SAP Field Service Management

Transforming field services with AI-infused digitalization

Strategies to boost efficiency and keep ahead of the queue with AI

SAP

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Digital transformation is opening the door to a new kind of field service—one that is faster, more connected, and centered around people. By embedding intelligent technologies into core service processes, organizations can automate routine tasks, gain real-time visibility, and make critical information accessible where and when it's needed most.

Tapping the power of digitalized field service management

In this e-book, we explore how AI and digital tools can help your teams work smarter—from streamlining planning and dispatch to empowering technicians with instant access to insights and technical resources. The result? More efficient operations, more confident service teams, and a better experience for your customers.

Field service business models are rapidly changing

Competition is more intense, and customer behavior has shifted repeatedly in recent years due to new technologies. Accelerated technological growth has also had a significant impact on customer expectations in the field service segment.

> Digital transformation opens new opportunities, helping you offer the **best possible field service** to your customers.

With customers demanding efficient, reliable service without delay, finding a long-term solution for maintaining the trifecta of a competitive edge, customer satisfaction, and your own profit margin becomes vital. Against this background, more and more service providers are investing in a digital field service management strategy, digitalizing established and often time-consuming manual processes.

Digitalized service processes vs. a manual approach

The following examples compare manual field service procedures with digitalized workflows to provide an overview of the benefits of digital field service management, from scheduling and service execution to invoicing.

Scheduling service orders

In manual scheduling processes, dispatchers prepare service activities, print them out, and place them in a file system for the service technicians. Every morning, service technicians go to their file and remove their schedule, including all the details for the order. If something is missing, they must make a call to request further information.

By contrast, using a digital process, dispatchers assign service calls to technicians using an app that provides all the relevant data and service history for the customer. With comprehensive information on areas such as inventory and spare parts specifications, as well as necessary documentation and details on system components, the technician arrives well-prepared at the service site.

Confirming arrival times for service technicians

When you schedule a service call manually, you notify the customer that the technician will arrive within a specified time frame on a certain day (for example, between 1:00 p.m. and 5:00 p.m.). With a digital approach to scheduling, the customer receives the same initial time-frame information. However, they also receive another notification shortly before arrival (for example, at noon) to let them know that the technician will arrive at 1:25 p.m. This more-precise update on timing provides a better customer experience.

Responding to requirements for additional information

When on-site, technicians sometimes realize that jobs are more complex than initially described by the customer and that they need additional information such as operating instructions or a spare parts list. Previously, they had to search in their service fleet vehicle for the required information or call their office. They might even look for information on the internet, depending on the availability of a mobile phone signal.

However, with a digital field service management approach, all important data and documents are already available in an app. If a problem arises during maintenance and repair work, technicians can access a wealth of resources, from checklists to training videos, or even a video call with an expert. In addition, bots can provide instructions through text and voice prompts, even when a device is offline.

Cross-selling and up-selling

Traditionally, cross-selling and up-selling have not been part of a service technician's role. At best, technicians might make a note on a report that a customer is interested in purchasing a new device or additional functionality. However, it's only by chance that this information reaches the sales team.

Using a digital approach, technicians can record customer feedback and up-selling or cross-selling opportunities dynamically using field service management software. Besides creating new leads, this proactive response to fulfilling customer needs helps ensure a higher level of satisfaction.

Reporting and invoicing

Using a manual approach to field service management, technicians complete a report form with details of tasks completed and time taken, which the customer then signs. Completed under time pressure, reports are often difficult to read, hampering efforts to transfer details to a digital report back at the office. After creating a digital report, an administrator sends it to a manager for approval before recording the figures in the ERP system and issuing an invoice.

With a digital approach, technicians use a mobile device to enter details of the service call directly into the ERP system. This prevents duplicate entries, reduces errors, and enables managers to gain a live overview of service status. After entering all the information, technicians ask customers to provide a digital signature to confirm completion of the work. A report is then sent to an administrator for review and analysis, with invoices automatically forwarded to the customer.

Streamlining service processes through digitalization

Digitalized field service management enables you to provide the fast, reliable service that customers expect. Streamlined processes save time, helping technicians be more productive and improving customer satisfaction. In addition, digitalized workflows help keep down costs and uncover opportunities for the business to grow.

