

Critical Capabilities for Field Service Management

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We evaluate vendor products for three common use cases using nine product capabilities. Application leaders supporting field service initiatives as part of the customer experience should use this research and its companion Magic Quadrant as part of a broader vendor evaluation process.

Overview

Key Findings

- Vendor suitability can vary quite widely, depending on the specific use cases that the field service organization (FSO) must support, such as high-volume and volatile schedules, complex service and support, and equipment as a service.
- Aspects based on individual circumstances (such as budget for implementation, or existence of a particular ERP or CRM in-house) should not be ignored. Therefore, a vendor that does not score as well as others in a particular use case should still be considered based on other factors described in their profiles in this Critical Capabilities.
- FSM products can be complementary to each other even though utilizing two or more products requires system integration work. Also, FSM products can act as a hub, so integration to multiple, or even dozens of systems may be desired during implementation.

Recommendations

Application leaders seeking improved customer relationship management and customer experience through better field service management should:

- Evaluate the capabilities of your current FSM product(s) against new and emerging requirements for managing customer and technician experience, efficiency and profitability.
- Identify which use cases apply to all or parts of the FSO organization in your enterprise.
- Decide, based on the complexity of your requirements, whether you should be evaluating best-of-breed components from multiple vendors or sourcing from a single FSM vendor.
- Evaluate all vendors, regardless of overall score, to understand other factors, and use this note in tandem with Gartner's Magic Quadrant, analyst inquiries and other research.

Strategic Planning Assumptions

By 2020, 70% of organizations will cite customer satisfaction as a primary benefit derived from implementing field service management, up from approximately 50% in 2018.

By 2020, 10% of emergency field service work will be both triaged and scheduled by artificial intelligence, up from less than 1% in 2017.

By 2020, more than 40% of field service work will be performed by technicians who are not employees of the organization that has direct contact with the customer.

By 2020, more than 75% of field service organizations with over 50 users will deploy mobile apps that go beyond simplified data collection and add capabilities that help technicians succeed.

What You Need to Know

The field service management software market is experiencing unprecedented growth (over 20% year over year through December 2017). Innovations that tailor technologies that were born in other use cases into FSM use cases are becoming more common. Senior executives have recognized the opportunities for additional revenue streams and better customer experience in addition to increased efficiencies they had come to expect from FSM. Also, there has been a convergence of technologies that positively impact field service, such as

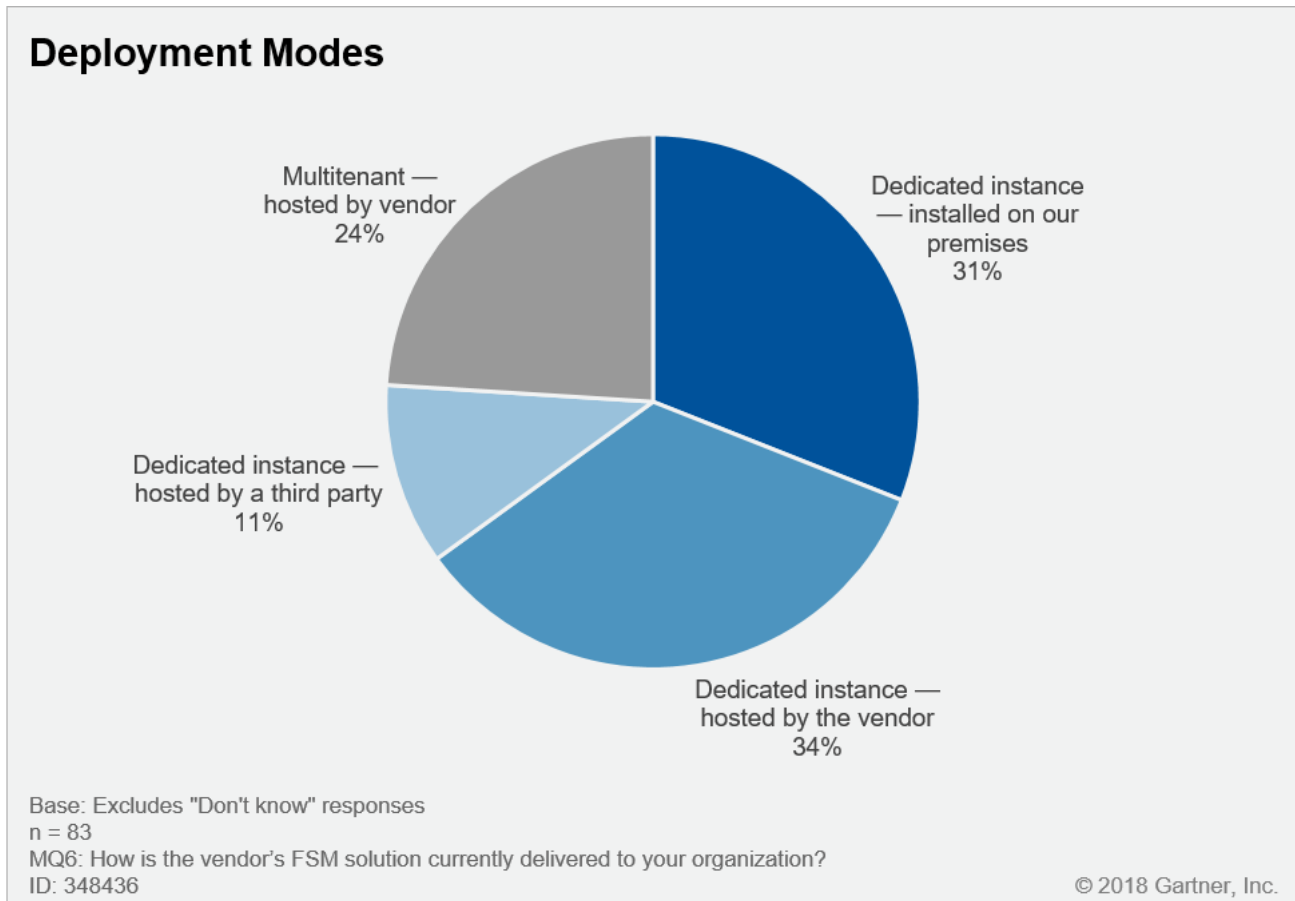
- Ubiquitous use of mobile devices by technicians.
- Connected field service with big data via Internet of Things (IoT) integrations and extensions.
- Augmented reality, wearables and streaming video for technician support.
- No-code or low-code methods of extending mobile applications to allow technicians to fill in proprietary forms (such as safety, inspection or opportunity capture) without "version lock."

- Increased compute power, which is useful in predictive analytics.
- Intelligent chat, text and workflow-based automated communications.

Two-thirds of Magic Quadrant vendor reference customers have opted to deploy in either a single-tenant or multitenant hosted environment instead of on-premises (see Figure 1). Organizations that chose to deploy into a hosted environment for the first time cited a desire to avoid heavy architecture and support requirements as reasons for abandoning an on-premises approach. As a result, many vendors have dropped the perpetual license model and begun to offer a subscription-based licensing model where named users carry a price per user/per month in multiyear contracts paid annually.

Some vendors have also begun to offer alternate pricing for organizations that utilize part-time subcontractors for a large percentage of their workforce. This alternate pricing, which is generally derived from a usage-based or "pay-as-you-go" model, is overcoming the "too expensive" obstacle that prevented organizations from arming subcontractor technicians with mobile apps. It alleviates the requirement to pay the same license fee for a part-time subcontractor as for a full-time employee.

