Fulcrum

GUIDE

How to operationalize standards into digital inspections

As the pillars of operational excellence, standards outline expected levels of regulatory compliance, quality assurance, and organizational efficiency. In contrast, inspections are the process by which these standards are evaluated to ensure that quality, safety, and efficiency needs are met. Translating the broad standards that define how things should be into a digital, operational framework to make it happen is vital to maintaining not just the standards themselves but also to ensure successful business operations. In addition, turning standards into digital inspections represents a major opportunity for organizations to streamline compliance and avoid the pitfalls of operational inefficiencies, regulatory non-compliance, and compromised product or service quality.

Join us as we examine the fundamentals of turning standards into digital inspections and the increasing necessity of adopting this technology-driven approach to elevate compliance efforts, prevent potential issues, and ultimately reinforce operational excellence.

Standards

Standards refer to established guidelines defining the minimum acceptable levels of quality, safety, efficiency, or other aspects of a product, process, or service. Standardization organizations like the American Society for Testing and Materials (ASTM), American National Standards Institute (ANSI), or regulatory bodies like OSHA, EPA, FERC, FCC, DOT, amongst others, are responsible for developing standards. Written to cover a wide range of possibilities, standards often include conditional language like “shall,” “may,” or “if,” and require interpretation based on an organization’s specifics (e.g., its type and size) or the situation at hand (e.g., on-the-ground, environmental conditions).

Standards, therefore, act as benchmarks that organizations aim to meet or exceed in their operations, but their actual implementation varies according to specificconditions.

Inspection processes

While standards provide broad requirements for operations, inspections are the practical process of evaluating, examining, or testing products, services, or processes.

An inspection aims to collect data to determine if standards are being implemented correctly under specific real-world conditions and to identify any shortcomings in meeting them.

Data collected in various formats, such as written notes, photos, and readings from devices, serve as evidence attesting to the conditions at the time of the inspection and act as proof of compliance with the set standards.

Inspections can be performed by an organization's internal employees or by external entities, such as third-party contractors or regulatory inspectors, and can be carried out at different operational stages, such as during a manufacturing or installation process, upon completion of a task or project, or during routine checks for ongoing operations.

How to operationalize standards into digital inspection processes

Turning standards into digital inspections designed to evaluate whether those broad requirements are being met under specific real-world conditions follows a sequence of steps:

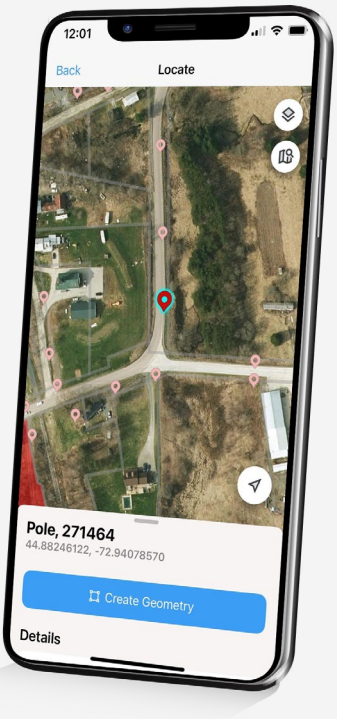
1. **Identify the clauses:** Begin by making a list of all the "shall," "may," and "if" clauses in the standard. These are the specific points that need to be addressed or complied with, as they lay out the conditions or requirements of the standard.
2. **Determine mandatory and optional clauses for your organization:** For each clause, determine which ones are mandatory (the "shall" clauses) vs. those that require discretion (the "may" and "if" clauses). It's not always straightforward. For instance, look at this mandatory clause from OSHA 1910.134: "This shall be accomplished as far as feasible by accepted engineering control measures." What does "as far as feasible" mean for your organization, and how does that affect what you will inspect? Consider your specific organization and typical work scenarios and decide which clauses are always applicable, situational, or not applicable at all.
3. **Determine mandatory and optional clauses for your inspectors:** Similarly, sometimes a mandatory clause tells us that an inspector needs to make a determination about what to do. Here's one from the same OSHA standard: "An employer may provide respirators at the request of employees or permit employees to use their own respirators, if the employer determines that such respirator use will not in itself create a hazard." The inspector may need to be able to make a judgment about whether or not a given respirator would create a hazard.
4. **Define the data to be collected:** Based on the activities they need to perform to align with the identified clauses, determine what specific data the inspector must collect to provide evidence of standard compliance. This could be checking oxygen levels, inspecting brakes, reading temperatures, etc.

