



Field Service Technologies

**Empowering mobility
in a post-pandemic world**

Customers' expectations of product quality are always high. However, their expectations of post-sales product service go way beyond. That's probably because downtime impacts the business and has costs associated with it.

The quality of response and action during the service lifecycle is a key attribute in determining the customers' perception of the product and the brand. The customer experience during this period, from the ease of call logging and troubleshooting to post-repair invoicing and warranty management, is of critical importance to service organizations in ensuring customer delight and loyalty.

It's therefore imperative that organizations mobilize their field services productively by connecting the back-office to the field personnel through integrated workflows to facilitate the highest quality of service delivery.

But that's not as easy as it sounds.

It's an uphill task as field technicians don't have access to or struggle to comprehend complicated contract or warranty entitlements, policies, service bulletins, equipment history, or maintenance schedules. It's harder to make on-field decisions on troubleshooting or estimate the coverage for billing and warranty or service contracts.





Going that Extra Mile... Field Service Optimization

Sales or service – which is of greater importance? This is almost always a point of contention in manufacturing organizations. While the sales department is under pressure to achieve time-bound targets, it's the service department's responsibility to ensure that product performance and commitments made by sales are met from the customer's perspective.

In less mature organizations, there is a disconnect in the product sale-service delivery relationship. Sales teams are driven to sell products or equipment with very little thought to the service team's ability to execute. Service is seen as an afterthought and the price of service is often discounted or given away to push product sales. This typically leads to a disconnected or compromised customer experience as the service leader is reactively reallocating resources to meet customer needs.

Leading organizations have a much more comprehensive view of how products and services need to work together. Their product promotions consider the service resources needed to install, maintain, and support the promotion. It's evident that there will be no sales without efficient customer service, which is key in developing and maintaining brand loyalty, and therefore bringing in repeat sales and referrals.

Service organizations are often, therefore, seeking ways to go the extra mile to improve field service efficiency and provide best-in-class customer service.

The Metrics that Matter

Customer service has evolved over the years from being a back-end function merely installing and repairing products to a key driver of repeat business. It's also an important consideration at the time of purchase of a product. The customer's experience also evaluates the product's performance during its service lifecycle.

Ultimately customer experience is the most important measure of performance of post-sales service. Dissatisfaction at any point can bring down their perception of the product as well as the brand.

Some of the critical parameters used to measure customer experience are:

- 1. Number of complaints reported**
- 2. Customer retention rate**
- 3. Product downtime**
- 4. Net Promoter Score (NPS)**

These metrics are very dependent on field service performance – from the speed of response to a service call, technicians' proficiency in solving the problem to the procurement of spares and invoicing.



Hurdles in the Field

A customer's first experience of field service can occur during installation or when it is time for a scheduled service, or in the event of a breakdown. This experience then defines their opinion of the brand and its product.

That's precisely why service organizations have to keep a very close eye on the potholes that could disrupt field service performance.



Here are some of the most common problems faced in the field:

- 1 Managers do not always have dynamic visibility into field activities leading to discrepancies in service scheduling and dispatch.
- 2 Scheduling of work orders is often managed on spreadsheets and manually assigned without considering important factors such as skill-sets, spares availability, and proximity to the customer location.
- 3 Misinterpretation of the reported problem or other work order details.
- 4 Loss of diagnostics information as paperwork in the field is often manual and untidy.

Complexities in Field Repairs and Deficiencies in Processes

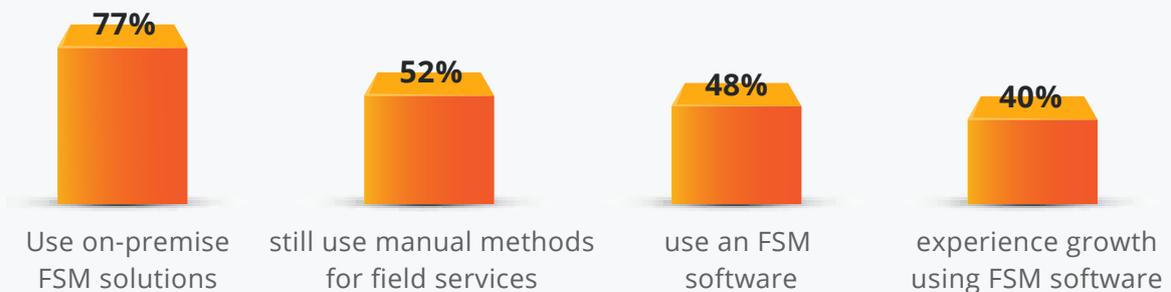
A poor first-time fix rate has two undesirable results - Increased costs for the service provider and customer dissatisfaction. Let's study the most common reasons that affect the first-time fix rate.

