White Paper

Field Service Mobility: Transforming Field Service and Customer Experience

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Executive Summary

Customers might not expect products to be super perfect, but they do expect service providers to fix them real quickly in the event of a breakdown. A customer’s expectations of a product are directly proportional to its cost and the business impact associated with it. And how customers are served during the service lifecycle transforms into customer experience, and impacts their perception of the product as well as the brand. Be it the quality of call logging, troubleshooting, or post-repair invoicing and warranty management, providing a delightful customer experience is a strong KPI for service organizations.

Today, a majority of service organizations have come of age on account of maturity of their field services. As per a report published by Aberdeen Group in June 2011, continued focus on field service excellence is warranted as customers demand improved services in terms of speed, efficiency, and overall service experience. Organizations need to mobilize their field service forces effectively by connecting the back-office to the field through integrated workflows to ensure the highest quality of service delivery. But it is easier said than done since many organizations struggle to achieve and implement this.

Also, field technicians strive to understand complex contract or warranty entitlements, policies, or service bulletins to make on-field decisions on troubleshooting or to evaluate the coverage for billing and warranty or service contracts.

In this white paper, the author discusses the real-life challenges faced by field technicians, and the importance of providing distinguished services for organizations to retain their customers and add more, amidst a challenging business climate. The paper also explains how technicians can be empowered with mobility solutions to improve field productivity, reduce paper work, increase accuracy of diagnostics, improve service revenues, and most importantly, enhance customer experience.
Key Drivers of Field Service Optimization

In manufacturing organizations, the sales vs. services debate rages on. Which of these functions is more significant? Which of them should be given more prominence? The sales personnel undoubtedly work under high pressure and tight timelines to meet their sales targets. The service organization, on the other hand, has the unenviable job of ensuring that product performance and service commitments, as promised by the sales personnel, are met from the end-user perspective. The debate, almost always, ends with the same conclusion – there are no sales without customer service. In fact, a strong and efficient service organization goes a long way in developing brand loyalty – the most important driver for repeat sales – among customers.

Given the importance of the function, service organizations strive to improve field workforce efficiency, response time, and first-time fix rates to be able to offer best-in-class customer service.

![Diagram showing key drivers of field service optimization]

Source: Aberdeen Group, January 2011

The figure above depicts the driving factors for improving field services for manufacturing organizations. Workforce productivity and utilization of resources is the top driver followed by rising customer demand for improved asset availability, and faster service response and turnaround, in-house pressure for boosting aftermarket service revenues, and the need to convert customer service into a competitive advantage in the market.

Each Instance Touches Customer Experience

Over the years, the role of customer service has changed significantly from merely servicing products to ensuring customer satisfaction and retention to drive consistent repeat business. One of the most critical performance metrics for the product service lifecycle today is customer experience – the sum of all interactions and feelings experienced by customers for the brand’s product, service, or people.

Customers are involved in every stage of the product usage and service lifecycle, and dissatisfaction at any stage can affect their overall experience and perception of the product as well as the brand.

Customer experience is measured in terms of various attributes such as customer satisfaction index, number of complaints reported, customer retention rate, product downtime, and Net Promoter Score.
Field Service Mobility – Transforming Field Service and Customer Experience

(NPS). Field service performance has a significant effect on all these metrics. Be it the responsiveness to service call, proficiency of technicians fixing the problem, warranty replacements, maintenance costs, or billing disputes, deficiencies in service management can impact the overall customer experience.

What Goes Wrong in the Field?
Customers get their first experience of field service when the product undergoes a scheduled service or breakdown repair, and they quickly associate this experience – good or bad – with the product and the brand.

There are several things that can potentially go wrong in the field. Service managers do not always have dynamic visibility into field activities leading to discrepancies in scheduling and dispatch. Scheduling of work orders is often managed on spreadsheets while the work orders are manually prioritized and assigned without considering important factors such as skill-sets and proximity to the customer location.

There are also the possibilities of misinterpretation of the reported problem or other work order details. The paperwork in the field is often untidy and the diagnostics information is recorded manually in the field.

Field Facts

> Interacting with staff, who have limited knowledge of the product and service history, is a major cause for customer frustration.

> Customers do not like describing the product’s history and problems repeatedly; they expect their complaint to be registered simply and fixed quickly.

> Customers are delighted when the service personnel are aware of the complaint before-hand and come prepared with the parts/tools required to quickly fix the problem in a single visit.

> According to Service Managers, the ‘time-to-resolution’ and ‘first-time-fix’ rates are critical metrics for high customer satisfaction and low service costs.
**Time-to-Resolution and First-Time-Fix: It’s More Than Money!**

The figure below depicts the major reasons that affect first-time-fix rate resulting in repeat work and additional costs for the service provider besides spoiling the customer experience.

