Connected Construction:

A new technology mindset
for a new era

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Actionable insights can help you navigate your company's digital transformation journey and create a connected construction experience.

But there's a lot to unpack in the in-depth GlobalData whitepaper, "Connected Construction: A new technology mindset for a new era."

Instead, read the main points and takeaways to get your company started quickly with this executive summary.

Download the whitepaper

Imagine the typical construction company 10 years from now. What will its day-to-day operations look like when engineering and constructing civil and building projects?

If you pictured a high-tech scenario where interconnected teams and technologies work together in highly collaborative, real-time working environments to increase productivity and efficiency, you might not be far off.

Technology plays an increasingly vital role in every aspect of our lives, and although the construction industry was slower to start, it's currently undergoing a massive digital transformation.

GlobalData predicts that, by 2025, construction companies will spend US$36.9 billion globally on cloud services and solutions, reflecting a compound annual growth rate of 16.3%.

But as the industry modernizes, construction companies everywhere are challenged by how to navigate change best. You know this transformation can no longer be avoided or postponed.

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In a GlobalData survey, 45% of respondents lacked financial resources for technological innovation, while 34% reported difficulties finding labor with skills in digital applications, cloud-based processes, and other cutting-edge tools.

Therefore, many firms are evaluating construction technologies on their ability to deliver a connected construction experience.

Today's contractors want to be free of managing multiple single-solution software programs that struggle to work well together. Instead, they're investing in scalable platforms that enable them to take advantage of the latest tech innovations, including virtual and augmented reality, robotics, predictive analytics and machine control, drones, next-level pre-construction detailing and estimating tools, real-time financial, enterprise resource planning (ERP), project management capabilities, and mobile workflow and collaboration solutions.

> **"One of our biggest business advantages is our ability to move information quickly, accurately, and efficiently to our people and equipment."**
>
> **— Britton Lawson, Director of Construction Technology, Veit & Company, Inc., United States**

But successfully incorporating these technologies into your workflows requires more than just purchasing them.

It requires streamlined implementation, scalability, and interoperability. It's about connecting your technologies and bringing people, workflows, stakeholders, and departments together with the help of a common data environment (CDE)—an online, cloud-based platform that stores real-time construction information and makes it accessible to all project participants.

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Connected construction will enhance project visibility and predictability while reducing the chance of errors, inefficiencies, miscommunications, and rework. The result: cost savings and improved profit margins.

> **"Technology, when used correctly, makes everyone on site and in the office more efficient. If a $1,000 software solution saves a 10-person steel crew an hour on site, it has already paid for itself."**
>
> **— Dallas Williams, Project Manager, Scott Builders, Inc., Canada**

The connected construction experience brings construction processes–from design and financing to engineering and maintenance–together to make your projects more efficient and profitable.

CONSTRUCTION INDUSTRY VALUE CHAIN

CHALLENGES

Conceptual design	**Basic specification	Planning strategy	Procurement options**
Feasibility studies, planning & permitting	**Site selection	Feasibility studies	Permitting**
Financing	**Asset management	Capital raising	Business cash flow**
Design & engineering	**Detailed design & estimate	Design for manufacturing	Production planning	Prefabrication**
Procurement	**Materials	Equipment	Logistics	Labor**
Construction	**Excavation	Foundation & formwork	Utilities	Framing & roofing	Mechanical, electrical & lighting	Flooring, painting & finishing**
Operation & maintenance	**Installation	Occupation	Facilities management	Maintenance**

Exploring the connected construction experience

The fundamental idea behind the connected construction experience is simple. If you have access to a common data environment (CDE) and a standardized set of connected workflows for all stakeholders, departments, and disciplines of the construction process, you will realize more consistent, streamlined, and predictable project execution.

But you might not be experiencing these benefits because you're working in traditional business silos.

This is why connected construction is so valuable. A single source of data that anyone can access at any time will improve communication, reduce labor overheads and resource wastage, and generate greater profit margins.

Seek the following capabilities to ensure you build an end-to-end connected construction experience.

