget management methods fail to properly capture the value of the investment. This is particularly evident when we compare the risk/return profile of our innovation investment-driven business model to the current, traditional construction approach.

Yet, quantifying the return on investment in digital initiatives is a critical step and, while challenging, is crucial to understanding how to commercialize and capture the value of innovation before investment decisions are made.
For example, while scoping the use of digital tools to automate compliance checks for urban planning, the initial focus was on how to boost the productivity of our planning staff. Although technology allowed days of checking to be completed in minutes, it was soon clear that the payback period for recovering our investment in building this tool was still much longer than desired.

However, by widening the brief and using the tools to cross-sell checking services to clients we found a new revenue stream, and a new service model – a service with significantly higher revenue streams that eventually provided a reasonable return on the investment.

This additional value would almost certainly have been overlooked had the team focused only on getting the budget to build the tools.

Business units and innovation teams are now compelled to own their investment plans and think deeper about how to extract value from the innovation that flows.

3) Partner, don't do it alone_

When we launched our digital journey, partnership was a key pillar of our strategy. Rather than "re-invent the wheel" by investing in R&D which others had done, we wanted to partner with these organizations, their technologies and solutions, and only invest to build where it made sense.

Our new Building Information Modeling for Facilities Management (BIM:FM) digitized facilities management platform demonstrates this partnership strategy in action.

Digitizing the traditionally manpower intensive FM business has created a new sustainable business model for the future using powerful new digital technology to transform the way buildings are monitored and maintained.

But rather than build a system from scratch, our innovation team sought out and identified partners who could accelerate our development program. As a result, we estimate that our "time-to-market" has been brought forward by at least a year.

Being able to "jump start" programs and tap into the strengths of other organizations, helps to make our solutions better, but also gets them to market faster, to serve our clients better. Our innovation teams and

business units are free to focus more effort on understanding clients' needs and finding the right solutions.

Conclusion_

Digital technology is already to disrupting the entire global construction industry's business model, and, as the old saying goes "if you're not at the table, you're on the menu".

That means a business as usual approach, with a focus on technology alone, is insufficient. We must go beyond the traditional solutions to problems to consider journeys and outcomes; we must go beyond budgets to consider returns on investment.

We must reject silos and embrace collaboration to stay ahead, or risk being left behind in what will be the most exciting change ever witnessed in our sector.