



# Ultimate Guide to Digital Work Instructions

What to Look for In a Solution and Supplier to  
Ensure a Successful Outcome

# Introduction

Ensuring workers have easy and timely access to the latest work instructions, troubleshooting guides, and other equipment and process-related information is critical for hitting targets set for safety, quality, overall equipment effectiveness, waste, and more.

These critical procedures are a company's "secret sauce" for ensuring high-yield processing and packaging efficiencies and building operational knowledge on how to perform related tasks and properly operate equipment. Workers also rely on these guides to quickly fix problems and correct deviations when they occur to minimize downtime and impact on operations.

Despite their importance, work instructions are rarely consulted by workers in most factories today because they are difficult to access, understand and apply in a timely manner. So, it's no surprise that many manufacturers are turning to digital work instructions as a better way to standardize work.

However, to achieve good manufacturing practice standards (GMP), manufacturers must do more than simply make digital versions of standard operating procedures (SoPs) available to workers at their workstations. They must simplify and streamline the way they are created, managed and distributed, while making them more effective and efficient to use. This includes introducing visual micro-lessons to facilitate comprehension and accelerate time to performance.

Further, because operational knowledge is continuously evolving due to technology and OEM innovation, manufacturers must empower their entire workforce to easily share their ideas and experiences, and contribute to the creation of instructions as part of the flow of their daily work. This ensures the latest best practices are captured for everyone to benefit from, and that both individual and tribal knowledge are documented and preserved long after workers leave or retire.



Moreover, documenting best practices in work instructions is just one step in the process of managing and developing operational knowledge. Manufacturers must also ensure workers use the latest work instructions as soon as they are available, and track individual's understanding and mastery of standards as part of the worker's on-going skills development and training program.

Of course, there are other important contributing factors to successful implementation. This ranges from maintaining high system performance, availability and security, to partnering with a supplier that has the needed expertise and support resources to successfully deploy and scale the system iteratively across a manufacturer's global operations to maximize return on investment and lifetime value.

This buyer's guide provides a comprehensive list of the system and supplier requirements needed to ensure a successful implementation and adoption of digital work instructions to help you get started with your evaluation. We encourage you to adapt the requirements for your operation's specific needs to ensure your targeted business outcomes are addressed.

# 1. Work Instructions Capabilities

## 1.1 Data Structure

One of the most critical success factors for implementing digital work instructions is ensuring the system's data structure supports manufacturing operations and varied process layouts.

### 1.1.1 Manufacturing Data Model

The system's default data structure maps to a manufacturing operation right "out of the box" so that content can be quickly tagged by plants, production lines, workstations, equipment, products and workers.

This eliminates the need to build the data structure from scratch which often leads to implementation delays. This also contributes to a more seamless user experience because workers have instant access to all relevant for their specific jobs, and are automatically notified when there are new additions and updates to the content.

## 1.2 Content Access

To increase the use and adoption of standards, frontline workers must be able to quickly and easily find the most up-to-date digital work instructions and troubleshooting solutions directly at their workstations. Content, therefore, should be stored in a central knowledge base, and users should be provided with a variety of methods to search for and locate the precise content they need based on their specific job title, plant, production line, shift, equipment, and work orders. Key capabilities include:

### 1.2.1 Manufacturing Data Model

The solution's data structure maps to a manufacturing operation. Content in the system is tagged by plant, production line, workstation, equipment, product and workers. This ensures users have access to all the relevant content for their specific needs as soon as it is available, and they don't have to waste their time sifting through irrelevant

content. This also allows easier integration with different systems of records that are governed by Master Data Management guidelines.

### 1.2.2 QR Code Access

Users can scan a QR code on their equipment, workstation or work order to instantly see all relevant information. This eliminates the need to search for and navigate to the information.

### 1.2.3 Keyword Search

Users can perform a keyword search to find information. This enables users to locate a specific work instruction or troubleshooting solution more quickly.