Figure 1. Deployment Modes

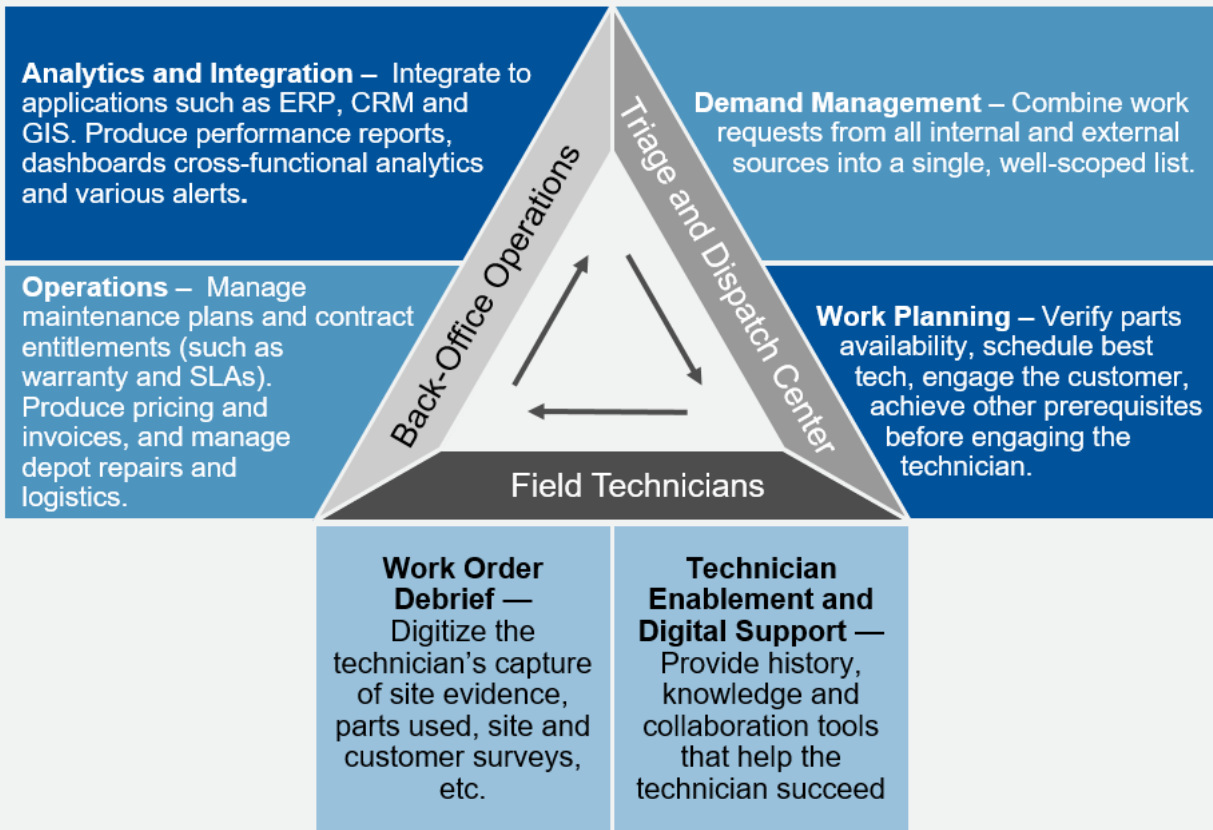


Source: Gartner (March 2018)

FSM products generally cover the six categories of field service management application functionality (see "The Six Categories of Field Service Management Application Functionality and Why You Need Them") — demand management, work planning, technician enablement, work order debrief, back-office operations, and analytics/integration — in varying degrees of depth, depending on where they started from (see "Three Tips on How to Select Field Service Management Vendors"). For example, some products have deeper mobile application capabilities than schedule optimization, while others are the opposite. Still others are deeper in back-office operations functionality than other categories. The functionality often favors the user community that the vendor sought to serve first. Three key user communities in field service with associated functionality that is important to them are depicted in Figure 2. The depth in functionality for members of each community tends to drive which industries the product fits best.

Figure 2. Key Functionality by Field Service User Groups

Key Functionality by Field Service User Groups



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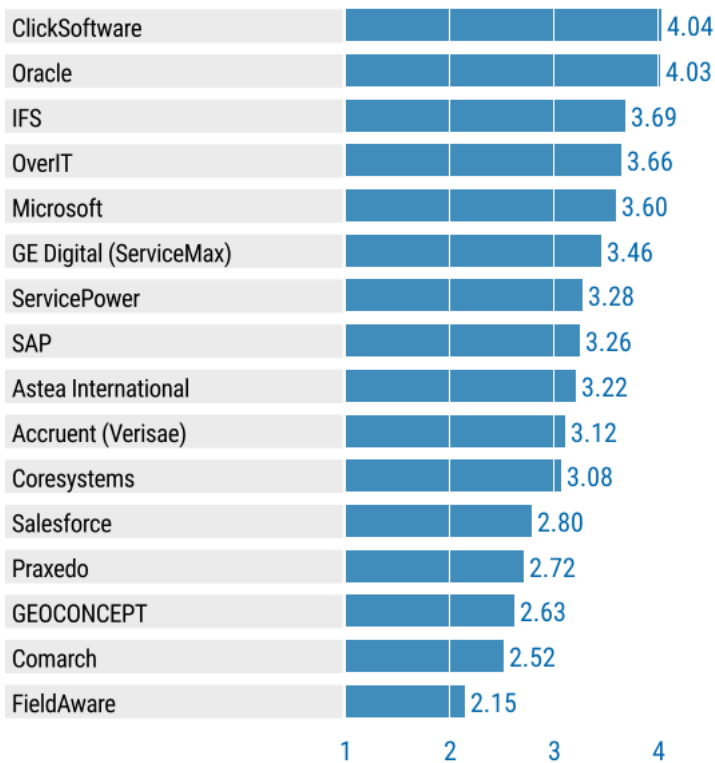
Source: Gartner (March 2018)

Analysis

Critical Capabilities Use-Case Graphics

Figure 3. Vendors' Product Scores for the High Volume and Volatile Schedules Use Case

Product or Service Scores for High-Volume and Volatile Schedules



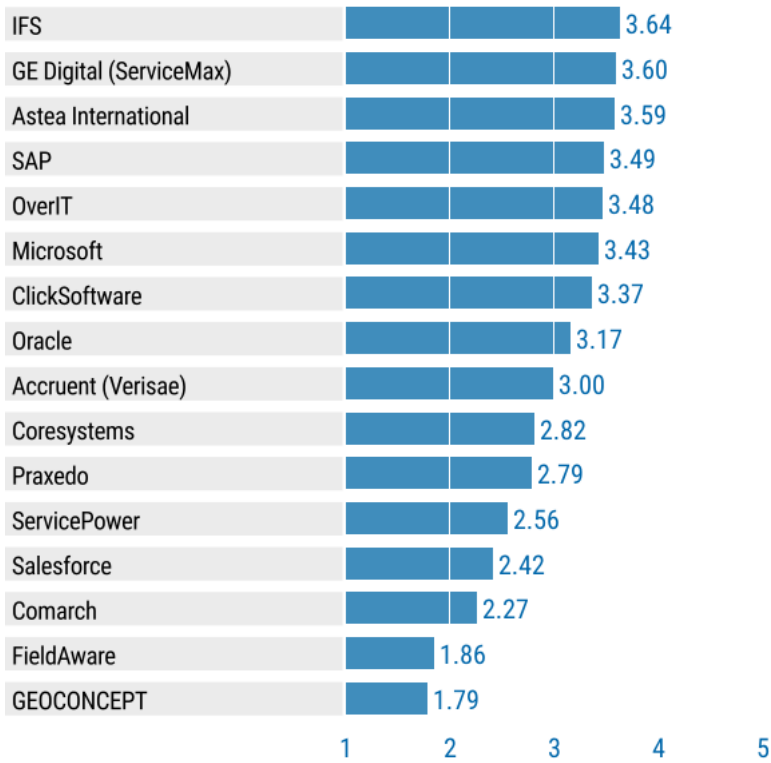
As of June 2017

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Source: Gartner (March 2018)

Figure 4. Vendors' Product Scores for the Complex Service and Support Use Case

Product or Service Scores for Complex Service and Support



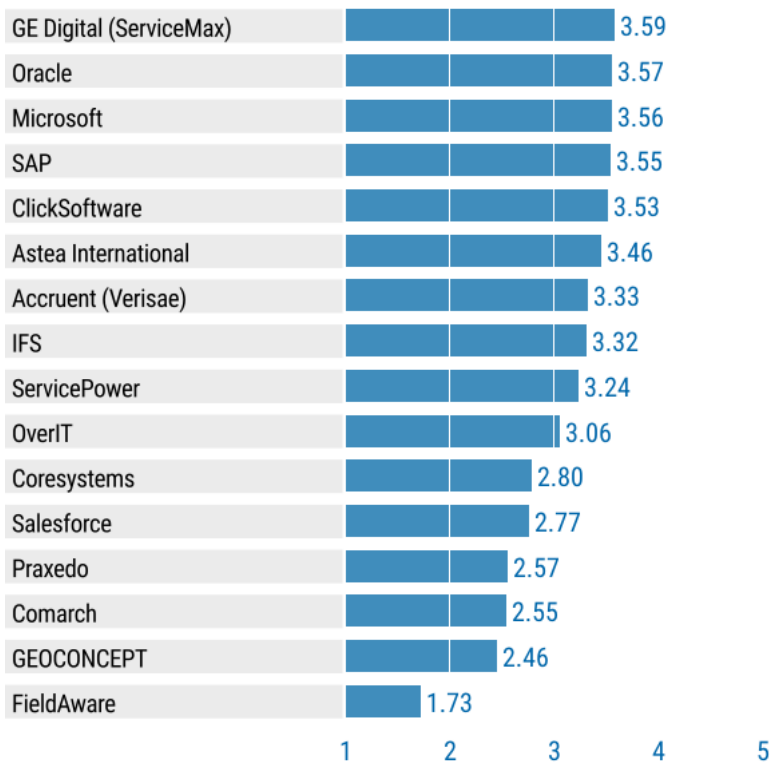
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Figure 5. Vendors' Product Scores for the Equipment as a Service Use Case

Product or Service Scores for Equipment as a Service



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Vendors

Gartner's product evaluations for this research were made on functionality generally released and available as of June 2017. Details of the criteria used for evaluation can be found in the Critical Capabilities Definition section of this document.

