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THE **SERVICE** REVOLUTION

MANUFACTURING'S MISSING CROWN JEWEL

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> PHOTOGRAPHY BY DAVID CLUGSTON

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Henry Ford wasn't just a brilliant supply chain innovator. He was a natural entrepreneur who understood business in all its dimensions. "A business absolutely devoted to service will have only one worry about profits," he said. "They will be embarrassingly large."

Ford's assertion, unfortunately, appears to have gone unheard by many of today's manufacturing companies, who consider themselves designers and producers of tangible products rather than providers of integrated

solutions to customers' broader needs. Too often, manufacturers view their service operations as ancillary businesses separate from and by no means equal in strategic or operational importance to the "core" product business.¹

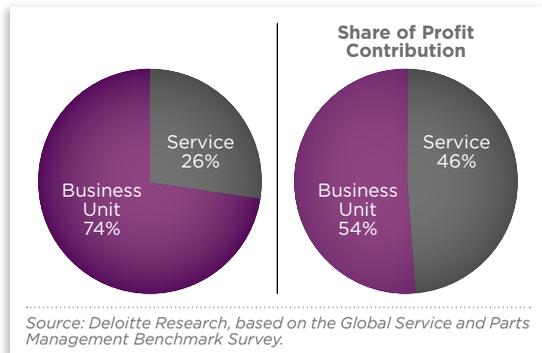
That mindset is as risky as it is outdated.² There has been a clear migration toward service offerings, a shift sparked by products rapidly becoming commodities and by growth in the number of customer "touchpoints" over the lifetime of a manufactured product. The shift applies to consumer goods as well as to industrial products, and to complex industrial machining centers and commercial refrigeration units as much as to vacuum cleaners. The sale transaction is essentially just one touchpoint on a continuum of potential interactions between producer and customer, and an early one at that. At its root, the basis of competition is shifting toward the ability to drive business performance through excellence in service and parts management.

Deloitte Research, in collaboration with the global manufacturing practices of Deloitte Touche Tohmatsu, launched a major multi-year research program in 2005, the Global Service and Parts Management Benchmark Study (see "About the Research."),³ designed to pinpoint the boundaries of best practice in service excellence and to understand more about the risks of ignoring the service side as well as the advantages of embracing it. The study conclusions reveal a wide gap between best-practice leaders - those

we call "service champions" - and the rank-and-file manufacturers whose service performance is far from excellent. The findings do, however, point to a large untapped market for the manufacturers that can master the elements of superior service. This article describes how most manufacturers today approach the service factor, compares the drivers of profitability and growth on the service side, and makes a strong case for change in a wide range of manufacturing sectors.

EX.1

MANUFACTURERS ARE DRIVING REVENUE AND PROFITS THROUGH THE SERVICE BUSINESS



THE PROFITABILITY IMPERATIVE

Let there be no doubt about the impact of the service business. Our research found that the average profitability of the service operations we benchmarked is more than 75 percent higher than

overall business unit profitability.⁴ The most profitable service businesses we benchmarked (the top 25 percent) are more than three times as profitable as the average business unit. Across the manufacturing companies that we studied, service revenues average more than a quarter of total revenues but deliver 46 percent of the profits. At many producers, there would be little or no profitability without the service business.⁵ (See Exhibit 1.)

These findings apply just to the current impact of service activities, with the future impact still more compelling. Our analysis suggests huge untapped profit potential in "non-captive" as well as "captive" markets.⁶ Yet most companies are not even close to tapping that potential. Although the fastest-growing service operations (the top 25 percent) are growing more than twice as fast as the average business unit, more than two-thirds of companies are seeing their service operations expand no faster than the overall business; in fact, their service growth rates often lag those of the whole company. The median benchmarked company derives only 40 percent of its after-sales service market and 75 percent of the after-sales spare parts market from servicing the installed base of its own products, which constitute its captive market. (Those numbers are much smaller for categories such as automotive original equipment manufacturers.) As for servicing non-captive customers, a market up to 10 times larger than the captive opportunity, only a few manufacturers have made significant inroads. Most

are managing their potential high-growth “stars” as if they were slow-growth “cash cow” businesses.

A few leading manufacturers, such as aircraft engine maker Rolls-Royce plc, understand the short-term and long-term value of their service activities. Rolls-Royce provides airlines with what it calls “Power By The Hour,” selling its engines along with the services to maintain, repair, and overhaul them over many years. Service revenue already accounts for about 53 percent of Rolls-Royce’s \$11 billion-plus in annual revenues, well above the 26 percent average for all the companies benchmarked.⁷ The company’s service revenues have increased by more than 60 percent over the last five years and almost tripled over the past decade, growing more than twice as fast as Rolls-Royce’s overall business. This company does not need a reminder that service matters more than ever, a message that bears new emphasis for many other manufacturing companies. We can point to six reasons why:

1. New basis of competition. The business models of many global manufacturers are under assault as customer demands change, home markets mature and low-cost rivals raise their games. In developed markets, products are becoming commodities as pricing pressures increase, particularly as a result of low-cost country sourcing. In emerging markets such as China and India, service and parts operations are facing fierce price wars as well as counterfeit parts, situations that damage long-term brand reputation as much as they hurt profits. Protecting the business through service excellence is one way of keeping out the competition while improving customer service and loyalty.

