ASTEA®

Optimize Field Service With Automated Scheduling and Dispatch

WHITEPAPER

Introduction

Field service is a dynamic environment. Technicians and dispatchers are faced with a daily barrage of scheduled and emergency service visits from multiple customers. Depending on the industry, determining which technician should go to which customer site at which time requires weighing and balancing a wide variety of factors, including service level agreement (SLA) requirements, technician skills, available parts, drive time, traffic, and customer history, among others.

Technology to automate the process of scheduling work orders, dispatching them to field technicians via mobile devices, and routing those technicians efficiently from one job to the next have been available for years.

Now, fully integrated solutions exist that can automate the entire work order lifecycle, from the point of contact to billing. These solutions allow field service organizations to optimize scheduling, dispatch and routing operations in such a way that they can better

utilize equipment and manpower, while cutting costs and improving customer service. What's more, these solutions are now available at a lower cost and deployment complexity, putting them within reach of even fairly small service providers.

This white paper will examine the factors that make field service scheduling and dispatch so complex, and detail how automated solutions can help companies drive down service costs while improving service delivery. It will also explain how automated scheduling, dispatch, and routing solutions can improve key metrics such as first-time fix rates, the number of work orders processed per day, fuel consumption, and SLA compliance.

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Service Schedule **Complexity**

According to member survey data from the Technology Services Industry Association (TSIA), the time it takes to respond to service requests is increasing, while the cost of each service visit is also going up. While the TSIA data is only reflective of one vertical industry within the overall field service market, it is indicative of trends that affect every service organization.

TSIA found that the average cost of each service visit now stands at $1,011.17, with onsite repair time averaging 2.41 hours. The average number of service visits per day for member organizations was 2.1, with 85.45 percent of issues resolved on the first visit. Members also reported a 70.3 percent technician utilization rate. More than half (58 percent) of members reported having completely manual dispatch and scheduling systems.

More and more, automation is becoming a "must have" for service dispatching operations. As the options available to dispatchers become more complex, and the number of factors influencing the selection of the "right" technician grows in number, it becomes nearly impossible for them to make these decisions manually or on the fly.

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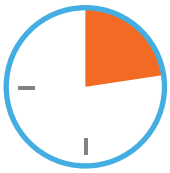
TSIA Member Survey Highlights