Technicians are constantly under pressure to reach the service site quickly. Often, this leaves them with very little time to understand the nature of the problem they are being called in to solve. They may not have access to service manuals, repair procedures, warranty/contract information, and most importantly, readily available spares to make matters worse.

A poor first-time fix rate has two undesirable results - Increased costs for the service provider and customer dissatisfaction.

1 State of software usage by field service organizations

Source: Fieldpoint, Salesforce, ServiceTitan



2 Benefits of data analytics for FSOs

Source: Hitachi Solution



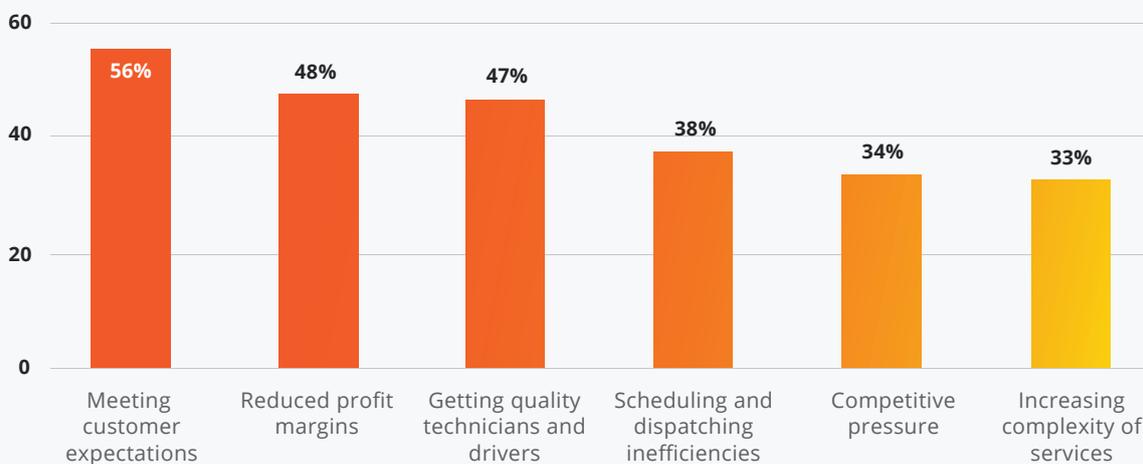
3 Top challenges for technicians

Source: Click Solution



Breakdowns are the most challenging of all service calls. Aside from the time pressure involved in troubleshooting and providing a solution, a few other processes add to a technician’s workload. Work orders have to be filled, estimates prepared for the repair and, warranty coverage assessed. If done manually, these can cause delays and increase the chances of error. In the case of manual estimation, time-to-closure suffers, and the accuracy of the estimate is compromised. And if the information needed is not fully automated and integrated with the backend ERP, the problem is compounded.

Top Challenges of Field Service Companies



Source: Finances Online

Field technicians also have to physically report to offices to submit completed jobs and pick up new service requests. Data from manually completed work orders are then entered into a backend system. A common problem at this stage is the misinterpretation of diagnostic data, which compromises the quality of the data entry process. In addition, the data entry process is often delayed, which in turn sets back invoicing and warranty claims as well. This brings down the customer experience several notches, without the service organization even realizing.

Field Service in a Post-Pandemic World

In the wake of the COVID-19 pandemic, maintenance and field workers faced home lockdowns and job disruptions. Yet a survey conducted in August 2020 by IDC (COVID-19 Impact on IT Spending Survey) indicated that 16% of field workers were still in the field.



New tools and technologies are making their way into the hands of field service teams to enable them to offer seamless service, regardless of location.

Additionally, service organizations had to explore contactless or remote service as according to a CustomerThink Report in 2020, 75% of consumers did not like the idea of having field technicians in their homes amid the pandemic. Like many IT professionals, field workers also used the limitations of the situation to explore technology to provide monitoring and service without compromising their safety or the safety of their customers.

