Aberdeen Group

Field Service Optimization Benchmark Report — Part II

Synchronizing Service Chain Supply and Demand in Right Time

May 2005

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Executive Summary

Assigning field technicians and engineers to service work orders is core to every field service operation, but it is often the most inefficient post-sales process. Typically, companies allocate work orders to technicians on a daily basis and do not make any adjustments to the schedule during the day.

Leading companies, however, are leveraging technology solutions to optimize the service workload throughout the day based on the technicians' current position and availability. These best-in-class companies are tightly aligning service demand — comprised of the backlog and pipeline of work orders — with service supply — comprised of technician capacity, proximity, aptitude, and inventory. The ultimate goal: Achieve the most cost-effective, productive, and profitable service chain at all times, in the face of a myriad of planned and unplanned constraints and interruptions.

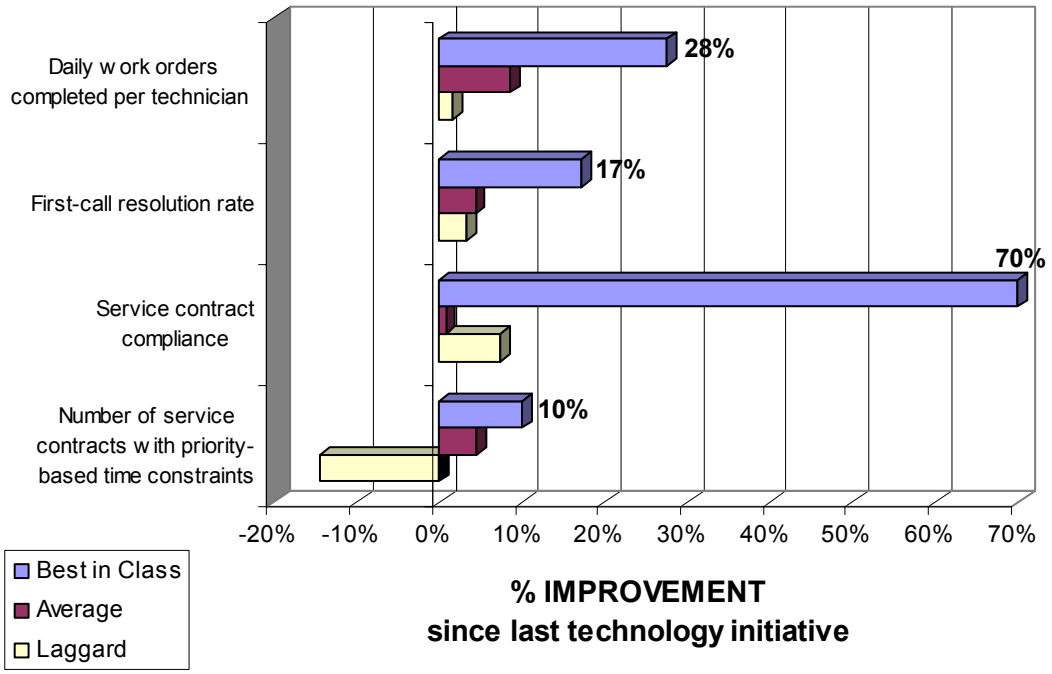
Key Business Value Findings

- 83% of leading companies indicate that field service optimization is core to improving their competitive positions.
- Disjointed business processes represent the most formidable challenge to success in field service optimization, with almost 60% of best-in-class companies seeing this as a key obstacle.
- 74% of best-in-class companies optimize their field service operations to increase overall profitability.

Implications & Analysis

- Companies running truly optimized service schedules have, on average, improved work orders completed per day per technician by 20%, service contract compliance by 25%, and increased "wrench time" by 18%.
- Companies that re-optimize their service schedules on a real-time or hourly basis have achieved such performance milestones as a 30% increase in work orders completed per day per technician and a 26% increase in wrench time.
- Companies that utilize work order optimization and mobile field service solutions have seen such performance gains as a 28% increase in work orders completed per day per technician, an 11% jump in first-call resolution rate, and a 16% reduction in work orders completed late.

Figure i: Field Service Optimization Maturity Maps to Performance



Source: Aberdeen*Group*, May 2005

Recommendations for Action

Regardless of industry, competitive maturity, or depth of technology experience, every service organization can take some of the following actions to drive maximum top- and bottom-line impact from field service optimization:

- Invest more energy in forecasting and planning technician capacity and work order demand. With a more preemptive approach to service chain planning, companies can reach new heights in performance with such tactics as pre-positioning technicians to meet anticipated customer demand.
- Establish rudimentary guidelines for type and frequency of communications among dispatchers and field technicians.
- Adopt a two-pronged approach to measuring the efficacy of field service optimization efforts: operational and customer-facing.

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Chapter One:
Issue at Hand

Key Takeaways

- The ultimate goal of field service optimization is to achieve the most cost-effective, productive, and profitable service chain at all times, in the face of a myriad of planned and unplanned constraints and interruptions.
- The number-one market pressure driving companies to invest time, money and resources in optimizing their field service operations is a collective customer base that is expecting faster work order resolution. Fully 55% of best-in-class firms across all industries surveyed reported this to be the case.
- Leading firms are turning to service "optimization" solutions, which allow for real-time alignment of technician aptitudes, availability, and proximity, and service parts availability, with changing work order requirements.

A service management system (SMS) does not, by itself, enable a truly best-in-class service organization. Leading firms are turning to service "optimization" solutions, which allow for real-time alignment of technician aptitudes, availability, and proximity, and service parts availability, with changing work order requirements.

But the perceived complexity of business and technology requirements for optimized field service scheduling and delivery has kept many companies from pursuing service optimization. Aberdeen research shows that best-in-class companies are beginning to crack the code on technology-enabled service optimization. These companies realize that responding to the market pressures of elevated customer service requirements, product commoditization, and increased competition requires a service optimization strategy that embraces technology.

Gunning for reduced service costs, higher productivity, and increased profitability, these leading companies are taking steps to tightly align service demand — comprised of the backlog and pipeline of work orders — with service supply — comprised of technician capacity, proximity, aptitude and inventory. The ultimate goal: Achieve the most cost-effective, productive, and profitable service chain at all times, in the face of a myriad of planned and unplanned constraints and interruptions.

PACE Key (For more detailed description, see Appendix A)

Aberdeen applies a methodology to benchmark research that evaluates the business pressures, actions, capabilities, and enablers (PACE) that indicate corporate behavior in specific business processes. These terms are defined as follows:

- ***Pressures*** — external forces that impact an organization's market position, competitiveness or business operations
- ***Actions*** — the strategic approaches an organization takes in response to industry pressures
- ***Capabilities*** — the business process competencies required to execute corporate strategy
- ***Enablers*** — the key functionality of technology solutions required to support the organization's enabling business practices

To achieve this, best-in-class companies with high-volume service workloads and distributed field forces have found that field service optimization must occur in real-time, and therefore, must be aided by technology solutions that can calculate optimal workload allocation amid unplanned service chain interruptions, based on pre-defined and prioritized constraints.