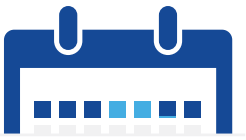
$1,011.17

Average Cost of Each Service Visit



2.41H

Average Onsite Repair Time



2.1

Average Number of Service Visits per Day

85.45%

Percent of Issues Resolved on First Visit

70.3%

Technician Utilization Rate

58%

Members With Completely Manual Dispatch and Scheduling Systems

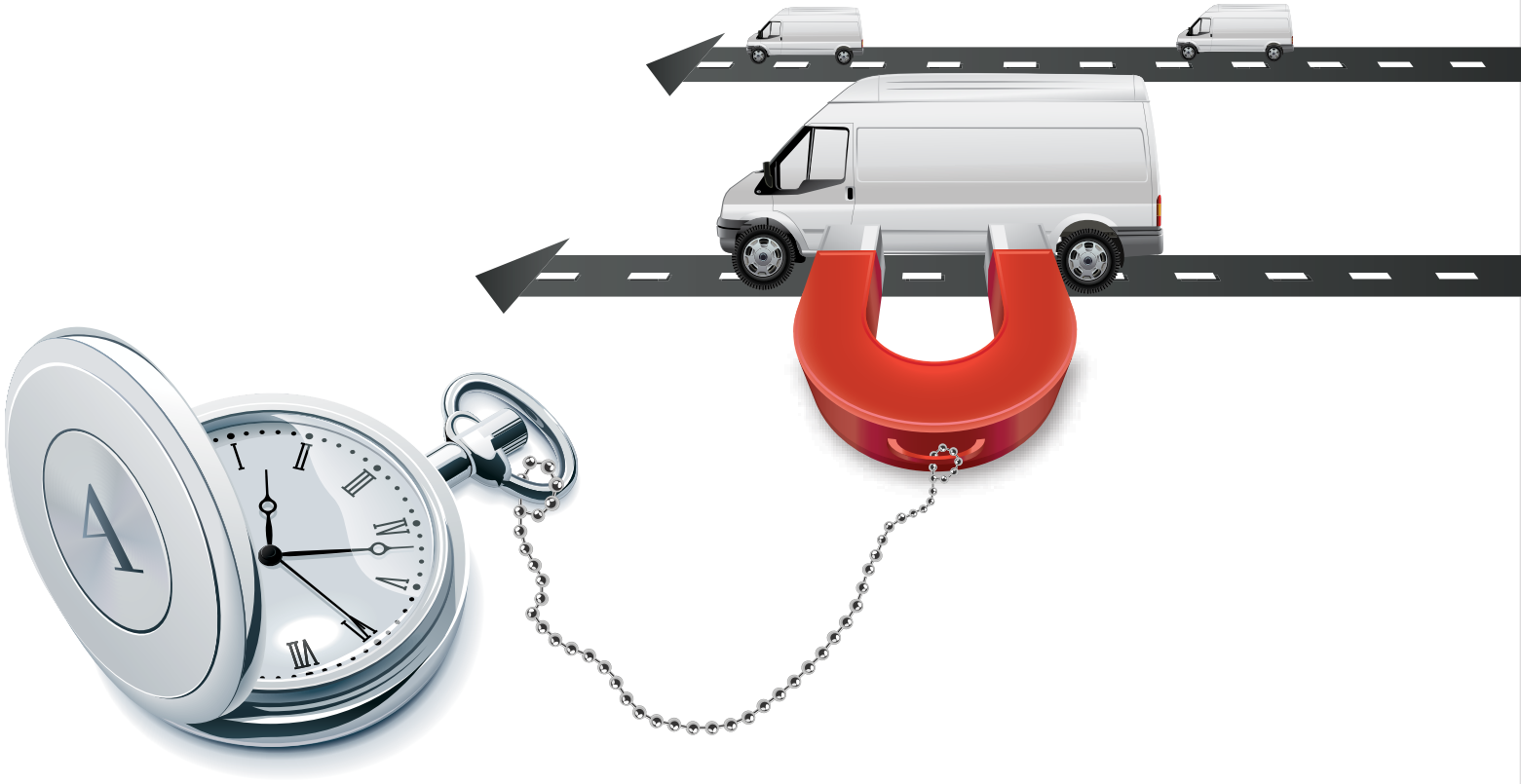
In large field service organizations, or even smaller operations with particularly complex client requirements, the decision to dispatch a particular technician to a specific job will be influenced by a number of factors, including SLAs, the geographic location of the customer and the technician, the technician's skill level, available parts or trunk stock, drive time, experience, customer history, the reason for the equipment failure, and even weather or traffic conditions.

Each of these factors are weighted differently in the decision making process. In manual dispatch/scheduling environments, different dispatchers may interpret the importance of these factors in different ways, leading to wildly variant decisions and outcomes. Luckily, modern field service automation tools include automated scheduling and dispatch algorithms that can easily balance each of these factors. The best of these solutions regularly revamp the schedule on an hourly,

or even minute-to-minute basis, depending on how dynamic the field service environment.

For organizations that face rapidly evolving daily schedules, the automated solution can delay the decision to dispatch a given technician to a customer site based on real-time technician status to ensure optimal optimization results. The system can respond to changes in the schedule due to unexpected events (a job taking longer than expected, for instance) by reshuffling assignments on the fly without disrupting the technicians' work day.

For example, if a work order is in danger of exceeding the contracted response time, the solution could recognize that while the best technician for that particular job is tied up at another site, another qualified technician is nearby who can be on site within the required response time.



