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Shoring Up the Front Lines of Product Service: The Call Center

A Benchmark Report

September 2006



Executive Summary

A large majority of companies (79%) say it is either “very” or “extremely” important for their call centers to be able to triage, diagnose, and even resolve problems in the call center. Moreover, 82% of companies say this will become even more important over the next two years.

But few companies are comfortable with their call centers’ ability to actually help resolve problems: 51% are less than satisfied, and only 13% or either “very” or “extremely” satisfied with call center capabilities in this regard.

Almost all survey respondents (92%) say that “customer satisfaction” is the top “key driver” requiring them to improve their call centers’ capabilities in problem diagnosis and problem resolution.

Key Business Value Findings

- Most survey respondents say their biggest challenge with regard to their call center’s ability to diagnose and resolve problems is that they get “inadequate information about problems gathered at the time calls are logged.”
- Conversely, 75% of companies who have empowered their call centers to be more proactive in problem resolution report an increase in customer satisfaction and retention.
- Unfortunately, solutions and technologies to enhance call center diagnostic and problem resolution capabilities are not yet widely deployed.
- A problem which can be resolved in the call center, thereby saving the dispatch of a service technician yields significant savings. The average cost of dispatching a technician is \$209; in high tech and medical devices, the cost of dispatching a technician is almost \$300.

Implications & Analysis

In response to the recognized need to involve call centers proactively in problem diagnosis and problem resolution, and in response to the dissatisfaction companies have regarding their call centers’ capabilities to do this effectively, most companies plan to upgrade the software and technologies used in their call centers which facilitate problem diagnosis and resolution.

Best-in-class call centers share some key traits:

- They are actively engaged in problem diagnosis and resolution.
- They have deployed appropriate technology and have software solutions at their disposal to aid in problem resolution.
- They have established KPI’s to monitor problem diagnostic and resolution capabilities and performance is systematically measured.

Organizations that do not engage in similar practices run a greater risk of losing to competition.



Recommendations for Action

1. **Provide back-up.** Establish a 2nd, 3rd, or higher level technical support organization to increase your capacity to diagnose and resolve product service issues without dispatching a field technician.
2. **Know your installed base.** Staff and train call center agents with the appropriate skills to support both legacy and new products.
3. **Invest in technology** enablers to facilitate the call centers' diagnostic and problem resolution capabilities.
4. **Single-task.** Dedicate at least a portion of your call center to product service and support.
5. **Maintain service chain view.** Measure call center effectiveness in the context of overall service chain productivity and profitability.

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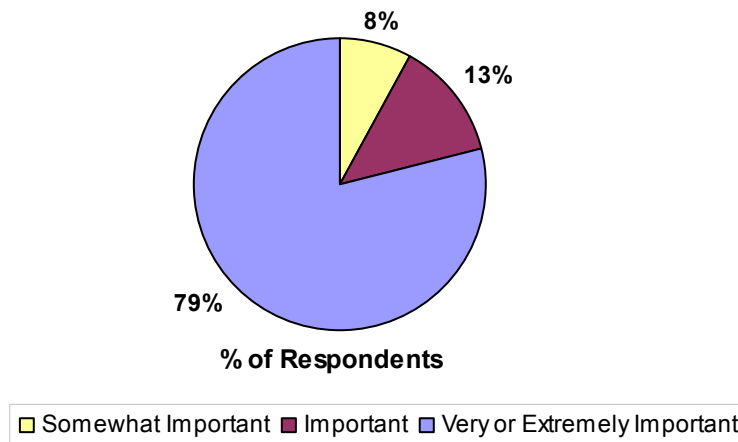
Chapter One: Issue at Hand

Key Takeaways

- 79% of survey respondents say it is either “very” or “extremely” important for their call centers to be able to triage, diagnose, and even resolve problems.
- 51% of companies are less than satisfied with their call centers’ ability to resolve service issues.

As manufacturers vie for competitive edge, they are placing increasing economic importance on post-sales service. In fact, 87% of polled companies consider product service to be very or extremely important to their overall success, and more than two-thirds report that this importance has grown over the past two years.

Figure 1: Importance of the Call Center in Problem Diagnosis & Resolution



Source: [AberdeenGroup](#), September 2006

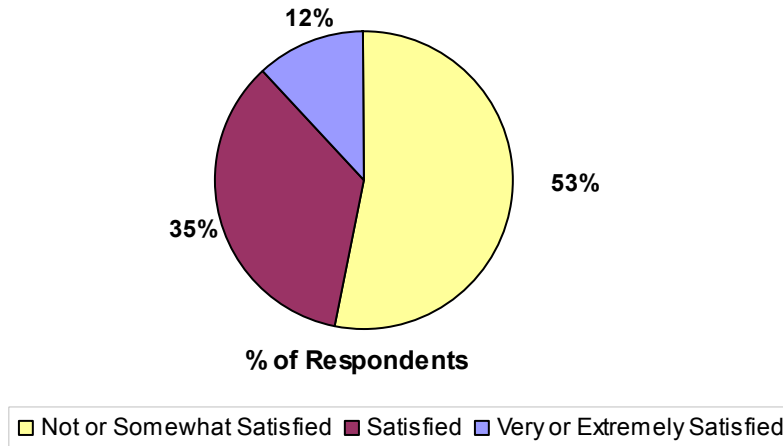
As such, manufacturers and their service network partners in business and consumer environments must balance costs and customer experience across remote service, self-service, call center, and field service channels. In this mix, the call center is usually the first point of contact between product supplier and customer.