### 1.2.4 Viewing Reports

Users can see all content that has been assigned to them from their personalized profile page. This enables them to quickly verify what content they have viewed vs. not, and identify what content has been added or revised. They can then access the content directly from their viewing reports.

### 1.2.5 Skills Program

Learning and Development teams can build a training curriculum based on digital work instructions, making it easier for them to track and maintain. Users then automatically have access to all required content as part of their onboarding and on-going training.

### 1.2.6 Notifications

Users are automatically notified each time there is a new or updated work instruction or troubleshooting solution is available. This ensures they are aware of it as soon as their next shift begins, and reduces the risk of broken telephone common when critical information is shared verbally.

### 1.2.7 Languages

The app must have broad language support and allow users to choose their local language for the user interface. This ensures workers across global locations can easily find and understand the information they need.

## 1.3 Content Coverage

The system must enable users to access all available content and information needed to perform tasks, work to standard and troubleshoot problems. Key content and other information include:

### 1.3.1. Instructional Content

Users can view all work instructions, standard operating procedures (SOPs), and troubleshooting solutions available for their production line, workstation, equipment and work order.

### 1.3.2. Production Parameters

Users can view the production parameters of their equipment within the app. This provides workers with a centralized app for all relevant machine information. Production settings are customizable and can include speed, temperature, height, width and much more. Changes to production settings can be tracked and audited.

### 1.3.3. Equipment profile pages

Users can view the asset model and serial number of their machine from the equipment profile page within the app. This facilitates sharing between sites and enables integration with ERP systems.

### 1.3.4. Machine KPIs

Users can monitor key performance indicators (KPIs) for their machine within the app, and then quickly access the specific digital work instructions and troubleshooting solutions needed to take corrective actions as needed. The KPIs are rendered from 3rd party MES, ERP and CMMS systems, and displayed in a dashboard within the app.

### 1.3.5. 3rd Party Data

Users can view 3rd party generated information directly within the app, such as machine data and production scheduling from a Manufacturing Execution System (MES). This eliminates the need for users to log into and consult multiple separate systems and eliminates the need to assign user licenses to all operators. More importantly, it provides workers and supervisors with a unified user experience, thereby maximizing adoption and use.

## 1.4 Content Presentation

Work instructions, troubleshooting solutions and equipment-related information must be quick and easy to understand so that workers can perform tasks and fix problems in the flow of their daily work. To achieve this goal, the most effective media should be used to present information and illustrate how to complete tasks. Further, the way information is presented should be standardized to ensure the necessary context is provided to facilitate comprehension. Key capabilities include:

### 1.4.1. File Formats

Content can be presented in a variety of file formats, including PDF, HTML text, video, photo or diagram. This ensures the most appropriate medium is used to communicate the information and facilitate understanding.

### 1.4.2. Visual Micro-Lessons

Users can view video and other visual micro-lessons that demonstrate how to perform the task. This reduces the time to understand the content and eliminates confusion, and enables users to perform the task as soon as they have reviewed the content.

### 1.4.3. TWI Format

Work instructions and troubleshooting solutions presents the information in the standard training within industry (TWI) format that explains what to do, how to do it and why. This provides the needed context to complete every task in a consistent and effective format.

### 1.4.4. ISO 7010 symbols

Work instructions and troubleshooting solutions use the familiar ISO 7010 symbols to quickly communicate safety hazards.

### 1.4.5. Time to Complete

Work instructions and troubleshooting solutions indicate the average time to complete a task. This encourages users to schedule their time appropriately and not begin a task that they don't have adequate time to complete.

### 1.4.6. Discussion Thread

Work instructions and troubleshooting solutions support comments by users. This provides users with additional context for using the content and gives feedback to the content creator on how the instruction can be improved.