Making field service smarter with data and automation
AI that puts people first

In the world of field service, success depends on the ability to respond quickly, solve problems efficiently, and deliver experiences that build trust. But with rising customer expectations, increasing complexity in service operations, and ongoing workforce challenges, this is easier said than done. That's where AI comes in—**not as a replacement for people, but as an enabler of their best work.**

AI that supports, not replaces

Every minute counts in field service. Dispatchers juggle priorities, resources, and constraints while technicians face pressure to solve problems on the first visit. AI helps reduce this complexity by providing immediate recommendations, automating routine decisions, and making essential information easier to find.

Instead of scrolling through job lists or hunting for past service records, AI surfaces what matters most—whether that's the right job, the right route, or the right fix. By learning from historical data and up-to-the-minute conditions, it supports proactive decisions, more efficient scheduling, and faster resolution in the field.

From reactive to predictive

AI doesn't just improve individual tasks—it transforms the way field service is planned and delivered. What was once reactive can now be predictive: identifying patterns, anticipating service needs, and continuously learning from outcomes.

For dispatchers, this means shifting from manual coordination to strategic oversight—with tools that simulate planning scenarios, optimize assignments, and align with business goals. For technicians, it means arriving prepared—with full context, relevant insights, and support to resolve issues faster and with greater confidence.

A human-centered approach to AI

At its core, the goal of AI in field service isn't just efficiency—it's empowerment. It's about creating space for people to focus on what they do best: solving problems, helping customers, and improving outcomes. With AI integrated into SAP Field Service Management and embedded into the broader SAP Business Suite, companies can unlock the full value of their data, workflows, and expertise. The result? Service that's faster, smarter, and more human—supported by intelligent technologies working quietly in the background.

Key benefits of AI in field service management

AI is reshaping the way field service teams operate—empowering people, streamlining complexity, and creating space for more value-added work. Rather than replacing humans, AI supports them with insights, automation, and proactive recommendations that improve every step of the service journey.

Field service benefit	How AI helps achieve it
Smarter planning and scheduling	AI helps automate routine scheduling tasks and adapt to last-minute changes. By learning from past performance and current constraints, it assists dispatchers in making faster, more accurate decisions—improving efficiency without sacrificing flexibility.
Reduced cognitive load for technicians	Technicians gain quick access to relevant job details, past resolutions, and equipment insights without having to dig through multiple systems. This helps them stay focused on the task at hand, reduces delays, and lowers stress in the field.
Faster, more personalized customer service	AI accelerates how service teams respond to customer needs—whether it's matching the right technician to a job or offering faster appointment slots. The result: fewer delays, more transparency, and an overall better experience for customers.
Actionable insights from data	From job history to equipment behavior, AI helps make sense of vast amounts of data. These insights inform not only the next service call but also broader decisions around maintenance planning, workforce development, and service innovation.

Staying up-to-date both online and offline with mobile solutions

Digital field service management solutions provide service technicians with essential data about service orders, from order history to required spare parts and technical features of machines.

Data is usually stored in the cloud, and some software solutions offer access to information using a mobile device. However, it is even more practical and efficient for technicians to download all necessary information using an app that can be installed on smartphones, tablets, or laptops and can also be used offline.

> Mobility and 24x7, trouble-free access to critical data, regardless of internet access, is now crucial for field service companies to remain competitive.

The key advantage of using an app is that the service technician can access the system at any time, regardless of the network connection. New information entered by the technician while at the customer's location is automatically synchronized with the field service management system when the device is back online. This way, all essential data relating to the maintenance and repair of equipment can be accessed by technicians at any time—even without an internet connection.

Removing obstacles to mobile device use

Breaking down data and information silos and sharing relevant insights with as many stakeholders as possible—such as technicians, supervisors, and customers—are essential capabilities for taking full advantage of mobile devices for service management. Only this kind of approach enables you to seamlessly connect technicians and colleagues throughout the entire company. Productivity in the field is optimized, cross-selling and up-selling opportunities are targeted and supported, and the consistency of customer communication is maintained.

By building on integrated technologies, you can optimize the user experience and minimize costs. Developing a technician-friendly mobile field service management program helps increase the fundamental acceptance and effectiveness of the solution. Before embarking on a mobile field service program or trying to improve an existing one, you should first analyze the information and communication needs of technicians. It is also important to ensure that the mobile devices used by technicians meet their needs, without cutting corners.