To contain service costs and maximize customer satisfaction, manufacturers rely on call centers to do more than just log trouble tickets. In fact, almost 80% of survey respondents reported that it is very or extremely important for their call center agents to play active roles in problem diagnosis and resolution (Figure 1).

Dearth of Data

Despite this stated importance, more than half of survey respondents said they are, at best, marginally satisfied with their call centers' capabilities in problem diagnosis and resolution (Figure 2).

Figure 2: Satisfaction with Call Center Abilities to Diagnose and Resolve Problems



Source: AberdeenGroup, September 2006

We asked survey respondents what their top three challenges are with regard to problem diagnosis and resolution in the call center. A large majority reported that they gather too little information about the problem when the trouble call is first taken. More than half say their call center agents possess insufficient skills. And more than one-third say they have no or limited procedures for escalating trouble calls to a higher level of technical support (Table 1).

Table 1: Knowledge Shortage Tops Call Center Challenges

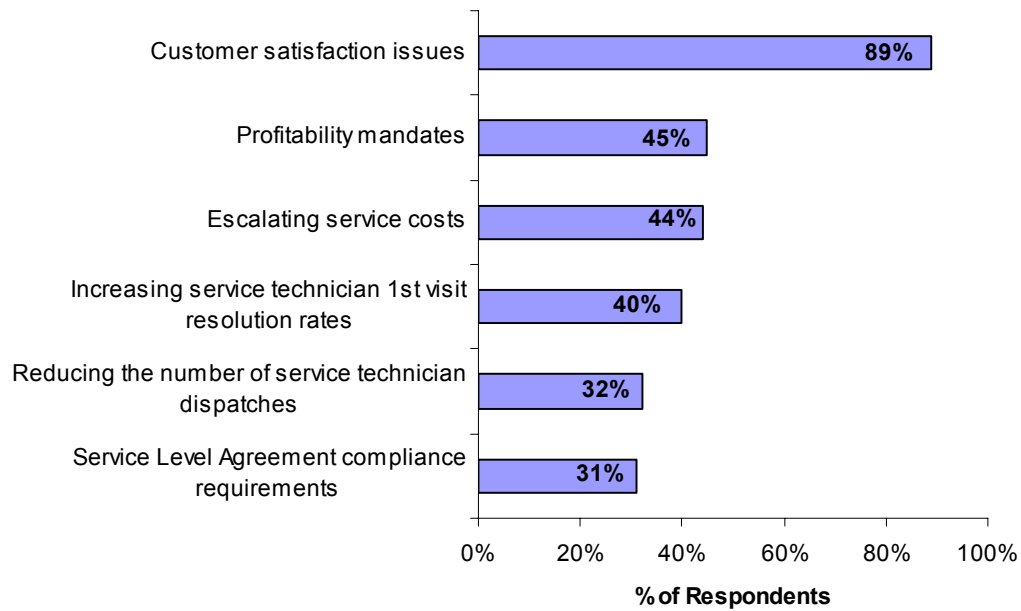
Challenge	% of Respondents
Inadequate information about problems gathered at time calls are logged	72%
Insufficient call center agent skills	59%
No or limited use of available automatic call center support technologies, such as IVR and Knowledge Management	45%
No or limited use of automatic call-routing capabilities such as Computer Telephone Integration (CTI) to route calls to the most appropriate agent	37%
No or limited procedures for escalation to higher level support	37%
Shrinking knowledge of call center agents due to retirement, attrition, and staff turn-over	33%

Source: AberdeenGroup, September 2006

Customer Sat Drives Call Center Focus

What is driving companies to close this gap between importance and satisfaction in the call center? The overwhelming majority of companies responded that “customer satisfaction issues” are the number one driving force for call center improvement. In fact, customer satisfaction issues outrank all other considerations by 2 to 1 (Figure 3).

Figure 3: Customer Satisfaction Top Driver of Call Center Improvements



Source: AberdeenGroup, September 2006

Best-in-class companies are charting specific courses of action in response to these driving factors. First among these is the use of knowledge management tools and pre-scripted troubleshooting and resolution workflows to better arm call center agents (Table 2).