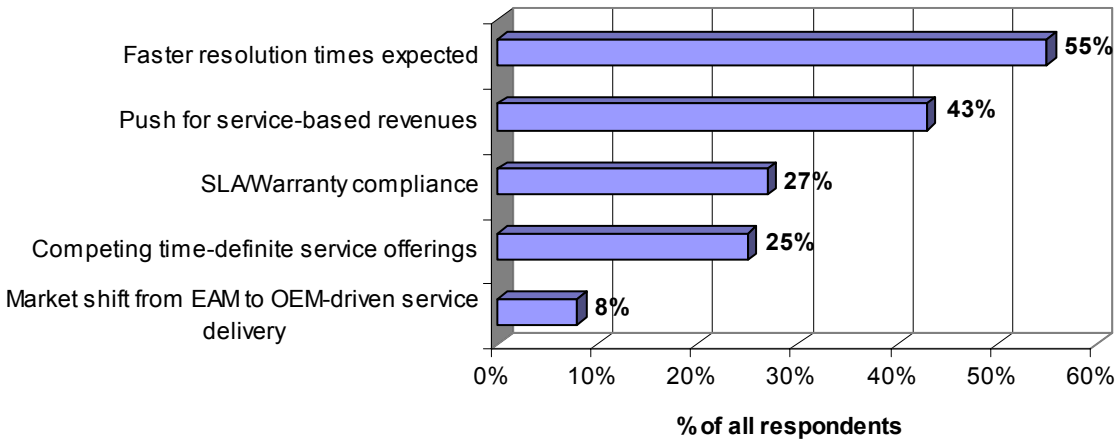
Market Pressures for Field Service Optimization

What market pressures are driving companies to consider field service optimization solutions as a way to improve post-sales service operations? For best-in-class firms, three driving factors stand out (Figure 1):

1. *Customers are expecting faster resolution times*

   Particularly in industries such as utilities, telecommunications and healthcare, in which customers require 100% asset availability, the number one driver for field service optimization technology investments is speedy issue resolution. Fully 55% of best-in-class firms across all industries surveyed report this to be the case.

Figure 1: Market Pressures Driving Field Service Optimization



Source: Aberdeen*Group*, May 2005

2. *Shrinking product-based profit margins are spurring the need for service-based revenue growth*

   Competition and other price pressures have eroded product-based profit margins in many industries, so leading firms are leaning on their service organizations for revenue growth. Firms of all maturity levels that participated in this study agree that the increasing prominence of revenue targets for the service organization is driving field service optimization adoption.

3. *SLA/Warranty Compliance*

   Another factor driving companies to optimize their service delivery operations is contract compliance. Meeting or exceeding service response times, asset availability, and other service contract terms is mission critical for every service organization.

   Companies that leave service order allocation and scheduling to chance or manual processes risk incurring costly monetary penalties and losing customers.

   For instance, the service contracts that govern customer relationships for a security system provider Aberdeen interviewed require assets to be available and operating 99.5% of the time. For every percentage point below 98%, the provider loses 5% of service revenues.

   To maintain this level of performance, this company must ensure that the technician with the appropriate skills and spares inventory is available at the right times for preventative maintenance and break/fix appointments.

Competitive Framework Key

The Aberdeen Competitive Framework defines enterprises as falling into one of these three levels of practices and performance:

Best in class (20%) — practices are the best in use today and are significantly superior to the industry norm

Industry average (50%) — practices represent the average or norm

Laggards (30%) —practices are significantly behind the industry average or norm

Chapter Two:
Key Business Value Findings

Key Takeaways

- 83% of leading companies indicate that field service optimization is core to improving their competitive positions.
- Disjointed business processes represent the most formidable challenge to success in field service optimization, with almost 60% of best-in-class companies citing this as a key obstacle.
- 74% of best-in-class companies optimize their field service operations as a means to increase overall profitability.

Companies investing time and resources into optimizing their field service operations have set clear objectives for these initiatives (Figure 2).

Best-in-class companies Aberdeen surveyed identified the following strategic objectives for their field service optimization programs:

1. *Improve competitive position*

   In crowded markets with razor-thin product profit margins, companies are increasingly building their competitive strategies around their service offerings. Not surprisingly, 83% of leading companies indicate that field service optimization is core to improving competitive position.

   One UK-based utilities company set out to edge competitors by providing superior customer service to its 12 million gas customers and 6 million electricity customers. To consistently meet narrow service appointment windows it promised customers, this company decided to implement an optimization technology solution that would assign the most appropriate engineer from its 8,000-strong field force to each order.

   Worker productivity and utilization are on the rise within the initial user group of 220 engineers and the company anticipates a healthy competitive boost once all its engineers are on the system by the end of 2005.

2. *Increase service contract compliance*

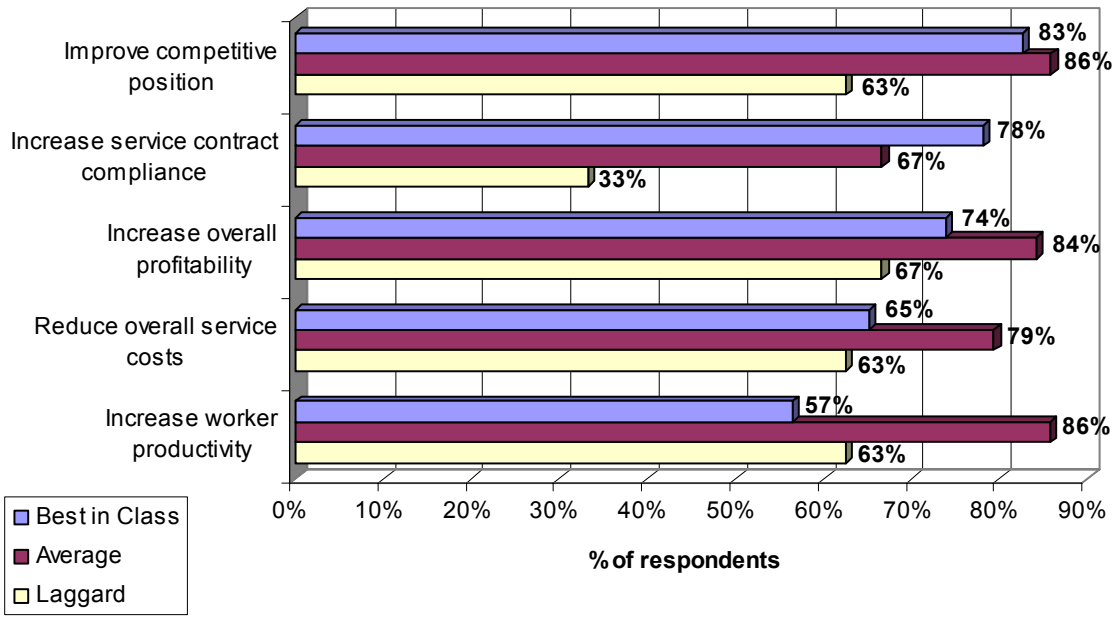
   Meeting or exceeding the terms of warranties and service level agreements (SLAs) is a foundational metric of any service organization. Fully 78% of best-in-class companies reported that increasing compliance with these contract terms was a critical objective for their field service optimization initiatives.

