Floodlight
software

The Business Value of Digitalizing Industrial Inspection Processes

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1. EXECUTIVE SUMMARY

Industrial inspections, including asset integrity management, non-destructive testing, risk-based inspections and fitness for service evaluations, are inherently people-centric processes. Technicians and engineers are specially trained and skilled to conduct highly specialized and sometimes dangerous inspections that cannot be completed by machines alone. It is a service-driven business. As with all service-oriented businesses, operational efficiency — from customer relations to project management to billing and retention — is critical to success.

In order to optimize operational efficiency, an inspections service provider must be able to: a) estimate job costs as accurately as possible, b) reduce or eliminate administrative overhead, c) manage equipment usage to minimize delays, d) optimize internal workflows and e) create full and persistent visibility into end-to-end processes.

Achieving good operational efficiency enables the business to improve important metrics such as meeting customer timelines, showing impeccable safety performance, adhering to customer-defined inspection report formats, and providing competitively priced service offerings. These results allow an inspection service provider grow its business while maintaining performance and profitability.

In a business environment that focuses heavily on manual data collection, management, and analysis, today's industrial inspection provider has an opportunity to stand out from the competition and deliver an exceptional customer experience by creating and deploying a controlled, end-to-end digital inspections management system. This system replaces paper-based processes with digital data capture, data storage, and data management. An optimal system manages data to a single source of truth and connects all relevant components from customer relationship management to proposal management, reporting, invoicing, analytics and predictive insights, and safety compliance. When implemented completely, these capabilities form the foundation for digital transformation.

The results of digital transformation for an inspections service provider are measurable in revenues, improved customer satisfaction, enhanced safety, greater employee engagement, faster and more thorough job completion, more accurate reporting, higher job margins, and faster billing cycle times.

This white paper discusses these benefits of digitalizing industrial inspections processes, focusing on the architecture and technologies required to make an organization's digital transformation successful and ensure a demonstrable return on investment. It also examines the impact on business operations: resource utilization, asset tracking, quoting accuracy, margin control, customer reports and workflow, technician safety and engagement, and invoice cycle time. Finally, we offer recommendations on how to approach digital transformation and achieve these outcomes.

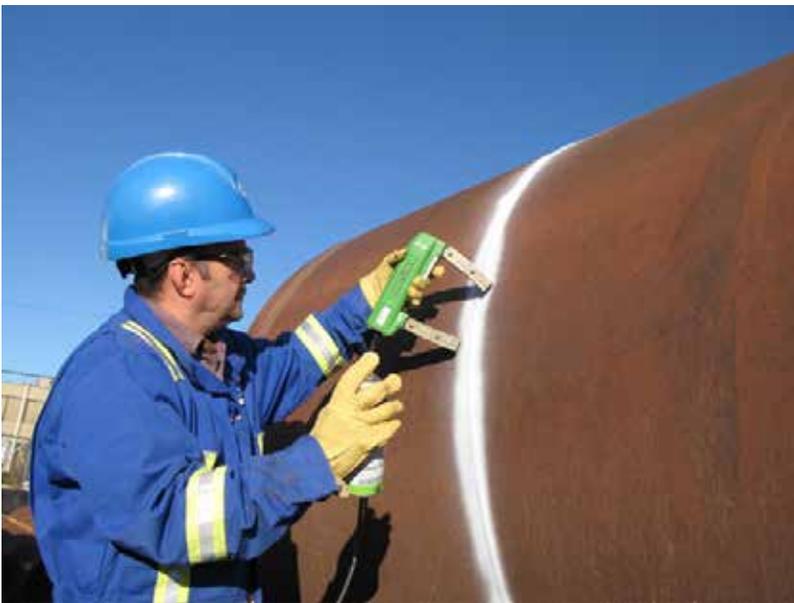## 2. BENEFITS TO CUSTOMERS OF INDUSTRIAL INSPECTION PROVIDERS

Your customer, the industrial asset owner or operator, has three top priorities:

- Ensuing that their industrial assets are operating safely and correctly
- Getting the most value out of their assets as possible
- Maintaining their assets in such a way that their future value is optimized

Your customer can derive these benefits from a range of industrial inspection service providers. How do you stand out, win, and ultimately keep customers?

Beyond reliably and accurately inspecting their assets, and in order to stand out among the competition, your organization can:

- Perform services at a lower cost than your competition
- Perform services more quickly than your competition
- Make your inspection reports more useful to your customer than those of your competitors
- Make your inspection reports easier for your customer to access, use and act upon
- Provide insights for your customer that go above and beyond the standard and required results
- Implementing a digitalized inspections process within your organization can enable you to surpass your competition and become more profitable.