Table 2: Knowledge Management is a Top Strategy to Improve Call Center

Strategies	% Selected (Best-in-Class)
Use knowledge management tools or scripts to help call center agents to identify and resolve problems	83%
Implement and/or upgrade call center productivity tools such as interactive voice response (IVR), computer telephony integration (CTI), automatic call routing, knowledge management software	78%
Institute a multi-tiered support structure in the call center (i.e., 2nd and 3rd level support staffs)	70%

Strategies	% Selected (Best-in-Class)
Provide service technicians with more information about the problem and possible fix before they go to the site	35%

Yaskawa Electric – a \$3 billion-manufacturer of AC inverter drives, servo and motion control, and robotics automation systems – has used a combination of revised business processes, updated organizational structure, and technology investments to both advance customer satisfaction and boost service profitability.

Yaskawa’s service process includes frequent customer surveys to determine their level of satisfaction with call center agents’ product knowledge and service resolution times. Survey results are shared with Yaskawa call center associates and improvements are continuously made to maintain high levels of customer satisfaction. Yaskawa has also implemented a multi-tiered technical support structure so problems can quickly be escalated to a technical support associate with the most appropriate skills. These process and organizational improvements, along with investments in call center automation solutions, have boosted Yaskawa’s service profitability by 14% for the first half of FY 2006, versus the same period for 2005.

Chapter Two: Key Business Value Findings

Key Takeaways

- 72% of call center survey respondents report their top challenge is “inadequate information about problems gathered at the time calls are logged”
- Solutions and technologies to enhance call center diagnostic and problem resolution capabilities are not yet widely deployed.
- Even small service organizations can save up to \$1.5 million per year in technician dispatching costs alone, by optimizing the call center.

Strategies to improve call center effectiveness are only as good as the results they deliver. As such, Aberdeen used five key performance criteria to distinguish best-in-class companies from average and laggard companies. These key performance indicators (KPIs) represent *financial measures* – with total product service costs as a percentage of revenue; *operational measures* – with percentage of calls successfully diagnosed in call center, percentage of calls completely resolved in the call center, and average resolution time; and *customer-facing measures* – with SLA compliance.

Based on aggregate scores that incorporated current and 24-month trend performance in these five metrics, those companies in the top 20% rated “best-in-class” status, those in the middle 50% were “average,” and those in the bottom 30% were “laggard” (Table 3).

Table 3: Best-in-Class Companies Reap Significant Benefits

Key Performance Indicator	Mean Class Performance		
	Laggard	Average	Best-in-class
% of calls <i>successfully diagnosed</i> in call center	40%	61%	77%
% of calls <i>completely resolved</i> in the call center and do not require a technician dispatch	26%	52%	63%
Total product service cost as a % of revenue	36%	22%	14%
Average time from problem reported to resolution (in hours)	26.0	12.2	9.5
SLA Compliance	76%	85%	89%

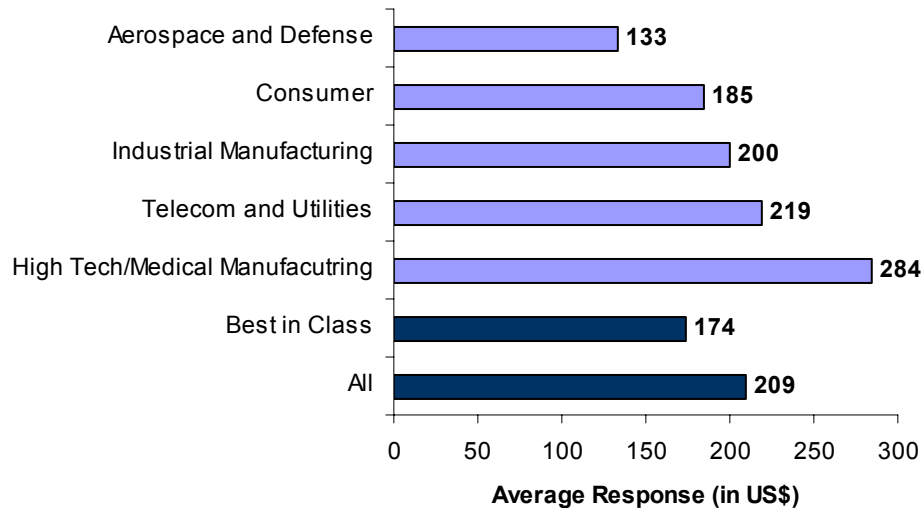
Source: AberdeenGroup, September 2006

Dispatch Avoidance Saves Millions

As mentioned previously, the vast majority of companies believe it is very or extremely important for call center agents to diagnose and even resolve service issues. Part of the motivation for this is to avoid the dispatch of a service technician, or to make sure the technician has the right information and service parts so they can resolve the problem on the first visit.

For many companies, dispatching a service technician is the highest-cost service channel, so reducing the volume of dispatches and broken calls can significantly impact the overall financial performance of the service organization. The average cost of dispatching a service technician across responding industries is \$209 per dispatch, with high tech/medical devices topping out at just under \$300 (Figure 4).

Figure 4: Cost of Dispatching a Service Technician



Source: Aberdeen Group, September 2006

Best-in-class service organizations resolve 37% more problems in the call center than laggard companies, and 11% more than average companies. At an average cost of \$209 per dispatch, the potential financial impact of reducing the total number of dispatches is enormous.