   In the case of a medical device distributor, 30,000 U.S.-based customers stake their businesses and revenue streams on the availability of their assets and the reliability of service. The distributor chose to automate and optimize the scheduling of its 180 service technicians in order to improve response times and boost contract compliance. For its efforts, the company has been able to speed response times and increase asset availability by establishing a transparent and optimized service schedule.

3. Increase overall profitability

Customer-centric service organizations ultimately win market share, but cannot subsist for long without running profitable operations. Seventy-four percent of best-in-class companies optimize their field service operations as a means to increase overall profitability. Indeed, driving down service costs with increased worker productivity while retaining more customers and supporting premium service-based revenue streams constitutes a recipe for healthy profits.

Figure 2: Strategic Objectives for Field Service Optimization



Source: Aberdeen*Group*, May 2005

Obstacles to Optimization Success

Many companies struggle with optimizing their field service operations because they lack adequate visibility into the supply side of the service chain. From both a business process and technology perspective, they are ill-equipped to assign the best technician to any given work order.

1. Disjointed business processes

Almost 60% of best-in-class companies reported that disjointed business processes represent the most formidable challenge to success in field service optimization (Figure 3). Service forecasting and planning is the process companies most often overlook.

About 20% of companies Aberdeen surveyed reported that they do not forecast service workloads at all, and almost 40% indicated they rely on spreadsheets for this purpose. On the supply side, almost one-quarter of companies said they do not plan technician capacity ahead of time, while 40% reported using spreadsheets for this task. While a spread-

sheet-based forecasting approach is better than none at all, it underserves the need for dynamic data manipulation and visibility in the service chain.

An accurate view into near- and long-term service workload and technician capacity is a critical supporting element for a cost-effective day-to-day field service schedule. Even the most sophisticated approach to prioritizing field service schedule constraints will fall short of optimal performance levels without preemptive forecasting and planning of both service supply and demand.

Patterns of planned service orders serve as critical input to calculating the optimal personnel and resources to assign to each order. Likewise, a forward-looking view into technician capacity and availability allows companies to proactively adjust to address demand fluctuations and to more accurately promise response times to customers.

With up-to-date service demand forecasts and resource allocation plans in place, companies can effectively make day-to-day field service scheduling decisions, while under-standing their impact on the bigger service chain picture.

Changes in business direction or activity — such as new market or geography entries or targeted sales and marketing campaigns — have a direct impact on service workloads. Companies must anticipate these events to effectively plan service personnel and resources to meet customer demand.

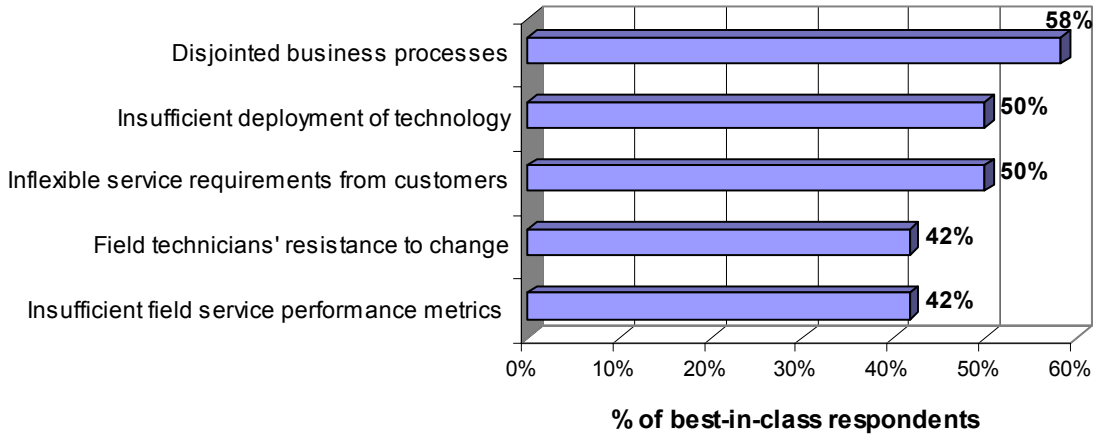
Likewise, on the supply side, service managers must stay on top of future technician availability, accounting for vacation time, training time, contingent resource plans, and the like in order to promise certain service levels to customers.

With up-to-date service demand forecasts and resource allocation plans in place, companies can effectively make day-to-day field service scheduling decisions, while understanding their impact on the bigger service chain picture.

2. Inadequate technology solutions

Half of best-in-class companies in Aberdeen's survey indicated that insufficient deployment or integration of technology infrastructure represented a critical stumbling block en route to field service optimization. Common business practice at many companies is to convene the field force at a central location every morning and assign each technician that day's work orders, according to a static assessment of daily workload and technician availability.

Figure 3: Leading Companies' Service Optimization Challenges



Source: Aberdeen*Group*, May 2005

Particularly in geographically dispersed service operations in which each technician handles multiple work orders per day, manual processes grossly under-serve the need for timely analysis of supply and demand data. In many cases, outdated, underdeployed, or poorly integrated back-office or mobile field service solutions prevent companies from quickly accessing such data points as technician availability, location, skill sets, and spare parts stock. These variables directly impact service response time and costs, as well as customer satisfaction, so leaving them to chance is a risky proposition.

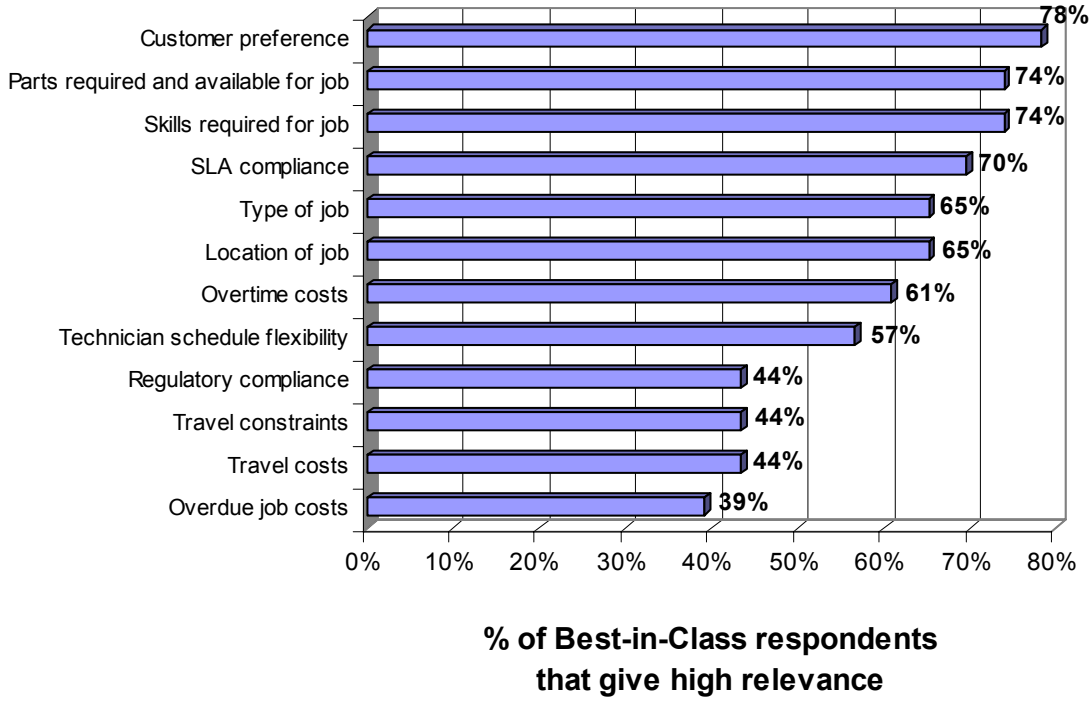
These different categories of solution providers often partner to form loosely federated solution sets, but it is still challenging for OEMs to incorporate the full breadth of solution functionality into their business requirements planning and communicate these requirements to a single accountable entity on the solution provider side.