Saving time when creating reports

Another advantage of mobile (offline) solutions is the faster, easier creation of reports that previously were laboriously compiled from handwritten notes. You can provide an app that automatically creates a report when technicians have finished the service call. When they enter the time taken in the app, the data is automatically transferred to an invoicing workflow.

In addition, technicians can enter any expenses incurred, which are then transmitted to the ERP system. This allows technicians to get their money back faster and saves administrators time and resources in preparing expense reports.

Accelerating issue resolution with self-service tools and chatbots

Self-service functionality helps businesses increase productivity, sales, and customer satisfaction. In addition to having a positive impact on customer loyalty, it speeds up processes and reduces costs, with increased flexibility and more effective capacity planning. Routine requests that typically tie up unnecessary capacity can instead be addressed using self-service solutions, relieving the strain on service teams. The process should be designed to be intuitive and self-explanatory to minimize expense on the part of the user and to create a positive customer experience.

Seamless service means being on-site quickly as well as providing support through e-mail, video, chat, social media, customer portals, and mobile applications. Today, many customers want to be actively involved in solving problems, and self-service portals allow them to review operational data, view tutorials, request remote support, or even schedule an appointment with a service technician. Providing customers with 24x7 contact options sets the stage for a positive, long-lasting customer relationship.

Chatbots and self-service tools can improve experiences related to processing inquiries, providing customer support, and supporting sales representatives.

Helping customers and technicians help themselves

If a machine is malfunctioning, customers can create a service request directly on their mobile device. They can do this by using a self-service tool to scan a QR code or call up a web link to reach a maintenance service site. There, they can request a technician, order spare parts, or access product information—even outside business hours. In addition, they can select a desired date and time for a service call. A status check then provides valuable details about the individual request and closes an efficient chain of subprocesses, benefitting everyone involved.

Chatbots are generally used to provide simple information through chat windows based on, for example, the company's FAQs or technical data sheets and user instruction guides. Because customers expect high-quality service right when they need it, these already play an important role in direct customer contact across all sectors. AI applications can collect, analyze, evaluate, and forward requests received through web chats to the appropriate employee, meaning that customers receive answers to first-level inquiries around the clock.

With text and voice prompts, AI bots also provide service technicians with direct on-site support—offline and even without the company's own mobile device. Technicians have the option of calling service bots from any phone and having a conversation.

As they are integrated into the field service management system, bots have access to the entire database and provide technicians with all the data required for the service call so they can solve problems quickly and efficiently. This self-help functionality reduces the number of on-site visits so technicians can concentrate on complex jobs and emergencies. The use of chatbots for customers and service technicians also enables the rapid resolution of first-level inquiries and efficient planning of additional service calls.
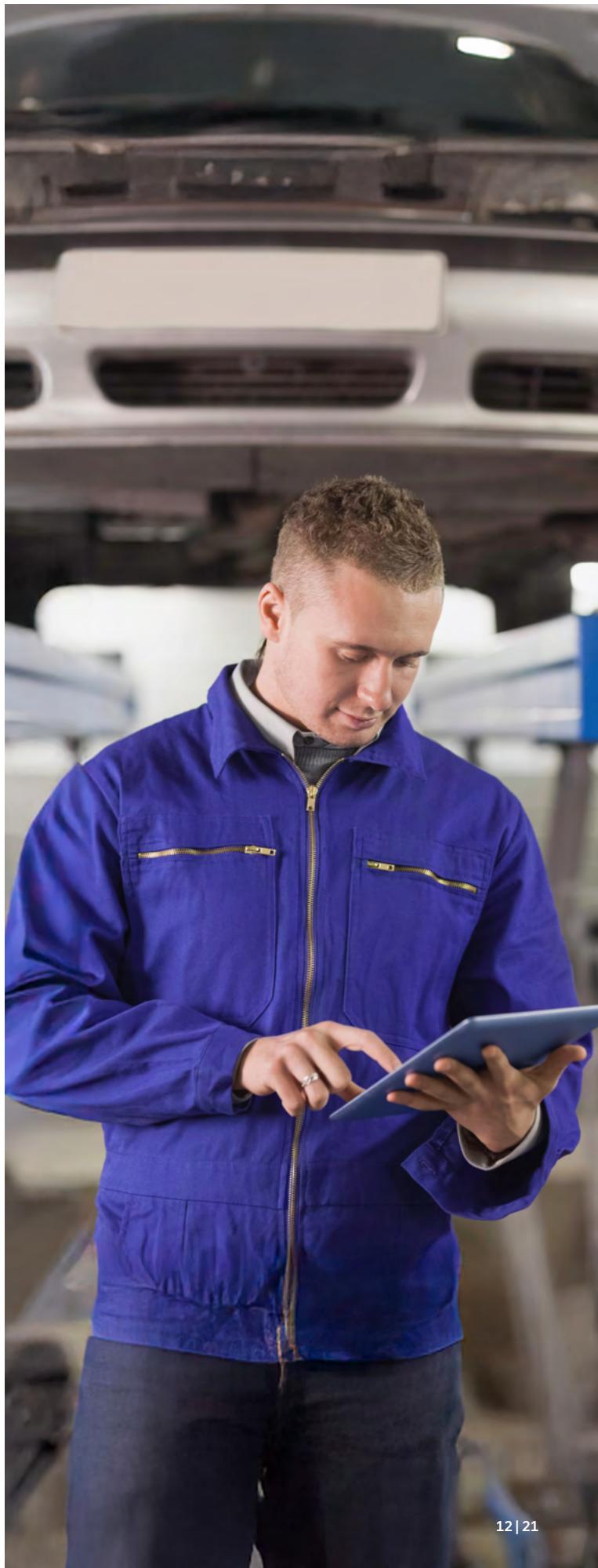
Satisfying customer demand for rapid response with crowd services