For example, if an average-level service organization with 150 field technicians is able to resolve more service issues in the call center and reduce its total dispatches by just 11% — which is the margin separating average and best-in-class performance — it would stand to save nearly \$2.5 million per year (Table 4).

Table 4: Dispatch Avoidance Holds Key to Millions in Annual Savings

# of Field Technicians	Avg Service calls per day per technician	Total Dispatches per Year	Average Cost per Dispatch	Potential Reduction in Dispatches	Annual Savings Opportunity
50	3	36,000	\$209	11%	\$0.83M
150	3	108,000	\$209	11%	\$2.48M
250	3	180,000	\$209	11%	\$4.31M

Source: AberdeenGroup, September 2006

The above example also extends to situations where call center agents might not be able to resolve the problem, but where they can diagnose correctly and provide the technician with accurate customer, inventory, and product information required to correct the problem on the first visit. Every repeat visit avoided adds to potential cost savings, increases technician productivity, and boosts customer loyalty.

Although many companies report significant challenges in utilizing their call centers more effectively, those companies that have empowered their call centers to be more proactive in problem diagnosis and problem resolution reap substantial benefits (Table 5).

Table 5: Customer Satisfaction Tops Call Center Improvement Benefits

Benefit	% of Best-in-class Respondents
Better reputation for customer support vs. competitors	70%
Improved customer satisfaction/retention	70%
Faster problem resolution times	65%
Increased service profitability	26%
Reduction in number of times service technicians must be dispatched	26%
Greater 1st visit problem resolution rates when service technicians are dispatched	22%
Higher level compliance with Service Level Agreement commitments	22%

Source: AberdeenGroup, September 2006

Telecom and Utilities Firms Lead Pack

From an industry perspective, telecom and utilities companies boasted the greatest percent of calls successfully diagnosed and completely resolved in the call center. In addition these firms also have the lowest product service costs as a percent of revenue with service costs accounting for 10% of revenues (Table 6).

As seen in Figure 4, telecom and utilities companies also reported one of the highest costs for dispatching a field service technician, so it follows that this industry would make call center diagnosis and resolution a priority. For these companies, efficiencies in the call center — in addition to improving customer satisfaction — go straight to the bottom-line.

Table 6: Telecom / Utilities Sector Best Call Center Performers

Key Performance Indicator	A&D	Consumer	High-Tech/ Med. Mfg	Industrial Mfg	Telecom & Utilities
% of calls <i>successfully diagnosed</i> in call center	46%	57%	64%	50%	69%
% of calls <i>completely resolved</i> in the call center — no technician dispatched	29%	50%	50%	45%	59%
Total product service cost as a % of revenue	38%	26%	19%	28%	10%
Average hours from problem reported to resolution	16.1	13.0	15.9	21.7	14.9

Source: AberdeenGroup, September 2006

Chapter Three: Implications & Analysis

Key Takeaways

- 75% of companies plan to deploy knowledge management tools to improve their call centers' problem diagnosis/resolution capabilities.
- Fully 65% of best-in-class companies indicate having such a systematic approach to call routing and diagnostics versus only 11% of laggards.
- Voice recognition systems are the number one technology differentiator of best-in-class firms — with 4 times as many best-in-class firms using this technology as compared to laggards.

As noted earlier, surveyed companies' aggregated call center performance determined whether they ranked as best-in-class, industry average, or laggard. In addition to performance parity, each of these maturity classes also share attributes in five key categories – process, organizational structure, knowledge management, technology usage, and performance management (Table 7).

Table 7: Call Center Competitive Framework

	Laggards	Industry Average	Best in Class
Process	Call Center agents act primarily as call-takers and data recorders, with limited or no abilities to diagnose or resolve service issues.	Ad hoc approach, with limited problem diagnostic prompts, and manual or redundant call-routing.	Systematic approach, with initial problem diagnostic prompts (using CTI, IVR, knowledge management, web, or automated email), and automated call-routing to most appropriate call center agent
Organization	Call center supports multiple functions in addition to product service, has diverse priorities and metrics, and it reports to a department other than service (e.g. sales, marketing, administration)	Call center has multiple functions in addition to product service and has a "dotted line" reporting relationship with the service organization	Call center is dedicated to and tightly integrated with the product service organization and reports up to a senior executive in charge of product service
Knowledge Management	Limited to no customer or product service call center data is systematically captured	Aggregated customer and product service call center data is captured over time, housed within the service organization, and periodically shared with other constituents	Customer and product service call center data is captured and analyzed over time and is systematically shared with service chain constituents

	Laggards	Industry Average	Best in Class
Technology Usage/ Integration	No software solutions or technology tools available to aid with problem diagnosis and resolution. Call center functions are strictly relegated to call taking and call logging.	Limited or ad hoc use of software solutions or technology to aid with problem diagnosis and resolution.	Technology and software solutions to aid in call routing and problem diagnostics widely deployed and routinely used.
Performance Management	Limited or no call center performance data gathered or maintained	Periodically measured as a stand-alone operating unit, with emphasis on call volume and throughput	Systematically measured as a component of the overall product service cycle, including field service and service parts logistics

Source: AberdeenGroup, September 2006

Process Makes the Grade

A systematic approach of diverting calls to appropriate call center agents leads to immediate dividends. Fully 65% of best-in-class companies indicate having a systematic approach to call routing and diagnostics versus only 11% of laggards. In fact, nearly a third of laggards indicated using their agents primarily as data recorders. While it is not surprising that a systematic approach equates to substantial improvements in problem resolution at the call center, it also assists in significantly slashing overall problem resolution times (Table 8).

