MANUAL PROCESSES IN CONSTRUCTION AND ENGINEERING

Industry Survey & Report
Accurate and up-to-date data is imperative to the success of construction and engineering projects. Data is used to track information related to quality, safety, efficiency, and productivity. Despite the importance of accurate and current data, collecting this critical information is often relegated to manual methods like spreadsheets or even hand-written notes. These manual collection methods are often full of errors and complicate the way data is communicated between job sites and the office. Adding to the challenge, companies use multiple systems to house project and job site data, making it difficult for main offices to turn data into actionable reports.

TrackVia surveyed more than 500 executives and managers in the construction and engineering fields to learn more about the challenges associated with manual processes on job sites and how those hurdles impact their day-to-day operations. This report closely examines the challenges, priorities, and business impacts that executives and managers face.

Executives that rely on four or more systems to manage their data spend 400% more time trying to use that data for decision-making compared to those who use a single system.
The research reveals how manual processes expose firms to higher risk and costs, namely around poor quality, project delays, and compliance. Most executives (70%) said their biggest challenge with data is identifying potential issues before they become big problems.

This research paints a picture of an industry that would benefit greatly from a more efficient and streamlined method of collecting, acting on, and analyzing data through a digital solution. In fact, many executives believe that digitizing their data collection and processes would improve their operations and lead to fewer risks and significant cost savings.

**KEY FINDINGS**

47% of managers still use manual data entry to capture critical data

59% of managers say that when data is collected manually, the #1 issue they face as a result is incomplete data about work quality

65% of managers said manual processes cause change and work orders to get missed some to all of the time

88% of executives who use four or more data systems spend at least 1,300 hours per year trying to assemble data into usable reports

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Managers (89%) and executives (78%) agree on the importance of job site data to their construction business. More than half of executives (52%) say four or more departments rely on the data coming from jobs sites and that the most crucial types of data that impact success are quality of work, the cost of time and materials, and safety.
SECTION 2: PREVALENCE OF MANUAL PROCESSES

Despite the importance of data to business success, both managers and executives note the inefficiencies of the data collection process. Even with the development of more advanced systems and solutions in recent years, there is wide usage of manual data entry and even hand-written notes on job sites.

CRITICAL DATA STILL CAPTURED MANUALLY

47% of managers say critical data is still captured manually

33% of managers still use paper and pen to track data
SECTION 3: NEGATIVE IMPACT TO WORK QUALITY

Most executives and managers say that ensuring quality work is the most important part of their overall success and the most important part of their job. But despite that importance, the majority of managers claim that data about work quality is still most often collected manually.

CRITICAL DATA ON QUALITY LEFT TO MANUAL COLLECTION

- 75% of executives and 74% of managers say that ensuring a high quality of work is the most important part of their job.
- 52% of managers say that when data is collected manually, the #1 issue they face as a result is incomplete data about work quality.
- Yet data about work quality is most often collected manually, with 52% of managers saying they use manual methods to track job quality data.
SECTION 4: PROTRACTED TIME-TO-COMPLETION

A large portion of change- and work-order initiation is manual, with more than 80% of managers reporting email as the primary means followed by meetings and calls via radio or cell phone. This contributes to why 65% of managers surveyed also said that work orders or changes get missed some to all of the time, lengthening time-to-completion.

CHANGE AND WORK ORDERS CONSISTENTLY MISSED

65% of managers said work orders and changes get missed some to all of the time.

66% of managers said the availability of information, like change orders, was the hardest information to capture accurately.

When data is collected manually, the top three challenges managers face are:

- Inadequate levels of details attached to work and change orders
- Incomplete work quality observation data
- Incomplete information to substantiate claims
SECTION 5: INEFFICIENCIES OF ANALYZING DATA

When data collection and processes are inefficient, the impact extends into how main offices are able to use that data to develop reports and drive critical decisions. Half of managers say their data must go through five different steps to get their data into a software or database system and half of executives say their data goes through the same number of steps before it can be used by team members for reporting and analytics.

THE INEFFICIENCIES OF CURRENT SYSTEMS

75% of executives say they use multiple systems to house project and site data

58% of executives say using multiple systems makes it too time-consuming to collect, process, and make data usable for team members

MULTIPLE STEPS AND SYSTEMS LEAD TO SIGNIFICANT TIME LOST

1,300 HOURS SPENT ANNUALLY

400% INCREASE IN TIME SPENT

88% of executives who use four or more data systems spend at least 1,300 hours per year trying to assemble data into usable reports

This is a 400% increase in time spent compared to those who use a single data system
SECTION 6: RISKS OF MANUAL PROCESSES

Lost, inaccurate, and incomplete data are executives’ biggest concern about data coming from the job site. Manual processes inhibit executives and managers from making timely decisions and from staying ahead of potential issues before they become big issues. Executives are also challenged with making decisions with incomplete data, as well as not having the information they need for compliance and audits.