## 1.5 Content Creation

To reduce the time and cost of creating and updating work instructions and troubleshooting solutions, content creators must be offloaded from having to perform manual and time-consuming tasks that don't add value to the quality or effectiveness of the content. Further, content creators must be able to easily incorporate the knowledge and input of workers to ensure the latest best practices are captured in the content. Key capabilities include:

### 1.5.1. Mass Import and Linking

All existing work instructions in electronic formats can automatically be brought into the system by doing a mass import or the system can link to an external repository. This eliminates the need to manually upload individual files and ensures existing content can be leveraged.

### 1.5.2. File Formats

Content creators can create work instructions and troubleshooting solutions in a variety of media and file formats, including PDF, HTML text, video, photos and diagrams. This enables them to choose both the quickest format for creating content and most effective format for facilitating comprehension.

### 1.5.3. Visual Micro-Lessons

Users can create a visual micro-lesson to illustrate how to perform a task by taking a video or photo using their mobile device. This reduces the time to create the content compared to writing a text document.

### 1.5.4. TWI template

Users create work instructions and troubleshooting solutions by following a step-by-step template that documents what to do, how to do it, and why you need to do it. This ensures all content follows a consistent format and includes the needed context.

### 1.5.5. Worker Input

All workers can contribute content for creating work instructions and troubleshooting solutions by capturing a video or taking a photo of how to complete a task using their mobile device, or by writing a comment and offering a solution. This encourages user engagement and enables tribal knowledge to be captured.

### 1.5.6. Approval Workflow Rules

Approval workflow rules can be defined based on the equipment and content category. This ensures all required stakeholders review and sign off on the content before it becomes the official new work standard.

### 1.5.7. Translation

Content can be translated and managed directly within the app. This enables content to be published across plants in support of global operations, while ensuring global standards and minimizing content creation effort.

## 1.6 Content Management

Work instructions are a critical part of a quality system and must be managed in compliance with ISO documentation standards. This ensures control and traceability throughout the entire document lifecycle. It also ensures that all workers use the most up-to-date work instructions and troubleshooting solutions as soon as they are available, the system must generate automatic notifications and provide real-time tracking and reporting capabilities. This also enables manufacturers to easily demonstrate compliance with various industry regulatory requirements and internal audit controls. Key capabilities include:

### 1.6.1. Content Sharing & Permissions

Work instructions and troubleshooting solutions can be associated with specific plants, departments, equipment and users based on their role. This ensures all users have automatic access to the content for their specific needs, while respecting permission levels and restricting access to other content.

### 1.6.2 Notifications

Users are automatically notified by the app each time there is a new or updated work instruction or troubleshooting solution is available. This ensures they are aware of it as soon as their next shift begins and that everyone receives the message.

### 1.6.3. Viewing Reports

Management can track all work instructions and troubleshooting solutions that workers have been assigned to and which content they have viewed vs. not in real-time.

### 1.6.4. Approval Workflow Rules

Approval workflow rules are built into the system, enabling manufacturers to easily assign who must approve what content. This ensures all required stakeholders are involved in the review and sign-off process before content is published. Automatic revision dates can also be set to remind authors when to review and revise content. This ensures content is updated periodically to reflect latest standards.

### 1.6.5. Version Control

The system tracks each release of the content. Administrators can verify the date and information of each release, and view or roll

back to previous versions as needed. This improves traceability and makes it easier to demonstrate compliance during audits.

### 1.6.6. QR Code Set-Up

QR codes can be generated in app, or supplied by external systems used in production including product barcodes.

## 1.7 System Administration Requirements

### 1.7.1 Configurability

The system provides administrators with the flexibility to customize content categories and permissions for their operations..This also enables manufacturers to standardize how content is presented and accessed across their global operations.

### 1.7.2 Analytics

The system enables administrators to monitor who is using the system and how. This includes user connections, user activities, user engagement metrics, and content creation trends over time. This enables them to monitor adoption objectives and opportunities for improvements in order to gain maximum value out of the system.



