



# Fixing Field Service Operations

How to Improve Technician Efficiency and Increase Customer Satisfaction



## Abstract

Field service organizations strive to increase efficiency and consistency as a means of reducing operational costs while improving customer satisfaction and service revenue. They aim to reduce equipment downtime by conducting routine maintenance and responding to unscheduled repairs as quickly as possible. The technicians and engineers are expected to be efficient, accurate and compliant with safety and regulatory requirements.

To optimize service and support, field service organizations often turn to service parts planning (SPP), enterprise asset management (EAM), dispatch or route logic, GPS tech monitoring or inventory/ parts optimization. While these solutions help reduce inventory and logistics costs, they do not make field service engineers more productive or efficient; service teams must look beyond these solutions, to business systems that accelerate the tasks associated with troubleshooting and repair.

Improving field service performance is a matter of making the right information available, whenever and wherever it's needed. Service providers must change their focus from "what needs to be done when" to address the technician's most urgent question, "how do I fix this specific machine right now?" Answering this question is less about resource scheduling and inventory control and more about service execution, which requires accurate troubleshooting, maintenance and parts catalogs.

## Seven Common Problems in Field Service

- 1. Wasted time** – Field service technicians often spend significant time searching for service information and part numbers, only to find the information they uncover is out-of-date. That's time that field service organizations cannot afford to waste.
- 2. Parts misorders** – Misorders happen for many reasons: outdated parts catalogs; incorrect maintenance manuals; undocumented equipment changes/modifications; data entry/transcription errors; multiple similar parts choices; missing

service bulletins, etc. Incorrect parts result in multiple service calls and additional costs.

- 3. High support costs** – Customers and service technicians call customer support for the latest parts and procedures. This increases call center costs with no additional value to the customer or the OEM.
- 4. Poor mean time to repair (MTTR)** – Technicians have different levels of experience, which means that one technician may take twice as long to fix a particular problem as another. Lack of consistency makes scheduling less predictable and increases costs.
- 5. Frequent no fault found (NFF) events** – Equipment troubleshooting is notoriously difficult, especially when multiple components are involved. Fault isolation by process of elimination – incrementally replacing parts until the problem goes away – is an expensive and time-consuming way to perform repairs and does not reliably identify the defective component, resulting in higher NFF costs.
- 6. Excess inventory and trunk spares** – Technicians often order multiple similar parts, hoping that one of them will fix the equipment problem. The extra parts are either stored locally (as "trunk spares") or returned to inventory or the manufacturer, which increases expenses.
- 7. Dissatisfied customers** – For equipment owners, downtime equates to lost revenues. They expect service technicians to repair equipment efficiently and consistently. When technicians can't meet owners' expectations it harms customer satisfaction and brand perception.

## Root Causes of Field Service Problems

What is the root cause of these problems? In most cases the problem is that service technicians and customer support representatives don't have accurate parts and service information.

- 1. Outdated Information** – OEMs frequently change part numbers, supersede parts, revise operator manuals, issue service bulletins and modify training

materials and other forms of support information. Getting those updates out to the field quickly has been a challenge, particularly for OEMs who outsource the creation and distribution of their service and parts catalogs; by the time a third party catalog provider assembles and distributes an update, several weeks or months have passed, in which case the information has again become inaccurate. Furthermore, third party catalog providers typically restrict the number and frequency of changes to service and parts data, or charge a fee for each revision, which makes it more difficult and expensive for OEMs to keep technical information up-to-date. As a result, the parts and service information used to support customers is often outdated and irrelevant. The problem is similar for equipment operators who must receive, reconcile and distribute product updates to their in-house service teams.

2. **Multiple Information Sources** – Critical product, parts and support information is spread across multiple locations/databases/business systems (e.g., paper catalogs, CMS, ERP, or PLM). Without a single, accurate and integrated source for service and parts information customer support decisions are often based on the first information that technicians find, which may not be accurate.
3. **Lack of knowledge management** – Service organizations tend to focus on “putting the right technician in front of the right problem,” rather than figuring how to help all of their service technicians to perform like experts. As a result, technicians often lack the systems necessary to share best practices, methods and procedures, and they waste time reinventing solutions to problems.

## The Solution

Service organizations need intelligent, accurate and up-to-date parts and service information, available at the point of need. Enigma’s InService EPC solution is a “one-stop shop” for service and parts information that enables service technicians to access the latest part lists, service bulletins, task cards, schematics, diagrams, and maintenance manuals. It can aggregate, enrich and deliver all relevant parts and service

information to repair any machine. With InService EPC, technicians can order the right parts, and find the latest service information to make repairs.

**Accurate information** – OEMs and equipment operators can keep their parts and service information up-to-date, without outsourcing the process to a third party. Creating and updating an electronic parts catalog (EPC) requires gathering and organizing the relevant service and parts data. Enigma’s unique technology helps OEMs and equipment operators assemble their data and load it into the EPC, which can then be distributed via the Web, wireless and/or DVD. Furthermore, Enigma allows companies to quickly publish incremental parts and service updates as often as they wish, which greatly reduces parts misorders and maintenance errors.