2. Product proliferation. New products are introduced more frequently. If not properly managed, the combination of shorter sales cycles and long service life cycles is a recipe for escalating costs, parts obsolescence, lost customer focus and deteriorating customer service quality. Among the service operations benchmarked, the median inventory obsolescence rate stood at five percent and in many cases exceeded 10 percent.

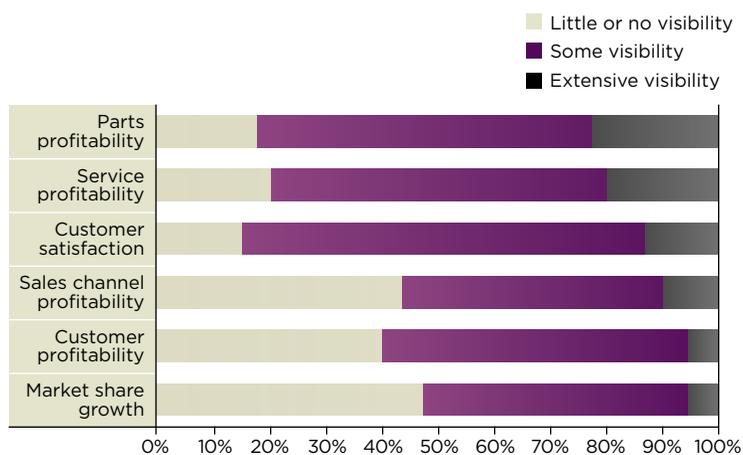
3. Quality backlash. Quality issues and problems with delivery of service and parts can exact a severe toll in warranty costs and brand damage. Analysts estimate that industrial equipment makers alone will invest a total of \$1 billion over the next five years to overhaul warranty management and spare parts logistics.

4. Continued outsourcing. Many large manufacturers are steadily outsourcing elements of their core operations, including parts production and assembly. In effect, they are relying more on the success of their customer-facing, service-oriented businesses, although those functions too often lack the capabilities needed to succeed.⁸

5. Service resilience. In times of economic downturn, service and parts sales are often far more robust than the main business. For example, during the economic and financial crisis in Korea from 1997 to 1999, sales of new vehicles by Hyundai and Kia Motors dropped by nearly 36 percent, but the Hyundai Mobis spare parts sales business posted a 5.6 percent sales increase.⁹

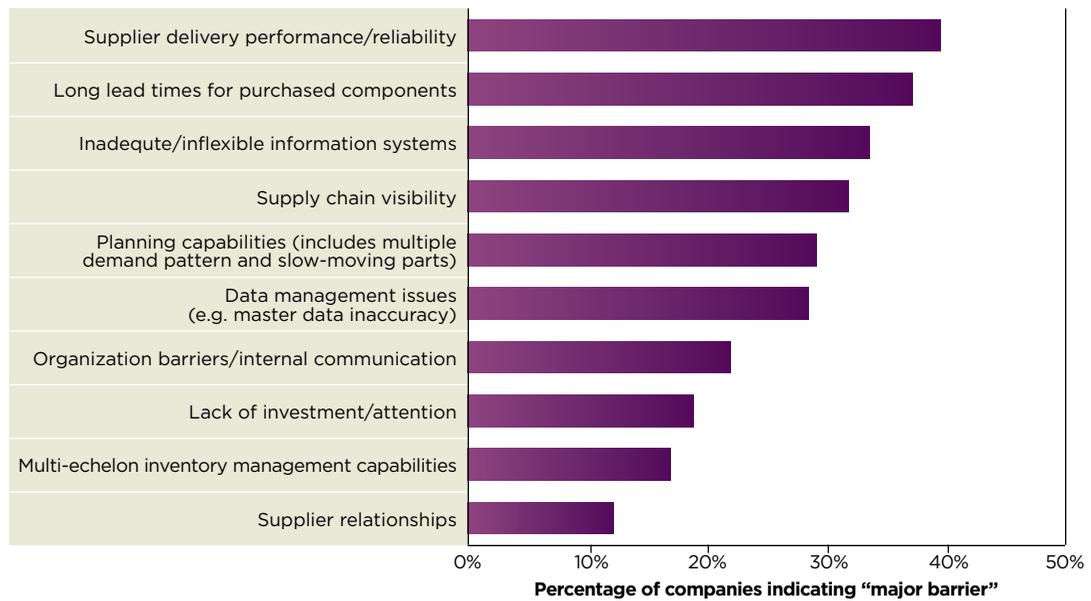
EX.2

MANUFACTURERS CANNOT EASILY SEE WHERE THE VALUE LIES IN THEIR SERVICE BUSINESSES



Source: Deloitte Research, based on the Global Service and Parts Management Benchmark Survey.