## 2. Connected Worker App Requirements

While digital work instructions are a great starting point for ensuring workers follow standards and quickly troubleshoot problems as they arise, they are only one part of a larger solution needed to effectively leverage operational knowledge in pursuit of manufacturing excellence. To close the loop, workers must be continuously connected so that they can share and build collective knowledge and be empowered to learn and solve problems more quickly. That is why digital work instructions must be combined with communications, electronic forms and skills management as part of a more comprehensive integrated platform.

### 2.1 Communications and Issues Management

Users can post updates in a news feed and collaborate to solve problems across shifts, departments and locations. This reduces the need for paper logbooks and face-to-face meetings, making it faster to communicate updates, share knowledge, and resolve issues. Issues can be managed and tracked at-a-glance using a visual Kanban board. Resolved issues in the news channel can be converted into a draft troubleshooting solution in a single click.

### 2.2 Electronic Forms & Checklists

Users can complete electronic forms and checklists to ensure a task is performed to standard and demonstrate compliance. When deviations are identified, users can post a digital call for help and assign actions directly within the app. Users can include a photo or video in forms to better illustrate an issue or observation.

### 2.3 Skills Management

Workers can access digital instructions and troubleshooting solutions as part of a broader

personalized learning plan defined per skill. Users can demonstrate their understanding of the content through online exams. Supervisors can endorse team member skills and indicate the level of competency. Team member skills can be viewed at-a-glance through a visual skills matrix.

## 3. Implementation Requirements

### 3.1 Deployment

The system is securely hosted in the cloud by the supplier. This eliminates the need to purchase the infrastructure needed to host the system and reduces the time and resources needed to deploy and maintain the system. This also enables the system to be updated with new capabilities with minimal disruption to operations.

### 3.2 Agile Implementation

The system can be implemented in an agile way to ensure key business priorities and targeted outcomes are met within a predetermined time frame. This ensures quick time-to-value and reduces resource demands, while generating enthusiasm among stakeholders and users, leading to high user adoption.

### 3.3 Multi-Device Support

Users can access the system on a tablet or smartphone using a native iOS or web app, and on a laptop or desktop computer through a web browser or desktop app. This enables an optimal user experience based on role and place of work for example making it possible to leverage native device capabilities like QR code scanning and video.

### 3.4 3rd Party Integrations

The system supports integration with 3rd party systems, such as ERP, CMMS, LMS, MES and business analytics systems. This enables data to be exchanged and workflows to be triggered automatically. Integration is supported via a well documented REST Application Programming Interface (API).

# 4. Security & Privacy Requirements

The supplier must follow Secure by Design principles and industry standard best practices related to organisation and system security so that information remains secure, available and compliant. Key capabilities include:

## 4.1 System Security

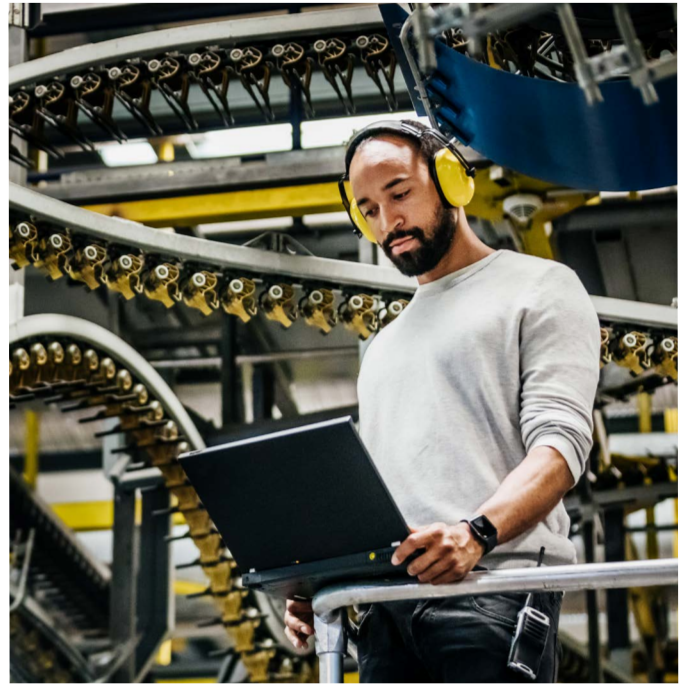
The supplier securely hosts the application in the cloud using the latest technology and protocols so that all information is protected and remains private. This includes encrypting data in-transit and at rest, preventing unauthorized access to data, tracking versions rather than deleting data, and making sure data is backed-up every hour and copied off-site.