3. Inflexible service requirements from customers

Companies also struggle to prioritize the various constraints that influence every service scheduling decision, in order to achieve predefined business goals such as lowest total service costs and near-100% customer satisfaction.

A confluence of factors directly impacts service costs and customer experience, but companies Aberdeen surveyed indicated that customer preference for service time is the most important for determining optimal work order allocation (Figure 4).

Figure 4: Relative Importance of Service Schedule Constraints



Source: Aberdeen*Group*, May 2005

Service and dispatch managers often assign work orders to individual technicians based on estimates of shortest travel times, lowest overtime risk, and the like. However, service and dispatch managers struggle to quantify the costs and benefits of these assignments. Field service scheduling and resource allocation decisions are typically made by intuition and habit rather than with rigorous compliance to corporate business goals.

Guided by clearly defined business goals and customer-specific service commitment levels, service managers should be able to prioritize every potential decision constraint and identify where they can afford to make concessions and compromises.

4. Change management friction

As with any process improvement initiative, one of the primary goals of service optimization is to improve worker productivity, which often means leveraging technology-enabled automation to accomplish more work with fewer resources. While it is a misconception that technology unilaterally precludes the need for skilled personnel, two key goals of most service optimization initiatives is to increase the technician-to-dispatcher ratio — that is, use fewer dispatchers to manage greater numbers of technicians — and to increase the number of work orders completed per day per technician.

As a result, service optimization and other improvement initiatives are often met with heated resistance, especially among unionized labor forces. Forty-two percent of best-in-class companies noted change management friction as a barrier to success. But the real-

ity is that as companies increasingly run their service divisions as profit centers versus cost centers, field and back-office personnel will have increasingly critical roles in delivering value-added services and sustaining new service-based revenue models.

Consequences of Sub-Optimization

Companies with sub-optimized field service scheduling approaches typically feel the consequences in a few key areas of their service operations.

1. Mismanaged technician time

One sure-fire way to quickly assess whether your company's service schedule is running optimally is to look at a typical day in the life of your field technicians. Sub-optimized schedules will result in large chunks of idle, misspent, or over-committed time for the technician, which of course, equates to low productivity levels, elevated service costs, and a high risk of missing service delivery targets.

For one Canadian utility company, deregulation quickly fueled service demand to about 500,000 calls annually from more than 1 million customers. Using an order-entry system independent of its resource scheduling system, the company consistently over-committed its technicians, resulting in missed appointments and unhappy customers, not to mention a demoralized field force.

Companies that participated in a related study reported that, on average, more than one-quarter of all their service work orders are completed late.

2. Inefficient dispatcher-to-technician ratio

Another manifestation of a sub-optimized service schedule is when any individual dispatcher can only handle about 10 or fewer field technicians. This is due to the fact that dispatchers in this situation must spend significant time juggling incoming service requests and disseminating them, often by phone, to what is presumed to be the appropriate field technician. Moreover, repeated clarification and status calls back and forth with technicians are all too common.

The average dispatcher-to-technician ratio among firms participating in a related Aberdeen study was about 1-to-11. For one U.S.-based communications company, each dispatcher could manage only about seven field technicians. But with the aid of a scheduling solution that automatically assigned the best technician to each service order, the company was able to increase each dispatcher's load to at least 30 technicians, with phone communications limited to mostly exception management.

3. Lost revenue opportunities

Companies that are optimizing their service operations are able to deliver higher levels of service at premium prices, due in part to the ability to shrink appointment windows and improve on-time delivery. Seven out of 10 companies recently interviewed by Aberdeen indicated that a key strategic objective for field service optimization is to increase service-related revenues with more time-definite service contracts.

Companies still managing their service schedules manually or through other sub-optimized means can only promise full- or half-day delivery windows and are missing out on significant incremental revenue potential.

4. Customer dissatisfaction and churn

As best-in-class companies continue to separate themselves from the also-rans by delivering promised levels of service, end-user enterprises will begin to demand similar levels of service from their asset suppliers and service providers. If field service organizations cannot meet these requirements, fewer customers will renew service contracts as they seek service elsewhere.

Chapter Three:
Implications & Analysis

Key Takeaways

- Companies that are running truly optimized service schedules have, on average, improved work orders completed per day per technician by 20%, service contract compliance 25%, and increased wrench time 18%.
- Companies that re-optimize their service schedules on a real-time or hourly basis have achieved such performance milestones as a 30% jump in work orders completed per day per technician and a 26% increase in wrench time.
- Companies that utilize work order optimization and mobile field service solutions have seen such performance gains as a 28% increase in work orders completed per day per technician, an 11% increase in first-call resolution rate, and a 16% reduction in work orders completed late.

As shown in Table 1, each survey respondent fell into one of three categories – Laggard, Industry Average, or Best in Class — based on a weighted summary of their characteristics in five key categories: process; organization; knowledge; technology; and performance measurement.