Single platform for shared data

Project data is part of a universally accessible environment, supported by a common set of tools and capabilities.

Real-time business insights

Next-level reporting and analytical tools help you parse data to uncover issues, trends, and more.

Team and stakeholder collaboration

Cohesive, company-wide visibility into the project's status makes it easier to define deadlines, budget, or equipment requirements.

Sustainable resource management

Synchronized decision-making around operational principles enables more accurate resource allocation and emissions tracking.

Cloud & subscription licensing

Moving to the cloud via a software-as-a-service (SaaS) license offers greater cost savings, efficient resource management, and increased flexibility.

Helping you identify and overcome challenges

When incorporating new technologies into your construction business operations, you will likely encounter several hurdles.

> **"It's not only a matter of technology but also the company culture, of seeing the process in the big picture."**
>
> **— Edizilia Construction Management, CEO, Argentina**

Through in-depth interviews and a thorough analysis of the industry, GlobalData identified many of these challenges and provided data-based, actionable insights on how you can overcome them. Here are a few of their findings.
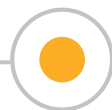
Overcoming cost barriers and proving ROI.
Barriers related to costs were the top three factors affecting a firm's digital transformation. This indicates that any adoption of new technology requires a comprehensive demonstration of its return on investment (ROI).

Changing the business culture.
Change management affects how technology is procured, deployed, and used across the organization. To succeed, you must overcome the entrenched business culture and the 'normal' way of doing things.

Addressing data security concerns.
According to the 2021 GlobalData survey, more than half of all construction executives believe a cyberattack will hit their firms in the future, yet 68% of firms have limited security measures. One option is to adopt a cloud solution and migrate your data to the cloud, which offers significantly more data protection than on-premises software and hardware.

How to make your move to connected construction

The connected construction experience offers countless benefits, but you may be wondering how exactly to get started.

When introducing new technologies as part of your connected approach, ensure you have a roadmap that outlines your vision and includes practical steps for how different teams will use the technology.

A roadmap allows you to track the progress of the implementation and address issues when they arise. More importantly, your roadmap can help you better communicate your objectives and vision so that you can champion the benefits of the new technology.

> **"The introduction of new construction process management technologies increased business efficiencies by way more than 10%."**
>
> **— Senior Road & Infrastructure Engineer, Egis, Saudi Arabia**

Your technology implementation roadmap has several
essential elements.

Establish project vision and key goals

Use vision and goals to develop a messaging strategy

Identify and cultivate "change champions"

Identify and engage stakeholders

Produce a communications plan

Devise a thorough plan for testing

Use training to communicate the benefits of, and the need for change

Your path to more profit

As you implement technologies across the company, all while measuring and tracking progress, you'll develop a truly interconnected technology stack that informs all areas of your business operations.

> **"By keeping projects on track, we can take new ones on, with the knowledge that we'll finish on time for the next one. It has truly changed our entire operation."**
>
> **— Wayne Barr, Production Director, Ground Developments, United Kingdom**

Embarking on the digital transformation journey will help you deliver more projects in full, on time, in spec, and within budget, resulting in increased revenues and improved profit margins for your business.

The connected construction experience is powerful, and it's within your reach today.

> **"Technology allows us to deliver a product that is not just built 'as planned,' but is delivered 'as intended,' often allowing us to make recommendations and deliver a final outcome that exceeds original expectations."**
>
> **— Jeff Buckley, Prefab/BIM Program Manager at Aldridge Electric, United States**

To get the complete picture of the connected construction experience, backed with more data and stories from people who have implemented their own digital transformation, download the whitepaper **"Connected Construction: A new technology mindset for a new era."**

Download the whitepaper

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About Trimble

Trimble is an industrial technology company transforming the way the world works by delivering solutions that enable our customers to thrive. From purpose-built products to enterprise lifecycle solutions, Trimble construction technologies give users control of their operations with best-in-class solutions and a common data environment.

For more information about Trimble (NASDAQ:TRMB) visit construction.trimble.com.