Service technicians are always under pressure to reach the service destination on time and have little time to understand the problem before-hand. To compound the problem, many times, technicians on the field do not have access to the service manuals, repair procedures, warranty or contract entitlements, policies, and service bulletins. Unavailability of right parts during repair contributes most to the delay in fixing the problem.

It helps if technicians know the details of the problem reported in advance, along with the service history. If technicians are well-informed of repair events, they can carry the probable parts and tools that might be required to fix the problem.

![Graph showing reasons for repeat work and additional costs](image)

**Complexities in Field Repairs and Deficiencies in Processes**

Breakdown repairs are often challenging. Besides timely and precise troubleshooting, technicians also have to complete the official work order paper work. Based on the extent of repair work carried out and parts replaced, technicians have to take a call on the items that need to be billed to the customer or offered free of cost under warranty or maintenance contracts. Technicians usually make a call to their office admin staff to verify the product coverage and accordingly take these decisions. This manual process causes delays and also increases the probability of errors in billing or warranty.

The estimation workflow is particularly crucial for high cost repairs. With manual estimation, the accuracy of the estimate as well as time-to-closure of the work order suffers. This problem is accentuated when information related to service parts, labor, failure information, and invoicing, etc., are not fully automated / integrated with the backend ERP.

**Field Facts**

- Field technicians rarely have insights into warranty or contract entitlements when they are on the field; most of the decisions about coverage and billing are taken based on their knowledge or by calling the office admin.
- Field technicians spend about 15-18% of their time on manual work order / job card updates and related paper work.
Field technicians have to report to office quite frequently to collect new service requests or hand over completed job cards or work orders. The completed service work order details such as failure, diagnostics, and service parts are then entered in the backend system a few weeks or months later, causing further delays in accounting or warranties. Besides timely and precise troubleshooting, technicians also have to complete the official paperwork associated with work orders.

Manual or paper-based work orders further complicate the data entry process. Sometimes, it leads to misinterpretation of the actual diagnostic data while processing work order details into the system. There is often a delay in handing over the completed work orders to office admin team. This causes delays in initiating invoices as well as claims for the items covered under warranty or service contracts.

While the end customers are handed over the invoice, they do not have much information on the repair carried out or the parts replaced. This makes overall customer experience very conventional while making the whole process opaque and inefficient. The post-service customer satisfaction surveys don’t help much, as many times, the surveys are not spontaneous, are based on samples or manually collected causing loss of communication due to incompleteness or misinterpretations of customer feedback.
Leveraging Mobility to Transform Field Services

Mobile applications for field service force can help resolve most of the problems discussed above. Mobile applications facilitate collaboration between service administrators and field representatives, and enable them to deliver prompt services to customers. In certain industries, delivery of a new product is followed by installation and demonstration of the equipment. In such cases, it makes sense to connect the product delivery, installation, and demonstration processes with service mobility to initiate product registration.

Here’s the integrated workflow for an end-to-end mobile app for automated field services:

1. The service work order data flows through multiple systems used by dealer or service providers and linked to the mobile device of the field technician. Service work orders containing detailed information about the customer complaint are pushed to the technician’s mobile device in real-time.
2. Maps and driving directions on the mobile device enables the technician with driving routes.
3. Based on the failure information received in advance, the technician can predict, and therefore carry, the probable parts required for repairs.
4. The bar code scanner on the mobile device helps reconcile service parts inventory, notify part returns, and billing updates.

> When the field technicians are involved in installation, commissioning and demonstration of the new product, it makes more sense to connect these processes with service mobility and ERP to enable product registration and other downstream processes.
5. The mobile app seamlessly integrates with the backend warranty and contract management systems to implement a simplified service workflow. The technician uses the mobile app to determine the warranty or contract payouts as well as items for billing by auto-bifurcation of claims and invoices.

6. The device captures the customer’s signature as a proof of service and prints the work order using a thermal mobile printer to provide complete details of the work done and parts replaced.

7. The integration of mobile app with payment gateway enables on-the-spot payment by customers.

8. Intuitive mobile analytics reporting provides performance data to assess field service KPIs.

Complex repairs often increase the cycle time of repair. The access to service manuals, knowledge management system and online collaboration with other technicians and staff greatly helps the technician for resolution information. For troubleshooting, the interactive repair procedures instigate a systematic approach to problems-solving. Clicking a picture or a video of the critical failure and attaching it to the work order or warranty claim, especially for first failure types, greatly helps engineering or warranty group for analysis and decision-making.