Table 1: Field Service Optimization Competitive Framework

	Laggards	Industry Average	Best in Class
Process	Work schedules are fixed daily and manually adjudicated by dispatchers or schedulers.	Work schedules are optimized one service order or one constraint at a time.	Work schedules are optimized by considering all service orders against all constraints and total technician capacity simultaneously
Organization	Service is viewed as purely cost, and there is no discrete management or P&L for service operations.	Director-level executive oversees cost-cutting and productivity targets for service operations; corporate culture is based on customer satisfaction, but there are no customer satisfaction targets or incentives for service workers	Vice president or higher-level executive oversees profit-and-loss (P&L) for service operations; service workers receive compensation incentives for achieving customer satisfaction targets

	Laggards	Industry Average	Best in Class
Knowledge	No stakeholder (executives, call center, dispatch center, parts depot, field technician) has the most current and accurate view of inventory, contract, resolution, and other service-related data	Visibility into inventory, contract, resolution, and other service-related data declines in currency and accuracy while moving from call center to dispatch center to field technician.	All stakeholders have on-demand or real-time access to the same inventory, contract, resolution, and other service-related data
Technology	Primary technology solution is spreadsheet-based	Primary technology solution is a back-office service management system (SMS).	Primary technology solutions are schedule and route optimizers and mobile field service solutions
Performance Measurement	Level of service optimization not systematically tracked and measured.	Level of service optimization measured with operational metrics (e.g., ratio of dispatchers to technicians, first-call resolution rate, work orders completed per technician per day)	Level of service optimization measured with operational metrics (e.g., ratio of dispatchers to technicians, first-call resolution rate, work orders completed per technician per day) *and* customer-facing metrics (e.g., service revenue growth, customer retention, SLA compliance)

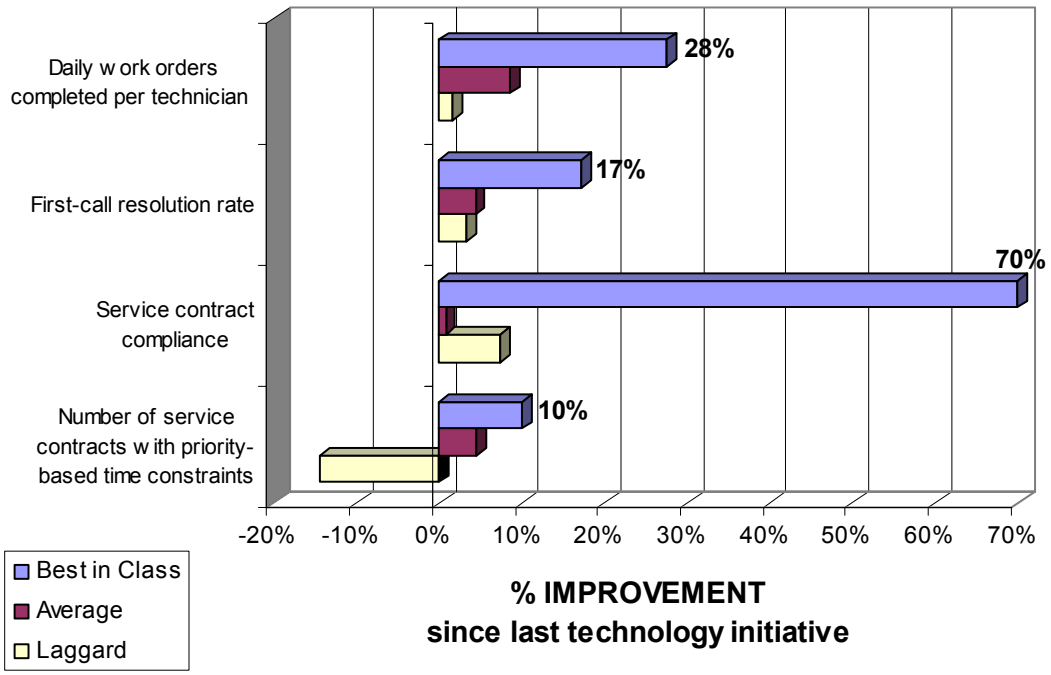
Source: Aberdeen*Group*, December 2004

Aberdeen benchmarked performance indicators that reflect the top- and bottom-line impacts of field service optimization. In any discussion of business performance, one must touch on what is being measured (i.e., key performance indicators, or KPIs) and the frequency of measurement. Often, companies might track the appropriate KPIs but at inappropriate or ineffective intervals. The top field service KPIs identified by best-in-class firms that participated in this study are as follows:

1. First-call resolution rate
2. Average daily work orders completed per technician
3. Service contract compliance percentage
4. Average hours per technician per day spent working on customer sites ("wrench time")
5. Percentage of work orders completed late
6. Average travel time per work order ("windshield time")
7. Overtime hours per month

Taken in aggregate, survey results show that the firms exhibiting best-in-class field service characteristics and a successful track record with optimization solutions also enjoy best-in-class service and financial performance (Figure 5).

Figure 5: Field Service Optimization Maturity Maps to Performance



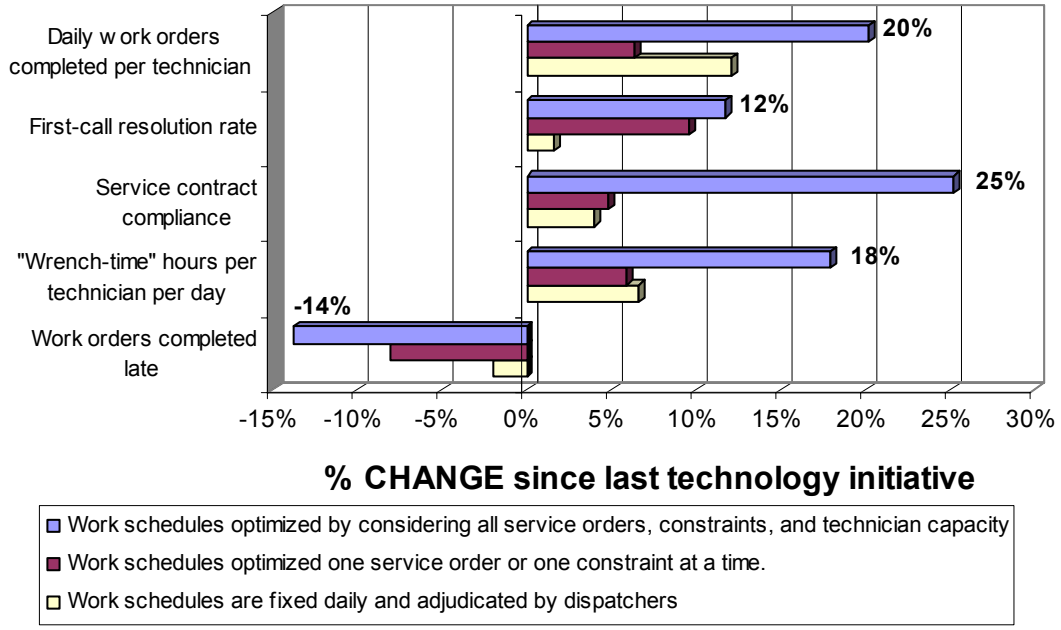
Source: Aberdeen*Group*, May 2005

Looking exclusively at the process and technology categories, it becomes clear that a company's maturity in each area direct correlates with overall company performance.

Process

For instance, companies that optimize their service work schedules by considering all service orders against all constraints and total technician capacity simultaneously have dramatically outperformed companies that optimize work schedules one service order or constraint at a time, or fix schedules daily and manually adjudicate them. Companies running truly optimized service schedules have, on average, improved work orders completed per day per technician by 20%, service contract compliance 25%, and increased wrench time 18% (Figure 6).

