

Microsoft Dynamics™ AX

# Integrating People, Information, and Resources to Empower Field Services Organizations

WHITE PAPER

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## *Introduction*

Companies in a wide variety of industries provide customers with field services as a primary business or as part of long-term customer service and support. Field service operators may include, for instance, manufacturers who offer after-market service, mechanical contractors, and property or utility managers. Depending on the size and type of organization, field services may involve a handful of employees in a local area or thousands of staff internationally. Regardless of whether such field services represent the primary business, a secondary profit center, or a competitive differentiator, organizations with a field service component depend on efficient coordination among distant field employees, dispatch and office staff, and the organization's collective customer and business knowledge.

Unfortunately, managing field operations accurately and effectively can be a challenge. Manual processes and uninformed decisions are the rule, not the exception. Inconsistent work practices, lack of, inadequate, or untimely visibility into field activities, and volumes of paperwork hinder efficiency and drag down both customer service and profits. Manual reporting of time and materials use requires redundant data entry, increases the likelihood of errors, and delays planning and billing. In addition, operations' intellectual capital and know-how frequently resides in just one or two experienced people (tribal knowledge), leaving the organization at substantial risk of operational chaos and loss of intellectual capital if the unexpected occurs.

Yet even with the most experienced dispatchers, work-assignment decisions rarely take full advantage of timely data on resource availability, qualifications, service history, optimal routing, work priority, and other demands on the resources. There are simply too many shifting factors to quickly incorporate into a manual scheduling or work assignment process. This is particularly true given the competitive environments of most field service markets, wherein customers are expecting not only faster service and more accurate estimates of arrival and completion times, but also that they "get it fixed" the right way the very first time.

Despite these challenges, field service operations are often the last part of an organization to capitalize on information technologies. Although many businesses enjoy the efficiencies of enterprise resource systems and supply chain automation, those systems rarely extend through the management of field operations. Moreover, the gains provided by existing business management solutions and supply chain systems are subject to the law of diminishing returns. In most organizations, however, field service operations still represent the last frontier for technological innovation. There, process integration, targeted automation, and electronic information can still dramatically enhance productivity, operational insight, and management.

## Purpose of this document

This white paper addresses business and technical decision makers in any organization with a field service component. It describes how the streamlined processes and integrated information provided by Field Services for Microsoft Dynamics AX can empower field service teams to lower response times and costs, increase first-time fix ratios, boost revenues, generate greater customer satisfaction, and help build a competitive advantage.

## Solution overview

Field Services for Microsoft Dynamics AX is an end-to-end field services management system. It can efficiently integrate customer, business, and operational information, making that information accessible to both office and field staff as needed for maximum efficiency in work scheduling, assignment, completion, parts inventory management, equipment management, reporting, and billing. The solution optimizes decision-making with automated best-fit matching between service requests and resources, and it streamlines management of contracts, service-level agreements, and resources. A variety of intuitive tools helps managers quickly understand what's going on in the business and how to best respond to changes, urgent needs, and improvement opportunities. Smooth links to Microsoft® Windows Mobile® devices and the spectrum of Microsoft solutions help ensure smooth communication and data flow and help to create the ideal solution stack for managing field services.

Key benefits include:

- Empowers employees with timely, integrated information and resources.
- Optimizes work performed, work scheduling, assignment, and dispatch processes.
- Streamlines work order life cycle management.
- Enhances tracking and management of personnel, assets, and contracts.
- Boosts profitability and customer satisfaction for a competitive advantage.

## *Technology Needs for Field Services Operations*

Automation and the integration of all available information into dispatch decisions can vastly improve the efficiency of field services operations. A call center or customer relationship management (CRM) solution can help increase the speed and accuracy with which service requests can be created and captures pertinent information not only for the resulting work order but for histories of the customer, location, and/or equipment. By compiling and interrelating data about service requests, customer history, and all available resources, electronic scheduling and work-assignment tools help optimize the balance of resources against demands. Requests can be scheduled, assigned, and completed faster, with better first-time fix ratios and improved customer service. When appropriate, the incorporation of geographic information systems such as Microsoft MapPoint® and global positioning system (GPS) technology can improve route finding and speed arrivals while permitting real-time tracking of field vehicles and personnel at a glance.