EX.3 TOP TEN BARRIERS TO SERVICE EXCELLENCE



Source: Deloitte Research, based on the Global Service and Parts Management Benchmark Survey.

6. Increasing business complexity. Whether caused by expansion into new markets, mergers and acquisitions or product proliferation, the growing complexity of business makes the challenges even more daunting. Customers are likely to demand better-tailored and better-managed service solutions, often combined with risk-sharing agreements. Ensuring the right customer experience, which involves products, service, branding and price, delivered to the right place at the right time, will become even more difficult. But it will also become a requirement for success.

UNDERSTANDING THE CHALLENGES

While most companies are eager to improve their global service and parts businesses, our research shows that they continue to treat service functions as an afterthought.¹⁰ Three major problems are apparent: flawed strategy and business design, substandard operations planning and management, and poor execution in building the profitable customer interactions that sustain loyalty and satisfaction. Each challenge deserves closer scrutiny:

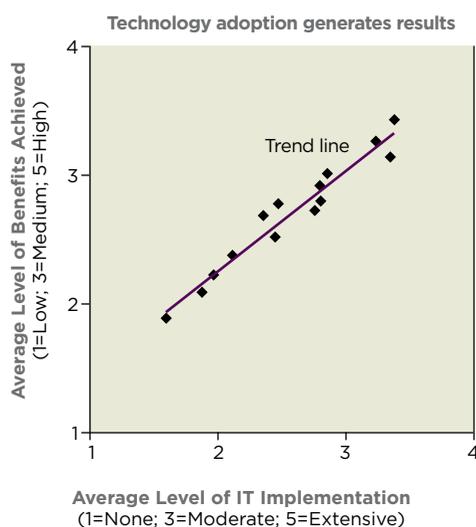
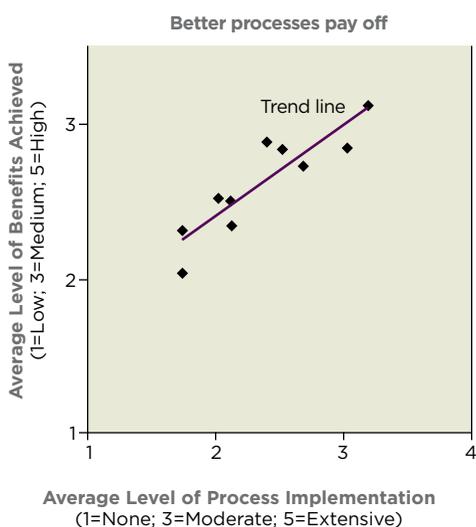
Flawed strategy and business design. Many senior executives simply don't understand the potential of their services and parts operations, often viewing them as cost centers rather than profitable growth businesses that can drive enterprise growth. At the heart of the problem is a lack of insight into the real opportunity. Only a fifth of the companies benchmarked, for example, said they had extensive visibility into service profitability. Just six percent had a clear idea of customer profitability and only six percent knew their key performance metrics on market share growth. (See Exhibit 2.) Without good visibility into the performance and potential of the service and parts business, executives are hard-pressed to understand the business and are poorly equipped to justify or prioritize major investments for improvement.

The problem goes deeper. Our benchmark survey found that many manufacturers have difficulty in developing a strategy and an efficient design for their service operations. While nearly 40 percent of executives said that continuous optimization of the

overall supply chain design of the service business is of the highest importance over the next three years, fewer than one in 10 companies perform well in this area today. Similarly, few respondents said they have achieved high performance in balancing cost with customer service levels. Even worse, more than 30 percent of respondents said they are not doing well in building global tax efficiency into network modeling, and another 40 percent said they did not even know how they were doing in this area. Taking a holistic view of the business, including issues of tax and other regulatory and compliance issues, is of crucial importance to most companies struggling to get value out of their global investments.¹¹

At the same time, only a few companies effectively include service management issues when making decisions about product innovation and product life cycle management. Ineffective organizational design further hampers service businesses, which tend to have low levels of investment in the people and competencies needed for good performance. Given the strategic importance, profitability and growth potential of the service function compared to the overall business, attracting and developing the right talent should be a priority for top management.