Increasing customer expectations and new ways of doing business are driving field service providers to rethink service processes. However, with a limited number of employees that all have different knowledge and skills, customer demand for an immediate response can be difficult to fulfill. Against this background, the crowd service concept helps you avoid service bottlenecks.

The concept involves the creation of a pool of certified, qualified service technicians that are connected to you and your customers through a field service management software solution. The pool includes your own employees in addition to partners, suppliers, and qualified freelance technicians.

This ecosystem of experts can solve simple tasks, such as installing standardized machines and devices or replacing cables, as well as tackling complex problems using specially configured systems. Service technicians either accept specific orders in the field themselves or are assigned them. Selection and allocation are carried out using mobile devices on which the field service management app is installed.

In this way, the crowd service approach enables you to use a comprehensive platform to find available service technicians on demand, significantly improving the quality of customer service. You're also able to extend your geographical coverage and deploy service technicians globally in a uniform manner.

Improving the efficiency of service-call assignment

Coordination of maintenance, service, and repair orders using paper-based processes is time-consuming and error-prone. In contrast, digitalized workflows enable faster, more efficient processing of service orders.

As soon as a user reports a malfunction, this triggers a well-established process chain. The field service management solution identifies an available technician right away, either from your own company or the crowd. In addition to a description of the issue, the technician receives precise repair instructions, including checklists and video tutorials as well as relevant information about the customer. At the same time, the customer receives a notification to let them know when the technician will arrive.

Used by manufacturers that offer maintenance and repair services as well as by service providers, the benefits of a digitalized crowd service-based approach are clear:

- Build stronger customer loyalty
- Lower the risk of errors
- Improve time management
- Achieve cost transparency
- Enhance employee experiences
- Increase sales by building close partnerships that endure

Key capabilities to look for in a crowd service solution

Optimized scheduling for the entire workforce

- By analyzing continuously updated data from the Internet of Things (IoT) and previous work-order data, you can better predict the frequency of future work orders.
- With the help of AI-based technologies such as machine learning or automation, crowd service solutions can coordinate technician assignments and carry out trend analyses on their own.

Integrated management of all technicians

- Communication with external technicians and your own staff should be as straightforward as possible, so they can quickly get in touch if they have questions or problems.
- Recording the work progress of external technicians in the internal system as it happens improves visibility for central coordinators, enabling them to access updates at any time.

Performance measurement and monitoring for external technicians

Connecting outside technicians to your internal field service management system using a crowd service solution reduces the likelihood of errors and inefficiencies.

