



GUIDE

Digital inspection platforms for manufacturing safety, quality, and maintenance



After disruptions initiated by the coronavirus pandemic, manufacturing seemed poised for dramatic growth, as consumer demand for manufactured products was projected to rebound. However, between recent production shortfalls,¹ an estimated 2.1 million manufacturing jobs that will be unfilled through 2030,² and an increasingly unstable economy,³ manufacturers must do more with less while maintaining high safety, quality, and maintenance standards.

Workplace safety remains a persistent issue in the manufacturing sector, accounting for 15 percent of all private industry nonfatal injuries and illnesses in 2020.⁴ In contrast, both quality and maintenance too often seem like an afterthought: 60 percent of companies don't know or don't measure the financial impact that quality has on their organization,⁵ while another 60 percent of manufacturing companies still perform reactive maintenance.⁶

In this precarious environment, it is more important than ever for manufacturers to implement and embed efficient safety, quality, and maintenance programs, especially because failure to do so comes at a high cost:

- On average, employers will spend \$120,000 in direct and indirect costs on each workplace injury.⁷
- Many companies have quality-related costs as high as 15 to 20 percent of gross sales revenue, while some manufacturers see costs as high as 40 percent.⁸
- Predictive maintenance typically reduces machine downtime by 30 to 50 percent and increases machine life by 20 to 40 percent.⁹

Inefficient or lax safety, quality, and maintenance standards, inspections, and programs drive up material and labor costs, squander resources, threaten margins, and quickly result in potential revenue losses or delays.

To prevent these losses and meet today's unique circumstances, leading manufacturers are turning to digital inspection programs that front-end successful safety, quality, and operational maintenance programs. According to the American Productivity & Quality Center (APQC), *"The future of work is increasingly digital, and nowhere is that more evident than in manufacturing."*¹⁰



How digital inspections improves safety, quality, and maintenance

Considering all its moving parts – employees, materials, equipment, stakeholders, processes, finances, data – the overall scope and complexity of any manufacturing operation is huge. But so is the potential for error. Over time, common missteps can coalesce into major pain points for manufacturing facilities, leading to serious and costly safety, quality, and maintenance concerns if left unchecked.

To resolve these pain points and stay competitive, manufacturers deploying digital inspection platforms to leverage value-added data will be better positioned to tackle quickly evolving circumstances, whether on the floor or in the economy.

Let's dive deeper into just a few ways digital inspections can mitigate the common pain points facing manufacturers by optimizing their safety, quality, and maintenance efforts.

Common challenges facing manufacturers	Common challenges facing manufacturers
<i>Uneven work output and product</i> When managers scramble to fill gaps in the production process by hiring inexperienced workers, the potential for mistakes and inefficiencies skyrockets.	<i>Clear guidance for new and inexperienced workers</i> Managers can create digital checklists with easy-to-follow instructions to guide workers through the specific task at hand, regardless of skill or experience.
<i>Inconsistent compliance with procedures</i> Making sure that every worker follows safety, quality, and maintenance procedures is nearly impossible without a coordinated system to facilitate and monitor compliance.	<i>Consistent, uniform protocols</i> Easy-to-create configurable checklists let you uniformly describe task SOPs across individuals, teams, and projects. Working from the same protocols across a shared tool results in team-wide consistency and compliance.
<i>Outdated inspection data collection methods</i> Performing inspections using pen and paper results in scattered, disconnected data that is difficult to use, share, or analyze in any meaningful way. In addition, adding photos or reference files must be done manually after inspection data is input into a digital file.	<i>Value-added digital data collection</i> Everyone works from the same, real-time cloud-connected data, unifying information across teams and tasks. Every action is geotagged in real time and multimedia resources like photos, maps, and videos can be uploaded to any record.
<i>Culture of reactive apathy</i> Paper-based systems silo information and make reporting emergent issues difficult and onerous, creating an apathetic culture that sees sharing information as a burden.	<i>Culture of broad, proactive reporting</i> Anyone at the plant who notices something wrong can scan a QR code and report it quickly. Broadening community reporting gives everyone a stake in plant safety, quality, and maintenance, creating a culture where reporting is enshrined as a proactive responsibility.