EX.4 BETTER PROCESSES PAY OFF ... AND TECHNOLOGY ADOPTION YIELDS RESULTS



- From highest to lowest implementation level:**
- Customer visibility into their tracking order status
 - Supplier performance tracking
 - Supplier visibility into their order status
 - Collaborative planning, forecasting & replenishment with suppliers
 - Integration and automation of replenishment process with suppliers
 - Integration and automation of replenishment process with customers
 - Vendor managed inventory and suppliers
 - Collaborative promotion management with customers and suppliers
 - Vendor managed inventory with customer

- From highest to lowest implementation level:**
- Demand/Planning/Forecasting
 - Warehouse Management System (WMS)
 - Enterprise Resource Planning (ERP)
 - Field Service Order Scheduling, Dispatch System
 - Product Data Management (PDM)
 - Field Service & Technical Document Management System
 - Field Service Analytics (SLA, reliability, performance)
 - Warranty management system
 - Advanced Planning and Scheduling System
 - Customer Relationship Management (CRM)
 - Transportation Management System (TMS)
 - Product Lifecycle Management (PLM)
 - Business Intelligence (BI)
 - Advanced Network Modeling and Simulation Tool

Note: Process collaboration trend line: $Y=1.21* + 0.60*X$. R^2 (adjusted)=0.78. Y =Benefit Level. X =Implementation Level. *significant at the 99 percent level. $N=10$. Technology adoption trend line: $T=0.68* + 0.79*X$. R^2 (adjusted)=0.94. Y =Benefit Level. X =Implementation Level. *significant at the 99 percent level. $N=14$.

Source: Deloitte Research, based on the Global Service and Parts Management Benchmark Survey.

In contrast, the service champions operate on a different plane. Leading providers such as Siemens AG Medical Solutions make service central to their corporate strategy, designing the service business around customer requirements in order to create customer satisfaction, loyalty, and business performance.

Siemens' customers increasingly expect to pay for equipment uptime. To achieve this, Siemens harnesses sophisticated technology and advanced processes and workflows, combining online, real-time repair information, inventory management, pricing and invoicing with advanced logistics systems to give service technicians the right information and parts when and where they need them. For example, the company is using simple lockboxes to store parts near customers, reducing the travel time for high-cost and highly valued service technicians.¹² The best way to assure high efficiency of field service engineers, they have learned, is to synchronize closely the arrival of a part at the drop-off point with the scheduled service job of the engineer at the client site.

Standard operations planning and management. Inadequate planning, managing, and monitoring capabilities hamper the service operations of many of the companies benchmarked. Planning is a particular challenge. Among the companies responding, the median forecast accuracy for parts demand is less than 80 percent, and for a quarter of the respondents it is lower than 52 percent. It's even less encouraging that nearly 70 percent of the manufacturers surveyed are unable to report on the forecast accuracy for their service and parts activities, suggesting deep-rooted problems in managing demand, inventory, and capacity.

Many manufacturers are in effect leaving money on the table by running their service operations at less than their potential. In inventory management alone, we calculate that if the average \$1 billion service business benchmarked were to add one annual inventory turn, it would liberate \$53 million a year in working capital.

Asked to identify the major barriers to service excellence, close to half of the executives responding cited supplier responsiveness and over a third mentioned long lead times. (See Exhibit 3.) Inadequate information systems got their fair share of blame, as did limited supply chain visibility. Executives at many companies said they had no or very limited visibility into key operational metrics such as inventory at dealers or customers, demand and sales forecasts at all distribution levels, and global available-to-promise inventory to commit to customer orders.

Once again, the service leaders show what is possible. The experiences of leading manufacturers such as Caterpillar Inc. show that ongoing investment in and focus on improving the service and logistics operations can lead to outstanding customer service, resulting in greater customer loyalty and a foundation for profitable growth. (See Sidebar.)

Poor execution. The "last mile" to the customer is where battles for customer loyalty are won or lost. It is a tough journey. Customers keep raising the bar for service excellence by requesting shorter lead times, higher service levels, lower cost and better customer service support. Yet most manufacturers are still unable to provide customers with excellent and cost-effective service. Overall, our analysis of the benchmark results suggests that customers are likely to get exactly the items that they want, at the right time and place, less than 75 percent of the time. That is a dismal performance in a global economy where customers have more options and more information than ever before to tempt them to switch to competitors' offerings.

Service level agreements (SLAs) with customers are gaining ground across many industries, but companies are running into difficulties in fulfilling them. Because they often have limited access to critical customer data, companies are unable to assess, quantify and manage contractual risks accurately. They usually have limited knowledge about the critical capabilities needed to satisfy customers' real needs at an affordable cost. They are struggling to develop and manage a business model that they do not fully understand.

Not surprisingly, the median on-time customer response for SLAs is just 90 percent, and for many companies the number is far below that. Given the high cost of equipment downtime in industries such as semiconductor manufacturing, mining and medical devices, low service levels are a costly problem and are not likely to generate much in the way of customer loyalty.