Supporting prompt problem solving with augmented reality

Servicing special equipment may require individual expertise, a prerequisite that not every technician can meet. Augmented reality (AR) can help ensure optimal results for field services, allowing technicians to be guided visually and acoustically by experts who are not on-site. In addition, modern AR technologies enable technicians to share images of their current location with experts in real time to find and implement the appropriate solution. This not only reduces equipment downtime, as customers no longer have to wait for experts to arrive but also saves money and solves customer concerns quickly.

Enabling remote maintenance with supervised self-service

AR can be leveraged for more than technician support. It also enables remote maintenance when external circumstances do not allow the technician to be present in person. This scenario may involve the use of AR goggles, where the technician displays work steps through the AR goggles during a virtual appointment with on-site personnel.

In the future, AR technology will not only enable remote maintenance but also encourage collaboration between technicians. This will reduce time spent searching for information, consequently improving efficiency.

Optimizing process efficiency with digital field service management

Digital field service management supports a perfectly coordinated process chain that enables high-quality problem solving in a time- and cost-efficient manner. The following table illustrates a scenario of what the interaction between field service management and AR applications looks like in practice.

Situation	Actions
A service technician receives a mobile device notification about a service request and decides whether to accept it.	There is a problem on a machine that has been adapted to the individual requirements of a user in the metal-processing industry. As soon as the technician accepts the order, detailed customer information and the service history of the machine in question is made available to the technician.
During the on-site service call, the technician encounters a problem that requires special expertise in the design and functioning of the machine.	The technician activates the corresponding application on the mobile device to request help. A screen opens immediately, and the technician directs the device's camera to the machine that requires repair. An expert at the other end of the line sees the same thing as the on-site technician and can zoom into the video image, add notes, mark individual image sections, and guide the technician in a targeted manner.
The on-site technician follows the instructions on the mobile device.	The on-site technician solves the problem and gets the machine running again. The relevant information is then archived and uploaded to a knowledge base where it can be used for future service calls.

Exceeding customer expectations with the right expertise

Customers expect their service experiences to exceed their expectations and deliver added value at all stages of their journey. In a service organization, business success depends directly on the ability to manage and apply knowledge. Field service technicians must increasingly expand their proficiency in different systems, machines, and devices.

Access to detailed sources of information, backed by powerful technology, helps them achieve this technical acumen and is essential for the time-efficient resolution of problems on-site. Furthermore, the ability to provide a quick solution to problems bolsters employee confidence in their job competence.

Simplifying knowledge capture with modern tools

Traditionally, knowledge was passed on in the form of documents, manuals, and tutorials. Now you can collect and record data in the cloud to make relevant information available on demand. Implementing a software solution for field service management and using it as a cloud-based repository of acquired business and industry knowledge improves communication between your service organization and your customers.