Table 8: Systematic Processes Map to Call Center Effectiveness

Process	% of calls successfully diagnosed	% of calls completely resolved in the call center	Average time to problem resolution (in hours)
Systematic approach with initial diagnostic prompts and automated call-routing to the most appropriate call center agent.	72%	62%	9.9
Call center agents act primarily as data-takers and data recorders , with limited or no requirements to diagnose or resolve issues.	41%	25%	16.5

Source: AberdeenGroup, September 2006

Call center associates at Yaskawa are well-versed in taking a systematic approach to diagnosis and routing processes. These call center associates are typically highly skilled and well educated individuals. Associates go through formal technical training on the products they will be supporting; and are then assigned a “mentor” who works with them in an “apprentice” type relationship for up to six months. Furthermore, agents are re-

quired to actually spend time “in the field” twice each year to hone their skills, and associates must be “certified” on the products they support annually.

Faster Resolution From Dedicated Centers

With the increasing focus on service to generate profits, it is of no surprise that senior executives are placing increased importance on their product service call centers. Two-thirds of senior-executives Aberdeen surveyed (vice president and above) reported that the importance of call centers had risen over the last two years.

The increased senior-level focus plays out in the form of performance enhancements, not only in problem resolution rates and times but also in the level of compliance with service level agreements. Companies that integrate their call centers within the product service organization with senior-level involvement report problem resolution times that are approximately five hours shorter than those rely on their call centers for non service-related tasks (Table 9).

Table 9: Senior Dedicated Call Center Oversight Impacts Service Performance

	Average time to problem resolution (in hours)	SLA / Warranty compliance (Average)
Call center is tightly integrated with the product service organization and reports up to a senior executive in charge of product service.	13.3	75%
Call center supports multiple functions and reports to a department other than service.	18.1	53%
Improvement Opportunity	4.8 hours	22%

Source: AberdeenGroup, September 2006

Knowledge Management

The technical support call center at **A.O. Smith Water Products Company** - the largest manufacturer of residential and commercial water heating equipment in North America - provides telephone support to contractors, plumbers, and consumers. Skilled technicians provide support for both residential and larger, more complex commercial water heating systems.

A. O. Smith uses knowledge base management software to enable technicians to quickly identify the probable cause of problems which have been reported. Contractors and customers can also access the knowledge base on the A. O. Smith customer support web pages for self service. This system automatically tracks and reports on how many inquiries are received and which answers are used to resolve problems.

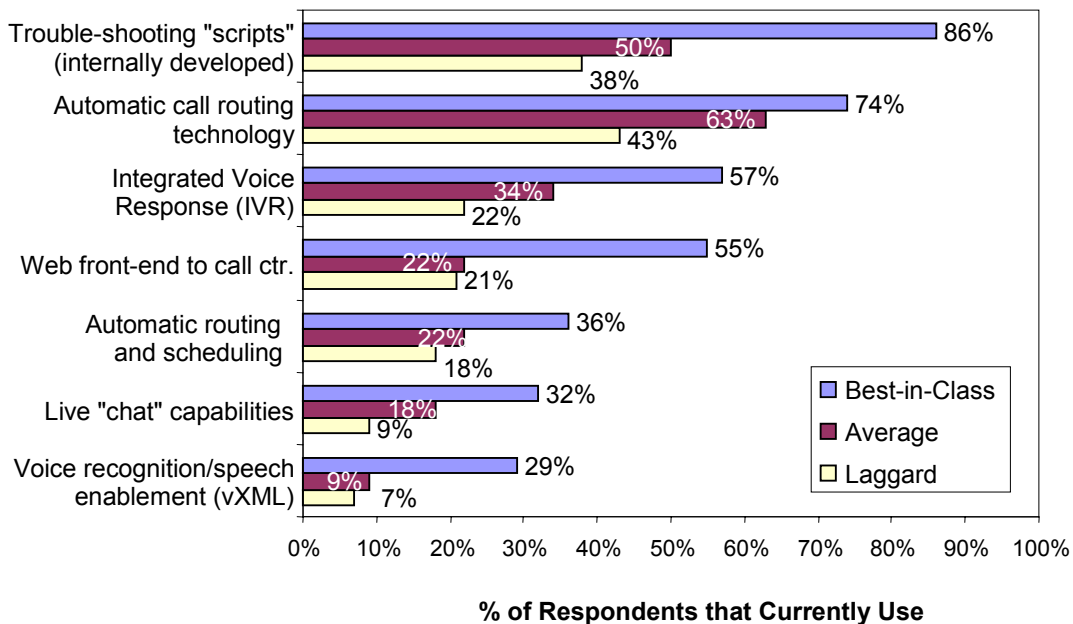
A.O. Smith further utilizes its knowledge base to suggest possible resolutions to problems via an automated email response system. Customers sending an email inquiry get a rapid email response to their query which suggests the most likely answers to the problem or question they have reported.