Figure 6: Schedule Optimization Processes Spawn Service Performance Gains

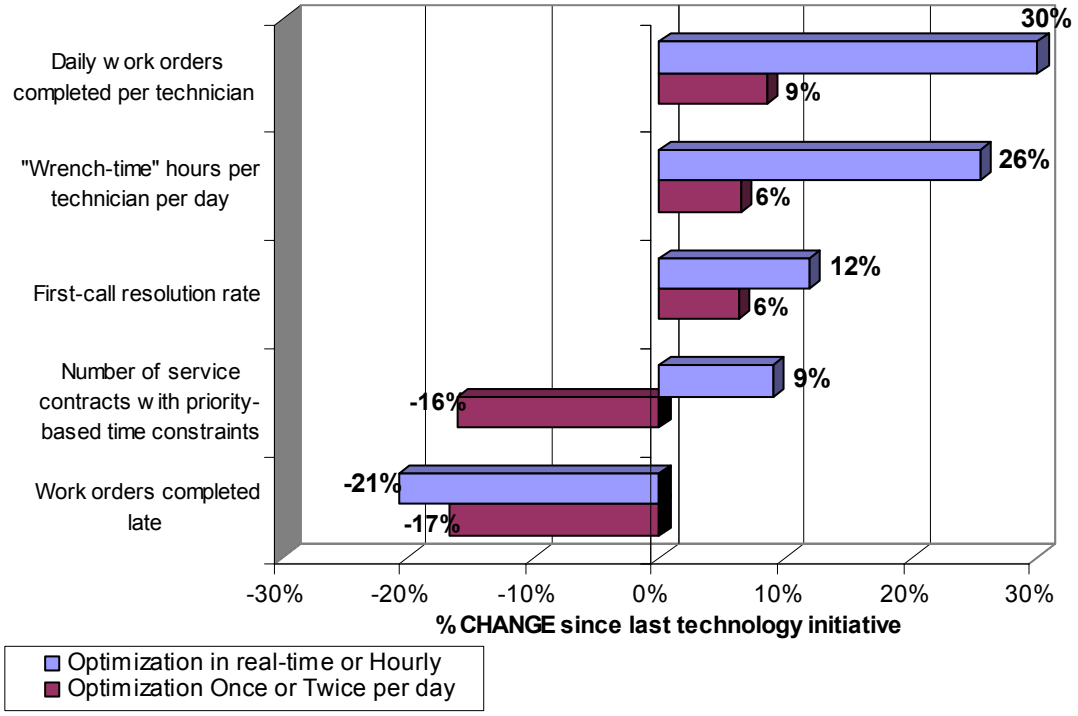


Source: Aberdeen*Group*, May 2005

Because many service schedule constraints — such as technician location, weather and road conditions – are fluid, work orders are best assigned to technicians at the last possible moment, often termed a "drip feed" approach. As such, technicians are usually aware of their current jobs, plus the next one or two, instead of receiving a full day's worth of work orders.

Companies that re-optimize their service schedules on a real-time or hourly basis can account for interruptions or exceptions in service delivery and quickly execute contingency plans without sacrificing productivity, customer satisfaction or profitability. This study showed that these companies achieved such performance milestones as a 30% increase in work orders completed per day per technician and a 26% increase in wrench time (Figure 7). These achievements represent markedly higher performance levels than companies that optimized their schedules once or even twice per day.

Figure 7: Frequency of Service Schedule Optimization Tied to Performance Gains



Source: Aberdeen*Group*, May 2005

Technology

Service optimization, in its truest form, is impossible without the aid of technology. Based upon prioritized weightings assigned to every possible schedule constraint, optimization solutions automatically match the most cost-effective and profitable resource with each service order. To accommodate evolving business priorities, most optimization solutions allow operators to reorder these weightings and execute ad hoc "what-if" scenario analyses to test the financial and performance impacts of scheduling alternatives.

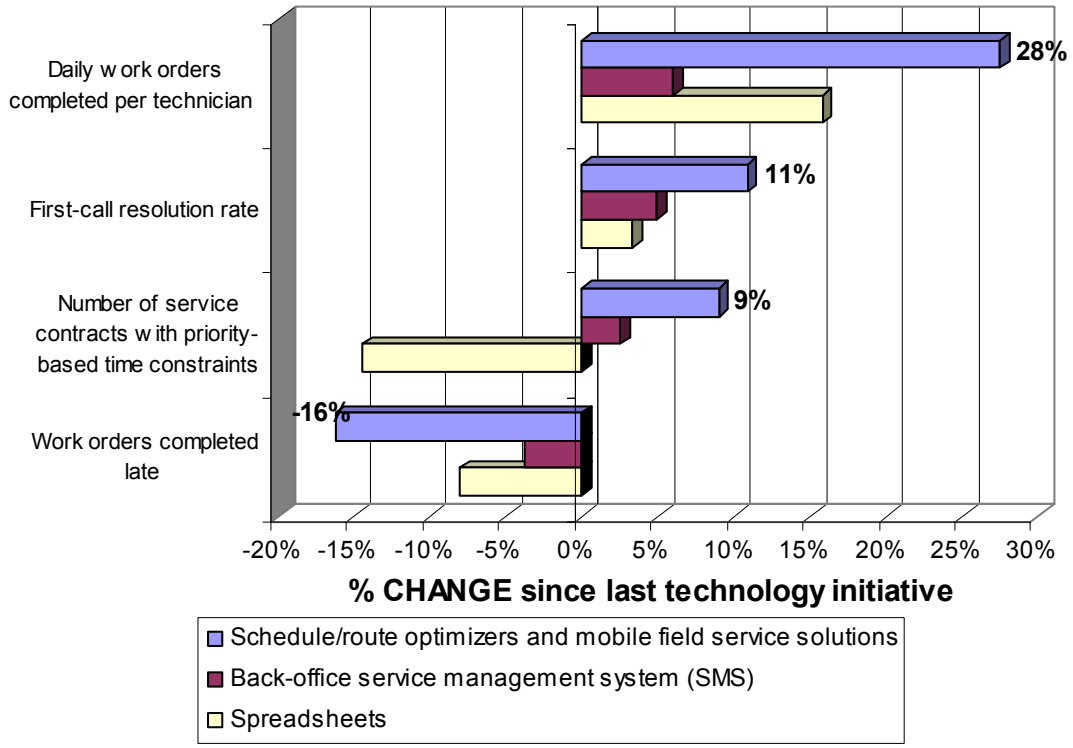
Mobile devices and applications are essential components of any service optimization solution to enable real-time communication with field technicians. Smartphones, laptops, personal digital assistants, and other handheld wireless devices establish the critical dynamic link between service chain planning and execution.

Companies that utilize work order optimization and mobile field service solutions have seen such performance gains as a 28% increase in work orders completed per day per technician, an 11% jump in first-call resolution rates, and a 16% reduction in work orders completed late (Figure 8).

Field service optimization solutions work best in close integration with related business systems such as customer relationship management (CRM), order processing, and ac-

counting systems. Customer-specific requirements, customer history, and order-specific details are critical data bridges for an optimized end-to-end service operation.