**Powerful search capability** – Service engineers need to search across vast quantities of technical information in multiple data formats. InService EPC offers robust search technology to search and filter across all documentation. Search results open at the appropriate assembly/sub-assembly or document page, which eliminates secondary searches within large documents.

**Integrated parts ordering** – Enigma’s InService EPC can be integrated with an ERP or e-commerce system, which reduces mistakes and wasted time for data entry. In addition, InService EPC can provide information about parts availability during the problem diagnosis, allowing more accurate service quotes.

**Offline access** – Enigma InService EPC offers role-based access to parts and service information, even in environments that lack Internet access. Whether working online or offline, service engineers are able to access all relevant technical content such as illustrations, engineering diagrams, part lists, operator manuals, service manuals, service bulletins, safety notices and other required product literature.

**Knowledge sharing** – InService EPC’s collaborative eNotes functionality captures technician’s best practices and shares it with others, within the context of the current repair. Instant access to best practices allows less-experienced mechanics to learn and put into practice the knowledge of more experienced technicians. Enigma InService EPC also increases

collaboration among product designers and service technicians by enabling technicians to provide feedback to the product development and engineering teams.

## Benefits of InService EPC for Field Service

Enigma's out-of-the box electronic service and parts catalog offers numerous benefits for field service:

1. **Increased equipment uptime.** Equipment is serviced more quickly e, reducing mean time to repair (MTTR) and turn-around time (TAT). Equipment is repaired more consistently, increasing the mean time between failure (MTBF).
2. **Increased customer satisfaction.** When problems are repaired efficiently and consistently, more customers can be served. Customers are happier because they don't have to wait as long for service, and their equipment is back online more quickly.
3. **Increased productivity.** Technicians spend less time searching for the right service procedure or the correct parts, which means they can make more repairs and serve more customers.
4. **Improved first time fix rates (FTFR).** Repeat service calls are expensive, wasting time and money; by providing necessary information technicians can fix things right the first time.
5. **Decreased NFF events.** Better maintenance information enhances automated diagnostic tools, which provides a more complete understanding of the problem and the equipment.
6. **Improved knowledge-sharing.** Enigma eNotes enable cross-department collaboration between field service, product development, engineering and technical publications, enabling technicians to assess, diagnose and repair problems more efficiently.

### KEY FEATURES OF THE ENIGMA INSERVICE EPC SOLUTION FOR FIELD SERVICE

- Complete parts and service information filtered by serial number, product line, model and options
- A choice of distribution methods: Web, wireless, DVD or paper
- Parts lists, alternative parts and assembly views to provide service technicians the information they need
- Part cards display detailed information regarding the selected part, such as price, cost, quantity in stock, quantity on order and warehouse location (BIN)
- Illustrated parts catalog displays a parts list and assembly illustration together with dynamic part information (pricing, location, availability)
- Search functionality that enables simple or advanced searches according to free text, serial number, part number, description, product type, family and model
- Support for multiple data formats including tables, text, graphics and video
- On-the-fly creation and viewing of maintenance notes
- Bookmarks and history functions to save and recall previously viewed parts or product information, including serial number, model and assembly
- Administrator tools to generate and automatically distribute catalog product and service updates
- Shopping carts, lists and e-commerce integration to streamline and automate the parts ordering process
- Administrative access control to grant and restrict user privileges according to role
- Standalone access; the entire application—including all EPC data, graphics and software components—can be loaded on a DVD/HD/memory stick and accessed in a disconnected environment using a standard web browser
- Open architecture enables integration with back-office applications such as e-commerce, inventory, ERP and EAM/planning systems
- Fast implementation; organizations can start assembling and distributing parts and service information in a matter of weeks, not months

- 7. Increased accuracy of parts orders.** Parts orders can be automated, eliminating manual data entry and errors. Technicians spend less time—and make fewer mistakes—ordering parts.
- 8. Reduced inventory and shipping costs.** With updated parts information, service technicians are less likely to order multiple spare parts in their effort to procure the right part for the job, eliminating the cost of parts returns (RMA and re-stocking)..
- 9. Reduced customer support costs.** Technicians and customers become more self-sufficient so that support calls decrease, both in volume and in time per call.
- 10. Reduced catalog production costs.** Easy-to-use administrator tools enable service and parts catalogs to be published with minimal resources. Dynamic, incremental updates eliminate recurring DVD shipments and outsourcing fees.

## Conclusion

It's crucial that field service technicians—whether they are in the aerospace, medical, transportation, automotive, defense, semiconductor, high tech or other complex machine industry—have the right technical content at their fingertips, online and offline, to repair assets more efficiently. Giving the field service team updated parts and service information not only enables them to perform maintenance and repairs more quickly and effectively, it also reduces field service operations costs.

Enigma InService EPC makes it easy to deliver parts and service information “to the last mile,” where the field service technicians work, in a depot or on-site. It is an out-of-the-box solution that is easy to administer, and easy for end-users to apply in their daily service activities. Ultimately the solution offers competitive advantages by reducing costs for field service and improving customer satisfaction.

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