Maximizing Customer Value in the Field:

How an Optimized Field Service Management Solution Consistently Delivers the Right People, Parts, and Knowledge to the Point of Service

A first-time fix – it’s the goal for all field service. And it’s key to maximizing customer value. Best-in-class field service performance requires optimized management from end to end – with clear visibility into field activities, and flexibility to adapt to exceptions.
At risk: customer value, satisfaction, and retention

When and where are the needs for effective field service management experienced most urgently? Usually at the point of service itself.

Consider a piece of medical equipment. If, for example, a CT scanner or a dialysis machine on a hospital floor must remain in repair and out of operation for long, the potential loss may be severe. It can be felt not just in the hospital’s ability to bill for the device’s usage, but more importantly, in patients’ continuing health.

But the situation doesn’t need to be life or death for the costs of product downtime to be high. Think of equipment as diverse as a hotel elevator, a farm tractor, and a soda dispenser in a fast-food restaurant. Less than optimal service performance can keep customers from getting the full value they need and expect from these machines.

The pain only compounds when product downtime persists. As the customer’s experience with the product suffers, their satisfaction declines – and the manufacturer may miss the chance to retain and grow the customer relationship.

Those additional product sales and follow-on service level agreements the manufacturer had been counting on? Very possibly lost to eager competitors.

Why field service management fails too often

The service organization’s goal, with every service event, is a first-time fix. Field service management is all about getting the right service technician to the right place at the right time – with the right service parts, tools, and information – to get the service task right.

The stakes couldn’t be higher. Maximizing product uptime not only helps minimize service costs, it’s also needed to increase customer value and retention, and optimize service profitability. The company’s competitive advantage may depend on this.

And yet, as recent industry research shows, even for best-in-class service providers, nearly a quarter of all service dispatches – 24% to be exact – require a second visit. Among these, 42% are due to unavailable parts, and 25% are from improper diagnosis of needs. In addition, 25% of parts orders wastefully contain multiple parts because the service technicians can’t determine exactly which parts are actually needed.

Why this shortfall in service efficiency? The reasons typically trace to these main factors:

-Disconnected field service management processes, and
- Lack of visibility into field service activities and resources

What a truly optimized solution entails

The field service leader’s challenge is to fully follow through on the company’s service-level commitments to customers while lowering the overall cost of service. This is not simply a matter of improving field service technicians’ productivity or solving specific scheduling and dispatch problems. Rather, it requires a bigger-picture perspective.

Today’s highly complex service world calls upon service leaders to break down the silos separating service processes. The good news is: The tools now exist to make this happen. Success depends on applying the integrated processes of Service Lifecycle Management (SLM) for planning, executing, and analyzing field service operations.

A complete, end-to-end field service management solution – achieved through an enterprise-wide SLM implementation – provides field service technicians with everything from detailed product information to full service procedures. Management capabilities range from strategic planning and locating of service parts to reactive and planned service scheduling, remote service monitoring, and up-to-the-minute customer status tracking.
Web connection via mobile devices is critical to an effective field service management solution. All service knowledge must be easily and instantly accessible to field service technicians, wherever their customers’ service needs take them around the globe.

These are the ways in which field service management can be optimized beyond just workforce utilization. The benefits don’t end with increased product uptime and service profits. Full visibility into field service activities lets service leaders see and address the threats to customer loyalty and the risks to their company’s service advantage.

Even better is when optimized field service management delivers insights about product performance and service history before the service call ever comes. This lets service teams anticipate customer needs and proactively perform preventive maintenance.

The costs to performance when pains persist

Still, for many service organizations today, optimizing field service management remains an elusive goal. Reasons are wide-ranging. The company’s service network may be stuck in frustrating fragmentation. Conflicting incentives may have service teams working inconsistently. Cross-team collaboration may be further hampered by poor visibility into the up-to-date product and service information needed to improve performance. All too commonly, these factors create service scenarios marked more by pain than gain:

- If service agents in the contact center are scored mainly on average handling time, they may be trigger-happy to dispatch – when instead, with perhaps just five minutes more of diagnosis, they could often save several hours of unnecessary dispatch time.
- At the very least, having the added time and knowledge to take extra care in diagnosis may allow the contact center’s agents to better prepare field service technicians for each dispatch or in some cases enable the customer to self-service their issue eliminating the need to dispatch a technician.
- Field service technicians who are scored on the number of visits per fix may feel incented to replace multiple parts, or even higher assemblies – often unnecessarily – to compensate when the product’s operational fault is imprecisely isolated.
- When service information is out of date – or, worse, inaccessible – field technicians may be unable to trace repair orders to the service dispatches. This breaks the feedback loop required by field service management to control no-fault-found rates.
- Parts planners may lack the data needed to distinguish necessary from unnecessary part changes. To enable first-time fixes, inventories must remain expensively high.