For the service champions, though, delivering service excellence is central to their business models. At Hyundai Motor Company and Kia Motors Corporation, both part of the Hyundai-Kia Automotive Group, service guarantees such as extended warranties are an essential part of the value provided to car buyers. Capturing a larger share in servicing the over-24 million Hyundai and Kia cars operating worldwide forms a crucial part of the growth strategy of Hyundai Mobis. Hyundai and Kia sell their cars with warranties of up to 10 years/100,000 miles in key markets around the world.¹³ To do that cost-effectively, the cars must be of high quality and the service and parts operation must operate at the highest level of efficiency.

Hyundai Mobis supplies service parts to Hyundai and Kia vehicles worldwide, which involves stocking more than 890,000 parts for 137 vehicle types. The company has built a \$55 million, 2.2 million square foot spare parts center in Asan, south of Seoul, to help do this more effectively and support its global distribution network.¹⁴ The center is piloting item-level radio frequency identification (RFID) tagging coupled with a central computer system using artificial intelligence for managing and optimizing the spare parts business. Customers can track the status of the shipment remotely at any time between order and delivery in real time.

CAT SEES BIG GROWTH IN SERVICES

CATERPILLAR INC. IS A MASTER OF THE SERVICE GAME, with an inventory of more than half a million spare part numbers and a huge worldwide installed base of earthmovers, engines, excavators, and other equipment that in some cases needs service for 40 years or more. Yet Cat can ship its customers exactly what they want within 24 hours, 99.7 percent of the time.¹⁹

Cat has done so well on the service front that it has extended its capabilities in service parts management and logistics to external customers. Forming Cat Logistics in 1987, the company set out to build a global growth business and to capture more of the available market for service parts management. Today, Cat Logistics counts among its customers blue-chip companies such as Ford, Saab, Toshiba and Honeywell. It employs more than 9,000 logistics professionals across 25 countries and six continents, managing more than 18 million stock-keeping units (SKUs) and shipping more than 160 million orders and 16 billion pounds of freight each year. The external opportunities are significant. Says Cat chairman and CEO Jim Owens: "Cat Logistics has been generating growth of 25 percent annually in revenues from external customers, and massive opportunities remain for creative third-party logistics providers in this \$170 billion industry."²⁰

Experiences at companies such as Caterpillar show that service excellence relies on processes and systems that create visibility across the supply and distribution network. As early as the 1970s, Cat built a global database for tracking inventory across its network, initially focusing on parts that originated from Caterpillar's central distribution centers. In 2002, the system was extended to include parts obtained locally to ensure global visibility into all parts in the distribution network. One outcome: since the late 1980s, the equipment maker has halved its service parts inventories while improving its already highly regarded customer service. For Caterpillar, top-notch customer service levels are the primary driver of repeat business. At the same time, these improvements are saving the company more than \$460 million a year compared to the late 1980s.

Cat is not complacent about its wins to date. Knowing that its core competency is in supply chain management and logistics and not in software development, the company is developing its next-generation global service and parts management system in collaboration with SAP, Ford Motor Co., and Deloitte Consulting.



SERVICE EXCELLENCE BY MANUFACTURING INDUSTRY

Industry	Trend	Example
Aerospace and Defense	Toward performance-based service and logistics agreements with customers, including guaranteed availability and reliability of equipment, modules, and entire platforms (such as jet propulsion) over long time periods.	Rolls-Royce has long been focused on selling "Power By The Hour." Customers can pay a fixed warranty and operational fee for the hours that their engines are running, so Rolls-Royce must focus on the entire package, from products, installation, after-sales maintenance, repair and overhaul, to overall service and parts management to ensure profitable long-term growth. ¹
Automotive, Commercial Vehicles	Excellence in service and parts management is key to the brand reputations and the entire business models of some companies.	For Hyundai and Kia, service parts management is an integral part of the corporate strategy. Many of their vehicles are sold with warranties of up to 10 years/100,000 miles, and the service and parts operation must function at the highest level of efficiency to avoid customer service problems and excessive warranty costs, and to sustain profitable growth. ²
Consumer Goods	As more consumer products are sold with a service component, top business performance relies on service excellence as much as product quality.	With its wildly successful iPod players, Apple Computer is mixing sales of a very attractive tangible product with digital services. While iPod unit sales are impressive enough, it is perhaps more impressive that Apple is selling two million music downloads per day and building fast-growing online video sales. ³
Diversified Manufacturing and Industrial Products	Customers view provider service offerings as an integral part of the business.	ABB offers its industrial automation customers "performance service" tailored to their needs. The offerings range from simple, product-focused maintenance and field services to "Automation Performance Management" where ABB guarantees the performance levels and assumes the risks of the customer's equipment over its life cycle whether or not it was originally made by ABB. ⁴
Life Sciences	As customers keep demanding more, manufacturers expect to see increased requests for same-day (instead of overnight or slower) service plus service-level agreements that put the risks and rewards on manufacturers' backs.	Siemens Medical Solutions responded by creating a more complex and expensive distribution and service network that gets closer to customers and allows faster responses. The system makes wide use of sophisticated technology and workflow processes. ⁵
High Tech and Telecom Equipment	Equipment downtime can cost \$100,000 or more an hour. Ongoing industry consolidation means that many customers now have unwieldy mixes of installed hardware and software that often need to be serviced for decades.	Printer makers, such as Hewlett-Packard and Xerox, have derived more revenue and profit in selling ink and after-sales services than in initial printer sales for quite some time. For semiconductor equipment makers like Applied Materials, service and parts management is at a premium and it is pivotal to selling the equipment in the first place. ⁶