Figure 8: Service Optimization Technologies Power Service Performance



Source: Aberdeen*Group*, May 2005

Pressures, Actions, Capabilities, Enablers (PACE)

Aberdeen research indicates that companies that identify the most impactful pressures and take the most transformational and effective actions are most likely to achieve superior performance. The level of competitive performance a company achieves is strongly determined by the PACE choices it makes and how well it executes.

All service organizations should examine their prioritized PACE selections and compare them to those of best in class companies to determine where they might make adjustments (Table 2).

Table 2: Best-in-Class Field Service Optimization PACE (Pressures, Actions, Capabilities, Enablers)

Priorities	Prioritized Pressures	Prioritized Actions	Prioritized Capabilities	Prioritized Enablers
1	Customers are expecting faster resolution times	Improve competitive position	Real-time alignment of technician supply and work order demand	Wireless communications software, hardware, and infrastructure
2	Shrinking profit margins, prompting focus on field service for revenue growth	Increase service contract compliance	Customer service-centric organization	Role-specific access to asset and customer data (e.g., health, history)
3	Customer SLA/Warranty compliance	Increase overall profitability	Field service processes integrated with related business functions such as finance/accounting, CRM, logistics, and inventory management	Robust analytics and performance reporting functionality
4	Pressure from competing service firms with time-definite service offerings	Reduce overall service costs	Visibility into service parts inventory levels and locations	Constraint-based schedule and routing optimization engine
5	Market shift from internal enterprise asset management to OEM-driven service delivery	Increase worker productivity	Systematic measurement of company performance against stated benchmarks and targets	Back-office service management system (SMS) integrated with order management system

Source: Aberdeen*Group*, May 2005

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Chapter Four: Recommendations for Action

Key Takeaways

- Invest more energy in forecasting and planning technician capacity and work order demand. With a more preemptive approach to service chain planning, companies can reach new heights in performance with tactics such as pre-positioning technicians to meet anticipated customer demand.
- Establish rudimentary guidelines for type and frequency of communications among dispatchers and field technicians.
- Adopt a two-pronged approach to measuring the efficacy of your field service optimization efforts: operational and customer-facing.

Regardless of industry, competitive maturity, or depth of technology experience, every field service organization can take specific actions to drive maximum top- and bottom-line impact from field service optimization.

What Can Field Service Optimization Do For Your Company?

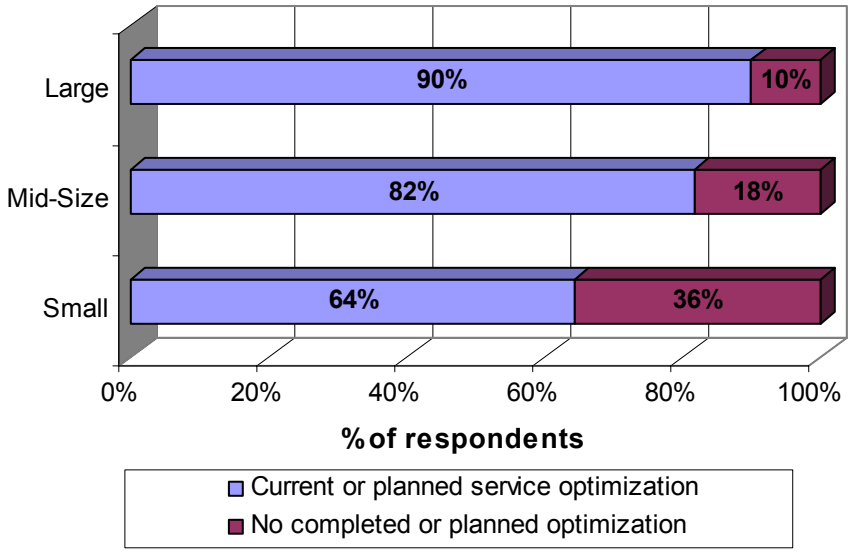
If your company's post-sales service organization exhibits any of the following characteristics, chances are you stand to benefit from optimizing your service operations:

- Field technicians handle multiple work orders per day
- Each dispatcher oversees no more than 10 technician schedules
- Field technicians are distributed over a wide geographic region
- At least 10% of work orders are completed late
- Limited visibility into technicians' wrench time versus windshield time
- Technicians' overtime compensation is on the rise
- Paper or spreadsheets are primary data collection and communication tools

One utility company serving 3.3 million electricity customers and 1.8 million natural gas customers faced paper-intensive field service operations, broken (i.e., multiple-visit) field service and construction calls, and inefficient work order management. The company chose to automate field resource scheduling with optimization and mobile technology solutions and was able to achieve an 87% increase in overall worker productivity, which amounted to annual cost savings of $27 million.

This company happens to be a publicly traded Fortune 500 firm, but companies of all sizes are actively optimizing their field service operations. While large companies are leading the way -- with 90% of those participating in this study currently or planning to optimize field service – the majority of mid-size and small companies is or will be optimizing field service in the near future (Figure 9).

Figure 9: Field Service Optimization Activity by Company Size



Source: Aberdeen*Group*, May 2005

Tips for Laggards

Technology-enabled optimization delivers the most robust stable of benefits, but if your company has not invested in a service optimization solution and does not intend to do so in the near future, there are still steps to take to prepare for better optimization.

1. *Determine the degree of variance between forecasted and actual service costs*. This might require some manual data collection, but it will allow you to size up the sub-optimization problem at your company.
2. *Establish some rudimentary guidelines for type and frequency of communications among dispatchers and field technicians*. Set standards for customer and work order information that must be communicated on the first call from the dispatcher to the field technician. Much of the wasted and misused time in the service chain results from incomplete and ad hoc phone interactions.
3. *Find out from your existing customers whether they are satisfied with the current level of service your company is providing*, and how they are measuring company performance. This information will be critical for establishing a set of customer-centric KPIs by which you should be measuring your service business.

Tips for Average Firms

1. *Move toward real-time schedule assessment*. Fully 74% of companies are either aligning service supply and demand on a daily batch basis or not at all. Due to the dynamic nature of the service chain, it is imperative for companies to more frequently assess the cost-effectiveness of their service schedules.
2. *Document all constraints that impact field service work order allocation*, as part of an initial requirements definition exercise. This will lay the foundation for

building an optimization program that is aligned with your company's unique business goals. As a starting point, consider constraints in these three categories:

- Technician-based constraints (e.g., skill sets, physical location, local geographic knowledge, preference for location and type of work)
- Environment-based constraints (e.g., road and weather conditions)
- Business-based constraints (e.g., marketing campaigns, SLA commitments, overtime restrictions, customer preferences, inventory, equipment, and vehicle availability)

One European telecommunications company with 20 million customers found its requirements extremely complex, with multiple categories of asset type, technician aptitude, and geographic locale. The company opted for a real-time service optimization solution that allowed it to manage task interdependencies so the same technician could complete related jobs in the right order, with minimal waste and excess travel.

3. *Take stock of your existing and planned technology investments.* More than one-third of companies Aberdeen interviewed rely on spreadsheets to schedule service work orders. But without the aid of software that can automatically calculate optimal workload allocation based on predefined and prioritized constraints, real-time service optimization is impossible.