5. **Specify the evidence required for compliance:** Decide on the type of evidence that will demonstrate compliance, which could range from a simple checkmark indicating compliance to more robust evidence such as photos.
6. **Determine data types for evidence:** Specify the data type that best serves as evidence of compliance, which can vary significantly depending on the nature of the inspection and the standard. For example, if your evidence is a temperature reading, the data type could be numerical. If it's a visual check, the evidence could be a photograph, so the data type would be an image.
7. **Consider app and record capabilities:** Each digital platform comes with different features, so it's essential to understand how your chosen tool can handle the different data types you need to collect. This also includes understanding how to best structure data within individual records, crucial for both user-friendly data entry and later analysis.
8. **Build out the application:** Develop user-friendly digital inspection tools within your chosen application by designing forms for data entry, establishing fields for various data types, and organizing how these forms link to create comprehensive records. Set up automated workflows, test the app to ensure it works as expected, and begin training inspectors to use the new tool effectively.

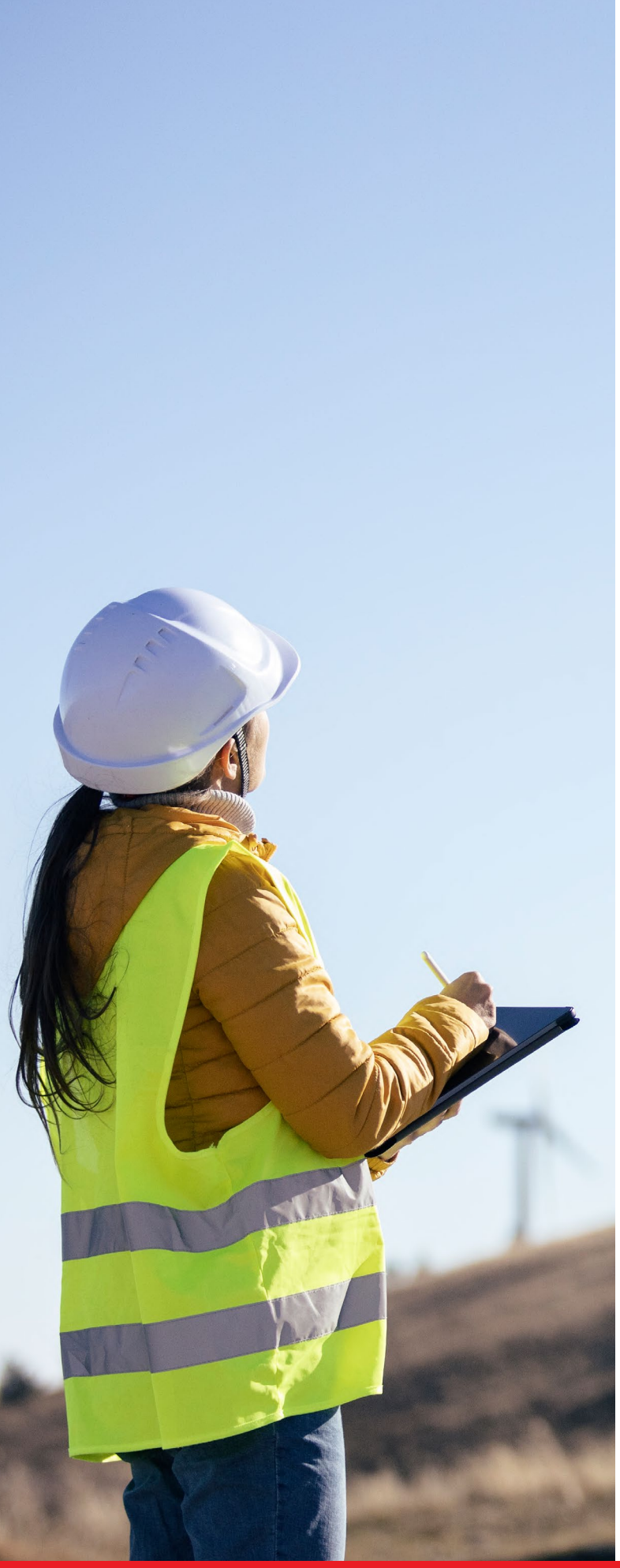
Remember that this is an iterative process: as inspectors use the tool, implement their feedback to further refine the inspection process, increasing efficiency and accuracy.