## 4.2 Data Privacy

The system handles personally identifiable information in a manner that complies with privacy regulations including the EU General Data Protection Regulation (GDPR).

## 4.3 Compliance

The security practices of the supplier have been audited and comply with recognized standards including SOC 2 Type 2, and the Cloud Security Alliance: Security, Trust and Assurance Registry (CSA STAR).



# 5. Performance Requirements

## 5.1 System Responsiveness

The system is highly responsive. Information can be processed and actions can be performed in real-time or near real-time. This ensures users do not have to wait for the system to respond and can quickly complete tasks. The supplier can produce records demonstrating the average performance of the system.

## 5.2 System Availability

The system provides high availability. Users can access the system 24 / 7 from anywhere in the world. This minimizes disruptions and ensures operational continuity. The supplier can produce records demonstrating the average uptime of the system.

## 5.3 Service Level Agreements (SLAs)

The supplier guarantees the performance and uptime of the system, and agrees to specific penalty terms if they are not met, as part of the service level agreement.

# 6. Support Requirements

The supplier must have a proven methodology and the resources needed to ensure a successful project implementation and maximize adoption and value. This includes providing on-going support beyond implementation, such as coaching and monitoring, and ensuring site-specific issues are resolved in a timely manner. Key capabilities include:

## 6.1 Implementation and Onboarding Support

The supplier offers professional services to help manufacturers go live with the system. This includes a proven outcome-oriented methodology for project scoping and delivering initial implementations and building a foundation for expanded use over time.

## 6.2 Issue Resolution

The supplier guarantees that they will respond to and resolve problems and requests within a mutually agreed time-frame. This ensures that problems and requests are promptly addressed according to their nature and urgency, and minimizes disruptions to operations.

## 6.3 Self-Serve Support

The supplier provides an online portal to access comprehensive and most up-to-date product documentation. This enables the manufacturers to get the information they need to support the system and trouble-shoot issues on their at any time of the day and from any location.

## 6.4 In-App Support

The supplier provides live in-app support via chat. This enables users to get product support as the need arises as they are completing tasks and without leaving the app.

## 6.5 On-Site Support

The supplier can provide on-site system support anywhere in the world, or has service partners in the region that can assist with implementation and support. This ensures that system experts are available to address more complex problems and requests on a timely basis.

## 6.6 Global Partner Network

The supplier has a formal process for recruiting, training and certifying regional partners. This ensures support resources are available in every region in the local language.



# 7. Supplier Attributes

The supplier must have adequate development, industry and enterprise expertise to successfully deploy the system in a manufacturing environment to address current and future needs. Key capabilities include:

## 7.1. Technology / Development Expertise

The supplier has extensive technical knowledge and resources to design the system. They have used the most effective and proven technology to ensure the system performs as advertised. They have also used best practices in user experience design to ensure that users find the system easy to use. 7.2. Manufacturing Expertise The supplier has extensive experience developing and implementing the system for use in similar production environments. This ensures that the system will have the required capabilities to support manufacturing operations and reduce implementation effort, time and cost.

## 7.3. Enterprise Expertise

The supplier has extensive experience deploying the system across a manufacturer's global operations, and provides guidance on how to configure and scale the system iteratively across plants, use cases and users. This reduces the time and cost of getting started, and enables the system to be tested in one area of the business before deploying to other areas.