3. BENEFITS TO INDUSTRIAL INSPECTIONS BUSINESSES AND OPERATIONS

Manual processes and systems impede your ability to serve more customers and grow your business. Starting at the technician level where the inspection service is delivered, paper forms and manual processes prevent the technician from fully understanding and serving the customer. Lacking visibility into the customer's assets, service requirements and inspection history, the technician cannot make recommendations or provide the depth of insight and knowledge needed on site.

The administrative efforts that go into keeping manual processes on track to deliver proper service levels require time that could otherwise be spent serving new customers and delivering new services. The hidden overhead in paper forms, storage and administrative time is an additional cost to not serving customers as they have come to expect.

To begin the process of digital transformation, start in the field to understand the role and daily tasks of the inspector. This is where the adoption of digital processes begins. In terms of resource utilization, digitalizing inspection processes enables the industrial inspections service provider to deliver and bill more work with the same number of staff. At the core of this capability is managing technician utilization in real-time. Adopting digital inspections processes creates new efficiencies in how jobs are initiated, quoted, assigned, managed, and invoiced. These efficiencies reduce costs and make it easier for your customers to do business with you.

Beyond streamlining work processes, holistic inspections management software that continuously stores and analyzes data enables the service organization to see into business operations: how long it takes to complete an inspection; which technicians are best suited and available to complete a job; what kind of equipment is needed and when it will be available; how profitable an inspection is; and where there are opportunities to further streamline and optimize.

Predictive analytics show how much work the business can realistically take on within a certain time period, and the business can set growth plans based on these insights. The data in the digital inspections system underpin these analytics and provide considerable competitive advantages. On a tactical level, digitization allows the business to see where inspectors are in the field, allowing them to be more informed when choosing an inspector based on skill sets and proximity to the job.

In financial terms, digitalizing inspections processes speeds up the billing cycle and reduces days sales outstanding (DSO). This advantage becomes even more pronounced when inspectors are enabled with a mobile apps that guide the work onsite, allowing inspectors to easily, and efficiently capture the data needed for the inspection report, in addition to the work performed, when the work was completed, and the results of the inspection. This data, captured in real-time, without requiring manual exports, re-formatting, or other manipulation, ensures accurate and complete billing as soon as work is complete.

Another facet of a job that affects accurate billing is the ability to capture job changes that may be required after the tech has been deployed on-site. Assessing job requirements once on location may result in changes that need to be approved by the customer before

work is performed. Giving the inspector the flexibility to react to individual customer needs by facilitating dynamic changes within a job is an important capability of your processes and the digital tools that support them. In addition to driving more revenue to your organization, supporting dynamic change requests also creates a stronger relationship with your customers, building increased goodwill and trust, repeat business, and good references.

Finally, there may be no more important aspect to digitalizing industrial inspections than safety. Keeping inspectors safe requires outfitting them with the proper tools, data and equipment. Central to these are the job safety assessments (JSA) that are required throughout an inspector's daily process to ensure a safe environment both for the inspector and for other workers and bystanders. Industrial inspections providers that enforce JSAs as a part of doing business reduce risk and improve safety records. With inspectors moving from one job to the next, incorporating JSAs into their daily routine and requiring them during each inspection process is a non-negotiable feature. A complete digital process can help to enforce these safety protocols, ensuring the well-being of inspectors, other workers, and bystanders. As a result, the risk to the business and to the customer is significantly reduced.

In summary, the benefits of digitalizing industrial inspections processes are vast. They include operational, financial, safety, and customer service improvements. The industrial inspections business can realize and grow these benefits over time; it's best to establish benchmarks for key performance indicators within the business before implementation and track them regularly to see progress and opportunities for improvement.

4. TECHNOLOGIES AND IMPLEMENTATION STRATEGIES

There is a wide range of software available to industrial inspections service providers. Many of these solutions address a specific need, like providing the results of an inspection, or automating a single process, such as managing an inspector's schedule. Digital transformation covers a wide range of business and operational needs, automating multiple, complementary processes across the customer lifecycle. Moving to a fully digital inspections process will require an adaptable technology that can be configured to match your exact end-to-end process, accessed by multiple roles within your organization and always available.