As a result, new tools and technologies are making their way into the hands of field service teams to enable them to offer seamless service, regardless of location.



Technologies that Empower Field Service Personnel

Today, the importance of top-notch and seamless service in customer retention and maintaining a business advantage is more critical than ever before.

ISE reports that about 75% of field service businesses that utilize mobility tools in 2020 have observed increased employee productivity, while the rest have seen customer satisfaction rates rise.

Let's look at some of the current technology solutions that improve field productivity, reduce paperwork, increase the accuracy of diagnostics, reduce downtime, improve service revenues, and most importantly, enhance customer experience.

CONNECTIVITY



The most efficient and effective method to facilitate collaboration between field personnel and service coordinators is by improving connectivity.

Mobile devices, tablets, video conferencing, and applications improve the quality of communication in the field, and the quality of post-sales service by providing real-time communication channels.

For example, in some industries, the sale of a product is followed by a demo and installation. In such cases, delivery, installation, and product registration have to be seamlessly connected to ensure efficiency. Investments in enterprise network infrastructure, 5G, Wi-Fi, mobile applications, and mobile devices will enhance the connectivity of an organization's workforce, operations, and partners.

In fact, according to IDC's February 2021 Future Enterprise Resiliency and Spending, in the next two years, 52% of all organizations are prioritizing technology improvements in connectivity programs.

INTERNET OF THINGS (IOTs)



IoT enables businesses to gather round-the-clock information allowing field workers to have access to accurate and timely information. Technicians can use IoT-enabled tools to monitor equipment health proactively, set alerts, and execute actions to reduce break-downs.

According to ReachOut, 73% of field management firms have already incorporated IoT into their operations in 2020. A excellent example of this is US-based electric power holding company Duke Energy which saved more than \$30M in repair costs in the first three years by using advanced IoT sensors to pick up data on their plant conditions.

IoT helps enable a seamless link between field service operations and customer needs. Using data alerts obtained from these devices, service and support staff can monitor diagnostics and predictively respond to offer maintenance proactively.

AUTOMATION AND AI



Automation offers on-demand information (such as recommended next best steps), which can be enhanced and driven by advanced AI and ML algorithms.

Recommendation and automation of routine tasks can help reduce the pressure on field workers and focus on visits requiring a higher complexity of skills. Automation can also help take the burden of mundane paperwork away from technicians, allowing them to deliver on the key factors that impact customer delight.

Visual AI is also a new technology being deployed in field service.

Visual AI is also a new technology being deployed in field service. It refers to the ability to teach a machine to recognize something from an image. The algorithm is trained with millions of images and can identify specific parts and spot faults including cracks and misalignments. By combining visual AI with monitor devices, alerts can be set and data collected on part maintenance and predictive support.

AUGMENTED AND VIRTUAL REALITY DEVICES

Augmented Reality (AR) and Virtual Reality (VR) are helping field technicians provide quality support service without compromising on safety or having to travel in the field.

AR and VR technologies can save tremendous time and money through remote assistance. Technicians can use wearables such as smart glasses to see what the customer sees and provide live service by overlaying virtual schematics. This is also useful when a technician has been dispatched but runs into issues that require a second opinion. Instead of calling for another technician and delaying the issue resolution, augmented glasses can connect the first technician with the support team.



Using augmented reality technologies in tandem with communication tools, companies such as Microsoft and Google are enabling “mixed reality” solutions to offer qualified technical support to those on the ground.

Both companies have various enterprise customers, including Boeing for Google, which used it to help build airplanes by augmenting the PDF assembly guides they had to view on laptop screens.

In 2014, USAA became the first major insurance provider in the US to request federal permission to test how drones could speed up claim processing in areas affected by disasters.

DRONES AND ROBOTS

Drones and robots can help with hazardous field working conditions for technicians.

For field engineers who need to inspect a high-rise building or powerline, a camera-enabled drone can offer safe support. Similarly, robots can enter into areas that may be physically hazardous for field service personnel and provide acoustic and visual data for diagnostics and faster resolution.

In 2014, USAA became the first major insurance provider in the US to request federal permission to test how drones could speed up claim processing in areas affected by disasters.





