



A Guide to Digitizing for Construction Materials Testing Organizations

How digitizing the materials testing workflow can help testing organizations boost productivity and ROI.

*It's well documented that the construction industry has traditionally lagged behind the rest of the automated world. As such, construction's digital transformation journey is only just beginning, and the sector offers a ton of opportunity for innovation **to drive productivity gains.***
Are you ready?

For construction firms who want to compete today amid ongoing labor shortages, higher productivity means everything – lower costs, on-time projects and a thriving business.

But how do you get there?

There's a lot of room for digitization in the construction industry as a whole, but the construction materials testing workflow is a great place to start.

In this guide, we review how CMT organizations can do just that, achieving serious productivity gains and return on investment.

We'll cover:

- The state of the construction industry
- Benefits of digitization
- What to look for in a digital solution

THE STATE OF THE CONSTRUCTION INDUSTRY

The construction industry is fraught with challenges, but they are nothing new – materials costs, labor talent and availability, and regulations are in constant flux. Here’s a recap of where the industry is at today.

Let’s start with the good news: A [recent Deloitte report](#) expresses optimism for the construction industry. In light of the Infrastructure Investment and Jobs Act, the opportunities are plentiful, and Deloitte expects a rewarding year of growth for construction firms.

But, of course, this is not without its challenges. Supply chain disruptions, material costs, sourcing challenges and ongoing labor shortages are expected to dampen project delivery and margins. According to the Associated General Contractors of America, [83% of contractors are struggling to hire workers](#) – with over half expecting it to continue to be hard (or become even harder) to hire in the coming 12 months.

As [Deloitte highlights](#), connected construction – with new technologies at the core – will play an important role in overcoming these challenges.

The problem? A [large majority of contractors](#) don’t expect changing their investment in technology in 2022.

It’s clear that digitizing is the answer, but it’s not at the top of the list of initiatives for construction organizations. How do we reconcile this? It starts with understanding the key benefits of digitization – specifically for construction materials testers – and then, once convinced, review what to actually look for in your quest for digital solutions.

“In 2022, connected construction will likely be a catch-all for major digital investments to connect, integrate, and automate operations and bring the entire value chain onto a secure, intelligent infrastructure.”

– Deloitte 2022 Engineering & Construction Industry Outlook

BENEFITS OF DIGITIZATION FOR CMT ORGANIZATIONS

Historically, construction materials testing has been a highly manual effort with paper-based and homegrown tools.

Some testing organizations have moved beyond some of the outdated practices by accepting automatic testing machines. Other engineers and project owners have implemented third-party software to keep track of test results, timelines, billing and other project data. But with these solutions, one legacy problem still persists: At various points in the process, human hands have to intervene.

And when there's human intervention, there's a [potential for human error](#) that can compromise result accuracy, trustworthiness and project productivity.

Every minute and critical path task in construction projects matter. For firms trying to do more with fewer resources all while keeping projects on track in today's tricky landscape, a manual testing process simply won't cut it.

Here's how an integrated, cloud-based CMT platform can help.

Consequences of Manual Testing

- Lower productivity
- Human errors
- Higher costs

What Is Construction Materials Testing Software?

An integrated, cloud-based CMT platform automates how data moves through the testing process, from specimen identification to data analysis.

Testing lab technicians save time and get more done faster with fewer people.

Project owners and other stakeholders can access unalterable original test results to verify the quality of construction materials and help move projects forward.

Benefit #1: Streamlined Specimen Prep & Identification

A cloud-based CMT platform enables technicians to mark specimens with barcodes instead of handwritten labels. These barcodes tie the specimen back to its unique ID, which is stored in the cloud database. Technicians only have to apply a barcode label to the specimen, and the next technician can get all the information needed by scanning it (or reading the machine-printed, human readable information, if a scanner isn't being used). This removes the need to double-check handwriting and ensures the right specimen is being tested on the right date.

Benefit #2: More Productive Testing

When a testing machine interface is linked to CMT software, the machine knows what specimen it's testing because it has been preloaded with the associated information in the cloud database. The technician doesn't need to spend time double-checking IDs and verifying the test setup. Plus, if the machine is automatic, the technician only has to touch one button to get the test started.

Benefit #3: Automatic Data Transfer & Access

With a cloud-based CMT platform, the machine (whether it's manual or automatic) can automatically transfer results to the cloud database and any other interface to interact with and report on that data. Technicians don't need to waste time manually recording the results or transferring data to the next person.

Powered by integrated CMT software, an automatic materials testing workflow eliminates manual, repetitive tasks and frees up technicians for more value-added tasks. Tests become consistent and reliable, results are more accurate and traceable, and analysis can happen at the click of a button. The benefits trickle through the rest of the project, improving productivity, ensuring project timelines are met, and building confidence in the infrastructure.

So, what does this actually look like?

WHAT TO LOOK FOR IN A DIGITAL SOLUTION

“Technology” is a broad term. What exactly should firms look for to achieve the benefits of a cloud-based CMT platform listed above?

There are many options out there. So many options that firms become quickly overwhelmed and unsure of where to begin. Others have frozen in their tracks, afraid of user errors from unfamiliar solutions. Then there are the firms that have simply searched for temporary, band-aid solutions that only solve short-term needs.

But, as we highlighted before, there are many benefits to a cloud-based CMT platform that will take your testing organization into the future – so long as the solution you select encompasses these four building blocks.

1. Cloud-Based Platform

It’s important to note the difference between a cloud-based platform versus cloud-based storage. Cloud-based storage is defined as flat files shared on a server that are manually organized into a folder structure (think Google Drive—definitely useful in other contexts, but not in this conversation).

In contrast, an integrated cloud-based platform is defined by free-flowing data that can be integrated to work with other software programs. And that brings us to the next building block.

2. Open System

Data must be able to move freely between the cloud database, testing machine, LIMS, accounting system and more. To accomplish these capabilities, your solution needs to play along well with other technologies. The more connected your materials workflow, the more you can improve productivity – because human hands don’t have to intervene.

Signs of Bad Tech

- Data silos
- Conflicting file formats
- Nonintegrated packages
- Overly complex UI

3. Short Learning Curve

As productivity and profitability concerns take center stage, you need to be able to implement a solution quickly and painlessly.

It's difficult to get people to change – especially in the construction industry – so it's important to find a solution that doesn't create a huge barrier.

Learning curves are inevitable, but they shouldn't be a roadblock in the adoption and training process. Any piece of technology you introduce to your testing environment should transform your process without making it more difficult to get the work done. After all, technology is only as good as it is usable.

4. Quick Technical Support

Again, you need a solution that can solve immediate productivity issues while still setting you up for future success. So, choose a provider with an experienced, dedicated team who knows and can adapt to the unique issues of CMT.

CONCLUSION

Construction firms are looking for ways to overcome legacy challenges and flourish in 2022 and beyond. The answer is connected construction – and the materials testing workflow offers a logical place to start.

Those who have already begun the digitization process are already starting to see productivity payoffs. Those who haven't will be left behind. It's time for the construction industry to change by accepting change – and actively strive to move beyond outdated, manual practices. Doing so will not only help them today but continue to pay dividends long into the future.

Ready to digitize your CMT workflow with an integrated, cloud-based CMT platform? Contact ForneyVault today.

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