Please note that, due to their volume and extensiveness, not every function is documented. We have identified and weighted those functions most likely to differentiate or influence the evaluation efforts as well as any that might affect additional cost and/or implementation efforts (based on what clients and vendor-supplied customer references have articulated in the last 12 months).

Vendor evaluations appear in alphabetical order below.

Accruent (Verisae)

U.S.-based [Accruent \(http://www.accruent.com/\)](http://www.accruent.com/) acquired [Verisae \(http://www.verisae.com/\)](http://www.verisae.com/) in September 2016. Our analysis focuses on the FSM products from the Verisae portfolio such as vx Field (for work planning and schedule optimization, technician enablement and debriefing) and vx Maintain (for contracts, planned maintenance and operations). These products have been installed primarily in retail, utilities and telecommunications organizations, but Accruent intends to extend them into corporate real estate, healthcare, education and government, especially where there is a heavy use of subcontractors and facilities managers. The portfolio includes other products as well, such as vx Observe for asset-as-service use cases.

vx Field and vx Maintain are together positioned in the middle third range for all use cases and are best-suited for the equipment-as-a-service use case, especially where some work is longer in length. Its work order marshalling functionality helps manage subcontractors, and it has several large retail customers that utilize its connectivity capabilities to observe and maintain equipment remotely on behalf of its customers. Accruent's customers have indicated that the products are easy to use and configure. It has mature operations functionality such as RMA management, agreement management and invoicing, so customers are less dependent on ERP integrations.

Organizations seeking deep integrations to ERP and other systems or seeking global localizations will need to work with system integrators and other partners to achieve appropriate depth in functionality. The VX portfolio is one of few that offers technician enablement capability to receive parts in the field and visualize data collected through the Internet of Things (IoT). However, it has limited breadth natively when it comes to emerging digital service support channels.

Astea International

U.S.-based [Astea's \(http://www.astea.com/\)](http://www.astea.com/) FSM product is an end-to-end field service solution, with deep functionality in almost every critical capability area. Most often, it is deployed on-premises or in a single-tenant cloud by discrete manufacturing, services, telecommunications and technology customers. Astea is uniquely suited for customers looking to utilize a single solution with all or most operational functions integrated by design, rather than integrating best-of-breed solutions for CRM, ERP and field service during implementation.

Astea is positioned in the top third for the complex service and support use case and in the middle third range for the other two use cases. It is particularly suited for FSM organizations that are equipment-centric and sell maintenance contracts and entitlements. Reference customers that must support multiple discrete processes (often due to multiple lines of business) tout its ability to handle these in a single instance. Its operations capabilities, such as RMA management, maintenance contract management, invoicing and long-cycle project management, are among the deepest of all offerings we reviewed. For technician enablement, it has recently released a hybrid mobile application that operates online or offline, and offers predefined simple, slim or full-featured configurations to streamline implementation. The full featured configuration includes functionality for parts logistics, new work quoting and some analytics capabilities.

Astea has partnered with other organizations for digital service support capabilities and offers some of its own capabilities, such as a knowledge solution and analytics. However, organizations looking for heavily packaged integrations to other ERPs, or that will need to significantly extend the offering, especially in the back-office component, may require extensive professional services.

ClickSoftware

U.S.-based [ClickSoftware \(http://www.clicksoftware.com/\)](http://www.clicksoftware.com/) has had multiple products in market for many years, including an on-premises-only application and a small and midsize business (SMB) application. Our analysis focused on its flagship multitenant-only product, Click Field Service Edge (CFSE), released in 2016. Scalable to tens of thousands of users and many dozens of integrations, CFSE also has packaged integration for ServiceBench and SAP (which SAP markets as Scheduling and Resource Management by ClickSoftware). CFSE is targeted at utilities (though some still hesitate to adopt cloud products), as well as telecom, home services and healthcare, especially in cases where high-volume scheduling optimization is required. Its capabilities to configure dozens of rules and business objectives to be used in its scheduling algorithm make it one of the most configurable solutions we evaluated.

ClickSoftware is positioned in the top third for the high-volume and volatile schedules use case and the equipment as a service use case, and scored in the middle third range for complex service. CFSE scores well in the mobile technician enablement areas because of its no-code configuration flexibility and mobile application development capabilities. It is one of the strongest on the market in terms of integration experience and capability, both within ClickSoftware and among its partners. Reference customers tout ease of use once implemented and ongoing configurability – this helps support improvements to the tactical scheduling process inside an organization.

Equipment-centric organizations that have deep customer equipment installed bases, maintenance planning, invoicing or complex digital support requirements for an inexperienced field organization may seek an additional product to integrate with CFSE's mobile and scheduling capabilities. Reference customers indicate that CFSE has some missing capabilities when compared to the older on-premises ClickSchedule product, and that implementation is more complex and expensive to work through than expected. However, ClickSoftware has worked to close many of these gaps.

Comarch

Poland-based [Comarch \(http://www.comarch.com/\)](http://www.comarch.com/) has a variety of products in its portfolio, including ERP, telecom systems and financial systems. Its FSM offering can be used as part of its ERP, as part of its IoT solution, as a stand-alone product (integrated to another ERP) and as part of a telecom organization's operations support system. The FSM product is usually targeted at telecom and insurance companies for whom Comarch has other offerings, but it has customers in other industries as well.

Comarch FSM is positioned in the lower third for all use cases, but its capabilities are suited for use cases with a high volume of work orders and volatile technician schedules. This is especially true in cases where the organization is also using one of Comarch's other integrated products and needs automated scheduling optimization, but must support the other use cases as well. For telecom and insurance organizations, it offers specialized functionality, structure and templates not found in most other solutions. Also, it has multiple large deployments and proofs of concept (POCs) with equipment-as-a-service use cases that utilize its FSM solutions in concert with IoT. Maintenance tasks such as trash pickups are only performed when necessary, based on observation of equipment in the field. Comarch also offers packaged integrations to other ERPs.

Comments from references indicated some minor issues with the mobile application's maturity and found that its extensibility is limited. Organizations seeking references for a multitenant deployment mode may look to other alternatives, because none of its existing customers have moved to a multitenant mode.

Coresystems

Switzerland-based [Coresystems](http://www.coresystems.net/) (<http://www.coresystems.net/>) offers a multitenant solution with a modern UI based on Google's Material Design language. Coresystems was originally an SMB-facing application with a focus on mobile (technician enablement, work order debrief and digital service support). It has since moved up-market and has many large organizations in its customer base, including discrete manufacturers, and utilities, oil and gas, technology and telecom companies.

Coresystems is positioned in the middle third for all use cases, but is best-suited for complex service and support use cases, especially when there is a large portion of the work performed by subcontractors or even outside freelancers. There is a companion product, through a joint venture with Swisscom, called Mila that helps large telecom organizations connect and manage the many smaller organizations and individual contractors in its ecosystem. The FSM mobile application is extensible in that users can create "when x happens, do y" events, and admins can create forms that support multiple languages without having to reproduce and maintain the form for each language (most other products require the user to create a unique form for each language). Coresystems also performs regular testing to ensure the many best-of-breed partner products it recommends to complement its offerings continue to operate well with Coresystems. Reference customers call out its API and packaged ERP integrations as particular strengths.

Coresystems has added schedule optimization and maintenance planning functionality in recent releases. These are new, however, so organizations with deep requirements for work planning, as well as operations functionality such as invoicing, should proceed with caution and consider the potential need to combine Coresystems with partners to round out the capability.

FieldAware

U.S.-based [FieldAware](http://www.fieldaware.com/) (<http://www.fieldaware.com/>) is a multitenant-only solution that is targeted at organizations looking to continue to rely on the capabilities of their ERP and CRM, but also enable technicians in the field with mobile applications. Many of its customers are heavy equipment service providers and manufacturers.