In this way, what has traditionally been a chaotic process can be replaced by one that optimizes technician utilization and increases overall customer satisfaction. Automation enables a transition from "push" scheduling environments (where multiple assignments are pushed out to technicians at the beginning of a shift) to a "pull" scheduling solution. Under this model, technicians can pull the next assignment from the scheduling engine based on when they actually complete the preceding job. The next-best appointment can be pulled from the queue, based on their location, the parts on their truck, and their skill level.

This helps avoid the problems associated with the traditional model. Under a "push" scenario, technicians may spend the day racing to keep up with a schedule of pre-set appointments. If there are delays at one job, other customers are bumped further back into the schedule rather than being re-assigned. If new work orders come in, technicians and dispatchers may waste valuable time on the phone re-shuffling existing assignments.

PUSH VS. PULL SCHEDULING ENVIRONMENTS

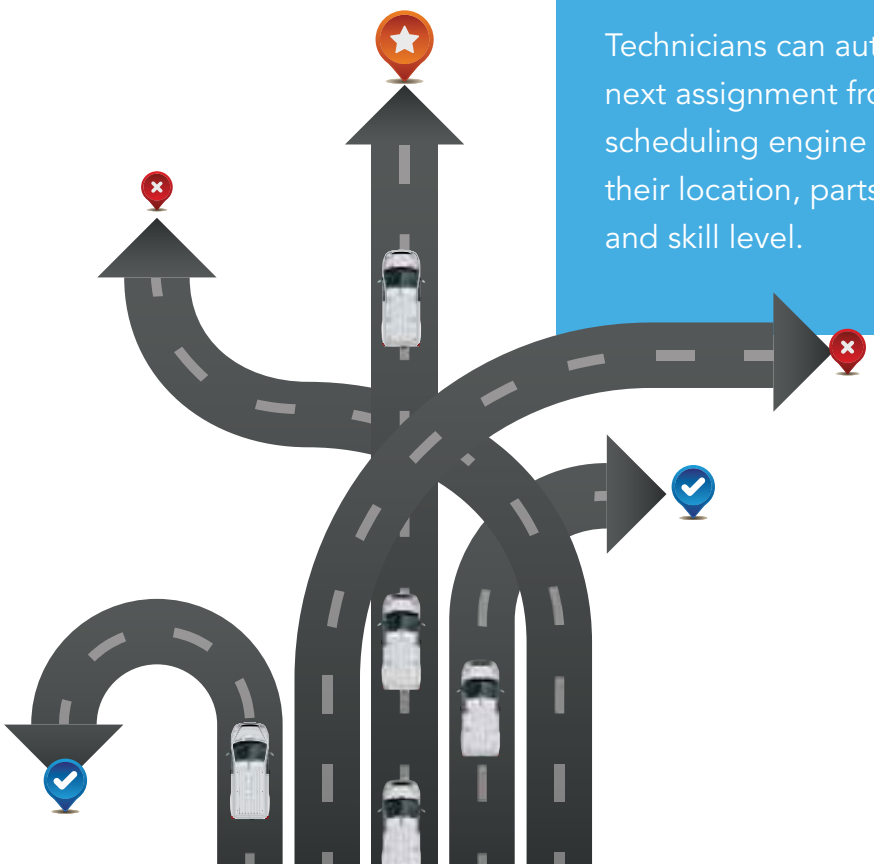
"PUSH" SCHEDULING:

Multiple assigments are pushed out to technitians at the beginning of a shift.

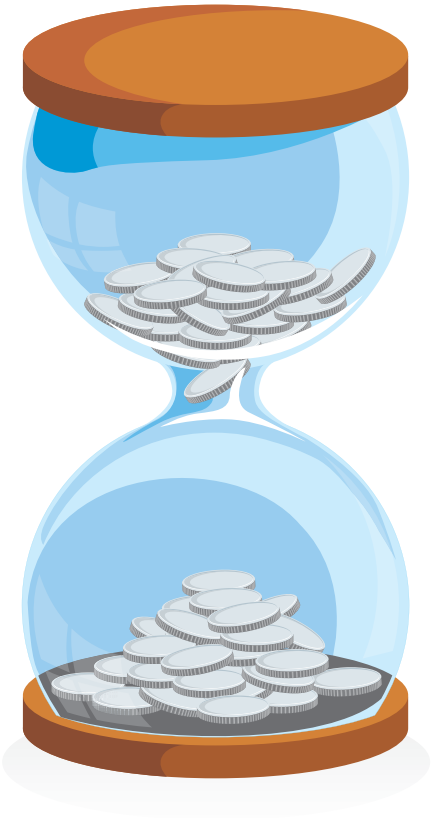
VS.