<i>Inefficient record management</i> Manufacturers must supply timely and accurate safety, quality, and maintenance information to regulators and stakeholders, which is difficult if records are scattered among workers and locations.	<i>Instant report creation</i> At the push of a button, create any manner of report in a variety of different formats to prove the performance of programs to stakeholders (executives, clients, OSHA).
<i>Poor tracking ability</i> Inability to track and analyze overall issue trends prevents efforts to keep problems from recurring.	<i>Connected documentation for insights</i> Cloud-connected digital inspections platforms track and store vast amounts of records on safety, quality, and maintenance issues and events. This allows leaders to quickly identify and mitigate knowledge gaps, extract data-driven insights to improve processes, and prevent persistent problems.
<i>Communication breakdowns</i> Workers on the floor have neither the incentives nor the tools to share information with leadership, while managers struggle keeping their ears to the ground. This leaves everyone blind to emerging and recurring problems.	<i>Communication leads to collaboration and remediation</i> Workers collect real-time data on emerging problems that is shared with managers who can quickly assign remediation tasks and schedule follow-ups. Digital tools promote proactive, timely, and collaborative remediation across teams.
<i>Barriers to prioritization</i> When data can't be shared between teams, managers struggle to prioritize tasks, leaving workers scrambling to get everything done at once.	<i>Efficient resource management</i> Digital records of equipment and resources let managers track and determine a plant's current operational capacity and adjust accordingly, moving resources around to better guarantee plant safety, quality work, and regular maintenance.
<i>Inability to scale</i> Without data to see the big picture, manufacturers are too focused on putting out daily fires, stifling potential for growth.	<i>Smart integrations</i> Data collected can be integrated into dashboards and other backend applications, including business intelligence (BI) platforms, providing better visibility to detect trends and develop insights that optimize resources for growth and scaling.



Benefits of digital safety inspections

The advantages of using a digital safety inspection platform go beyond reducing worker injuries and safety incidents, and can include reduced insurance premiums, better worker morale, and even an increased ability to attract experienced employees. Digital safety inspection platforms also simplify OSHA interactions, eliminating the mad scramble for records to demonstrate compliance that tend to follow OSHA visits. In addition, if an accident does occur, proving safety efforts is easy, lessening the likelihood of fines or OSHA action.

Benefits of digital quality inspections

Using a digital quality inspection platform also has advantages far beyond the expected reduction in mistakes. Lessening the risk of rework is a benefit that cannot be overstated – the American Society for Quality estimates that quality-related costs can be as high as 15 to 20 percent of sales revenue.¹¹ This figure is likely to be higher now as supply chain issues continue to plague the manufacturing industry, making raw materials both costly and difficult to replace if they're made unusable due to production errors. Additionally, a reputation for high quality can help drive sales, just as a reputation for poor quality can make others reluctant to do business with you.

Benefits of digital maintenance inspections

The chief advantage of using a digital inspection platform for maintenance lies in assigning and complying with recommended maintenance schedules, as well as the ability to quickly see when maintenance falls behind. The easily accessible record of maintenance activities, along with the increased likelihood of adhering to maintenance schedules, benefits manufacturers by keeping equipment operational for longer, reducing unscheduled downtime that can result in work stoppage, and easing the process of getting warranty repairs or replacements.

Digitize, stabilize, revolutionize

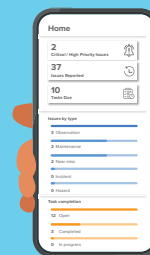
Achieving top-tier worker safety, product quality, and regular maintenance has always taken careful planning, well-documented and efficient processes, and the right technology. Gaps in any of these areas forces companies, willingly or not, to make uncomfortable tradeoffs between safety, quality, or maintenance on one side and cost or timeliness on the other – tradeoffs much riskier in uncertain economic conditions.

Filling these gaps requires not just data, but the right kind of data – on-the-ground, reliable, accurate, real-time, value-added, multimedia, accessible and shared across teams. Armed with this digitized data, a manufacturer can extract and then implement the data-driven insights that quickly and efficiently resolve the gamut of issues they face, big or small, short- or long-term, day in, day out.

By streamlining communication to collect better inspection data, a digital inspection platform unites people, processes, and information across sites and jobs to better automate workflows and execute tasks – all in a more efficient, proactive, and timely way. These best practices empower teams to work more collaboratively and responsibly, building a company-wide culture that keeps safety, quality, and maintenance top of mind, so you can scale up no matter what’s happening on the floor – or out in the world.

LEARN MORE

Fulcrum’s leading digital field inspection platform empowers everyone at your plant, from workers to executives, with reliable information and automated workflows to help create a culture of safety, make better products, and ensure proper maintenance. Sign up for your **free trial** today!



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Sources:

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¹⁰Digital Manufacturing | APQC

¹¹What is the Cost of Poor Quality (COPQ) and Why Is It Important? (sixsigmadaily.com)