FieldAware is positioned in the lower third for all use cases, but is best-suited for complex service use cases, where it is important to share as much information as possible with the technicians as part of work order dispatch. It has had customer success in the field with customer-facing reporting based on data collected through its mobile app. It offers packaged integration with specific ERPs such as its certified integration with Oracle's NetSuite and CRMs such as Salesforce, while also enabling integration with others through its APIs and partnerships with middleware (iPaaS) providers. It has one of the fastest implementation cycles of the products we reviewed, but this is partially because of its limited coverage of critical capabilities such as invoicing (although its invoicing does offer task-based and item-based pricing calculations), agreements and operations, for which it typically relies on the ERP.

FieldAware manages multiple development partners to fill in capabilities for its more complex customers. It relies on OEMs and development partnerships for critical capabilities such as automated schedule optimization and development partners for mobile forms extensibility, digital service support, advanced analytics visualizations and IoT integration.

GE Digital (ServiceMax)

U.S.-based [ServiceMax from GE Digital](http://www.servicemax.com/) (<http://www.servicemax.com/>) is built on the Salesforce platform, but also includes a purpose-built mobile application (not Salesforce-based) that is a hybrid of native and HTML5. This allows it to operate offline and access device-specific capabilities, while also pulling configuration metadata and business logic from the cloud when connected. ServiceMax is an end-to-end field service solution, with functionality to support all critical capabilities. It targets large and midsize enterprises globally (from 100 to tens of thousands of technicians), with the most traction in North America, EMEA and Japan.

ServiceMax is positioned in the top third range for complex service and equipment as a service use cases, and in the middle third range for the high-volume and volatile schedules use case. It has strengths in capabilities such as preventative maintenance agreements, installed base management and technician enablement support for field technicians and customers through its extensible mobile application and workflow. As such, it is suited for complex field service scenarios that require mobile data capture and complex contract pricing, and that need to manage and maintain connected equipment remotely through the IoT. Its Connected Field Service component surfaces historical data to the technician, such as performance over time for various meters and metrics on the equipment. This data comes from integrated IoT platforms (such as PTC and GE's Predix) and can be used to aid triage agents in diagnosing issues with equipment in the field.

Although ServiceMax enhanced its automated schedule optimization capabilities in recent releases, some organizations may need to integrate an additional vendor to cover some high-volume use cases, such as those with constant intraday changes to scheduling requirements at scale (due to, for example, jobs running for too long, emergency service or extensive subcontractor use). Reference customers have indicated that implementations require more than expected specialized knowledge, but ServiceMax continues to offer solid business guidance, expertise and thought leadership through its blogs, implementation best practices and dashboards.

GEOCONCEPT

France-based [GEOCONCEPT \(http://www.geoconcept.com/\)](http://www.geoconcept.com/) 's Opti-Time and Opti-Time Mobile products for FSM are available in either on-premises or cloud deployments, and integrate with both its GIS and geodrive marketing automation products. It targets organizations in sectors such as home healthcare and utilities, where geographical information system data and automated scheduling, are important.

GEOCONCEPT is positioned in the lower third for all use cases, and is best-suited for use cases with a high volume of work orders and high schedule volatility, but also fits other cases. References indicate that its included scheduling optimization and forecasting capabilities are easy to use and work well. The long-term forecasting component is designed to help users predict and manage longer-term (weeks or months) scheduling demand by performing side-by-side simulations. GEOCONCEPT has also deployed into equipment-as-a-service use cases, where tasks are performed dynamically, based on readings collected from the IoT. Organizations that fit best are often looking to source GIS, marketing and scheduling optimization from a single vendor, rather than integrating products from multiple vendors together.

GEOCONCEPT mobile app has little extensibility, low adoption and lacks industry-specific templates, which are often important in scheduling intensive use cases. It also lacks social collaboration capabilities, and its pricing and parts management capabilities are limited. It has some large customers with thousands of users, but has few new deployments outside of EMEA and APAC.

IFS

Sweden- and U.S.-based [IFS \(http://www.ifsworld.com/\)](http://www.ifsworld.com/) has FSM products built into its ERP, as well as a stand-alone product, Field Service Management (FSM). It can be deployed on-premises or in Microsoft's Azure cloud, which provides a choice for customers that are not committed to a multitenant SaaS solution for field service.

IFS FSM is positioned highest for complex field service use cases, where there is a desire to handle as much of the business of the field service department, including invoicing, maintenance contracts and reverse logistics, in the FSM product as opposed to in the ERP. It is positioned in the top third for higher volume or hybrid use cases, where there is some complex work and some high-volume work, because of its integrated scheduling optimization module. For equipment as a service, it scores in the middle third range. Its strength in high-weighted critical capabilities, such as mobile extensibility and technician enablement, reflect its efforts to enable custom branding in mobile, collaboration tools to help technicians connect, and partnerships for augmented reality and context-specific work instructions. It also provides other operations functionality as part of FSM, such as invoicing, integration with IFS's supply-chain planning, and support for long-cycle work.

Organizations seeking a simple-to-implement product with many multitenant cloud proof-points and mature, packaged integrations with multiple ERPs will need to work with IFS or its partners (that are not always local) to achieve these. Organizations that heavily utilize subcontractors may also seek a partner solution to help with data integration, approval workflows and digital tools for the subcontractor technicians.

Microsoft

U.S.-based [Microsoft \(http://www.microsoft.com/\)](http://www.microsoft.com/) acquired FieldOne Systems in 2015 and rebranded its product as Dynamics 365 for Field Service. The back-office components are built on the Microsoft Dynamics 365 (formerly Dynamics CRM) and there are two mobile applications available. The original mobile application was built using Xamarin and Resco (a third-party platform). The other mobile application (called Universal Client) is in its first major release, and is built on Microsoft's own platform. Microsoft intends for Universal Client to replace the "MOCA" mobile application (released in November of 2016), but it was not generally available at the time of product review. Microsoft committed that this new version would support use while disconnected from the internet, use on mobile, and improved configuration capabilities and use on phones, tablets and desktops. During a transition period, Microsoft will support both the Resco-based app and the Universal Client app.

Dynamics 365 for Field Service is positioned in the top third for the high-volume and volatile scheduling use case and the equipment as a service use case, and in the middle third range for complex service and support. It has strengths in preventative maintenance agreements and plans, as well as particular strengths in connected equipment diagnostics because of its built-in integration to Azure IoT. Also important for these use cases are its digital service support elements such as knowledge (with Dynamics 365), support for multiple mapping solutions for different parts of the world, and augmented reality and remote collaboration using its HoloLens head-mounted display (HMD), which technicians can also use to interact with its mobile app.

The product is available globally in either on-premises or multitenant SaaS modes and in 44 languages, but reference customers indicated that implementation and training are expensive compared to expectation. Some of this is due to its limited packaged integrations for ERPs. Some customers have indicated that, while functionality is broad, it lacks depth in areas such as scheduling optimization (a current area of focus for Microsoft's R&D), report extensibility and parts management.

Oracle

U.S.-based [Oracle \(http://www.oracle.com/\)](http://www.oracle.com/) has multiple products in market that target FSM. For this report, we focused on its flagship multitenant-only product, Oracle Field Service Cloud (OFSC), which it acquired as part of its 2014 acquisition of TOA Technologies. With customers scheduling tens of thousands of technicians from a single instance, OFSC often targets organizations such as cable and telecom, home healthcare, and utilities. This is due to technicians in these industries performing a high number of work orders per day, and because there is high volatility in schedules due to unplanned work, cancellations and travel conditions. A multitenant cloud solution since its inception in 2003, the product can support multiple geographies, integrations and languages in a single instance, and provides a private, dedicated database for each customer's data.

Oracle is positioned in the top third for the high-volume and volatile scheduling and equipment as a service use cases, and in the middle third range for complex service and support use cases, where it met or exceeded many requirements. Its work planning and scheduling capability scoring reflects its powerful scheduling optimization engine, as well as basic template integrations to some of its portfolio of ERPs through Oracle's Integration Cloud Services iPaaS. For customers that have purchased companion Oracle products, it offers capabilities for technicians, such as access to Oracle's knowledge solution and troubleshooter through its policy automation product, collaboration with back-office staff, and the ability

to find additional work within a distance radius. It scores well in work order debrief thanks to capabilities for capturing activities and tasks performed on-site (such as added or collected equipment, time entries, parts and work completion evidence).