Use of mobile devices, especially with close integration between those devices and enterprise information, can help streamline communication with field staff and help reduce or eliminate the need for costly and time-consuming trips to the office for meetings and paperwork. The same mobile technology can help field technicians access technical and procedural information, which in turn may assist them in completing their assignments correctly the first time as well as improving adherence to standardized procedures or best practices. Mobile communications can also empower staff to quickly enter time and materials use, instead of reporting such information by phone for another employee to input or manually filing paperwork at the end of the day or pay period. This electronic information capture can not only help to increase reporting accuracy and managerial insight, but may also provide much more timely information for planning, billing, purchasing, and performance management.

Integrated electronic data may also simplify management of the entire work order life cycle, independent of or in concert with contractual agreements. Sophisticated data systems enhance managers' ability to track, manage, and accurately bill against complex contracts and agreements with multiple parties such as owner, property manager, and tenant. Integrated record-keeping may also permit the automatic generation of work orders to maintain compliance with contracts or warranty terms and maximize billing opportunities without relying on memory.

Finally, information technology solutions support the crucial ability to efficiently withdraw up-to-the-minute operational information for inventory management, resource utilization assessments, performance coaching, and financial analysis. Intuitive and robust reporting capabilities arm managers to measure and enhance productivity, improve operations, and direct business expansion.

## *Field Services for Microsoft Dynamics AX*

Field Services for Microsoft Dynamics AX optimizes field service processes, information, and operations and links them to other business systems. The solution integrates diverse customer, employee, and operational information; automates decisions and labor based on organizational criteria; and presents the results in intuitive and flexible views for assessment and action. With customization tools, organizations can configure the solution to their exact needs and then quickly assess and respond to daily challenges and long-term opportunities.

This field services solution fills the gap between call center or CRM applications and the daily activities of field staff. Its smooth interface with Windows Mobile devices can help increase the flow of communication from the company to the field and back, reducing paperwork and helping to ensure more timely and accurate record-keeping and business intelligence.

### Features and functionality

- Call center and dispatch management
- Contract and service level agreement (SLA) management
- Work order generation, assignment, tracking, and reporting
- Resource scheduling and timekeeping
- Asset, inventory, and field service parts management
- Service order visibility and self-service request capability for customers
- Support for Windows Mobile devices
- Robust business intelligence and reporting

### Value proposition

By providing personnel with access to information and the means to take quick action, this solution can help field service employees reduce response times and costs, increase first-time fix ratios, and boost revenues and profitability. As a result, businesses can optimize field service operations for increased efficiency, greater customer satisfaction and loyalty, and a competitive advantage.

### Key benefits

Field Services for Microsoft Dynamics AX offers a spectrum of benefits related to integration and automation of key tasks in the work order life cycle.

#### Efficiency

Service call information may be quickly captured in a rapid-response environment with support from built-in tools or existing call center solutions. The information can flow directly to a centralized database from which work orders are automatically created and prioritized. The system then suggests best-fit assignments, ranking available resources based on qualifications and criteria specified by the enterprise. Organizations can also configure the system to assign work orders automatically, as well as assess and deploy labor from both demand and supply perspectives. These streamlined dispatch

processes can help improve on-time fix ratios by more quickly matching customer needs to the resources best able to meet them.

In addition to human resources, Field Services for Microsoft Dynamics AX can also match work orders to other specified resources such as contractors and special equipment. This comprehensive view helps ensure a first-time fix and ultimately provides data for quick assessments of resource utilization. Performance against outstanding work can be understood at a glance, thanks to dynamic work order tracking and prioritization, automatic escalation, and visual status alerts.

The solution's excellent fit with Windows Mobile devices empowers dispatchers to quickly transmit work requests to the field. In turn, field crews can access technical information and schematics, as well as customer data and service histories. Windows Mobile integration helps increase first-time fix ratios by helping to ensure that the required knowledge is available the moment it's needed. Organizations can more easily incorporate procedural checklists and best practices into their businesses, since field crews do not need to rely on memory or hardcopies but can reference appropriate procedures as needed for more reliable fixes, greater service consistency, and improved customer satisfaction.