In addition, tools that simplify access to your company's expertise and are available both on mobile devices and offline reduce paper-based processes. Employees get the insights they need to optimize performance in the field and manage resources more efficiently. After these tools are standardized, they help increase employee satisfaction, improve customer experiences, and close the talent gap.
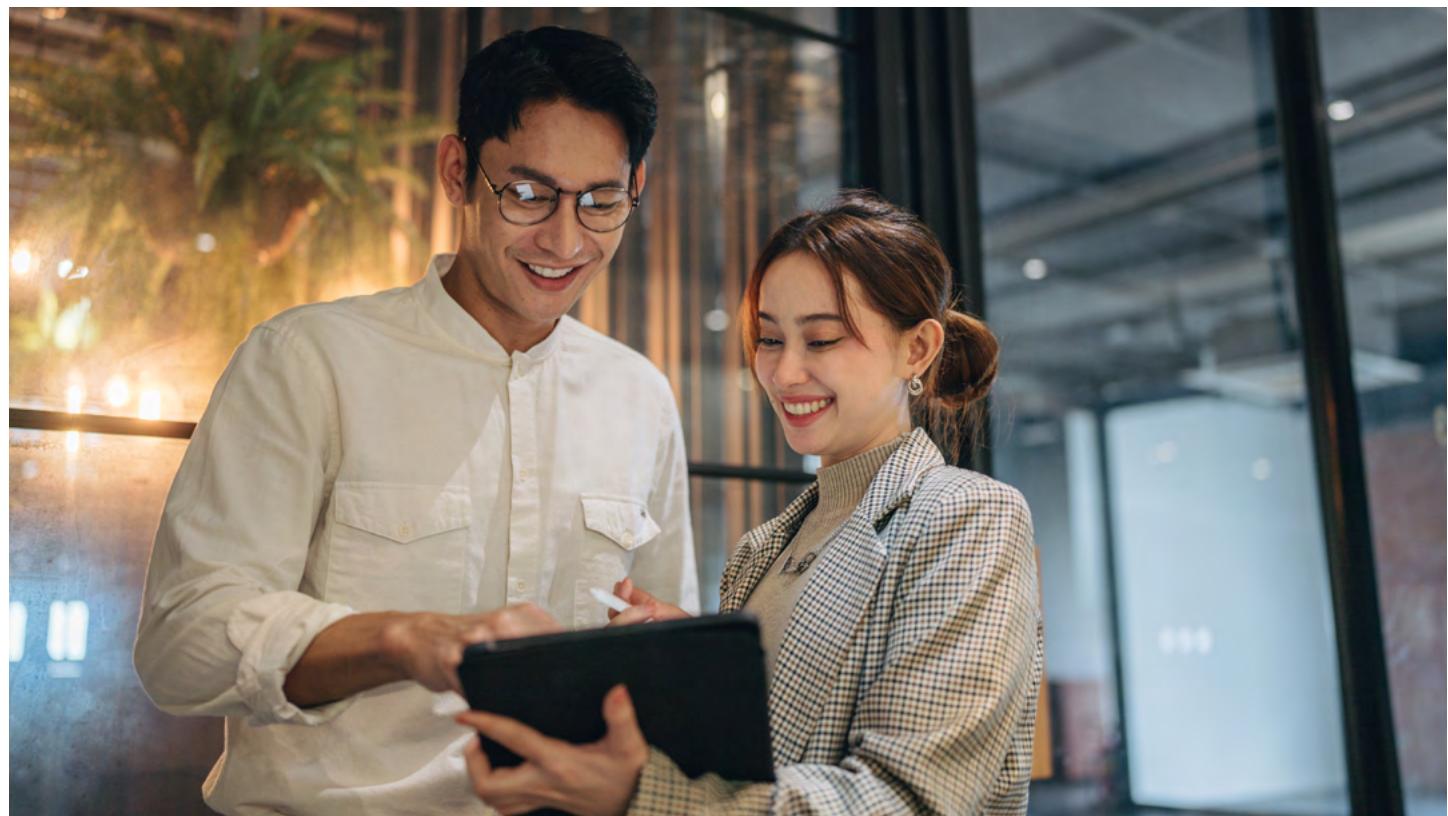
Establishing a uniform safety culture with integrated EHS procedures

Service technicians are particularly at risk for work-related accidents. Increased stress levels due to frequent changes of service call locations and varying on-site conditions can create moments of negligence—moments that can be dangerous for a service technician. Robust environment, health, and safety (EHS) procedures have become a crucial factor for many customers when selecting a service provider.

The health and safety of employees must not be left to chance. It must be prioritized as a management issue, not just because of your responsibility for employee well-being but also to protect your reputation and control the financial risks that result from compensation claims.

That's why it's necessary to establish a uniform safety culture for service technicians. But how can you make EHS procedures in the field as effective, straightforward, and efficient as possible to help ensure maximum adherence by the teams involved? Integration into a field service management system is the first step.

Setting checklists for greater security

One way to establish an EHS culture is to integrate risk analyses into workflows in the form of checklists. Before technicians start work, they can complete the checklists, ideally in the field service management system. It's important not to request too many details and to make sure that the routine doesn't seem patronizing or even boring to the technician. In addition, technicians must be able to access checklists at all times, even when offline.

Making field service management EHS-compliant

Organizations can use field service management systems to integrate a safety culture from the start by guiding service technicians step by step. Before a specific activity is performed by technicians, the field service management system provides them with a classification of the risk, together with detailed instructions. In addition, the system may require confirmation that technicians have taken note of certain warnings for the deployment, minimizing the risk of accidents.

Nevertheless, it's important not to demand too much, and information should be made available to the workers at the right moment. Attentiveness when carrying out a job can be significantly increased if employees have already familiarized themselves with the work regulations.