Organizations that rely heavily on complex workflows or knowledge access while technicians are offline, or that prefer a rich native client experience in mobile, may prefer to seek alternatives for mobile applications. Also, organizations with complex back-office requirements, such as contracts and equipment management, that are not looking to integrate Oracle ERPs may need to identify and integrate additional vendors' products to fulfill these requirements. However, Oracle is designed to be integrated to any ERP or back-office solution. Oracle offers limited integration templates and some reference customers indicate that integrations were more expensive than expected as a result. Some OFSC implementations rely on other systems (including some Oracle systems) that must be integrated in order to achieve coverage for all of the customer's FSM requirements.

OverIT

Italy-based [OverIT's \(http://www.overit.it/en\)](http://www.overit.it/en) most comprehensive product for FSM is called Geocall Workforce Management (WFM). It has functions within all critical capability areas and several supporting products that relate to FSM use cases. WFM targets organizations whose technicians rely heavily on geospatial data, particularly in transport and distribution utilities, oil and gas companies, and manufacturing organizations. WFM integrates to its own GIS product or to Esri, depending on customer preference. Most of OverIT's largest customers deploy on-premises, although OverIT has a managed cloud offering as well.

OverIT is positioned in the top third for both the high-volume and volatile schedules, and complex service and support use cases, and in the middle third for equipment as a service. It best supports complex service use cases where digital service support through multiple channels is weighted heavily through capabilities such as SPACE 1, its augmented reality and holographic reality (Microsoft HoloLens) solution. Technicians can collaborate as necessary by sharing and annotating video and multimedia documents, but some of these capabilities are unproven. Support for other wearables help its customers monitor technicians while in confined spaces or during evacuations. It supports high-volume scheduling with several thousand technicians through its schedule optimization engine, and is often integrated with SAP.

Many of its customers utilize its ERP for invoicing and preventative maintenance planning functionality. OverIT has some capabilities in its WFM product, but organizations seeking full invoicing capability will need to seek an additional product. Also, organizations seeking large, multitenant cloud deployment may be better served with alternate packages that have more-active multitenant deployments.

Praxedo

France-based [Praxedo's \(https://en.praxedo.com/\)](https://en.praxedo.com/) multitenant SaaS-based FSM application and its companion mobile application offer packaging for both SMBs and large enterprises. It traditionally targeted the subcontractors of large telecom organizations, but it has recently expanded its market to organizations that operate in much the same way, but are utilities and service providers, such as HVAC FSOs.

Praxedo is positioned in the lower third for all use cases, but it is best suited for use cases where a significant portion of the workforce is composed of subcontractors. It is also best suited for those organizations with subcontractors that cannot afford, or choose not to maintain, their own FSM application. Its strengths, in terms of connecting primary organizations (those with the direct relationship to the end customer) and their subcontractors, include data sharing and easy-to-deploy mobile applications that offer a "whiteboard" to help technicians collaborate with other technicians by sharing and annotating pictures and notes. It also can generate a pro forma invoice, which is useful for organizations that are running the application stand-alone or see it as important to get an initial signoff of invoice details before the formal invoice. However, it has not demonstrated evidence that it can scale to support the needs of very large organizations with many technicians, especially if these organizations require heavy schedule optimization automation. These organizations may need to combine Praxedo with other partners. Also, its customers are almost entirely in the EMEA region and it currently only focuses on a few industries.

Salesforce

U.S.-based [Salesforce \(http://www.salesforce.com/\)](http://www.salesforce.com/) released its Field Service Lightning (FSL) product, built on the same platform as Service Cloud, in 2016. It has included a small subset of functionality for schedule optimization from ClickSoftware through its scheduling "optimization-as-a-service" web services. FSL is able to optimize schedules through a batch process, but is generally best for organizations whose agents seek a tool that will propose multiple ideal timeslots for a work request in real time (such as while on the phone with a customer). The product is targeted horizontally, across all industries.

Salesforce FSL is still a new product and is positioned in the lower third for all use cases. However, it has strengths in critical capabilities such as extensibility and digital service support channels, particularly for owners of other Salesforce products, such as Service Cloud, because of shared features and the common platform. Integration with Salesforce Knowledge (Knowledge is included in some packages) enables dispatchers to attach articles to work orders for offline consumption. In the mobile app, technicians can collaborate with their support teams via video if they own Salesforce SOS. Salesforce has also built POCs that position the Einstein Vision image recognition capability of its Einstein AI platform as a component of a custom solution to provide a technician with the proper part number, based on an image. The Service Analytics product includes sample dashboard reports for a few key metrics. Reference customers tout ease of creating custom safety or inspection checklists for the mobile app. FSL is best-suited for organizations that are appointment-driven (as opposed to parts-driven, for example) with low work scoping complexity, such as financial services, inspectors, retail, healthcare visits and smart home installers.

FSL does not yet offer packaged integrations to ERPs, and its maintenance planning and agreement management capabilities are still limited, especially for complex entitlement and planning scenarios. Salesforce has sold many FSL systems, including a few with high user counts. However, most of its reference customers are small and midsize enterprises. Many have chosen FSL primarily because the use of a common platform enables them to develop missing functionality themselves.

SAP

Germany-based [SAP](http://www.sap.com/) (<http://www.sap.com/>) has offered multiple on-premises FSM products for many years, including its scheduling tool, Multiresource Scheduling (MRS is an add-on to its on-premises ERP), and its CRM for Service offering (part of its on-premises CRM). Our evaluation focused on its multitenant-only cloud product, SAP Hybris Service Cloud, which contains FSM capabilities. It offers the option of scheduling through MRS or through one of two ClickSoftware products, which are branded as SAP Workforce Scheduling and Optimization by ClickSoftware (WSO; an on-premises solution) and SAP Scheduling and Resource Management by ClickSoftware (a multitenant cloud solution). SAP sells these directly as solution extensions and provides first-level support.

The product targets industrial manufacturing, high-tech and utility organizations, as well as others that also use one of SAP's ERP offerings. It is positioned in the top third for equipment as a service and complex service and support use cases, and in the middle third range for the high-volume and volatile schedules use case. C4S is strongest in critical capabilities such as operations, digital service support channels and connected equipment diagnostics, as a result of its depth in integration to its ERPs (especially in areas such as invoicing and purchasing), the SAP Asset Intelligence Network, and partnerships with IoT providers. It is well-suited for complex service and asset-as-a-service use cases where there is a high degree of complexity in the equipment, IoT integration and asset-centric or outcome-based service contract requirements.

The field service capabilities for C4S were released in 2014 and, of late, SAP has been working effectively and collaboratively to overcome perceived gaps in functionality, according to reference customers. Organizations not using SAP for ERP should generally seek alternate solutions. Those who expect to have high numbers of technicians operating mobile apps through a single instance may find it difficult to find reference customer proof points for very large, single-instance deployments.

ServicePower

U.S.-based [ServicePower](http://www.servicepower.com/) (<http://www.servicepower.com/>) offers multiple modules that together offer varying degrees of capability for each critical capability area. Its schedule optimization product, Smart Scheduling, contains patented algorithms that continuously reoptimize work assignments to identify more-efficient schedules. Its Contractor and Warranty Claims Management solution is designed for managing the unique requirements of a third-party service provider network, including onboarding, credentialing, authorization, appointment booking, status collection and warranty claims processing and payment. Its Mobile Technician Enablement module supports both employee and third-party technicians with configurable processes, reporting and workflow. A new component, Customer Portal, enables consumers with appointment booking and technician communication capabilities. ServicePower has also added structure for the storage of maintenance agreements, plans and asset coverage. ServicePower has traditionally focused this product suite on consumer-oriented organizations such as appliance, electronics and HVAC manufacturers, insurance companies, and third-party contract administrators and security companies, especially those that rely heavily on subcontractors.

ServicePower is positioned in the middle third range for the high-volume and volatile schedules use case and the equipment as a service use case, and in the lower third for complex service and support. Its scheduling engine is efficient at continuously optimizing schedules in reaction to intra-day work demand and work duration changes. It has well-known contractor management capabilities, including dispatch and warranty claims processing, and a mature service provider network. Reference customers cite easy configurability and ease of use as benefits of the package.

The Schedule Optimization component is single-tenant, but the other components can be deployed either in a multitenant SaaS or single-tenant mode. ServicePower has separate scheduling engines for employee and third-party resources, but new customers are increasingly adopting its new job brokering engine, which is designed to map work demand to one or the other automatically based on configuration.