Why manual methods and point solutions fall short

Many organizations attempt to improve their field service management efficiency through largely manual processes. They build spreadsheets, distribute lists of procedures, collect hastily written reports, and communicate mainly by phone and email. Others, in a nod to increased automation, adopt add-ons to their existing CRM or ERP systems.

But, in relying on ad hoc methods, outdated legacy systems, and disparate databases, service organizations can advance only so far toward meeting their end-to-end field service management challenges. They get point solutions at best. Service
intelligence stays in silos rather than being shared across the enterprise through a fully integrated solution. The field has little or no visibility into real-time service status.

The pains thus remain for field service managers:

• Continual need for manual processes means dispatching mistakes happen too frequently, and tracking of service events is often incomplete or incorrect.

• With lack of visibility into parts availability, field service technicians too often set out to the customer’s site without the right parts on the truck.

• It can be difficult to match the skill sets of technicians in the field to the service tasks at hand. Efficiently routing the flow of service technicians may be next to impossible.

• Having very different processes for reactive service scheduling and planned service scheduling fails to optimize the allocation of service resources.

• Lack of up-to-date information on service status strictly limits the ability to scale service offerings for customers’ differing levels of service needs and urgency.

How poor service impacts the enterprise

The negative effects of sub-optimal field service management extend to the highest levels of the capital goods manufacturer’s business performance. They are most often felt in:

• Declining customer value and satisfaction. Service typically represents the most direct interaction between the customer and the manufacturer. Failing at first-time fixes erodes brand equity. Worse is when SLAs are missed due to the inability to manage field service well. The service organization may lose the chance to identify how, when, and where to improve field service and minimize at-risk dispatches.

• High cost and low profit in service. The burdens of inefficient field service management add up quickly. They reveal themselves in too many service calls per service fix ... difficulty in coordinating break-fix service with planned service events ... imbalances in service workforce utilization ... inability to track service status and collect service data effectively ... a ratio of dispatchers to technicians that exceeds industry averages ... and, ultimately, low profitability from less-than-expected service performance.

• Lost opportunities for service revenue. Inconsistent and unpredictable SLA performance severely reduces the manufacturer’s chances of winning contract renewals. Ability to up-sell parts, accessories, and upgrades may be sacrificed forever. The manufacturer may be unable to expand field service offerings into new regions or markets, especially if manual processes prove too difficult to scale.

Balanced measurement of field service performance

To deliver best-in-class field service to customers, service organizations must act proactively, yet flexibly in a dynamic service environment. Agility is key to balancing planned service activities (mainly: installations, maintenance, and upgrades) with break-fix events, complex projects, indirect work, and routine service needs as they arise.

For field service managers, the goal is to effectively plan, monitor, and dispatch — and optimally schedule — their field service technicians’ work. This goes beyond the relatively narrow concerns of workforce utilization (as in: “solving a dispatch problem”). Rather, a truly optimized field service management solution provides the ability to:

• Measure the contact center’s performance on a balanced scorecard weighing average handling time with dispatch avoidance and field service’s first-time fix rates. These business-aligned incentives encourage the contact center to allow enough time to do more phone-based fixes and better prepare dispatches with relevant diagnostics.

• Measure field service technicians on a balanced scorecard including the number of visits per fix and no-fault-found rates for returned parts. These assessments help reduce churn in parts depots as well as overstocking of parts by service planners.
Empowering service options to extend service value

An optimized field service management solution also enables service teams to:

- **Empower the use of lower-cost service methods.** Delivering service onsite isn’t the only option. Other touch points can include remote service, self-service, and quick fixes by phone or email from the contact center. These help minimize service dispatches and reduce needs for service triage while improving first-time fix rates.