Facilitating intelligent networking with the Industrial Internet of Things

As with devices based on IoT, technology using the Industrial Internet of Things (IIoT) monitors activity and deployment conditions and facilitates remote control. Unlike IoT, IIoT does not involve consumer devices, such as washing machines, thermostats, or light bulbs, but instead focuses on production facilities in the industrial environment.

Networked sensors, instruments, and other devices linked to industrial applications open completely new possibilities for process optimization. IIoT describes the networking of complex machines equipped with sensors, with the aim of optimizing production processes, monitoring devices, and generating new business models through machine-to-machine communication and big data technologies.

The technology combines all relevant information, such as sensor data, customer input, availability of service technicians, and existing knowledge. This foundation makes it possible to respond right away to problems and provide industries with effective solutions that take specific requirements into account from the outset.

Thanks to intelligent networking, entire production systems can independently recognize when maintenance is required or automatically carry out software updates. Meanwhile, the collected data makes predictive maintenance and condition monitoring possible.

As a result, a data-driven field service management system that uses systematically organized information can play a significant role in business success. For example, a well-thought-out and integrated IIoT strategy makes it possible to efficiently control production processes and intelligently integrate production resources. This approach enhances compliance and traceability as well as quality management and manufacturing intelligence.
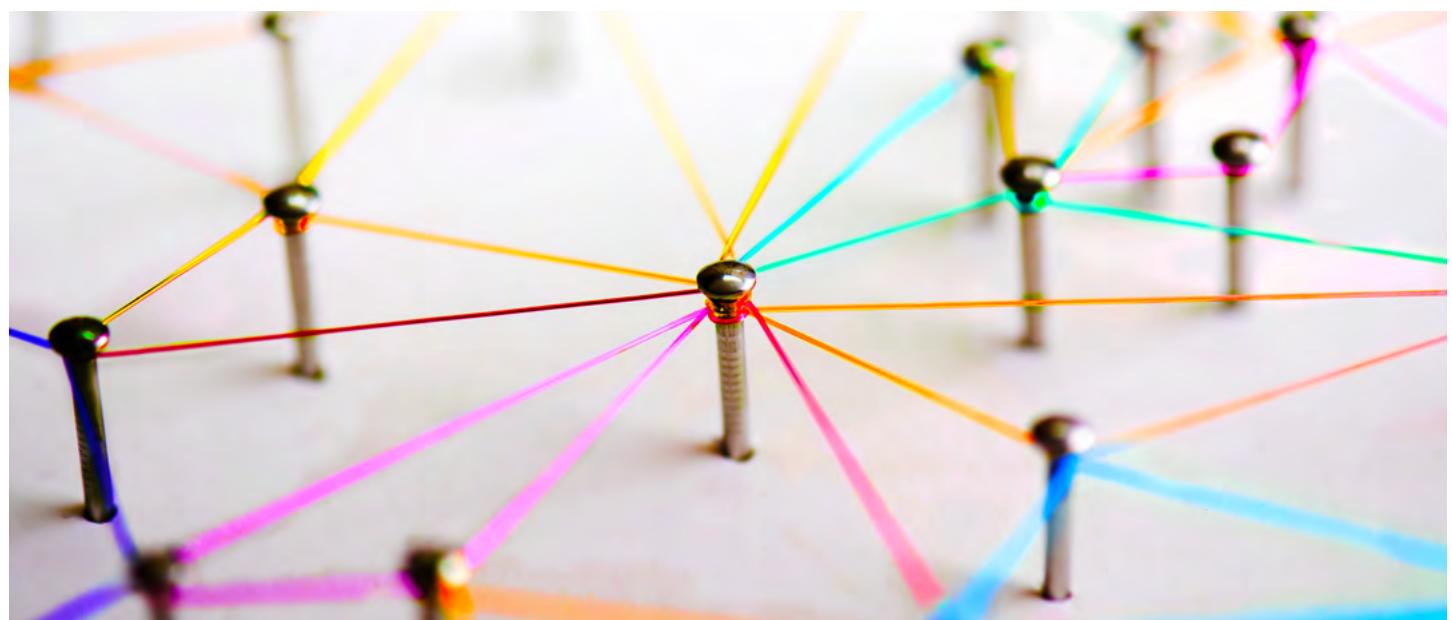
Enabling condition monitoring and predictive maintenance

Intelligent, networked machines exchange information in synchronous time: production facilities organize themselves and coordinate processes and deadlines with each other. This capability makes production more flexible, dynamic, and efficient. In addition, the machines can network worldwide, whether within the company itself or with the systems of customers, suppliers, or maintenance companies. This interconnectivity will have a significant impact on customer service in the future.