The Positive Impact of Technology on Field Solutions

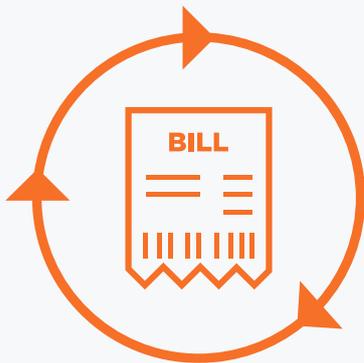


Faster Problem Resolution

When service calls for complex problems arrive, the cycle time for repair increases. This can be controlled by interactive repair procedures, easy access to service manuals, and a knowledge management system. Being able to interact online with other more experienced colleagues, the technicians can resolve the problem faster.

Quicker assessment of Warranty Coverage

In the field, it's critical to be able to assess the problem and make a decision on warranty or contractual entitlement. If the repair is extensive, this process becomes way too complicated to be handled manually. The right solution would be to integrate the field device/product app with warranty/contract information and billing. The warranty team is also greatly aided in its analysis of the problem by the technician's ability to shoot a picture or video.



Reduced Billing Cycles

If a handheld device can generate an invoice/warranty claim at the service site, it significantly slashes claim cycle time. It also improves cash flow for the service organization by enabling the customer to pay on the spot, if needed. Employee time is also saved by preventing the duplication of these tasks at the back-end.

Data Visibility and Increased Opportunity

Integration of field service activities with the sales CRM system enables cross-selling and up-selling of products. This can uncover opportunities to increase aftermarket revenues.





Questions to Ask Before Investing in Technology

Field service technicians shouldn't have to focus their efforts on anything but solving customer problems. But simply deploying a technology solution will not iron out every problem faced by a service organization.

Companies must assess the current field service performance to nail down shortcomings before preparing a roadmap for any new technology deployment.

Here are some simple questions to ask. Is it easy to use? Is it scalable? Is it secure? Can it integrate easily with existing back-end ERP, Warranty, Contract, Sales, and CRM systems? Is it available in a SaaS model? Does it support speech recognition?

Companies must assess the current field service performance to nail down shortcomings before preparing a roadmap for any new technology deployment.

Will it help your business function online? It's time to let go of the paperwork, and any technology that enables you to do everything digitally is a plus.

Will it enable predictive maintenance? The potential benefits of identifying a problem before it occurs are huge in terms of both cost-effectiveness and customer appreciation. Evaluate if your solution can help your field staff stay ahead of the complaints.

Will my solutions talk to each other? The business world is moving away from siloed data, and you should be too. Consider whether your solutions can work together in tandem to provide field operatives more than mere data access and instead enable insightful, data-backed solutions.

Will it improve customer experience? New technology must empower field technicians to provide near-seamless customer support. Ease of use and enhanced experienced will go a long way towards any new technology being adopted wholeheartedly.



Pivoting Field Service Into the Future

Service organizations must continue rising to the occasion by leveraging technology to find innovative and smarter ways to work.

The simplification of field services using advanced field technology is critical to improving customer experience, building equity, and becoming a strong selling proposition for any business.

Customer expectations will continue to rise. And service organizations must continue rising to the occasion by leveraging technology to find innovative and smarter ways to work.

SOURCES

<https://financesonline.com/field-service-management-statistics/>

<https://www.servicepower.com/blog/top-5-field-service-trends-in-2020>

<https://customerthink.com/5-reasons-why-your-field-service-performance-metrics-should-include-customer-effort-score/>

<https://www.idg.com/blog-a-look-into-idc-directions-2021-how-tech-suppliers-must-adapt-to-stay-relevant-in-a-post-pandemic-world/>

<https://www.cbinsights.com/research/report/corporations-drone-technology/>



About Tavant

Headquartered in Santa Clara, California, Tavant is a digital products and platforms company that provides impactful results to its customers across North America, Europe, and Asia-Pacific. Founded in 2000, the company employs over 2500 people and is a recognized top employer. Tavant is creating an AI-powered intelligent enterprise by reimagining customer experiences, driving operational efficiencies, and improving collaboration.



Santa Clara | Dallas | New Jersey | London | Bangalore | Hyderabad | Noida | Sydney | Tokyo | Colombia

+1-866-9-TAVANT | hello@tavant.com