- **Extend the value of the service parts chain.** Efficiency requires field technicians to correctly diagnose the service problem and quickly identify the replacement parts needed. Then they should be able to immediately locate the best available parts. The aim for every field service event is to get the parts right the first time.

- **Base preventive maintenance on specific conditions.** Knowing the product’s service history helps point to service needs that may be imminent for the customer. It also helps when field technicians detect low levels of machine usage. The service organization can then proactively offer training and other services to ensure that the customer’s targets for product utilization, throughput, and value are met consistently.

- **Gain the insights needed for improvement.** Every service event offers the chance to collect and analyze useful data on product and service performance. This helps service leaders plan for continuous refinement of field service operations. Engineering also gets vital information to help drive product design changes.

Core capabilities for optimized field service management

In decades of experience working with major manufacturers to help improve their product development and service processes, PTC has determined the critical success factors for field service management optimization. Service leaders, we have learned, derive greatest effectiveness and efficiency from an integrated solution that helps them plan for complex field service logistics while strategically prioritizing resources and closely monitoring operations. The solution’s core capabilities should include:

- **Reactive scheduling and dispatch.** This helps ensure that the right field engineer – equipped with the right parts and skills – is available at the right time to deliver the required service. Street-level routing and extended GPS tracking are enabling utilities.

- **Planned service scheduling.** This combines with reactive scheduling within a single field service management environment. Service leaders are better able to plan for optimized resource utilization to meet customers’ service level agreements.

- **Parts locator.** The ability to quickly and easily discern parts availability, directly integrated with field dispatch, is critical in improving first-time fix rates and reducing service exceptions.

- **Customer status tracking.** Customers, as well as company sales representatives, can view up-to-date status of service tickets. This improves customer satisfaction by giving more precise information about service delivery. Another benefit: Overhead in the service organization is reduced.
Connecting people, parts, and knowledge – everywhere

The integrated field service management solution should also provide:

- **Immediate access to current service intelligence.** Field service managers should feel sure that every field technician has the product and service information needed to diagnose and resolve a customer’s issue quickly, right at the point of service. Service technicians shouldn’t need to waste time searching multiple sources for service parts, technical specifications, and service procedures. Having all service intelligence in one place – up-to-date, accurate, and easily accessible – boosts field service technicians’ productivity and increases first-time fix rates. This is key to delighting customers.

- **Real-time monitoring.** Through a command center’s dashboard view, field service managers should be able to continually track, on a single screen, the current status of all service calls. Automated alerts and management by exception help ensure that service commitments are met. Trending and reporting allow on-the-spot review of service performance. This enables managers to adapt quickly to any unforeseen service needs and efficiently reallocate resources. Customer satisfaction, along with the company’s competitive service advantage, can be sustained in these ways.

- **Full mobility and visibility.** The integrated field service management solution should be deployable on HTML5-compatible devices including laptops, tablets, and smart phones. This empowers all in field service – at the call center, at branch offices, and at headquarters – with immediate visibility into current service needs and resources.

- **Easy capture of service data.** While technicians are solving customers’ service issues in the field, they should be able to easily capture product and service performance information from the service event and feed it back into the integrated field service management solution. This not only helps field service managers plan for future needs, but can also provide company management with vital insights for improving product designs and service delivery processes.

The integrated field service management solution thus connects the people, parts, and knowledge needed to optimize field service performance. Real-time part availability works to improve resource allocation by matching field technicians’ skills and locations with the detailed logistics of part pick-up points and drop-off windows.

**Automation, with exceptions, within a full optimization suite**

This whitepaper has thus far specified the required functionality of an integrated solution capable of helping service leaders optimize field service management. How then to select the right technology solution provider? Here are three key evaluation criteria:

1. **The selected solution should lend a high degree of automation to service routing.**

   While a number of vendors offer field service optimization software, the design and implementation of these packages vary widely. A common mistake is to choose a solution that is not sufficiently focused on automation. Moving to a solution where rooms full of dispatchers can freely override automated routes deeply erodes the benefits of the automation software. Lack of visibility into exceptions can further hinder efficiency.