"PULL" SCHEDULING:

Technicians can auto-pull the next assignment from the scheduling engine based on their location, parts inventory, and skill level.



Service Cost **Reduction** Considerations



This type of flexible, dynamic scheduling can be critical for service organizations that are looking for ways to reduce operating costs. Customers increasingly want faster service resolution at a lower cost; improving worker output is one of the only ways to effectively achieve that goal.

Scheduling tools that use advanced mathematical algorithms and models to optimize service operations are now available at a reasonable cost. Hosted or cloud-based solutions have further reduced the cost and complexity of these deployments by eliminating upfront infrastructure requirements.

Many of these solutions are directly integrated with field service and workforce management software, allowing data from the scheduling engine and the business systems to be integrated. This not only improves scheduling efficiency, it also provides enhanced visibility into the service operation so that managers can better measure performance and create an auditable data trail to establish a service baseline, improve processes, and provide historical data to customers.

More importantly, these solutions give service organizations multiple levers with which to improve management of costs tied to the dispatch operation and return service visits that can be avoided via improved scheduling.

The Benefits of Automated Scheduling and Dispatch

Automated dispatching, scheduling and routing can have a direct impact on service costs. Benefits vary by industry, but typically include:

IMPROVED RESOURCE ALLOCATION

According to Aberdeen, best-in-class service organizations provide service leaders with near or real-time performance data so that they can intelligently re-allocate resources according to need. Automation also allows these companies to conduct simulations to see if they can take on more business without expanding their work force, and evaluate the impact of different scheduling scenarios on the existing workforce. Companies can also more efficiently deploy both highly skilled technicians and vehicles, potentially avoiding the expense of adding more employees or equipment to service a growing customer base.

IMPROVED TECHNICIAN PRODUCTIVITY:

Rather than managing their schedules and dealing with dispatchers, technicians can spend more time working with customers and completing work orders. Knowing where customers are on a map can also help technicians better complete their routes, and orient themselves relative to the location of the home office, a parts depot, or a nearby supplier.

Improved scheduling makes technicians more efficient and productive, enabling them to complete more service calls per day. They spend more time turning wrenches rather than looking for directions or driving from one far-flung client location to another. If the average work order generates between $200 and $300 in revenue (and for many companies, those figures would be higher), then even adding one work order per technician can increase revenues without adding staff. And by helping them work more efficiently, service companies can reduce or eliminate costly overtime.

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IMPROVED SCHEDULING OF PREVENTIVE MAINTENANCE

Scheduling preventive maintenance (PM) work between break/fix calls can be a challenge. In many organizations, these calls are actually managed by the technicians themselves; during their regular shift, they try to squeeze those visits in between other stops. This process is both inefficient and can lead to unnecessary delays in scheduled maintenance.

By incorporating PM calls into the scheduling system, they can automatically be assigned based on technician location and other factors. Technicians can then spend more time upselling or cross-selling during the

maintenance call. That helps improve customer loyalty and potentially generates add-on business.

REDUCTION IN NON-VALUE-ADDED TIME

In a manual dispatch environment, technicians and dispatchers spend an enormous amount of time on the phone, leaving and responding to messages. An automated solution can eliminate phone calls and reduce reliance on direct contact with the dispatcher in the field. In some cases, phone time has been decreased by as much as 95 percent.