## Connectivity

Field Services for Microsoft Dynamics AX can increase real-time information flow between offices, field staff, and customers—saving time, improving productivity, and enhancing the quality of business information. The ability to easily transmit labor time and materials use, for instance, eliminates manual paperwork, speeds payroll, and permits faster, more accurate assessments of costs, productivity, and profitability. In addition, the capacity to quickly communicate a range of business information, including new policies and safety updates, helps businesses attain procedural and regulatory compliance without the expense of meetings, travel, and time away from field tasks.

Field service operational data flows smoothly to the enterprise system and interfaces with the full range of Microsoft software, including Microsoft Office system programs, MapPoint, Microsoft Office Project 2003, and Microsoft SQL Server™ 2005. Integration with MapPoint and GPS technology, for example, means organizations can track resource status geographically at a glance. Such extensions to the solution help companies leverage their overall IT investment with a unified solution stack that's ideal for their needs. A familiar user experience consistent with that of Microsoft Office system applications helps ensure quicker startup and reduced training costs.

The solution also helps empower organizations to leverage customer relationships by opening their business processes and data directly to selected customers. Using Microsoft Windows® SharePoint® Services and Web services, companies can offer their customers the ability to check work order status or submit new work requests, gaining speed and efficiency as well as increasing satisfaction and loyalty among customers who demand such capabilities.

## Insight

Field Services for Microsoft Dynamics AX can provide field services managers with the integrated information required for both immediate understanding and long-term planning and analysis. Comprehensive work tracking and various information views help organizations identify job status, resource availability, and the whereabouts of field staff at a glance, in real time. Quick entry of labor

and materials helps keep project cost and inventory records up to date while providing reliable data for accurate forecasts. The resulting data library improves business planning so companies can take advantage of bulk and just-in-time purchase options that help minimize inventory cost. The costs of other resources including contractors, becomes more manageable when organizations can access, manipulate, and interpret solid data about utilization, volumes, and return on investment.

Companies can expand their insight into staff capabilities, productivity, and development by generating individual performance scorecards. Dynamic tracking of qualifications and experience supports better dispatch decisions as well as development planning.

When organizations can track, compare, and predict labor time and other costs, they can make more reliable promises to customers about pending and future work. They can also create contracts and bids based on reliable figures that attract customers while helping protect their bottom lines. Robust reporting and business analysis capabilities, including online analytical processing (OLAP) cubes, help companies monitor profitability, guide improvement, and better manage operational growth.

### Flexibility

Field Services for Microsoft Dynamics AX fits businesses on their terms. Organizations can use agile customization tools to tailor the solution to their back-office systems, terminology, and specific needs, helping ensure quick ease of use and a long-term fit with a faster return on investment (ROI). Enterprises can easily extend the solution to incorporate monitoring or data-collection devices unique to their industries.