   **Case in point:** If, after receiving a route from the optimization software, the dispatcher must go back and manually adjust the route to reflect real-world conditions, the software must not be truly up to the task. These manual adjustments are likely to create less-than-optimal routes. Look instead for a solution allowing the dispatcher to easily adapt to and handle exceptions while still attaining the full optimization benefits of automation.

2. **The selected solution should be part of a complete service optimization suite.**

   Purchasing a standalone routing “engine” from a vendor who does not have a broader software offering puts the company on the long path of having to build many customized add-ons. Such pieced-together
A competitive edge only optimized field service management may provide

Even as service leaders recognize the need to improve field service management, the challenges of specifying, designing, and implementing a truly integrated solution remain. The right solution promises both the capability and the flexibility to deliver best-in-class field service to customers. In mature markets marked by increasing product commoditization, this is key to increasing customer value and company profits.

The success formula is fairly simple: By fully optimizing field service performance, through a fully integrated field service management solution, the manufacturer may find their best opportunity to stand out competitively – and boost their bottom line.

The Business Challenges of Field Service Management

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<tr>
<th>Poor Customer Service Outcomes</th>
<th>High Cost of Service</th>
<th>Low Service Revenue</th>
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<tbody>
<tr>
<td>Low first-time fix rates</td>
<td>Low field service productivity</td>
<td>Low contract renewals</td>
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<tr>
<td>Wrong diagnosis</td>
<td>Wasted service calls</td>
<td>Lost up-sell opportunities</td>
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<tr>
<td>Wrong part and technician</td>
<td>Missing service parts</td>
<td>Lack of new service offerings</td>
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<tr>
<td>Parts not available</td>
<td>High cost of warranty</td>
<td>Missed upgrade opportunities</td>
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<tr>
<td>Poor delivery of service</td>
<td>High rate of no fault found</td>
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<td>Slow resolution times</td>
<td>Low workforce utilization</td>
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<tr>
<td></td>
<td>High ratio of dispatcher to technician</td>
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<td></td>
<td>Missed SLA penalties</td>
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Example: As the optimization suite generates routes, they must be dispatched to field service technicians. An integrated mobility module allows for this. For dynamic dispatching, a mobility tool that sends updates back to the optimization suite will help the service organization achieve higher levels of automation and efficiency than they likely ever could with standalone routing software. Plus, when the integrated suite adds break-fix dispatch, parts planning and logistics, event monitoring, and knowledge management – all in one, easy-to-use, field service management solution – users reap the benefits of complete and coordinated issue resolution across service channels.

3. The selected solution should simplify the tasks of managing by exception.

Many service organizations find themselves spending too much time scrutinizing field service events that could not be automatically scheduled – and not knowing why. This, unfortunately, is the norm when field service optimization software requires field service managers to handle exceptions manually, using a drag-and-drop interface.

By contrast: Software providing clear visibility into exceptions can sustain high levels of field service efficiency, even when routes can’t be completely automated. To achieve true optimization, the field service management solution will be designed first for routing automation, while also showing clear paths to resolution for exception cases. This can mean the difference between a dispatcher-to-technician ratio of 1:10 or 1:100. A service leader doesn’t even need to do the full math to understand the potential cost savings.
Driving Forces for Optimizing Field Service Management

A recent survey of 300 service organizations revealed the top four factors motivating service leaders to improve their field service management processes:

1. Need to drive workforce productivity and utilization – 67%
2. Customer demand for improved asset availability and faster service response – 61%
3. Need to drive new service revenue opportunities – 53%
4. Competitive pressures / need for differentiation – 44%

Source: Field Service 2011: Key Trends in Workforce Management, Aberdeen Group, January 2011

First-time Fix and the Impact on Customer Satisfaction

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<tr>
<th>Metric</th>
<th>Average Result</th>
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<tbody>
<tr>
<td></td>
<td>First-time Fix &lt; 50%</td>
</tr>
<tr>
<td>Customer Satisfaction</td>
<td>46%</td>
</tr>
<tr>
<td>Customer Retention</td>
<td>60%</td>
</tr>
<tr>
<td>Service Margin</td>
<td>23%</td>
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</tbody>
</table>

The pattern is clear – and striking. Field service organizations able to achieve first-time fixes at higher rates satisfy and retain more customers. This increases service profits.