One of the most important aspects of decision-making in the field is warranty or contract entitlement. It becomes even more complex if the repair is large and requires a number of parts to be replaced. In such a scenario, integration of mobile app with the warranty and contract management systems, wherein the
A warranty claim or invoice generated directly by the mobile device significantly reduces the claim and billing cycle time as well as duplicate back-end administration of warranty claims and invoicing. Integration of the mobile app with payment gateway enables on the spot payment by customers. The mobile app’s capability to capture customer signature as a proof of service and printing of the work order or invoice summary using a thermal mobile printer provides the customer with complete details of the work done and reduces billing disputes. Intuitive mobile analytics reporting provides performance data to field technicians as well as service managers to assess field service KPIs.

Mobile apps, integrated with the sales CRM system, can enable cross-selling and up-selling of products to boost aftermarket revenues.

Given the growing popularity of social media, people tend to express informal feedback on service quality of products and organizations on social platforms. A post-service customer feedback survey initiated directly from the technician’s mobile device can help organizations obtain spontaneous responses from a large customer base. Customers could take the survey and revert to the technician with a trust that the service organization really cares about them and service quality. Capturing customers’ feedback proactively can also avoid unnecessary escalations or expressions on social media, which could quickly spread bad publicity to a large audience and affect brand image.

**Technology Architecture – Usability, Scalability, Security & Integration**

Before making any mobile app purchase decision, it’s important for organizations to assess the current field service performance and identify areas for improvement. A cross-functional team approach, with stakeholders from customer service, field service, IT, quality, warranty, finance groups, etc., can help define the roadmap for mobile deployment.

Given the inherent advantages of cloud computing, IT Executives can also consider cloud based deployment of the app as well as creation of custom Enterprise App Catalog using the SaaS (Software as a Service) model. Mobile apps on several advanced platforms such as iOS, Android, Blackberry, Windows, etc., can be integrated with the backend ERP, Warranty, Contract, Sales and CRM systems. Technicians prefer mobile apps that are simple and easy to use. Among mobile hand devices, tablet PCs provide a better user interface and space for completing transactions easily. For tougher environments though, ruggedized devices may be more practical to use.

End-to-end integrations play a crucial role for synchronous data. Based on different number of systems involved in aftermarket service processes, organizations should use a good middleware tool to manage

Quick Feedback Helps!

A spontaneous post-service feedback survey shows that the service organization really cares about the customer and service quality.
all interactions. When designing a field service app, organizations might complicate things by including too many integration points. There needs to be a balance between real time data checks and periodic data updates. Mobile devices have limited storage, so periodic updates need to be more intelligent.

The architecture can be managed by distinct components, which facilitate scalability. The security of the app with critical field data is another important aspect. Field technicians might not always have network coverage, especially in remote or dense work locations, such as basement. The mobile application should be capable of working offline, if connectivity to the network is not available. It will allow technicians to process work orders and file them offline. The application’s capability to take dictation or speech recognition can also help technicians to update the work order transaction at a later point in time, and improve productivity and accuracy of the actual repair process.
Conclusion

Customer expectations of services are rising constantly and will continue to do so. With mobile platforms that have hit critical mass, organizations need to leverage technology as a competitive advantage to simplify field services that directly affect customer experience.

Service technicians are in the field to fix customers’ problems proficiently, and should not be bothered about any other issues that could delay or hold their work. Be it preventive maintenance, unscheduled repair or warranty replacement, troubleshooting and decision making in the field is often intricate and time-consuming.

It is important for organizations to mobilize their field forces by automating field service tasks and connecting transactions in the field with back-office through integrated workflows. While selecting a field service mobile solution, organizations must consider factors such as its usability, scalability and security, along with its capability to seamlessly integrate with backend ERP systems.

Field services, along with mobility solution and automation, play a key role in improving service KPIs, enhancing customer experience and making service excellence a strong selling point.

References

> In-depth interviews of Field Service Technicians and Service Managers across multiple industries and geographies
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About Tavant Technologies

Tavant Technologies is a specialized IT solutions & services provider that leverages its expertise to provide impactful results to its customers. We have leveraged our unrivaled capabilities and domain insights to create game changing results for leading businesses across chosen industry micro-verticals. We are known for our long-lasting customer relationships, engineering excellence and passionate employees. Founded in 2000, we are headquartered in Santa Clara, California and service customers across North America, Europe, and Asia-Pacific.

About the Authors

Devendra Malekar is a Business Architect at Tavant Technologies. With over 13 years of experience in warranty management and after-market services in diverse industries. Dev has played various roles across the aftermarket value chain, such as field services, warranty and fleet management. He specializes in reengineering of warranty business processes and technologies to develop multifaceted and customized warranty management solutions.