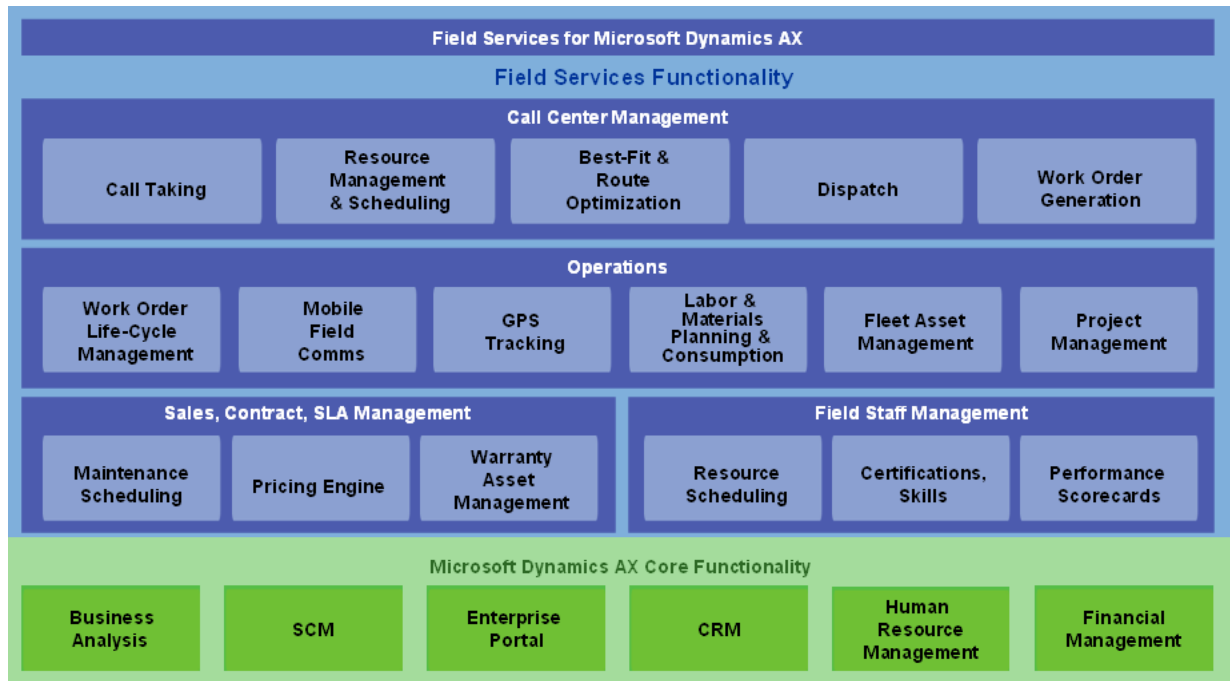
Because the solution is built on a single, layered architecture and can be customized with familiar development tools, it's easy to scale as organizations grow. Companies can support a few dispatchers or hundreds, link multiple offices, and empower thousands of field staff regionally or internationally. They can add new functions quickly when their business shifts, and they can even customize one layer without affecting functionality on others. With this tiered architecture, companies can reduce the risk of changes and upgrades while providing organizations with a solid ROI both now and into the future.

## Solution map

Field Services for Microsoft Dynamics AX integrates the information, people, and processes of field services operations to help better manage the work order life cycle.

The cycle begins with call center processes including call taking, work order generation, scheduling, assignment, and route optimization. Work order communication and execution functionality includes tracking of assets, time, location, and both fixed and mobile materials inventories. Sales and contract management processes incorporate the creation and tracking of customer agreements, pricing, and warranties, which link smoothly to work order generation and billing functionality. Finally, the solution includes integrated functionality for resource identification, certification, and dynamic tracking of qualifications, scheduling, and performance reporting.

These field operations processes and data link directly with core Microsoft Dynamics AX functionality including CRM, human resources management, and financial analysis.



## Return on Investment

Experience shows that Microsoft Business Solutions–Axapta®, now part of Microsoft Dynamics, can provide a rapid ROI. According to Nucleus Research, Inc., a global provider of ROI-focused research and advisory services, 75 percent of Microsoft Axapta solution customers interviewed achieved a positive ROI from their deployments, with an average payback period of only 23 months.<sup>1</sup>

In the Nucleus Research survey, Microsoft Axapta compared favorably with other business management software vendors, some of which failed to show a positive ROI regardless of length of deployment. According to the survey report, “Companies cited four key benefits leading to a positive

<sup>1</sup> Nucleus Research, Inc. *The Real ROI from Axapta*. Research Note E116, October 2004.

ROI from Axapta: staff reductions, reduced IT costs, improved customer and partner satisfaction, and improved operations and visibility.”

The report states, “Fifty-six percent of Axapta customers were able to directly reduce staffing costs as a result of their Axapta deployment.” In addition, 44 percent of customers reduced IT costs as a result of their Microsoft Axapta deployment, and 75 percent reported “improved operations and visibility.” Microsoft expects that the wizard-based configuration and system setup tool will further accelerate the strong ROI results demonstrated in the independent study.

## Value opportunities specific to field service operations

Customers experienced with Field Services for Microsoft Dynamics AX have achieved these returns in the following opportunity areas.