To drive optimal business operation, digital inspection software needs to address the entire active inspections process and manage and maintain various inspection and customer data

before, during, and after an inspection job. From job inception to completion, and beyond, digital inspection software enables sales, operations, finance, and upper management. Within these functions, everyone from inspectors to senior management needs relevant visibility into customer information, job status and progress, asset usage, and historical information. The more thorough and available information is to users and stakeholders, the more valuable the data is to everyone. This may include highly detailed information the inspector accesses at the job site via a mobile device, and it may include high-level trend reports that managers review when making pricing or other operational decisions. Presenting inspection results in highly usable format and access for customers is another key component of effective data management.

Digital transformation is far more than technology solutions. Effective transformation accounts for people, process and technology that work together to provide the complete end-to-end solution value. Understanding the inspection business process and following a proven methodology to ensure the people, process, and technology elements are defined and integrated together is a successful approach to digital transformation. The most common reason for failed projects or unrealized ROI is marginalized usage of the system by the end users or customers. Keep in mind that technology is simply an enabler to both process and a person's daily tasks; implementing well-designed processes and workflows to make use of new technology is critical to a successful deployment.

ENTERPRISE SOFTWARE INSTALLATION AND DEPLOYMENT OPTIONS

Enterprise software applications that organizations use to run part or all of their businesses can be installed "on-premises" or in the "cloud." On-premises — also referred to as on-premise — software is purchased and installed within the organization's own IT infrastructure, where cloud software, also known as software-as-a-service (SaaS), is installed and maintained by the software manufacturer and accessed by customers through a web application.

SaaS continues to gain in popularity, because it removes the requirement for an organization to use its own equipment and resources to service and support the tool. Unless an organization has a very high need for control and security — and has resources skilled to meet those needs — an inspection services company would do better to choose a SaaS solution for its digital transformation foundation. The advantages of software in the cloud include continuous uptime, always having the latest version of the software, no recurring maintenance costs, and a reduced dependency on IT resources.

DATA MANAGEMENT

Industrial inspections involve an incredible amount of data that must be collected, stored, managed, and analyzed for various purposes. One of the greater challenges for inspection services companies is tracking data in a variety of disparate systems; a major goal of digital transformation is optimizing data management. Creating a single source of truth for data elements, preferably all in a single place (database, application, system), is ideal. That may not be possible in all situations. Where information needs to either be distributed or copied to two different systems, carefully design how these systems will stay "in synch." Manual exports

and imports are error-prone and inconsistent. Creating an automated integration between data systems is crucial to ensure data integrity and security.

A very important long-term benefit of a good data management strategy is your ability to learn from your own business as your business grows and develops. An inspections services company engages in some mostly repetitive processes. Tracking performance of these processes over time can help identify inefficiencies and areas for potential improvement that can have significant impacts on business profitability and success. Stringent data capture and strong data management are fundamental to effective analytics and is a top priority for digital transformation.

MOBILE SOFTWARE OPTIONS

Industrial inspection service companies utilize field workers to perform inspections on assets in a variety of locations, some quite remote; a variety of environments, some noisy, bright, wet, hot, cold or otherwise distracting; and perhaps for long periods of time. The mobile apps used by inspectors need to effectively collect inspection data, track time and expense, correctly track travel time and other overhead, and consolidate accessory information such as photos, GPS-stamps, and timestamps. Effective mobile apps also need to operate without a network connection, handle errors gracefully and with easy-to-understand corrections, and provide a user experience that matches the skill level and workflow of the field technicians. Good mobile apps are not a "nice-to-have." They are a crucial component in the success of your digital transformation effort and its importance cannot be overstated. They will affect the retention of your field force, could make an inspector's job easier and more enjoyable, and can drive significantly greater productivity for your business. When implementing digital transformation, make sure to have a mobile strategy that matches the needs of your business.

BUSINESS PROCESSES

Outlining business processes at the beginning of a digital transformation process helps to identify requirements for mobile applications, data management, and other aspects of your end-to-end system. We recommend creating a process map of existing versus desired processes prior to designing out a new system. Here are some examples of processes that