Trouble-Shooting Technology

Given the high level of dissatisfaction with call center problem diagnosis and resolution capabilities revealed in this study, it is not surprising that most companies have not yet implemented solutions that can help their call centers be more effective. Fully 86% of polled best-in-class companies are using internally developed trouble-shooting scripts for problem diagnosis and resolution in their call centers. And nearly three-quarters of best-in-class firms are leveraging automatic call routing technology.

A more telling takeaway perhaps is the ratio of best-in-class firms to average and laggard firms in utilizing these solutions. For example, 29% of best-in-class companies currently use voice recognition and speech enablement technology within their call centers as compared to just 7% of laggard firms. This relates to a differentiation of more than four to one for this technology — making voice recognition systems the biggest differentiator of best-in-class firms (Figure 5).

Figure 5: Best-in-Class Firms Differentiate Themselves with Voice Recognition Systems



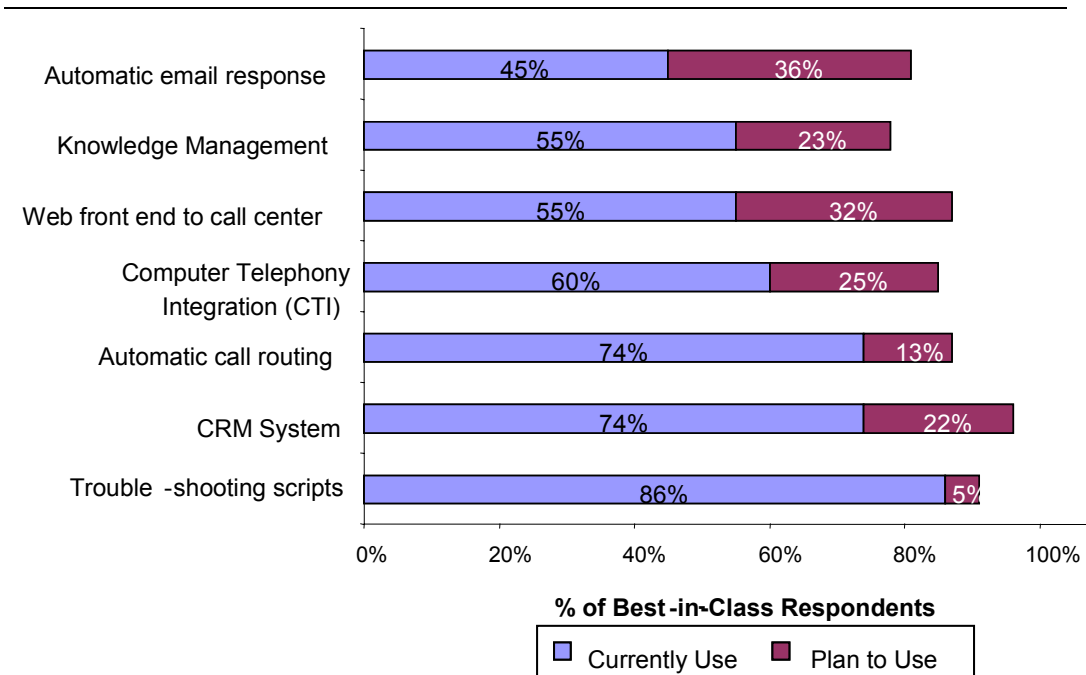
Source: AberdeenGroup, September 2006

Leaders Eye Call Center Technologies

Looking ahead 12 to 24 months, many companies plan to deploy one or a combination of solutions and technologies to boost their call centers' capabilities. In fact, more than 80% of all survey respondents say they will implement one or more solutions within the next 24 months — with many planning to do so within a year.

Best-in-class companies have done a much better job at equipping their call centers' for problem diagnostics and problem resolution than their peers. These organizations have been most aggressive in deploying enabling solutions and technologies. While internally developed trouble-shooting scripts, CRM systems, and automatic call routing systems top the list of most currently deployed technology solutions, about one-third of best-in-class firms plan to leverage automatic email response and web front end to call center technology in the near future (Figure 6).

Figure 6: Planned Technology Deployments of Best-in-Class Firms



Source: AberdeenGroup, September 2006

For **A.O. Smith's** part, the company has implemented a variety of call center technologies to boost call center effectiveness. This focus on call center quality has paid off: the speed to answer calls has improved by nearly 90% and the call abandon rate has been slashed by almost 85%.