Context

Vendors included in this Critical Capabilities have demonstrated an ability to provide multitenant SaaS and, in many cases, single-tenant hosted or on-premises deployable products that support FSM for midsize and large enterprises in a range of industries. Some provide narrow, but deep, field service scheduling optimization or mobile apps. Others provide broad service suites.

It is common for large enterprises to use more than one field service application, depending on the industry, nature of service and regional makeup of its user base. Organizations should gain a deep understanding of which use case(s) fit their organization, keeping in mind that many organizations support more than one use case. Also, factors such as those below can significantly impact the products that are best-suited:

- The need to integrate into GIS.
- Extensive use of subcontractors.
- The organization's budget for implementation.
- The organization's budget to build and maintain integration to other systems such as ERP, CRM and GIS.

Product/Service Class Definition

FSM is a discrete market within the broader customer service and support software space. Field service operations typically dispatch technicians to customer locations to provide installation, repair or maintenance services for equipment or systems. These may be actively managed, maintained and monitored under a predefined service or maintenance contract.

As described in the Critical Capabilities section, FSM applications provide capabilities to manage demand, plan and schedule work, inform and enable technicians, debrief work orders, and perform analysis while also integrating to one or several systems of record.

FSM products operate across multiple communication channels (websites, supply solutions, third-party service brokering solutions and analytics). FSM solutions touch software in several markets, such as CRM, ERP, enterprise asset management, IoT, workforce management, vendor

management, product life cycle management, and supply chain markets such as transportation management and fleet management. Although several FSM vendors have capabilities in these areas, these are not their focus.

Critical Capabilities Definition

Integration, Scalability, Industry

Measurement considers deployment modes, architecture, size and complexity of existing deployments, depth and maturity of packaged integrations to ERPs, CRMs and other products such as GIS, project management and EAM, as well as packaged localizations, configurations and implementations by industry.

FSM is often the system of record for work orders and scheduling, but relies on ERP and CRM applications for critical objects such as customer locations and inventory items, as well as transactions for supply chain, invoicing and payroll. Field work order transactional activity, as well as estimating and work planning activity, impact these objects and, as such, drive requirements for organizations to create two-way integrations to these and other components.

Large enterprises have tens of thousands of technicians that need to be managed and scheduled in a single FSM software instance. FSM applications must address system-resource-intensive areas and offer considerable, proven scalability, especially in areas such as mobile application synchronization, schedule optimization and integration.

Successful FSM vendors typically provide thought leadership through templated configurations, based on best practices they have developed. These configurations vary by industry, geography and company size and may include specialized reports, mobile forms, integration templates, tools, training and lexicons that resonate well with customers in a given industry. This reduces the amount of time to implement, as well as the time between go-live and achievement of a ROI, because customers avoid repeating the mistakes of others, and support teams have a more-consistent configuration across the customer base. In addition, FSM vendors must provide support for local languages and customs in geographies they support.

Extensibility

This measurement considers the ability to add smart forms, logic and workflow to the mobile application, and the configurability of workflows to drive downstream activity, which starts with the technician, change branding, "wrapping" homegrown applications, and extension of back-office components.

FSM applications ideally offer enough flexibility so that everything the technician does electronically can be integrated into a single user experience which, ideally, avoid cases where technicians need to access more than one application. Often, additional UI must be added "after-market" without custom code or risk "version lock" (when it becomes cost-prohibitive to upgrade or precludes the ability to operate the application in a multitenant environment). Examples of additional UI include:

- Proprietary safety walk-around checklists
- Maintenance verification checklists and work instructions
- Meter reading collection
- UI to collect equipment and site evidence before and after completing tasks
- Survey of equipment at the site

For back-office users, such as dispatchers, supervisors, contract and invoice administrators, salespeople and executives, FSM applications must offer the ability to modify the UI, and add workflow and additional components without jeopardizing a clean and efficient user experience. Tools should connect to other applications in the environment, and enable adjustments to branding, look and feel, so that administrators can create a consistent user experience for those users that utilize multiple applications.

Connected Equipment Diagnostics

Considers tools such as IoT platform integration, sensor data visualizations, advanced analytics and escalation workflow development tools that are useful for deriving an actionable and defined scope of work based on data collected from real-time or near-real-time equipment or environment sensors.

Typical IoT ecosystems include the following elements:

1. **IoT endpoints:** The physical devices, equipment, automobiles, etc., and the technologies they have onboard, that capture data about their physical state and connect via Wi-Fi, cellular, beacon or other local connection to local gateways.
2. **On-the-edge computing:** The components local to the device that ingest the large amounts of data that each device generates and then transmit it to the middleware layer for processing.
3. **Middleware/platform hub:** The middle tier that contains analytics, machine learning and rule engines that make sense of the data and determine what is important to pass along.
4. **Enterprise application integration:** The layer that translates the information into a format that the APIs of enterprise applications (such as customer engagement center, field service management, enterprise asset management, etc.) can use to initiate workflows that will drive either human or autonomous actions.

While these elements are not generally core to FSM products, FSM products bear the responsibility of enabling efficient triage of the work demand they generate. This triage is often performed by a combination of human and systematic analysis. FSM tools should present users with visualizations of sensor trends, equipment history, similar cases and knowledge articles to help determine what next steps (if any) should be taken. These steps could include any combination of:

- Determining that no additional action is required.
- Noting diagnosis or remediation tasks to be performed along with the next scheduled maintenance task.
- Initiating further diagnosis of the device through remote control or customer intervention.
- Making adjustments to equipment configuration through remote control or initiating a shipment of replacement parts.
- Creating a work order, which will be used to dispatch a technician to the site.

FSM applications may be integrated to case management or asset performance management tools, or IoT platform components, or may have embedded capabilities that help identify patterns and best actions to take. Tools should provide complex analysis of historical problem and resolution notes, tasks, knowledge articles or maintenance manuals.

Work Planning and Scheduling

Our measurement considers functions such as automated technician, crew and equipment schedule optimization, routing, capacity planning, parts prediction and allocation, certification management, organization of multichannel demand.

Work demand is often generated in systems outside of FSM and must enter the FSM application through channels such as service brokers, technicians, IoT, portals, chat, mobile, maintenance plans and APIs. Before work can be scheduled, it must be defined, including the parts, tools and skills that one or many technicians will need in order to be successful. The set of tasks the technician will perform may vary based on specific contract entitlements, customer preferences or expectations.

A customer may have a preferred technician, warranty or maintenance commitment, or an SLA that guarantees an arrival window. Technicians in the field may generate work demand through field quotes and customers may request added intra-day scope. A clear picture of overall demand for skills, geographical coverage, required parts and tools, and any constraints or considerations (such as priority or issue severity), must be clearly captured and organized in order to enable efficient scheduling.

Developing a schedule that aligns the best technician with the right skills, parts, availability and proximity to the location is core to successful FSOs. FSM tools must help align technicians to work while also achieving the highest number of work orders with the resources available. At the same time, they must still achieve business objectives such as cost optimization, customer experience, labor load leveling (allocating an equal number of hours of work to all technicians) and employee satisfaction.

Once an optimized schedule has been created, field service applications must facilitate manual handling of exceptions and intra-day changes, such as those below (see "How to Achieve Scheduling Optimization in Field Service"):

- Scheduled appointments in jeopardy of being missed due to other jobs running for too long.
- Emergency or other reactive work that is higher priority than previously committed work.
- Customer cancellations and cancellation prediction.

As part of planning and scheduling, an FSM product must help users complete as much prerequisite work as possible prior to engaging the technician. This can include verifying that parts are available on the primary or a nearby technician's vehicle, or initiating drop shipments to deliver parts to the site or a forward stocking location ahead of the visit. Also, automating functions such as collecting appropriate history, guidance, manuals and GIS visualizations into a work package, helps to facilitate human work planning, triage, collaborative diagnosis and communication to or with the customer.

Technician Enablement

Includes embedded GPS and GIS visualizations, intra-site directions, equipment history, customer communications, location sharing, purchase requisitioning and quoting tools for technicians. These prepare and empower a technician to deliver a positive and efficient customer experience independently.

A mobile application that merely digitizes the traditional paper-based work order debrief (capture of labor, parts used, tasks completed, customer signature and recommendations) is important, but is no longer a differentiator. Technician enablement capabilities help build the trusted advisor relationship between the technician and the customer. FSM products should automate capabilities that help organizations provide better preparation information, such as:

- Before and after pictures from previous visits
- Cause and resolution descriptions from previous work orders
- Maps and access instructions for the equipment location within the site
- As-maintained drawings

■ Operations and maintenance manuals

A technician in a "trusted advisor" role must also react to unforeseen requests from the customer or results from diagnostics. FSM products should provide tools that simplify workflow initiation for new work quoting and approval, additional parts purchases, and even changes to contract coverages. For cases when work is not able to be completed properly or at all during the first visit, FSM tools should help the technician minimize surprises to the customer by helping to automate communication, escalations, and remote reviews and sign-offs.