are relevant to Inspection service companies:
- Financial: Job pricing and costing, quoting, invoicing, billing, and post-job costing analysis
- Assets: Test equipment tracking and utilization
- Inspection process: Job definition and test types, equipment and materials requirements
- Scheduling and dispatch of technicians
- Managing skills, training, and ongoing education
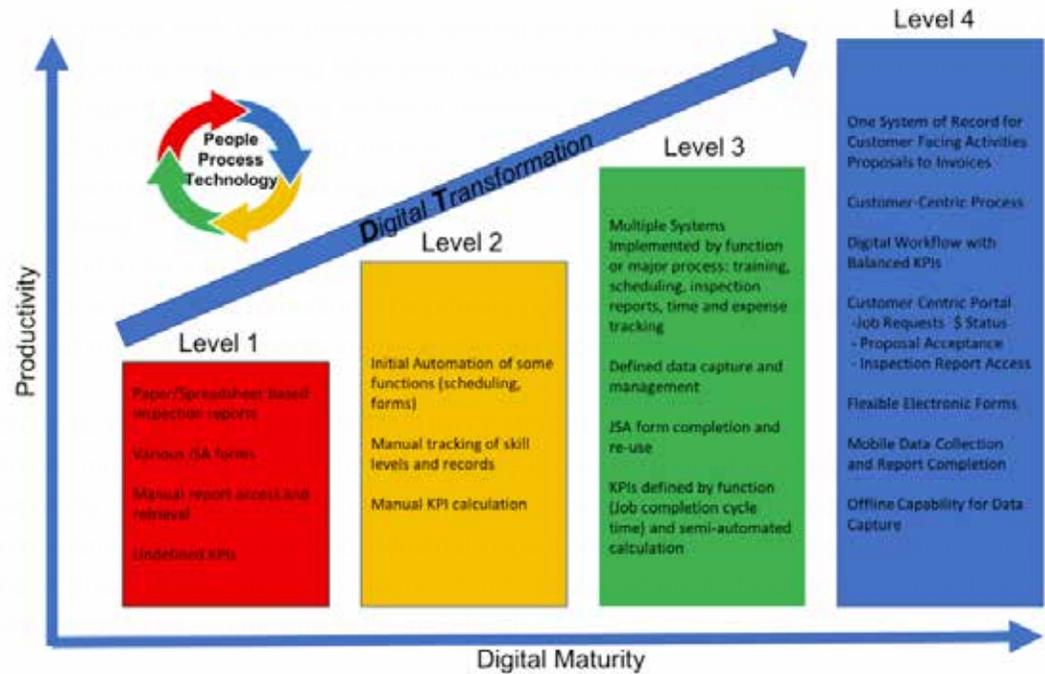- Change order processing and approvals

Figure 1: Industrial Inspection Digital Maturity Model

Moving from left to right on the maturity model depicted in Figure 1, the industrial inspections business gains measurable improvements in productivity through the effective use of digital workflow, data collection and analytics. Looking at business process data, the organization can enhance the customer experience, customer retention, service delivery times, and cost reductions.

To move along this continuum, establish a methodology that starts defining the customer-centric objectives. Navigating the digital pathway starts with business operations planning and having a field-first approach. It is critical to remember that technology is a means to an end — an enabler of business processes and of the inspector performing the work for your customer.

To ensure success in the digital transformation of industrial inspections, use a methodical and proven process that takes all stakeholders and operations into consideration. The core elements of our recommended approach include:
- Define the current and desired state of inspections processes including customer-facing interactions.
- Gather requirements from inspectors, schedulers, sales, project management and bill-

ing to achieve desired state.

- Establish reporting requirements, inspection job types, safety reports, uses and needs.
- Identify gaps in existing tools and process.
- Evaluate and select software to fill gaps and automate operations, considering both current and future needs. Include mobile apps in software consideration set to ensure inspectors are fully outfitted for safety and productivity.
- Map out new processes and utilize senior technicians, inspectors and dispatchers.
- Create an implementation plan including change management.
- Execute the implementation plan, including pilot, training and roll-out.
- Assess adoption at regular intervals and identify opportunities for ongoing improvements.

DIGITAL TRANSFORMATION FULLY REALIZED

When fully realized, digital transformation for industrial inspections service providers encompasses a critical cross-section of the business. A wide range of options must be considered that often require knowledge beyond the scope of an industrial inspection's business' core competencies. There are technical issues such as data management, workflows, permissions and security, integrations, and reporting and analytics. There are operational considerations such as inspection reporting, quoting, billing and customer communications. And there are personnel considerations such as JSA completion, inspector skills and certification management, and training. In short, digital transformation goes to the core of industrial and NDT inspection operations.

Digital transformation in industrial inspections is a considerable undertaking, but well worth the effort. Many inspections service providers do not have the resources or expertise to effectively scope, plan, implement, deploy and optimize digital inspections processes. Whether taking on the effort alone, or with a partner who can fill in the gaps in your expertise, the benefits achieved in productivity, effectiveness, and improved customer care will create great competitive advantage for your company.

To learn more about digitally transforming your industrial inspections business, visit https://floodlightsoft.com.