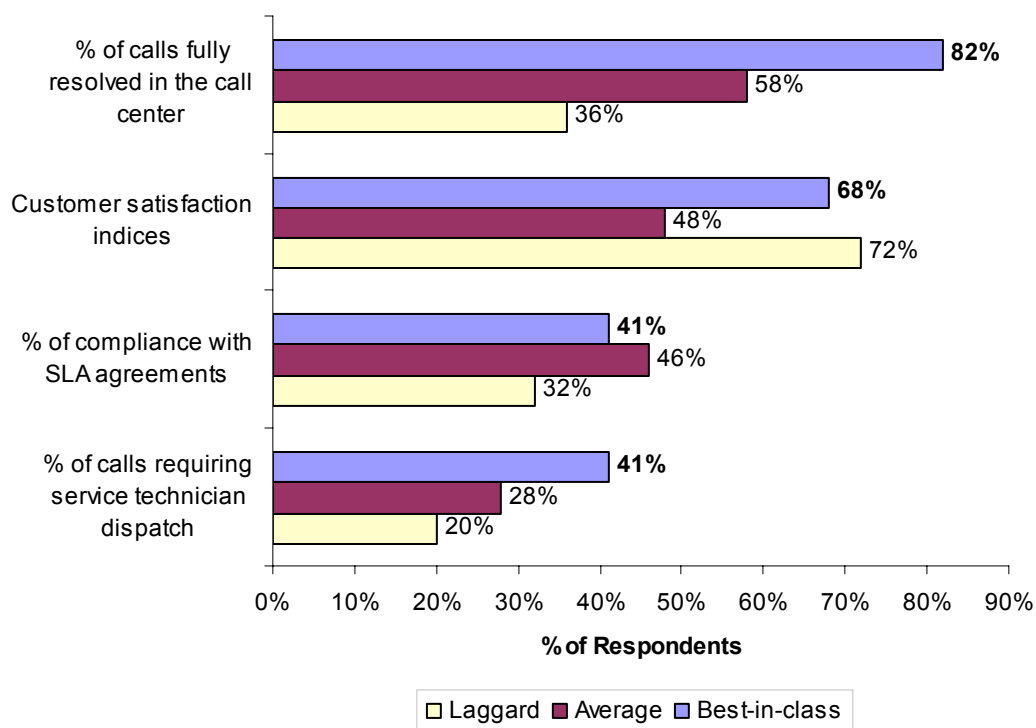
The company's focus on "best in class customer service" has propelled it to begin implementation of a new integrated call center solution which will allow the company to further improve its ability to monitor customer interactions and track customer service history, according to Roy Wood, Customer Support Director at A. O. Smith.

Resolution Metrics Matter Most

Best-in-class organizations are looking to drive efficiencies in problem diagnosis and resolution within their call centers. As such, they are looking to establish and systematically measure call center product service related metrics. Fully 65% of best-in-class companies report that call center performance is systematically measured as a component of the overall product service cycle. Only 38% of laggards report this level of performance measurement.

The top KPIs measured by best-in-class companies directly relate to the efficacy of the call center in problem resolution capabilities to enhance customer satisfaction (Figure 7).

Figure 7: Best-in-Class Track Resolution in the Call Center



Source: Aberdeen Group, September 2006

In addition, those firms that track and measure performance of their call centers report higher gains than companies without a systematic approach to performance measurement. Survey respondents that reported *systematic call center performance measurement* reveal that 51% of their calls on average are completely resolved in the call center and don't require service technician dispatch. In contrast, companies that *don't actively measure their performance* only resolve 30% of their calls in the call center. The reduced levels of dispatches required not only increases the number of customers that can be met on a daily basis but also reduces the cost of problem resolution. With an average cost of \$209 per service technician dispatch for all companies polled in this study (Figure 4), a 21% improvement in call center problem resolution can lead to immense direct savings in terms of service-related costs.

Chapter Four: Recommendations for Action

Key Takeaways

- Establish a 2nd, 3rd, or higher level technical support organization to increase your capacity to diagnose and resolve product service issues.
- Staff and train call center agents with the appropriate skills to support both legacy and new products.
- Invest in technology enablers to facilitate the call centers' diagnostic and problem resolution capabilities.

The financial, operational, and customer-facing benefits of boosting call center capabilities in problem diagnosis and resolution can be substantial. To capture these benefits, Aberdeen recommends that service executives consider the following action steps:

1. **Provide back-up.** Establish a 2nd, 3rd, or higher level technical support organization to increase your capacity to diagnose and resolve product service issues without dispatching a field technician.
2. **Know your installed base.** Staff and train call center agents with the appropriate skills to support both legacy and new products. Agents with inadequate skills or training will result in dissatisfaction in the customer base and high agent turnover and training costs.
3. **Invest in technology enablers** to facilitate the call centers' diagnostic and problem resolution capabilities. Evaluate knowledge management solutions, web front end and web "chat" tools, IVR and speech enablement technologies, automatic call routing and work flow software, and other decision-enabling technology solutions.
4. **Single-task.** Dedicate at least a portion of your call center to product service and support. Peripheral tasks distract from resolution effectiveness and inflate service costs.
5. **Maintain service chain view.** Measure call center effectiveness in the context of overall service chain productivity and profitability. Look for opportunities to shift increasing volumes of work to lower-cost channels like eService, self-service, and call center. Reserve field dispatches for premium, revenue-generating service customers.