   Companies that have already deployed ERP, order management, CRM, or service management systems are well positioned to add service optimization functionality. When evaluating optimization solution providers, companies — especially in the mid-market — should be sure that full integration with existing systems is possible without unreasonable extensions to the implementation timeline or price hikes.

   As noted earlier, mobility is an essential component of any service optimization solution to enable real-time communication with field technicians. Handheld wireless devices establish the critical dynamic link between service chain planning and execution. Companies should carefully weigh the costs associated with equipping their field forces with mobile devices and select a solution that delivers adequate functionality to the field and allows for rapid but cost-effective deployment and ongoing maintenance.

Tips for Best-in-Class Firms

1. *Invest more energy in forecasting and planning technician capacity and work-order demand.* About 58% of companies that participated in this study do not forecast service demand, and 63% do not forecast service supply, or they rely on spreadsheets for this purpose. With a more preemptive approach to service chain planning, companies can reach new performance heights with such tactics as pre-positioning technicians to meet anticipated customer demand.
2. *Adopt an enterprise-wide perspective*. About 11% of companies Aberdeen surveyed currently optimize field service scheduling and delivery on an enterprise-wide basis. The rest optimize on a divisional or regional basis, or not at all.

While it may be unreasonable to expect average or laggard firms with limited field service technology experience to immediately embark on an enterprise-wide deployment of service optimization, it should be every company's ultimate goal to optimize on this scope. It might indeed be necessary for your company to begin with local or regional pilot programs to secure executive or IT buy-in.

But with an enterprise-wide view, a service optimization program can appropriately weigh all relevant schedule constraints, more effectively allocate human and inventory assets, and provide more accurate control and reporting of overall service chain performance.

Your objective should be to provide service consistency for customers who interact with multiple divisions or regions of your company. For instance, if one division offers 2-hour appointment windows, then all divisions should strive for the same level of service.

3. *Adopt a two-pronged approach to measuring the efficacy of your field service optimization efforts*. First, track operational metrics that include the following:

    - First-call resolution rate
    - Average daily work orders completed per technician
    - Service contract compliance percentage
    - Average hours per technician per day spent working on customer sites ("wrench time")
    - Percentage of work orders completed late
    - Average travel time per work order ("windshield time")
    - Overtime hours per month

    Just as importantly, if not more so, companies should also track customer-facing metrics such as customer retention rates, contract renewals, contract compliance, percentage of service contracts with priority-based time constraints, and service revenue growth.

    It is critical for companies to adopt a customer-first mentality and weigh every decision regarding field service technology, process, strategy, and performance against the backdrop of customer impact.

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Appendix A:
Research Methodology

In March 2005, Aberdeen*Group* examined the field service optimization procedures, experiences, and intentions of 160 enterprises in high-tech, discrete and process manufacturing, utilities, as well as other industries.

Responding customer service, sales & marketing, manufacturing, supply chain, and logistics executives completed an online survey that included questions designed to determine the following:

- The degree to which field service optimization solutions impact corporate strategies, operations, and financial results
- The structure and effectiveness of existing field service optimization procedures
- Current and planned use of field service optimization solutions to enable post-sales service improvements
- The benefits, if any, they have derived from field service optimization solution deployments.

Aberdeen supplemented this survey effort with interviews with select survey respondents, gathering additional information on service optimization strategies, experiences and results.

The study aimed to identify emerging best practices for field service optimization and provide a framework by which readers could assess their own post-sales service capabilities and opportunities.

Responding enterprises included the following:

- ***Job function:*** The research sample included respondents with the following job functions: customer service (46%); logistics/supply chain (19%); marketing (10%); finance (9%); sales (8%); procurement (5%); and manufacturing (3%).
- ***Industry:*** The research sample included respondents from the following industries: High technology (31%); utilities and related industries (22%); manufacturing (20%); business services (10%); consumer-driven industries (7%); transportation/distribution (6%); and public sector (4%).
- ***Geography:*** Survey respondents from the United States represented 33% of the survey sample; from Asia-Pacific, 23%; from Europe, 14%; from Canada, 9%; from Latin America, 3%; and from the Middle East and Africa, 1%. Seventeen percent of the sample did not provide geographic data.
- ***Company size:*** About 29% of respondents were from large enterprises (annual revenues above US $1 billion); 31% were from midsize enterprises (between $50 million and $1 billion); and 40% of respondents were from small businesses ($50 million or less).

Solution providers recognized as sponsors of this report were solicited after the fact and had no substantive influence on the direction of *The Field Service Optimization Benchmark Report – Part 2*. Their sponsorship has made it possible for Aberdeen*Group* to make these findings available to readers at no charge.

Table 3: PACE Framework

PACE Key
Aberdeen applies a methodology to benchmark research that evaluates the business pressures, actions, capabilities, and enablers (PACE) that indicate corporate behavior in specific business processes. These terms are defined as follows: • *Pressures* — external forces that impact an organization's market position, competitiveness, or business operations (e.g., economic, political and regulatory, technology, changing customer preferences, competitive) • *Actions* — the strategic approaches an organization takes in response to industry pressures (e.g., align the corporate business model to leverage industry opportunities, such as product/service strategy, target markets, financial strategy, go-to-market, and sales strategy) • *Capabilities* — the business process competencies required to execute corporate strategy (e.g., skilled people, brand, market positioning, viable products/services, ecosystem partners, financing) • *Enablers* — the key functionality of technology solutions required to support the organizations' enabling business practices (e.g., development platform, applications, network connectivity, user interface, training and support, partner interfaces, data cleansing, and management)

Table 4: Relationship between PACE and Competitive Framework

How PACE and Competitive Framework Interact
• Aberdeen research indicates that companies that identify the most impactful pressures and take the most transformational and effective actions are most likely to achieve superior performance. The level of competitive performance a company achieves is strongly determined by the PACE choices they make and how well they execute.

Table 5: Competitive Framework

Competitive Framework Key
The Aberdeen Competitive Framework defines enterprises as falling into one of these three levels of *field service* practices and performance: *Best in class (20%)* — FIELD SERVICE practices are the best employed now and significantly superior to the industry norm, and result in the top industry performance. *Industry average (50%)* — FIELD SERVICE practices represent the average or norm, and result in average industry performance. *Laggards (30%)* — FIELD SERVICE practices are significantly behind the industry average, and result in below average performance

Appendix B:
Related Aberdeen Research & Tools

Related Aberdeen research that forms a companion or reference to this report include:

- *Optimizing Field Service to Achieve Profitability Goals* (March 2005)
- *Managing Service Chain Performance for Competitive Advantage* (February 2005)
- *Next Generation Post-Sales Service Benchmark Report* (December 2004)
- *Mobile Field Service Benchmark Report* (September 2004)
- *Field Service Optimization Benchmark Report* (June 2004)

Information on these and any other Aberdeen publications can be found at www.aberdeen.com, or you can inquire by e-mail at memberservices@aberdeen.com.

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- LEVERAGE information technology for tangible business value.

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