Endnotes

- 1 Source: Rolls-Royce, www.rolls-royce.com. See also Rolls-Royce, http://www.rolls-royce.com/civil_aerospace/overview/default.jsp and Deloitte Research, *Making Customer Loyalty Real: Lessons from Leading Manufacturers* (New York, 1999). For more on the aftersales service business in the commercial airline market, see also Mark Dixon Bünger and Henry H. Harteveltdt, "Overhauling Airline Maintenance," *Forrester*, October 13, 2004.
- 2 See Hyundai Mobis Annual Report 2004.
- 3 Apple shipped 6,451,000 iPods during its fourth quarter ended September 24, 2005. See "Apple reports fourth quarter results: Apple concludes best quarter & best year in company history," October 11, 2005. See www.apple.com. See also Paul Taylor, "Demand for iPod and Nano help Apple quadruple profits," *Financial Times*, October 12, 2005, and "The resurrection of Steve Jobs - Face value," *The Economist*, September 17, 2005.
- 4 See e.g. *ABB Services Executive Review 2005*. See also www.abb.com.
- 5 See presentation by Frank Ellsner, Siemens AG Medical Solutions, "Uptime Services: Siemens Medical Solutions," *Service Parts Management with SAP*, Berlin, September 28-29, 2005. See also *Siemens Annual Report 2005* and Jack Ewing and Diane Brady, "Siemens' New Boss," *BusinessWeek*, January 24, 2005.
- 6 See Ken Spencer Brown, "New Marketing Tack," *Investor's Business Daily*, August 12, 2005. For Xerox, service revenue share is calculated as the share of "post-sale and other revenue" in total revenues. "Post-sale and other revenue" includes service, outsourcing and rentals, supplies, paper and other sales. See *Xerox Annual Report 2004*.

USING PROCESS AND TECHNOLOGY TO RESHAPE THE SERVICE BUSINESS

Our research suggests that manufacturing companies can make strategic and operational investments in processes and technologies to leapfrog the competition. This in turn leads to ongoing improvement in the operational and financial performance of their global service businesses. Those investments fall into two categories:

1. Collaborative processes can be applied across the service supply chain, from suppliers to customers. For most, if not all, applications, they are well-documented, proven and ready for implementation. Our analysis shows a strong correlation between the level of implementation of processes, such as collaborative planning, forecasting and replenishment with customers, and the benefits achieved from implementation. (See Exhibit 4.) Across the service businesses benchmarked, the more extensive the level of implementation, the higher the benefits reported from adopting key processes.

For example, the North American operations of Volkswagen AG saw first-hand the benefits of implementing robust processes for service parts management. In 2004, the automaker was struggling with low customer order fill rates and with incorrectly located parts inventories spread across a broad distribution network.¹⁵ There were more than 160,000 part numbers, with supplies coming from Europe and South America. The parts operation was handling 12 million order line items a year and serving 1,000 dealers nationwide. To overhaul the service parts operations, VW's customer-focused team deployed a new business design as well as new processes and planning techniques (including lean warehouse management). They were able to reduce their structural cost, improve inventory management and productivity, and increase customer service levels. Order fill rates directly from customer-facing inventory soared from 76 percent to the targeted 94 percent and network fill rates using the entire parts network are now around 98 percent. The company also managed to take \$25 million a year out of its North American parts inventory and warehousing costs.

While VW knows the potential on the service side, the same cannot be said of many other manufacturers. According to our research, only one in seven of the service businesses benchmarked gives customers full visibility into their order status. Only seven percent have implemented extensive collaborative planning, forecasting, and replenishment with their customers and suppliers. In fact, nearly 70 percent of the service executives responding say they either have no implementation of vendor-managed inventory practices or they do not know the implementation status. Clearly, there are significant opportunities for improvement through better collaborative processes.