Source: Fixing First-Time Fix: Repairing Field Service Efficiency to Enhance Customer Returns, Aberdeen Group, March 2013
What’s Required for Optimized Field Service Management

The Field Service Manager’s Needs
- Not just a toolkit, but one truly integrated solution – coordinating processes and compounding value from the end to end field service management experience
- Ability to plan, upfront, for the best field service results – increasing first-time fixes while reacting quickly to new needs, and seeing areas for immediate improvement
- More success, more quickly – getting the right technician, with the right parts and right skills, to the right place at the right time, to improve service response time
- More efficient use of resources – allocated optimally among break-fix and scheduled service events, with the ability to shift resources quickly as needs change
- The need to improve field service performance overall – with rapid deployment aided by mobile dispatching, tracking, and monitoring, for full visibility into field activities

Enterprise-level Priorities
- Gain a global view, from the service command center, into field service operations
- Empower the field service workforce, with data and parts, to be successful in their jobs
- Understand where the best opportunities are for improving field service performance
- Guarantee great customer service – to help protect the brand and drive future business

The Optimized Field Service Management Solution’s Workflow

AUTOMATE planning and deployment of people, parts, and knowledge

SUPPORT real-time collaboration throughout the service network

MONITOR key service metrics and proactively address issues in real time

How Field Service Management Benefits from Optimization

BEFORE — As service organizations move from reactively managing field operations, vulnerable to the availability of technicians, parts, and knowledge.

AFTER — to proactively planning and scheduling for optimized allocation of resources in both break-fix and project-based field service scenarios.

they have been shown to gain value-enhancing advantages like these:
- 10% to 25% increase in field service engineer productivity
- 30% to 50% increase in remote fixes through better diagnosis
- 15% reduction in technician drive times
- 25% reduction in indirect time
- 50% to 80% improvement in dispatcher/supervisor productivity
- 10% to 25% in first-time fix rates

Studies in Field Service Management Success

EMC² Increases Parts Availability and Service Productivity

EMC² helps customers move to cloud computing with state-of-the-art storage hardware for data backup and recovery. The company has over 2,000 field technicians serving customers in more than 80 countries. They support products from many providers.

EMC²’s field service management solution integrates scheduling and dispatch with parts planning and parts locator. The system has enabled the company to increase field technicians’ productivity by 25% and planner productivity by 40%. The company now enjoys a 98.5% parts availability rate. With less inventory required, EMC² has cut costs for parts ordering and
shipping. Expensive same-day shipments have been reduced by 25%.

ThyssenKrupp Elevator Tightens Control of Field Service

ThyssenKrupp Elevator has over 2,700 certified technicians providing remote and onsite service from more than 170 locations in North America. They keep customers’ elevators running 24/7/365 in facilities ranging from office towers and airports to casino hotels.

Recently, while upgrading their field service people’s mobile communications devices, ThyssenKrupp also replaced an internal legacy system with new software for field service management. It includes advanced planning and scheduling capabilities, real-time dispatch, and dynamic updating. Service managers now have greater visibility into field activities and SLA compliance, and can score service performance on a range of metrics.

Specifications Checklist for an Optimized Field Service Management Solution

Does the field service management system at hand fulfill the requirements for a truly optimized solution? Consult this list when evaluating proposed offerings:

- Cross-network visibility and global mobility
- Strategic planning tied to tactical capabilities
- Integration of parts, people, and knowledge
- Parts availability considered in scheduling
- Dispatch automation allowing for exceptions
- Parts locator that feeds inventory updates
- Metrics, reporting, and analytics built in
- Web-based system architecture and delivery
- The backing of a financially strong solution provider

How the Best in Class Optimize Field Service Management

- Best-in-class service organizations succeed in meeting their customers’ expected response times in 92% of the cases, as compared to 72% for all others.
- The best in class achieve 79% workforce utilization, versus 64% for others.
- First-time fix rates average 89% for best-in-class service providers. Others get the service fix right the first time only 71% of the time.
- The best in class increase workforce productivity by 11.4% each year. The year-to-year increase is only 3.7% for all others.

Citations

1 Fixing First-Time Fix: Repairing Field Service Efficiency to Enhance Customer Returns, Aberdeen Group, March 2013