## 7.4. R&D / Innovation

The supplier keeps up with technology trends and is continuously improving the system to address evolving market needs. The supplier has the resources to fund R&D and provides visibility into the product roadmap for the next three years.

# 8. Cost of Ownership Requirements

The system must be fairly priced and provide lifetime value, while accelerating return on investment and lowering total cost of ownership. Key capabilities include:

## 8.1. Pricing Model

The supplier provides a scalable enterprise pricing model based on volume of users and usage. The supplier helps the manufacturer to forecast usage so that the cost can be accurately forecasted over time, while building in a buffer to support additional usage and prevent additional charges from being incurred.

## 8.2. Total Cost of Ownership (TCO)

The supplier is transparent with all internal and external costs needed to deploy, maintain, support, configure and scale the system for the lifetime of the contract and upon renewal. This ensures predictable pricing, and that the total cost of ownership can be easily calculated and forecasted.

## 8.3. Return On Investment (ROI)

The supplier can demonstrate experience delivering a return on investment for similar companies and use cases within a specified time.

## 8.4. Lifetime Value

The system provides a comprehensive and scalable platform that delivers incremental lifetime value by enabling the manufacturer to expand usage over time and in-line with our strategic goals.

## 9. Conclusion

There are many contributing factors to ensuring a successful implementation and adoption of digital work instructions, as outlined in this buyer's guide in great detail. To provide quick return on investment, the system must be designed for manufacturing from the ground up so that it's easy and effective for all stakeholders to use, while providing a secure and flexible framework that can be quickly and cost effectively scaled across a manufacturer's global operations.

However, to provide lifetime value in pursuit of manufacturing excellence, the system must continuously connect, enable, engage and empower workers. That's why the system must also support the digitization of work instructions as part of a larger continuous improvement process that also captures, builds and manages operational knowledge over time as part of factory workers' daily flow of work so that their input can be easily incorporated into these critical documents and everyone can learn from one another.



## 10. AI-Powered Connected Worker Platform for Operational Excellence

IFS Connected Worker brings together digital work instructions, operational knowledge management, training content, exams and skills management into the most comprehensive solution for manufacturers.

The Connected Worker Platform closes the loop on operational knowledge by empowering frontline workers across shifts, plants and offsite locations to continuously capture, share and grow knowledge in support of manufacturing excellence.

**IFS Connected Worker equips frontline teams with the knowledge, skills, and real-time insights to drive consistent operational excellence. Powered by Poka, the platform is trusted by more than 2,300 customers worldwide.**

Transform your frontline workforce with IFS Connected Worker – where AI meets operational excellence to drive productivity, quality, and safety.

[Book a demo](#)

## About IFS

IFS is the world's leading provider of Industrial AI and enterprise software for hardcore businesses that make, service, and power our planet. Our technology enables businesses which manufacture goods, maintain complex assets, and manage service-focused operations to unlock the transformative power of Industrial AI™ to enhance productivity, efficiency, and sustainability.

IFS Cloud is a fully composable AI-powered platform, designed for ultimate flexibility and adaptability to our customers' specific requirements and business evolution. It spans the needs of Enterprise Resource Planning (ERP), Enterprise Asset Management (EAM), Supply Chain Management (SCM), and Field Service Management (FSM). IFS technology leverages AI, machine learning, real-time data and analytics to empower our customers to make informed strategic decisions and excel at their Moment of Service™.

IFS was founded in 1983 by five university friends who pitched a tent outside our first customer's site to ensure they would be available 24/7 and the needs of the customer would come first. Since then, IFS has grown into a global leader with over 7,000 employees in 80 countries. Driven by those foundational values of agility, customer-centricity, and trust, IFS is recognized worldwide for delivering value and supporting strategic transformations. We are the most recommended supplier in our sector. Visit [ifs.com](https://ifs.com) to learn why.