Operationalization considerations

To make this app-building process smoother and the final product easier to implement, keep in mind the following considerations:



1. **App naming conventions:** Having clear, consistent naming conventions for apps minimizes confusion and makes it easier for users to find what they want. Keep an eye out for inconsistencies in punctuation and spacing, which cause apps to alphabetize differently and confuse users.
2. **Record naming conventions:** Record names are usually sourced from information in particular fields within the application or record. However, there might be cases where you need to name records manually.
3. **Ease of reporting:** Your digital inspection process design significantly impacts how easy or hard it is to report data. For example, consolidated reporting is straightforward if a single app is designed to handle all instances of wood pole inspections. But if multiple apps are used for different stages of the inspection process, you may need to consolidate data with external reporting tools (such as Microsoft Power BI or spreadsheets), a process which becomes increasingly complex as the number and type of inspections grow.



Principles of app creation and arrangement

Developing an app requires thoughtful consideration of user interaction, data management, and the overall user experience. Understanding the following key principles enhance your inspection app by ensuring it meets the needs of inspectors and collects more comprehensive and reliable data.

1. **Progressive disclosure/conditional visibility:** Enhancing usability and reducing pencil whipping, this principle involves only showing users the necessary or relevant information when needed. Based on relevant responses, additional data fields may appear, while irrelevant options can be kept hidden to avoid overwhelming or confusing the user. For example, in wooden pole inspections, inspectors would only see the most basic fields like the location of the pole, its identification number, and the inspection date. If the inspector indicates an issue with the pole, more detailed fields appear that can ask about the nature of the problem, the severity of the issue, and any recommended remedial action.
2. **Ask for more evidence:** This principle encourages inspectors to provide more details and insights about their inspections, even if the initial questions are not that specific. When an inspector answers a generic question, the app can prompt for additional evidence, such as photos, text descriptions, or even voice recordings. Providing additional evidence requires a certain level of engagement with the task at hand, which helps to yield richer data and reduce the chances of pencil whipping. For example, if an inspector identifies a problem with a wooden pole, the app prompts the inspector to upload a photograph or provide detailed observations.

By simultaneously reducing the chances of incomplete or rushed inspections and allowing for greater detail, these two principles work together to make the inspection process more thorough and user-friendly.

Practical tips

Embracing digital transformation requires understanding best practices to streamline the transition from paper and improve data accuracy. These practical tips will guide you to optimizing digital inspection operations and delivering robust and reliable outcomes:

1. **Need vs. have dichotomy:** Break ambiguous items down into separate questions about "needing" and "having." For example, going back to our wooden utility pole instance, a digital form can ask inspectors to separately answer "Is a specific type of material required for the pole?" and "Does the inspected pole have the specified material type?" to eliminate ambiguity and provide clearer, more actionable data.
2. **Mandatory evidentiary proof:** Digital tools can request evidentiary proof, such as photos, to validate compliance. For instance, a digital form may require a photo to confirm the structural integrity of the pole, adding an additional layer of verification to the responses.
3. **Question reframing for digital transition:** When transitioning from paper to digital, it's crucial to rephrase questions to ensure clarity and effectively capture the required information. For example, breaking down a question about wood treatment into two distinct questions – "What is the required utility pole wood treatment?" and "Has it been appropriately treated?" – enhances clarity in the digital format.
4. **Multiple question preference:** Computers require specific answers, so it is often more effective to ask several specific questions instead of one broad one. Instead of asking, "Is the pole compliant with standards?" it's clearer to ask, "Does the pole have the required dimensions?" and "Has the pole been treated with the specified preservative?"
5. **Carry-over choice mechanism:** Implementing a mechanism where one choice carries over into multiple questions can reduce confusion and minimize errors. For example, if a specific ANSI wood pole standard is chosen at the start of the inspection, the form will automatically present only relevant questions based on that standard, ensuring a streamlined and accurate inspection process.

A digital leap for standards and inspections

Standards and inspections are vital to ensure the smooth functioning of an organization's operations, and in-market digital tools present an exciting opportunity to better approach and apply them. By harnessing the potential of digital platforms like Fulcrum, the complexity of turning standards into inspections can be significantly streamlined for more accurate and reliable results.

Built to encourage data accuracy, uniformity, and reliability, Fulcrum offers an effective way to digitize and operationalize standards into clear-cut, user-friendly inspections that also promote transparency and efficiency in meeting compliance.

Learn more

To further explore how Fulcrum can revolutionize your standard compliance and inspection processes, **sign up for a no-obligation chat** with one of our inspection experts, and find out how digital inspections are essential to enhancing operational efficiency and ensuring compliance with ever-evolving standards, regardless of industry or sector.