Digital Service Support Channels

Includes remote support with video streaming, augmented reality with collaborative annotation and context-specific work instructions, and self-service with suggested knowledge base artifacts, chat and chatbots. Must enable and improve the quality of technicians' access to resources for assistance.

Digital service support is a nascent area. It extends the methods and tools through which organizations are able to assist technicians (or the customer's facilities managers) who are in the field, especially when they are less-experienced or are subcontractors that are less-familiar with expected practices and procedures. Many of these tools impact the technician enablement critical capability as well, but we break them into a separate category for product differentiation.

In several regions, an aging workforce, tighter profit margins and smaller budgets for on-the-job "ride alongs" with senior technicians are forcing FSOs to ask less-experienced technicians to work alone. At the same time, on-site work is becoming more-complex for some technicians, because more simple issues are now resolved remotely, without a technician visit.

Supervisor or mentor technicians attempting to support field technicians from remote triage centers are achieving significant improvements to resolution time, first visit fix rates and customer satisfaction surveys when they can see what the technician sees and can augment the technician's field of view with annotations such as drawn arrows and circles. FSM applications must integrate and embed these technologies, and also create capabilities that bring the experience of the entire organization to bear, in support of a technician that is working on a complex problem. This can be through knowledge solutions, human interaction, text and chatbot collaboration and artificial intelligence components that help to recognize or predict parts, suggest likely resolution steps, recognize equipment or parts with computer vision, and surface other resources — human or not — that can help a technician succeed.

Work Order Debrief

Our evaluation includes technicians' ability to record time, expenses, parts, tasks completed, approval signatures, checklists, surveys, video or pictures and recommendations digitally with bar code readers, voice-to-text and handwriting recognition for more accurate and timely work order reporting.

FSM applications must minimize or completely eliminate any data capture that requires a technician to utilize more than a single application. Well-adopted FSM mobile applications tend to enable the technicians to, within one app, perform a work order debrief, and also view records of customer reviews and approvals, surveys, site evidence, as well as inspection data and any site inventory reviews the technician performed. They also should enable organizations to build in proprietary forms and workflow, and enable single sign-on to proprietary apps in order to minimize the number of apps a technicians must work with. In many cases, FSM mobile applications are replacing homegrown applications and must replicate business-specific capabilities (see "Build Versus Buy Considerations for Delivery of an Enterprise Mobile App Portfolio").

Invoicing and Reporting

Our evaluation includes pricing and discounting for parts, labor and packaged tasks, thought-leading reports and analysis, pro-forma and/or final customer invoices and credit memos. Also includes recurring billing for maintenance agreements and negotiated pricing contracts.

Many ERP-based invoicing functions are limited in their capabilities to handle invoicing for a field service business because an FSO prices its services based on elements such as contract entitlements, or technicians' skills levels and/or certifications. In negotiated "equipment-as-a-service" pricing, the customer is paying based on equipment *output* rather than for a prescribed set of tasks to be performed or based on actual time spent. Because these objects are often foreign to the ERP, the FSM product must fill in functionality to calculate invoices and reports using a combination of ERP or CRM objects, plus information for which the FSM product is the only system of record.

Contracts, Operations, Contractors

Our evaluation includes maintenance agreements and plans, installed equipment management, customer warranty and warranty claims, reverse logistics, depot repair, subcontractor enablement, scheduling and payment adjudication, and third-party service provider networks.

Most mature field service organizations get to the point where they offer prescribed or predictive maintenance packages that are predicated on one or many of the following:

- An SLA that guarantees a reaction time when unscheduled issues arrive; the actual levels are often dependent on priority, severity or trade
- A reliability level
- A defined scope and set of tasks; on a prescribed frequency
- Equipment health monitoring and outage prediction
- A defined level of equipment output
- A discounted labor rate or "no-charge" labor and/or materials on certain types of reactive work

FSM packages often must go beyond the capabilities found in the ERP to enable organizations to manage entitlements such as the above, and to connect actual costs to billing and revenue amounts in order to identify and manage issues such as:

- Contract profitability
- Warranty leakage (work provided free that should not have been)
- Warranty claims (require reimbursement from manufacturers or suppliers)
- Contract quotes

Many industries are reporting an uptick in the percentage of work they must outsource, either due to specialized skills or profitability pressures (subcontractors can often provide equivalent service at a lower total cost). There are many challenges in outsourced service, including managing scope changes, adjudicating invoices, onboarding and certifying vendors, warranty work or other rework, capacity-based scheduling, and subcontractor technician enablement and support (see "Eight Components of Successful Outsourced Field Service Management").

FSM packages also must offer a combination of other capabilities, depending on the industries they serve. Examples include handling of use cases where equipment or its components must be sent to a repair depot (instead of technicians being sent to the equipment). These cases require managing reverse logistics (such as returns and cross shipments), as well as capturing costs incurred in a depot. FSM packages may also offer complex warranty and warranty claims management capabilities, engineering change request management, fleet management and telematics capabilities such as tracking driver behavior.

Use Cases

High-Volume and Volatile Schedules

In this use case, technicians perform over five work orders per day and schedules fluctuate intra-day due to emergencies, estimate overruns, cancellations and travel issues.

Work demand comes in through multiple channels, such as IoT-connected equipment, customer portals, mobile apps and other integrated systems such as customer engagement center, project management and outage management.

FSM applications must scale well because organizations in this use case, especially in utilities and telecom, often have a high volume of technicians, subcontractors and work orders. Due to the number of work orders, technicians and intra-day changes, FSM systems must provide product depth in automated schedule optimization. This helps limit dispatcher workload to exceptions that could not be scheduled automatically (see "How to Achieve Scheduling Optimization in Field Service"). Factors such as seasonality, new equipment model releases, and the natural ebb and flow of business impact the amount of demand over time for specific skills, which drives the need for capacity planning tools.

In these organizations, as well as among B2B and B2C specialty contractors, the ability to offer a simple-to-learn mobile application and basic tools to enable senior resources to support junior technicians, is also important because of the level of technician turnover. Technicians may require specialized mobile forms that feed organization-specific regulatory or safety reporting, or to collect data about the site and equipment.

Complex Service and Support

In this use case, heavy diagnosis and planning is needed to scope work orders, and on-site resolution by staff or subcontractors requires significant time and/or support.

Organizations with this use-case service complex equipment, and there may be many brands, model years and configurations of equipment, such that it takes many years for technicians to become independent. These organizations may heavily employ subcontractors or lesser experienced technicians that require a high degree of guidance and support from senior technicians. FSM capabilities that help prepare technicians before arriving on-site, as well as technologies that improve the FSO's ability to support technicians that need help with diagnosis or resolution steps, are of utmost importance.

These organizations often sell their customers a maintenance contract that includes scope for preventative planned maintenance tasks, and also offer reactive service that is billed on a time and materials basis. They may ship or transport some equipment or equipment components to a repair depot to perform repairs or maintenance, so FSM products must help supply chain and ERP products manage parts logistics, demand management and reverse logistics for returns.

Equipment as a Service

In this use case, FSOs monitor equipment via IoT. They predict and address many issues remotely, and contractually commit to business outcomes instead of a defined task list.

Organizations with this use case must integrate their enterprise FSM (and often other) applications to both their own and outsourced IoT platforms, as well as asset performance management tools. They develop complex analytics in an attempt to both proactively and reactively maintain equipment installed at customers' sites. Instead of committing to a prescribed set of tasks to be performed on a defined frequency, the FSO commits to a more-holistic level of service (see "Field Service Management Processes Must Change to Benefit From the Internet of Things"). This means that the FSO commits to providing a specific level of equipment output (such as amount of energy generated or mean time between failures).

For these organizations, the timing and accuracy of diagnosis is especially important, because the FSO shoulders the full burden of any unnecessary services provided, as well as any penalties from outages that should have been prevented. Also, reactive on-site work can be more complicated, because simple issues are more likely to be resolved remotely. As such, the ability to identify appropriate potential parts, skills and other

prerequisites before engaging a technician is important. It remains important in this use case to ensure that technicians arrive well-prepared so they can address issues quickly and on the first visit. Integration and scalability is also important because of the high volume of data that is typically generated by machines in the field. Even if the IoT platform performs data reduction procedures, the FSM application must provide or integrate to components that help the organization triage, escalate and prepare work for field technicians.

