

How To Buy Construction Technology

The 2018 AGC/FMI Industry Risk Survey reported that almost two-thirds of respondents expect more change in how construction is put in place over the next 5 years than in the last 50 years combined.

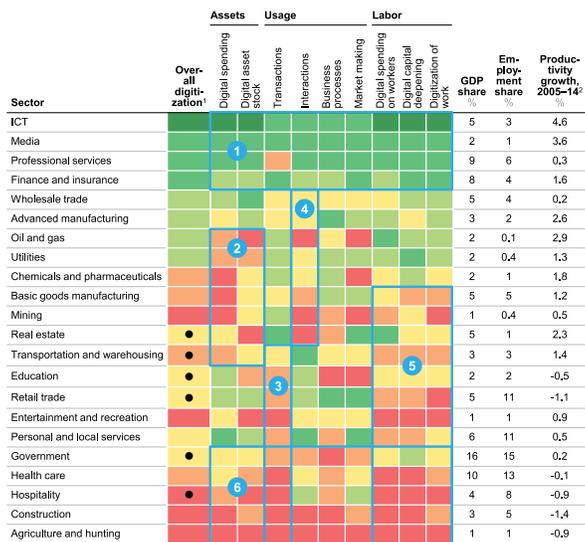
According to the McKinsey Global Institute industry digitization index, the construction industry is second to the last on the list of industries digitized. Construction labor has not kept pace with overall economic productivity. Low productivity is tied directly to the lack of digitization.

Exhibit E2

The MGI Industry Digitization Index

2015 or latest available data

Relatively low digitization Relatively high digitization
● Digital leaders within relatively undigitized sectors



- 1 Knowledge-intensive sectors that are highly digitized across most dimensions
- 2 Capital-intensive sectors with the potential to further digitize their physical assets
- 3 Service sectors with long tail of small firms having room to digitize customer transactions
- 4 B2B sectors with the potential to digitally engage and interact with their customers
- 5 Labor-intensive sectors with the potential to provide digital tools to their workforce
- 6 Quasi-public and/or highly localized sectors that lag across most dimensions

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

A recent report by Global Construction 2030, forecasts the volume of construction output will grow by 85% to \$15.5 trillion worldwide by 2030, with three countries - China, US and India - leading the way and accounting for 57% of all global growth.

There has never been a greater reason for the construction industry to identify and adopt solutions that improve productivity and project delivery through new technologies.

So, if the initial step to improving productivity is to digitize, how do you select the right construction technology? First you must identify and understand the problem, second form an evaluation committee, third evaluate the technology against key considerations and finally do a pilot.



Understanding the Problem

The U.S. construction industry has invested 1.5% of value-added on technology, compared with 3.3% in manufacturing, and an overall average in the economy of 3.6%. Manufacturing benefits from repetitive processes and leverages real-time measures to track production. Construction managers don't have accurate real-time measurements of how much work is getting done. To solve this, many contractors send people around the job site with paper drawings and highlighting pens. Some rely on marking up 2D PDFs and still others report subjective progress estimates based on the experience of the individuals who are reporting them. These methods are often prone to inaccuracies and very slow and manual, resulting in a cloudy and distorted representation of progress and productivity.

Providing project managers real-time visibility into field status and labor productivity (the biggest factor affecting costs), is key to solving this problem.

Forming an evaluation committee

The key to adopting a new technology is getting buy-in from the right people. There is no magic number of how many people to have, but as rule of thumb keep it to an odd number of participants. Include staff that embrace technology as well as those that resist it – in fact, one of the strongest ways to promote new technology and workflows in an organization is to involve the nay-sayers and get their support. If a technology resister embraces it, there will be little resistance by others.

5 Essential Technology Elements to Improve Construction Productivity

Historically construction firms have delayed implementing technology. As the Marketwatch.com article pointed out, under investment in technology is directly tied to poor productivity. What are the key elements you need to look for when making a technology investment to track construction productivity?

- 1** Ease of use – The single most important feature of construction software is ease of use. It facilitates user adoption, increases user satisfaction and most important, increases productivity as happy people work harder.
- 2** Built for mobility – The construction industry is entering the “Mobile Revolution,” in which apps are becoming an accepted means for workflows. A majority of workers use mobile devices on the job site and mobile apps are becoming a significant solution for the construction industry as they increase efficiency and save time.
- 3** Real-time reporting – The ability to access and share project data in real time is invaluable to all project participants. It provides added productivity, better communication, and the ability to address project issues immediately as they arise.
- 4** Low cost of entry (startup costs) – Most construction companies spend 1% or less of annual sales volume on IT. Having a low cost of entry is very important for the technology to be budgeted for.
- 5** Leverages BIM technologies and a digitized workflow – In a McKinsey report, one study found that 75% of companies that have adopted BIM, reported positive returns on their investment with shorter project life cycles and savings on paperwork and material costs. Further, in small specialty studies, BIM appears to be increasing productivity in labor and help improve safety with the increase of prefabrication. In a study involving a small contracting enterprise, the impact of BIM on labor productivity was quantified and findings demonstrated a 75% to 240% increase in labor productivity for modeled and prefabricated areas (Poirier, 2015)

| Pilot on a project

There is no better way to get a feel for the software than to do a pilot. This ensures the team gets a feel for the technology, new workflows, and benefits from proper training. Be sure to have the evaluation committee outline success metrics up front and assign a company “champion” to lead and track the process. Make sure to share those metrics with the technology provider as well as your support expectations. Having a paid pilot keeps all parties engaged, and it’s best that everyone has “skin in the game”. At the conclusion, having a successful evaluation goes a long way in promoting the technology solution to the rest of the organization and instilling confidence in the new process.

Making wise technology investments to improve construction efficiency and productivity makes sense and is essential in today’s competitive environment. Technology investments are as important as good field tools to reduce project delays, adopt to project changes, improve operations cost control, efficiently and safely complete tasks quicker, and provide a quality project on time and on budget.

| ICT Tracker: A Tool Toward Increased Project Productivity

ICT Tracker is an easy-to-use mobile construction installation and productivity tracking software. By tracking projects, you are in control of costs and can make informed decisions based on detailed, up-to-date information from the job site. Utilizing augmented reality or free-flight mode with your existing project models, ICT Tracker enables construction teams to benchmark field installation status and productivity rates with real-time data. ICT Tracker delivers innovative and empowering solutions to streamline work processes and enables the use of technology in construction.

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