2. Information systems that help design, plan and manage service operations are maturing rapidly. A decade and more ago, and in some cases as recently as five years ago, the IT systems available were the weakest links for most service and parts businesses. But today they can support most of the requirements of the largest and most complex service operations. In fact, without sufficient technology support, it will be increasingly difficult to manage and optimize the service business as customer requirements increase, products proliferate, and the service function itself grows more complex.

Our study shows that many companies are neglecting to upgrade their IT infrastructure to allow them to differentiate performance in their service businesses.¹⁶ Service executives pointed to inadequate and inflexible IT systems as a major barrier to operational excellence. Only 11 percent of the companies benchmarked have implemented customer relationship management systems extensively, and just 10 percent have the software to streamline product data management. A mere six percent have IT tools for advanced planning and scheduling in their service operations.

“In fact, without sufficient technology support, it will be increasingly difficult to manage and optimize the service business as customer requirements increase, products proliferate, and the service function itself grows more complex.”

Yet our analysis points to a strong correlation between IT systems implementation and benefits achieved. (See Exhibit 4.) Some leading companies are capitalizing on technology in innovative ways. At General Electric, RFID tools, which barely rate at all with most manufacturers, are used to tag power-generation parts and modules to make it

“The service issue must be included on the meeting agenda of the board of directors to reflect a sense of urgency and to ensure executive commitment.”

easier to identify and assemble the equipment at customers' sites.¹⁷ Rolls-Royce also offers a powerful example. On a trans-Pacific flight, when a Rolls airplane engine was hit by lightning, the engine shut down and restarted appropriately. But instead of incurring an unscheduled inspection upon landing at a cost of about \$1 million in maintenance and delays, the airline was able to schedule the inspection for a more convenient and less costly time.¹⁸ How? Rolls-Royce uses

sensor and communications systems to access the data feeds from the engine monitors in flight. The maintenance problem was addressed in real time - literally on the fly.

NEXT STEPS: PUTTING THE SERVICE BUSINESS ON THE BOARDROOM AGENDA

We believe that the service and parts business is the overlooked jewel in many corporate portfolios. Exhaustive research establishes that service operations typically generate higher profitability than “core” product manufacturing activities, and they typically offer a much stronger growth potential. Yet the service opportunity is still under-exploited in most of the companies benchmarked. Service is chiefly viewed as a secondary activity, and seldom receives the resources or the attention it deserves.

A decade ago, it might have been possible for managers to get by with that viewpoint. Today they cannot. The consequences will not necessarily be obvious next quarter or even next year, but global competition is too intense and too volatile, and the basis of competition is changing too quickly, for manufacturers to enjoy long-term success without incorporating the service business into their strategic planning. Three key steps are necessary:

1. Senior managers should map out their companies' current service functions and pinpoint the synergies between the service business and their companywide strategy and operations in areas such as marketing, sales, customer service, product development, manufacturing, and distribution.
2. Companies must benchmark thoroughly against the best operational and execution practices both within and outside their industry and conduct follow-on visits to selected best-practices businesses.
3. Based on their overall corporate strategy and the operational benchmark assessment, companies need to develop their road map for “service transformation” by targeting key areas for improvement in strategy and business design, operational planning and management, and execution.

The service issue must be included on the meeting agenda of the board of directors to reflect a sense of urgency and to ensure executive commitment. Service champions such as Rolls-Royce, Siemens and Caterpillar are moving the service business to the boardroom agenda and making service excellence a litmus test for competitiveness. With profitability and growth levels on the service side often far exceeding those in the main business, it is clear that the service revolution in global manufacturing is well under way. For most manufacturers, it is now a matter of embracing the service revolution or risking being left behind.

ABOUT THE RESEARCH

Over the last few years we have conducted in-depth case studies and benchmarked to date more than 120 companies across the United States, Europe, and the Asia-Pacific region with combined revenues of more than US \$1.5 trillion.

Participants to date in the ongoing Deloitte Touche Tohmatsu Global Service and Parts Management Benchmark Study come from a diverse array of industries, with about six percent from the aerospace and defense sector, 32 percent from automotive and commercial vehicle businesses, 30 percent from the diversified manufacturing and industrial products industry, 21 percent from high technology and telecommunications, and 10 percent from life sciences. More than 60 percent have their corporate headquarters in Europe and 34 percent have head offices in North America.

The participating companies are all big players in their industries, with 77 percent reporting annual corporate revenues of more than \$1 billion. Nearly two-thirds of the service and parts businesses benchmarked have global coverage while another 17 percent have regional or multi-national coverage.

The research was conducted by Deloitte Research, a part of Deloitte Services LP. DR

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Wim Vaessen, a partner with Deloitte Consulting BV, is the Deloitte Consulting Manufacturing Practice leader for the EMEA Region and leads the European efforts on the Global Service and Parts Management Benchmark Program.