Automated and digitalized field service management—supplemented by crowd service, self-service portals, and real-time services—will provide a comprehensive maintenance service landscape. With such future-oriented solutions, networked machines will be able to independently recognize when maintenance is required per the parameters of predictive maintenance and condition monitoring. Under certain circumstances, maintenance will even be carried out by the machines themselves. The result is a decrease in disruptions and production interruptions and an increase in productivity.

The key prerequisites for this automation are remote system management, administration of software configuration and data management, and sensor hardware. In addition, you need an IIoT cloud platform that can handle vast amount of data streams and enable smooth information flow between systems.

Supporting machine-as-a-service models

Machine-as-a-service models are another area supported by IIoT. Using this approach, you offer a time-limited right of use of a machine that makes a predefined contribution to a customer's business model. IIoT then enables you to monitor maintenance and service requirements as well as manage regular software updates throughout the entire service life of the machine.

Protecting production and data with IIoT

To harness the full potential of IIoT for field service management, you need a comprehensive security system, consolidated in a unified threat management (UTM) system. UTM relies on a mix of security features that take immediate effect when needed. A firewall helps prevent attacks from outside, and VPN applications encrypt the data flow. Powerful antivirus software completes the package, ideally in combination with intrusion detection or intrusion-prevention functions.

Ideally, UTM is integrated early in the planning and development of the IIoT platform. Besides encryption, integrity control, and compliance functions, authorization management plays an important role here. In addition, you can control access using a digital interface and make detailed log file records.

Closing the experience gap with digital capabilities

The primary goal of most service providers is to create positive customer experiences. In practice, only a few companies actually succeed. The result is the so-called "experience gap," which is the disparity between what customers expect from a company and what they actually get. Today, what differentiates you from your competitors is no longer solely defined through products but increasingly through service.

Many companies have focused on optimizing random customer interactions, without a comprehensive view of their relationships with customers. However, a positive service culture has never been so important, and both commercial and consumer customers expect products and services to be perfectly tailored to their requirements.

Experience management solutions use both experience data (X-data) and operational data (O-data) to capture and improve four core areas: customer, employee, product, and brand experiences. Experience management, therefore, is the process of monitoring every interaction between individuals and a company with the intent of both identifying optimization potential and anticipating and preventing problems before they occur.

By combining O-data that provides information about what happened with X-data that provides information about why it happened, you can gain an understanding of what customers expect and how their reaction affects the business. This supports real-time decision making that helps you improve customer service.

### Improving field service through integrated experience management

After technicians have completed a job or solved a problem, you can capture information on the service experience while it's still fresh in the customer's mind by asking them to call the service center or use a self-service tool. The customer then answers a short questionnaire to help you evaluate their service experience.

Boosting employee motivation with digitally enabled experiences

Digitalization not only offers opportunities to improve the customer experience but also the employee experience. A lower error rate, smoother on-site service calls, modern tools, and improved communication within service teams lead to less frustration and higher motivation among technicians, employees in the service center, and management.

Digitalized field service management	Artificial intelligence	Mobile solutions	Self-service tools and chatbots	Crowd services	Augmented reality	Know-how	Uniform safety culture	Industrial Internet of Things	Customer experience management
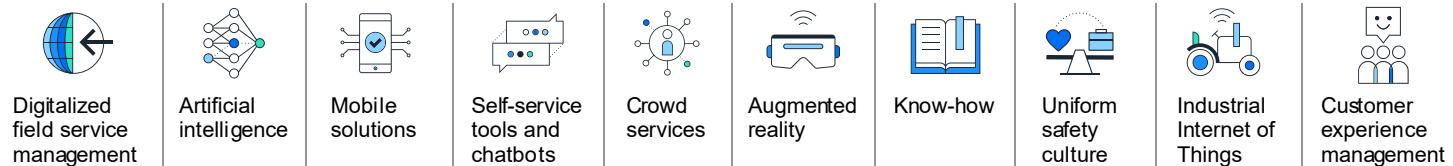
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