MANUAL VS. AUTOMATED DISPATCH

95% PHONE TIME

ENSURE THE RIGHT TECHNICIAN IS AT THE RIGHT LOCATION

According to Aberdeen's *Mobile Field Service 2012: Mobile Tools for the Right Technician* report, the top complaint from customers was that a technician, once on site, couldn't resolve the issue (45 percent of respondents). The top reason for not completing a job the first time: not having the right part.

Automated scheduling and dispatch helps mitigate this issue. If you can be sure that the technician arrives in a timely fashion, and that he has the skills and tools to complete the job, first-time fix rates can be greatly improved.

First-time fix is an important metric. For companies that were unable to complete a task the first time, Aberdeen found that those companies required an additional 1.5 service visits to finish the job. If an average technicians performs 3.8 tasks per day, even an operation with as few as 10 service technicians with 14 unresolved calls on the first visit (38 percent of all calls, based on Aberdeen's data) can generate dozens of additional visits. For an average service visit cost of $276, a shop would see $5,796 per day in additional costs.

FIRST-TIME FIX IS AN IMPORTANT METRIC. ABEREEN FOUND:

38% of all calls are unresolved on the first visit

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Getting the job done right the first time can eliminate these unnecessary expenses; an intelligent dispatch/scheduling solution plays a key role in making that possible.

REDUCED WINDSHIELD TIME

Automated scheduling only solves half of the problem relative to getting the right techs to a given location. Routing those technicians is equally important. Routing systems can guide technicians from one job to the next efficiently.

Better routing can reduce the amount of drive time between jobs, and help technicians complete more work orders per day, but routing can also have a direct affect on operational costs. By moving from site to site more efficiently, fuel consumption can also be reduced. With the cost of fuel continuing to rise, reducing unnecessary windshield time can be a major contributor to the ROI of the solution.

IMPROVED DISPATCHER-TO-TECHNICIAN RATIOS

Manual dispatching requires a rather high number of dispatch personnel to manage a given group of technicians, primarily because of the amount of time spent on the phone. By automating these processes, the total number of dispatchers can be reduced. Dispatch operations for geographically disparate locations can also be consolidated, since scheduling decisions will rely less on local knowledge of the customer base and geography.

That doesn't mean that dispatchers wont' have a role to play, however. There are always emergencies and exceptions that require manual intervention. Another upside of automation is that these instances are fewer and farther between, and when they do arise, dispatchers can devote more time and attention to thoughtfully solving the problem.

This is also why an incremental approach to dispatch/scheduling automation is preferable. Start with a small subset of constraints so that employees have time to learn how the solution works and can buy-in to the potential benefits. Not every possible constraint needs to be implemented at once. As dispatchers become more comfortable with the solution, and new processes are rolled out, more scheduling constraints can be added.

DEVELOP NEW SERVICE OFFERINGS

With an optimized and standardized approach to scheduling and routing technicians, service organizations are in a better position to develop tiered service offerings, charging a premium for faster response times or additional preventive maintenance visits that would have been nearly impossible to provide under a manual system. Offering differentiated service level packages is an attractive option for service providers and customers. In order to support more customized and personalized services, organizations require automation to efficiently manage the priority of the service calls indicated by the customer agreement. Building out these targeted offerings and meeting the SLA requirements every time can help turn service into a revenue center.

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Conclusion

True field service automation is more than just electronically managing work orders. A fully optimized field service operation relies on highly automated scheduling, dispatch and routing functions to ensure that qualified technicians arrive at the job site in a timely manner, with the right tools and parts.

Advanced scheduling solutions balance technician availability, location, travel time, SLA requirements, and many other factors to help keep customer satisfaction levels high while simultaneously reducing operational costs and improving technician productivity.

About Astea

Astea International is a global provider of software solutions that offer all the cornerstones of service lifecycle management, including customer management, service management, asset management, forward and reverse logistics management and mobile workforce management. Since 1979, Astea has been helping more than 600 companies drive even higher levels of customer satisfaction with faster response times and proactive communication, creating a seamless, consistent and highly personalized experience at every customer relationship touch point.

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