Endnotes

- 1 In this study we use the terms "service business," "service operation," "service and parts business," "service and parts operation (SPO)," and other similar terms interchangeably unless otherwise indicated. For more details on this research, see Deloitte Research, *The Service Revolution in Global Manufacturing Industries* (New York: 2006).
- 2 For more on the global trends in manufacturing, innovation and supply chain management, see Deloitte Research, *Mastering Complexity in Global Manufacturing: Powering Profits and Growth through Value Chain Synchronization* (New York and London: 2003); Deloitte Research, *Mastering Innovation: Exploiting Ideas for Profitable Growth* (New York: 2004); and Deloitte Research, *Unlocking the Value of Globalization: Profiting through Continuous Optimization* (New York and London: 2005).
- 3 Service and parts management refers to the management of a service and parts operation after the initial sale of the main products and includes installation sales and services, spare parts distribution and sales, and post-sales services.
- 4 Profitability is measured as earnings before interest and taxes (EBIT) as a percentage of sales revenue.
- 5 Profitability is measured as earnings before interest and taxes (EBIT) as a percentage of sales over the last fiscal year. Revenue growth is measured as the average annual increase in sales revenue over the past three fiscal years. Other research suggests that "aftermarket service and parts account for 20 percent to 30 percent of revenues and about 40 percent of profits for most manufacturers." See Tim A. Minahan, "Unlocking Value and Profits in the Service Chain Service Parts Management," Aberdeen Group, September 2003.
- 6 We refer to "captive" markets as those for servicing a company's own installed products. The "non-captive" market is defined as the market for servicing competitors' installed products.
- 7 Source: Rolls-Royce, www.rolls-royce.com. See also Rolls-Royce, www.rolls-royce.com/civil_aerospace/overview/default.jsp and Deloitte Research, *Making Customer Loyalty Real: Lessons from Leading Manufacturers* (New York, 1999). For more on the aftersales service business in the commercial airline market, see Mark Dixon Bunger and Henry H. Hartevelde, "Overhauling Airline Maintenance," *Forrester*, October 13, 2004.
- 8 See "Extinction of the predator-the global car industry," *The Economist*, September 10, 2005.
- 9 See *Hyundai Mobis Annual Report 2004*.
- 10 See Deloitte Consulting, *Aftermarket, Afterthought: Getting More Value from Your Service Parts Supply Chain* (New York, 2003).
- 11 See Deloitte Research, *Unlocking the Value of Globalization: Profiting from Continuous Optimization* (New York, 2005).
- 12 See presentation by Frank Ellsner, Siemens AG Medical Solutions, "Uptime Services: Siemens Medical Solutions," *Service Parts Management with SAP*, Berlin, September 28-29, 2005. See also *Siemens Annual Report 2005* and Jack Ewing and Diane Brady, "Siemens' New Boss," *BusinessWeek*, January 24, 2005.
- 13 Estimate. See *Hyundai Mobis Annual Report 2004*.
- 14 See "Mobis opens logistics center in Asan Center dedicated to enhanced after-sales service. W54.7 bil. spent to combine logistics functions," Hyundai Mobis, June 16, 2005. See www.mobis.co.kr.
- 15 See *Volkswagen AG Annual Report 2004*.
- 16 Research indicates that spending on service and parts management IT is 60 percent below main line business and that automation of service lifecycle management is important. According to one study of (mostly) North American companies, the 65 percent of businesses that have not automated to support service lifecycle management (SLM) are twice as likely to lose customers as are SLM leaders. See Marc McCluskey, Judy Bijesse, David O'Brien, and Lindsey Sodano, "Service Lifecycle Management (Part 2): Building a Roadmap for Investments," AMR Research, September 24, 2002. Another analysis suggests that "manufacturers' service supply networks are ten years behind their product supply networks in terms of process sophistication and use of packaged applications." See Brian Albright, "Industry Rises to Aftermarket Parts Challenges," *Frontline Solutions*, July 2004.
- 17 Presentation by Joseph Salvo, Pervasive Decision Systems Laboratory, Information & Decision Technologies, General Electric Company, at the Massachusetts Institute of Technology Forum for Supply Chain Innovation, June 15, 2004.
- 18 Source: Miles Cowdry, Director, Services, Rolls-Royce plc, at *SAPPHIRE Europe*, Copenhagen, Denmark, April, 2005. For more on Rolls-Royce's customer service capabilities, see Stanley Reed, Diane Brady, and Bruce Einhorn, "Rolls-Royce at Your Service: Careful Attention to Customers is Key to its Rebound in Commercial Jet Engines," *BusinessWeek*, November 14, 2005.
- 19 See Michael Schmidt and Steve Aschkenase, "The Building Blocks of Service Excellence," *Supply Chain Management Review*, July/August 2004.
- 20 See *Caterpillar 2004 Annual Report*.



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