

# Construction sector is at a turning point

Using new technology, revamped business models and talented hires, the industry can grow and help revive the economy

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The size of the global construction industry by 2022 will be a whopping \$12.7 trillion. India will contribute about \$640 billion to this, aided of course by government initiatives in infrastructure development and affordable housing for all. In addition, the latest move of bailing out inefficient and profiteering private builders with ₹25,000 crore of the taxpayers' money will also boost the GDP. Next to agriculture, construction has been the biggest job generator, and employs the largest number of workers.

While it has seen its ups and downs, the sector continues to be a steady contributor to India's GDP and employment growth for several decades now. The sluggish growth in the last few years will begin to change in the construction landscape soon, going by the technological and disruptive changes occurring globally.

## Construction tech

Although construction may not have the profitability levels of financial services, several start-ups have discovered its potential. Construction start-ups in the US raised over \$1.3 billion in funding in just three quarters of 2018. Moreover, incumbents in or adjacent to the sector are spending big on acquisitions. Like other sectors, in which incumbents worry that their inability to innovate may be holding them back, we're beginning to see them shell out billions for technology-focussed start-ups making older processes obsolete.

Thus, Autodesk spent \$1.5 billion to acquire construction-software companies BuildingConnected and PlanGrid, after buying Assemble Systems earlier during the year. Trimble acquired Viewpoint for \$1.2 billion and e-Builder for \$500 million. What are they spending all that construction-technology money on?

As it turns out, drones,

equipped with sensors and virtual reality visualisations, are replacing expensive (and ineffective) aerial photography. The construction industry is reportedly the largest buyer for commercial drones today. Robots are working with humans, eliminating repetitive and potentially dangerous activities. Brick-laying robots can do the job more safely than humans. We're starting to see real 3D-printed buildings. And AI is anticipating and deflecting risks that human beings would have missed.

It seems that digital and other advanced technologies are making old business models obsolete.

## Work processes

If you were to buy a car, you would never imagine hiring one person to design it, another to procure the parts, and a third to put it all together. And then, what if you're told that the car would be delivered very late with a price tag that's 35 per cent higher than estimated? That's the way much of construction works.

New technologies and modular construction has the potential to bring in the much-needed industrial-scale productivity. Venture funds are going for a new kind of construction company, that handles all the aspects of the job under one roof; or even creates the new roofs off-site rather than in the traditional on-site service model.

One example is the SoftBank-funded Katterra. Claiming that it has an "ongoing mission to help transform building for the 21st Century," Katterra uses advanced technologies and proprietary software to do in construction what is already done in the automotive and electronics industries — create products as a unified whole, rather than having each supplier doing only their bit.

In addition to creating a complete service from design through delivery, Katterra is also creating the conditions in which buildings and their parts can be assembled



**Labour shortage** Construction managers in India complain about the difficulty of getting enough workers REUTERS

off-site rather than at a typical construction site. Building off-site allows for greater economies of scale, more routine operations, and better prediction of timing than bespoke construction on a specific site. This in turn promises a decrease in cost and complexity. And it can potentially address some of the more challenging social issues, such as a scarcity of affordable housing.

## Getting work done

Construction managers in India complain about the difficulty of getting enough quality workers. Many skilled workers have fled to greener pastures like the Middle-Eastern Gulf. With those economies in slowdown mode, the sector is caught in labour market headwinds. Many young people don't think of construction as an attractive option. And those who are trying to enter the industry often don't have the skills that customers require, such as the ability to operate specialised machinery.

The industry is thus resorting to some non-traditional practices to recruit and retain skilled talent. From offering higher pay and benefits to hiring full-time employees (rather than contractors), incentives to improve these jobs have been created.

Other creative tactics include recruiting ever-younger candidates, reaching out to previously incarcerated people, focussing on veterans, and even — wait for it — making a big push to bring women into the historically male-dominated industry.

The gender gap in construction is stunning — women represent less than 10 per cent of the total construction-related workforce. When you look at on-site jobs, there's only one woman for every 100 men! If the industry wants to address its chronic labour shortage, this might well be a good place to start. Governments should also encourage this, given their thrust on women empowerment.

## Push for growth

Industry experts suggest how such trends might all come together to create a major shift in the business of construction. When you combine excellent operational practices such as advanced technologies, with better-paying jobs and clear career growth, this can lead to significantly higher performance.

Opportunities for major improvements in the sector are around the corner, but the business leaders need to see them

right. Start with focus and look to simplify process, as attempted by Katterra, and bring all the disparate elements of the system into one place.

Next, standardise and empower employees so that they can work on similar tasks in multiple locations and substitute for one another quickly. Third, cross-train employees to create more value for all stakeholders by way of new skills and better prospects.

Finally, operating with slack ensures that there are enough resources in the system for innovation to flourish and for people to engage in practices that they themselves initiate. That way the system can inspire all stakeholders.

If the construction industry can adopt these measures, it would no longer be seen as the last-resort career option for millennials.

One other complication India has to overcome is the reluctance of the incumbents to follow regulations fully. In other words, construction could be poised for a major positive inflection and help revive the economic sluggishness.

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