MANUAL DATA COLLECTION POSES BIG RISKS

- 61% of executives said they have to make decisions with outdated data.
- 70% of executives say their biggest challenge with data is identifying potential issues before they become big problems.
- 66% of executives say they are challenged with incomplete or inaccurate data needed for compliance and audits.
SECTION 7: COSTS OF MANUAL PROCESSES

Inadequate data collection leads to costly challenges for executives and managers. Executives cite that manual data entry leads to poor quality controls, inadequate or damaged supplies, materials, and equipment, as well as employee downtime.

MANUAL DATA COLLECTION INCREASES COSTS

Executives and managers agree on two out of the three top costs that their businesses face as a result of manual data entry:

- **Costs related work quality, especially when work must be redone**: 76% of managers, 61% of executives
- **Costs related to employee downtime**: 71% of managers, 54% of executives

Executives and managers disagree on the third top cost caused by manual data entry. Fifty-seven percent of executives reported costs related to inadequate or damaged supplies, materials, and equipment. Whereas, 58% of managers cited liquidated damages due to project delays.

INABILITY TO SUBSTANTIATE CLAIMS

The ability to substantiate claims is crucial to contractors and engineers. Inefficiencies with collecting and managing this data is costly, with some firms facing thousands or millions of dollars per day in liquidated damages.

- 45% of managers said they could adequately substantiate claims only **51-80% of the time**
- 50% of executives said they could legally substantiate only **50-79% of claims with daily reports and other documentation**
WHERE WE GO FROM HERE

Executives and managers agree that data is vital to the success of their business, but they know that the systems and methods they have in place to collect, act upon, and analyze data aren’t meeting their needs. Even more so, these systems and methods are posing significant risks to projects and increasing costs.

DIGITIZING DATA COLLECTION

With data playing a critical role in the success of construction firms, contractors and engineers need a shift toward more streamlined, digitized data collection processes. Replacing paper and spreadsheets with dynamic mobile apps enables firms to capture information from any device — online or offline. Job site teams can use standardized forms to enter data, scan barcodes, geotag locations, attach photos, and document weather conditions using any iOS or Android device.

Digitizing data collection processes dramatically improves the completeness and accuracy of daily reports, safety observations, and quality inspections. More than half of executives (52%) believe digitizing data collection would help alleviate several of the issues related to manual processes, including costs related to rework or damaged supplies and materials.

AUTOMATING WORK AND CHANGE ORDERS

When work and change orders are manual, work slows down and quality is compromised. By automating work and change order processes, firms eliminate manual steps and free employees to take immediate action. Firms can automate tasks, work orders, notifications, alerts, and validation using event- or data-based triggers — all according to firms’ specific processes.

Time-to-completion accelerates when firms automate their job site processes, resulting in significant improvements in on-time performance.

Executives reported the number one way to improve their operations is by digitizing data collection, processes, and reporting that are still done manually.
STREAMLINING DECISION MAKING
Corporate offices need to simplify their processes for turning job site data into usable reports. By digitizing data acquisition on the job site and integrating it with other systems, firms get accurate, real-time visibility across their entire organizations. Firms can create custom dashboards and reports and publish those for executives and managers so everyone is on the same page.

With a single system, executives and managers can drive fast, impactful decision-making around improvements in work quality, on-time delivery, and safety on job sites.

TAKING ACTION TO REDUCE RISK AND AVOID COSTS
Forward-thinking executives and managers know that a solution is needed to address manual data collection and processes on job sites. Most executives agree that digitizing their operations would reduce risks and avoid costs. Workflow platforms that digitize operations allow firms to create custom applications according to their unique business processes. Furthermore, workflow platforms integrate with and extend current systems, such as project management and enterprise resource planning tools, so firms can streamline reporting across the business including the job site. Learn more about how workflow platforms help construction firms digitize their businesses.

METHODOLOGY:
TrackVia surveyed over 500 executives and managers in construction and engineering in February 2018. This survey was completed online and responses were random, voluntary, and completely anonymous.

ABOUT TRACKVIA
TrackVia is an operational workflow platform that helps hundreds of companies like Leidos, Honeywell, and KS Industries build applications that improve on-time performance and reduce costs. TrackVia offers the fastest and easiest way to build powerful apps that are business led and IT approved.

TrackVia, Inc.
1675 Larimer Street, Suite 500
Denver, CO 80202

720-625-3460 | sales@trackvia.com | trackvia.com