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Mark Vigoroso spearheads primary market research in service management and assesses software and services that automate and streamline these and other value chain processes.

Vigoroso's current efforts include quantifying Global 5000 executives' strategies, experiences, and deployment plans in the area of field service optimization.

He has published research in the areas of strategic sourcing, supplier performance measurement, enterprise spending analysis, total cost management, global trade management, and product management.

Vigoroso has spent years covering electronic procurement, supply chain, and logistics management trends as a journalist, editor, speaker, and columnist for various industry publications. Specializing in e-business applications and strategies, he was an editor at *Purchasing* magazine and *Manufacturing Marketplace*. He has also been a columnist and feature writer for *The E-Commerce Times*, *ZDNet TechUpdate*, and *Workz.com*.

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Michael Israel is a senior analyst and research director focusing on Service Chain Management research. Through primary market research, Michael analyzes how service executives are utilizing field service management, mobile field service, service parts planning and execution, service force optimization, machine-to-machine (M2M), and other solutions to automate, streamline, and improve post-sales and aftermarket service and support processes.

Israel has worked in the service chain field for more than 30 years. He has significant service operational experience, having spent 15 years managing both field service and service parts operations. And he has more than 20 years experience in selling and marketing service management software solutions to manufacturers and service providers in a wide variety of industries.

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As an analyst in the service chain management practice, Sumair Dutta researches and examines how service executives are utilizing technology and streamlining business practices to improve post-sales service and support processes, analytics and management. Dutta examines how best-in-class service organizations are reengineering their service chains for optimum performance and increased profitability.

Dutta is currently analyzing this transformation as it relates to traditional finance roles and is looking to uncover how corporations are looking to enhance financial visibility into their post-sales service activities.

Dutta has a strong finance background, ranging from strategic finance to asset management and financial services. He has previously worked as a Financial/Research Analyst, both locally and internationally, examining the financial impact of strategic decision-making on both the value and level of equity and debt investments.

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As a research analyst in the service chain management practice, Rachel Gecker researches and analyzes how service executives are utilizing technology and streamlining business practices to improve post-sales service and support processes. Through benchmarking and analysis of Aberdeen's fact-based research, Gecker examines how best-in-class service organizations are reengineering their service chains for optimum performance and increased profitability.

Prior to joining Aberdeen Group, Gecker wrote and edited for a variety of business trade publications, including *Inbound Logistics*. She brings a wealth of editorial and industry experience to her role as research analyst, having researched and reported on technology-driven business value for enterprises in the manufacturing, distribution, transportation, and logistics industries.

Appendix A: Research Methodology

In August and September, 2006 Aberdeen Group and its publication partners captured more than 150 qualified respondents to a quantitative survey on the role of the call center in product service.

Responding call center and service management executives completed an online survey that included questions designed to determine the following:

- The importance of their call centers' abilities to diagnose and resolve problems within the call center itself
- Whether or not that capability will grow or decrease in importance going forward
- Current and planned use of software solutions and technologies to aid these activities
- The benefits, if known, that have been derived from enabling the call center to proactively diagnose and repair equipment problems reported by customers and end users.

Aberdeen supplemented this survey effort with telephone interviews with select survey respondents, gathering additional information on call center management strategies, experiences, and results.

Respondents can be characterized as follows:

- **Job title/function:** The research sample included respondents with the following job titles: manager, director, vice president, executive and senior vice president, and C-level (CEO, CFO, COO). 17% are C-level, 7% senior vice presidents, 8% vice presidents, 24% directors, 26% managers, 6% staff, 13% other.
- **Industry:** Responses were received from 24 different industry segments. The largest concentration of responses came from high tech – 19%, telecommunications – 11%, industrial and construction equipment – 11%, medical devices – 9%, consumer durables and electronics – 9%, and aerospace and defense – 7%.
- **Geography:** Responses were received from all geographic areas of the world – 62% from North America, 19% from EMEA, 15% from Central/South America, 4% from APAC.
- **Company size:** 18% from large enterprises (> US\$1 billion); 33% from midsize enterprises (revenues between \$100 million and \$1 billion); and 50% of respondents were from small businesses (annual revenues of \$50 million or less).

Appendix B: **Related Aberdeen Research & Tools**

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

- *Revisiting Reverse Logistics in the Customer-Centric Service Chain* (Sept. 2006)
- [*Service as a Profit Center: The CFO's View*](#) (August 2006)
- [*Best Practices in Service Chain Performance Management*](#) (August 2006)
- [*Supercharge Your Call Center to Slash Product Service Costs*](#) (August 2006)
- [*Winning with Integrated Warranty Management*](#) (June 2006)

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

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