Inclusion Criteria

Gartner's inclusion criteria specify that each vendor must have qualified for the Gartner "Magic Quadrant for Field Service Management" (published September 2017). Each vendor must also show market presence and momentum and short-term viability, as summarized below.

Market Presence and Momentum

Factors that affected our evaluation were the presence that a vendor has in the FSM market and the observed momentum of its growth, given that prospective buyers should be concerned about any vendors with stagnant sales or an ineffectual marketing organization.

Each vendor must:

- Identify new reference customers as follows (including the dates on which the customers went live, where, with what functionality, and for how many technicians and office personnel):
 - Five new FSM customers that first began using the product during the previous four fiscal quarters that ended March 2017, covering at least two of the following markets: North America, Latin America, EMEA, Asia/Pacific.
 - Two FSM customers with more than 100 technicians in production for over six months that use the latest major version of the software with integration to system(s) of record.
- Provide evidence of at least \$6.5 million in FSM software license, maintenance and support revenue (excluding professional services), per GAAP or IFRS, during the four fiscal quarters that ended closest to the end of March 2017. The following must be well represented and supported:
 - Large or midsize businesses (average deal size above 100 mobile technicians).
 - Two major geographical markets (out of North America, Latin America, EMEA and Asia/Pacific).
 - Two industries (examples being utilities, telecommunications, high tech, oil and gas, manufacturing, aerospace and defense, automotive, financial services and insurance, chemicals, medical devices, healthcare).
- Provide at least four of the following five categories of functionality, plus integration and analytics:
 - Work demand management (included in the work planning and scheduling critical capability)
 - Planning and scheduling
 - Technician enablement (includes the digital service support critical capability)
 - Work order debrief
 - Operations (includes invoicing, reporting, maintenance agreements, subcontractor management, warranty, reverse logistics and other operations)
- Be recognized by the market, as evidenced by regular appearances on client shortlists, by appearances at tradeshow and by references as a competitor by other vendors.
- Provide thought leadership, which is adopted by customers in live operations, through webinars, market-related white papers, blog articles and user communities.

Short-Term Viability

Each vendor must:

- Have sufficient cash to fund 12 months of operations at the current burn rate.
- Have sufficient professional services to fulfill customer demands during the next 12 months.
- Have a practice and ecosystem with sufficient third-party consulting and integration firms to grow at a double-digit pace for two years.
- Demonstrate a pipeline of prospective customers and an adequate sales team to drive growth in new business.
- Provide evidence that results for the upcoming four quarters (from 1 April 2017) will exceed the previous four quarters' results.

Table 1: Weighting for Critical Capabilities in Use Cases

| Critical Capabilities ↓ | High-Volume and Volatile Schedules ↓ | Complex Service and Support ↓ | Equipment as a Service ↓ |
|------------------------------------|--------------------------------------|-------------------------------|--------------------------|
| Integration, Scalability, Industry | 35% | 5% | 10% |
| Extensibility | 5% | 10% | 5% |
| Connected Equipment Diagnostics | 0% | 0% | 30% |
| Work Planning and Scheduling | 30% | 7% | 15% |
| Technician Enablement | 15% | 25% | 10% |
| Digital Service Support Channels | 5% | 18% | 5% |
| Work Order Debrief | 5% | 10% | 0% |
| Invoicing and Reporting | 3% | 10% | 5% |
| Contracts, Operations, Contractors | 2% | 15% | 20% |
| Total | 100% | 100% | 100% |
| | | | As of June 2017 |

Source: Gartner (March 2018)

This methodology requires analysts to identify the critical capabilities for a class of products/services. Each capability is then weighed in terms of its relative importance for specific product/service use cases.

Critical Capabilities Rating

Each of the products/services has been evaluated on the critical capabilities on a scale of 1.0 to 5.0; a score of 1 = Poor (most or all defined requirements are not achieved), while 5 = Outstanding (significantly exceeds requirements).

Table 2: Product/Service Rating on Critical Capabilities

| Critical Capabilities ↓ | Accruent (Verisae) ↓ | Astea International ↓ | ClickSoftware ↓ | Comarch ↓ | Coresystems ↓ | FieldAv |
|------------------------------------|----------------------|-----------------------|-----------------|-----------|---------------|---------|
| Integration, Scalability, Industry | 2.9 | 2.2 | 4.0 | 2.2 | 3.9 | 2 |
| Extensibility | 3.1 | 3.4 | 4.0 | 1.9 | 3.6 | 1 |
| Connected Equipment Diagnostics | 3.4 | 3.2 | 3.5 | 3.0 | 2.7 | 1 |
| Work Planning and Scheduling | 3.8 | 3.8 | 4.7 | 3.4 | 2.3 | 1 |
| Technician Enablement | 2.0 | 4.0 | 4.0 | 1.5 | 3.0 | 2 |
| Digital Service Support Channels | 2.2 | 2.3 | 2.5 | 2.3 | 2.3 | 1 |
| Work Order Debrief | 4.1 | 4.3 | 3.8 | 3.0 | 3.4 | 2 |
| Invoicing and Reporting | 3.7 | 4.1 | 2.1 | 3.6 | 1.6 | 2 |
| Contracts, Operations, Contractors | 4.0 | 4.1 | 2.7 | 1.9 | 2.9 | 1 |

Source: Gartner (March 2018)

Table 3 shows the product/service scores for each use case. The scores, which are generated by multiplying the use-case weightings by the product/service ratings, summarize how well the critical capabilities are met for each use case.

Table 3: Product Score in Use Cases

| Use Cases ↓ | Accruent (Verisae) ↓ | Astea International ↓ | ClickSoftware ↓ | Comarch ↓ | Coresystems ↓ | FieldAware |
|------------------------------------|----------------------|-----------------------|-----------------|-----------|---------------|------------|
| High-Volume and Volatile Schedules | 3.12 | 3.22 | 4.04 | 2.52 | 3.08 | 2.15 |
| Complex Service and Support | 3.00 | 3.59 | 3.37 | 2.27 | 2.82 | 1.86 |
| Equipment as a Service | 3.33 | 3.46 | 3.53 | 2.55 | 2.80 | 1.73 |

Source: Gartner (March 2018)

To determine an overall score for each product/service in the use cases, multiply the ratings in Table 2 by the weightings shown in Table 1.

Evidence

Scoring for the nine critical capabilities given here for the evaluation and selection of FSM solutions was derived from Gartner's independent research. The quantification for the scoring is supported by interactions with Gartner clients, vendor references and feedback from other market participants. In addition, each vendor in this research provided us with a vendor briefing and responded in detail to questions administered by experienced analysts. This provided an objective process for considering the vendors' suitability for the workforce engagement activities of your business.

Critical Capabilities Methodology

This methodology requires analysts to identify the critical capabilities for a class of products or services. Each capability is then weighted in terms of its relative importance for specific product or service use cases. Next, products/services are rated in terms of how well they achieve each of the critical capabilities. A score that summarizes how well they meet the critical capabilities for each use case is then calculated for each product/service.

"Critical capabilities" are attributes that differentiate products/services in a class in terms of their quality and performance. Gartner recommends that users consider the set of critical capabilities as some of the most important criteria for acquisition decisions.

In defining the product/service category for evaluation, the analyst first identifies the leading uses for the products/services in this market. What needs are end-users looking to fulfill, when considering products/services in this market? Use cases should match common client deployment scenarios. These distinct client scenarios define the Use Cases.

The analyst then identifies the critical capabilities. These capabilities are generalized groups of features commonly required by this class of products/services. Each capability is assigned a level of importance in fulfilling that particular need; some sets of features are more important than others, depending on the use case being evaluated.

Each vendor's product or service is evaluated in terms of how well it delivers each capability, on a five-point scale. These ratings are displayed side-by-side for all vendors, allowing easy comparisons between the different sets of features.

Ratings and summary scores range from 1.0 to 5.0:

1 = Poor or Absent: most or all defined requirements for a capability are not achieved

2 = Fair: some requirements are not achieved

3 = Good: meets requirements

4 = Excellent: meets or exceeds some requirements

5 = Outstanding: significantly exceeds requirements

To determine an overall score for each product in the use cases, the product ratings are multiplied by the weightings to come up with the product score in use cases.

The critical capabilities Gartner has selected do not represent all capabilities for any product; therefore, may not represent those most important for a specific use situation or business objective. Clients should use a critical capabilities analysis as one of several sources of input about a product before making a product/service decision.

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