Value opportunity	Business results*	Enablers
Faster response times	Increase on-time fix ratios 50% or more to reach 99.5% on time	Improved process efficiencies; route optimization; crucial technical information available onsite using mobile communications
Higher first-time fix ratios	Increase first-time fix ratios by 50% to 100%	Best-fit resource assignments; procedural checklists, best practices, and technical information integrated into work orders; improved inventory management
Lower costs or higher revenues	Increase revenues by up to 10% while reducing costs by up to 25%	Increased end-to-end efficiency; higher resource utilization; tighter contract management; faster, more accurate billing
Reduced material and inventory costs	Reduce by as much as 10% to 15%	Better inventory insight and resource planning helps improve SCM logistics while reducing costly write-offs
Reduced travel time and expense	Cut drive time by 10% to 30%	Geographic locators; route optimization; improved field communication resulting in fewer trips back to the office
Fewer billing disputes	Reduce disputes by 80% to 90%	Customer signatures in the field acknowledge work performed and enterprise-wide data flow from field obscurity
Lower administration costs	Reduce costs by 50% to 70%	Centralized schedule and dispatch; intuitive, automated, and real-time dispatching tools; capacity for greater ratio of field workers to dispatchers

\*Results as compared to manual processes, market survey analysis, and customer results.

## *Support and Quality Assurance*

To provide high quality and excellent value, Field Services for Microsoft Dynamics AX has been reviewed by Microsoft internal development and quality assurance staff and is supported by Microsoft Business Solutions Support Services globally. A technical review prior to launch and throughout the product life cycle helps ensure greater overall quality, performance management, and stability through service packs or major releases. Businesses can count on the overall assurance of receiving support for their entire solution from one place, rather than having to contact different people and organizations for different support needs.

## *Technology Overview*

Based on a single, three-tiered, object-oriented architecture, Field Services for Microsoft Dynamics AX is built using C# as the key programming language and taking advantage of the entire Microsoft .NET Framework. The solution employs industry standards including XML and simple object access protocol (SOAP). Microsoft SQL Server 2005 powers the database layer.

Organizations can quickly tailor the solution to their unique business terminology and processes right from the start with a set of agile, built-in configuration tools. This set of tools performs as a multi-tiered code generator for easy use. In addition, the solution can be further customized and extended using .NET code and the familiar Microsoft Visual Studio® development environment. The solution's layered architecture permits organizations to customize one layer without affecting functionality on others. As a result, companies can adapt to business changes and upgrade over time with less risk and expense.

Field Services for Microsoft Dynamics AX features tight integration with both Windows Mobile devices and Windows XP/Windows Vista-based devices. Organizations can also tailor mobile applications as needed to support a wide range of devices and multiple carriers.

## **Solution requirements**

Implementation of Field Services for Microsoft Dynamics AX requires the following additional components:

- Microsoft Windows Server™ 2003
- Microsoft SQL Server 2005
- Microsoft Windows XP/Windows Vista client with Microsoft Internet Explorer and .NET Framework (Notebooks, Tablet PCs)
- Mobile devices (Windows Mobile 5 or 6 devices, including Pocket PC, Pocket PC Phone Edition)

## Conclusion

Field service organizations face significant administrative and managerial challenges in a marketplace growing ever more accustomed to pinpoint precision and just-in-time services. Fortunately, most field services managers may still take advantage of untapped opportunities to extend the many efficiencies of information technologies into their field service operations. Business management solutions and supply chain management systems are not the end of the story; more integrated information and processes in a field services context can reduce response times and costs, increase on-time and first-time fix rates, and boost revenues and customer satisfaction levels.

Field Services for Microsoft Dynamics AX can make this possible by providing an end-to-end management system that integrates people and information to optimize processes, resources, and operations. With proven ROI performance, global backing by the full assurance of Microsoft Support Services, and the flexibility to grow, this solution empowers field services employees to increase efficiency, enhance customer satisfaction, and build a competitive advantage.

For more information, visit [www.microsoft.com/dynamics/ax](http://www.microsoft.com/dynamics/ax).

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