Industrial Services Strategies

The quest for faster growth and higher margins
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Foreword

The capital goods industries have been experiencing a fundamental shift in recent years. While a strong decline of profitability has been witnessed in the market for large capital goods investment, the market for industrial services has been discovered as a vital source of turnover and profit.

Services ultimately seem to be the most attractive business area. However, since this statement holds true for almost all participants in this industry, the following questions deserve urgent attention:

• Where within the service business should companies play?
• What are the success factors?
• How can competition of original equipment manufacturers (OEMs) and industry companies be beaten?
• How can real value be generated for service customers?
• How long will this business stay attractive?

Based on extensive consulting experience in the capital goods and industrial services industries, Monitor Group has analyzed the service market within these sectors. This has entailed carrying out a detailed study of current business practices of companies in the German-speaking world to highlight general trends and derive successful service strategies.

In order to allow for cross checks and to extract meaningful insights, the study encompasses both the service provider and service user perspectives. It also covers a broad array of industries. The classical EPC (Engineering, Procurement and Construction) industries of power equipment, metallurgy equipment, paper machines, and rail vehicles are included in the study. The machine tools industry and its major customer, the automotive industry, have been included as well for benchmark purposes.

Based on interviews with major, mostly international, players in these industries and complementary market analyses, the study:

• provides a general understanding of industrial services and examines which service patterns apply to which of the industries covered
• outlines service opportunities for both service providers and service users
• identifies key industrial service success factors for both service providers and service users
• provides an outlook for the future of industrial services
• deduces concise, action-oriented strategic options for industrial services
Foreword

Needless to say, this study would not have been possible without the active participation of leading players in the selected industries. Their points of view and willingness to share sensitive data have laid the foundation for the outcome of this study. We would therefore like to extend our gratitude to all participants, some of which have chosen to remain anonymous. Participants from the provider side are companies operating globally whereas the majority of the service customers included in the study represent a European viewpoint. Aspects specific to North American and Asian service customers could well be added at a later point.
I. Executive Summary

After decades in which traditional product oriented strategies could be successfully pursued, major players in the capital goods industries are now being forced to shift their attentions to the service business as an opportunity for growth and profitability. Our study shows that industrial services/maintenance functions are increasingly on the strategic agendas of both potential service providers and potential customers. The key driver for this is ongoing commoditization of products and technologies leading to increased cost pressure for providers. Service customers, experiencing cost pressure in their own markets, are finding more providers for maintenance services and, as a consequence, often better prices and/or quality delivered.

For original equipment manufacturers (OEMs), providing services offers attractive growth and margin potential. While they have traditionally focused on their own installed bases, we have observed that they are increasingly attacking third-party fleets in order to tap new revenue streams. By concentrating on core competences and outsourcing other functions to service providers, companies operating large industrial sites can free up capital resources and increase both turnover and profitability.

For owners and operators of capital goods and plants, the capabilities of service providers offer opportunities to improve performance on important factors like reliability, efficiency and availability. Furthermore, it enables them to focus on core competences and place more emphasis on sales, marketing and distribution. Increasingly sophisticated capabilities of service providers allow plant operators to generate more value. However, we have observed that this value often goes unrecognized mainly due to a traditional view of the business.

Although the examined industries differ in regard to their specific histories, the technologies applied as well as the competitive and regulative environments, there are critical success factors common to all service providers. These include: understanding customer needs, responsiveness to customer requests, reliability, technology and people.

Service providers have placed primary emphasis on spare parts, but there are growing opportunities for differentiated service solutions and intelligent product/service combinations. However, the study did not reveal a simple trend towards outsourcing and operation of entire plants. In order to fend off the threat of rising competition, successful OEMs will need to make long-term service contracts more attractive to their customers by offering individually...
designed service solution bundles. Long-term relationships between service providers and users prove to be an essential advantage for both parties.

The biggest challenge of managing industrial services consists of defining and implementing strategies which enable the company to capture the value of long-term relationships while at the same time capitalizing on changing market trends and service opportunities.

Two questions are central to developing a successful and sustainable service strategy:

- **Where will we play?** Finding the answer to this question will help to continuously set the right focus for your business. This includes making decisions about which customers to serve and which range of products and services to offer.

- **How will we win?** Answering this question requires turning customer insight into unique and value creating solutions for them and developing your offers in close accordance with their evolving needs.

The answers of these two questions then drive the alignment of companies’ capabilities and resources, e.g. to what extent automation capabilities are required to be able to deliver the chosen offering.
II. The Nature of Industrial Services

Traditionally, industrial services have been seen as “necessary add-ons” to the physical product and mainly centered around initial “custom-design” activities and the spare parts business later on. Users wanted to be treated as “customers” and expected to be “served”. From their perspective, industrial services were defined as having timely, friendly and reliable interactions with suppliers when buying original products and spare parts and they did not consider services as distinct deliverables.

Thus a wide range of potential services remained untapped and demand was equally limited. Since the beginning of the 1990s, this paradigm has been in a state of flux. Industry deregulation and market globalization have led to increased competition and transparency. This period marks the beginning of a massive transition from “engineering and manufacturing companies” to “performance providers”. Services have turned into powerful tools for increasing customer retention and generating new revenues for producers of physical products or original equipment manufacturers (OEMs). At the same time, customers or users have experienced cost pressures in their own markets, and have started focusing on strengthening their core competences. While the competences that constitute the “core” have to be defined individually for each industry, they often comprise sales, marketing, R&D and some parts of production. Other parts of the value chain, such as all activities with no direct customer interface and those which can be provided better and/or cheaper by external suppliers, can be outsourced. This is exactly what users have started doing e.g. in some segments of the power equipment industries, which are focused on the customer interface. Furthermore, plant operators have started reaching out for knowledge and skills that they themselves do not possess. Increasing equipment complexity has contributed to the development of a market for specialized services, which had previously been provided almost exclusively on an internal basis. The prospect of transforming fixed costs into variable costs has been a welcome side effect in this context. On the other hand, this development has constituted a threat to OEMs as new companies, which were focused solely on services, entered the market.

Our study covers a range of industries because the impact and speed of transformation differs significantly from industry to industry. Including a broad spectrum of industries has helped analyze various different development stages with regards to industrial services. We have focused on the following industries:

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1 Other comparable industries, such as aviation equipment, elevators manufacturing and IT equipment have not been included in this study.
We included machine tools because it is a major supplier to the automotive industry. This is a reference industry with a very advanced capability of managing suppliers on their way through an ever changing value chain.

Opinions vary widely, in both published documentation and among the participants in our study, as to what “industrial services” actually refer to. We have therefore applied the following definition of industrial services for the purposes of this study:

“Industrial services are all business transactions which, subsequent to the sale/installation of a physical product, are intended to maintain and/or optimize the operational process, upgrade performance and cover its resource needs throughout the entire life cycle.”

While we fully recognize that pre-sales services, such as sales conversations or consulting, are vital prerequisites for selling e.g. a combined cycle power plant, we have focused the current study on the services directly related to or provided subsequent to installation of the physical product.

The following types of industrial services are covered by our definition:

1. **Spare parts**: provision of replacement components for the physical product (e.g. replacement of worn blades in a turbine)
2. **Repair**: restoring physical product to sound condition after damage (e.g. repair of broken air conditioning system in a train)
3. **Performance upgrade**: replacement or addition of one or more hardware and/or software components of the physical product, which provide better overall performance (e.g. new software to run a paper machine at higher speed)
4. **Reconditioning**: restoring physical product to good condition, especially by renovating or rebuilding. Reconditioning is more extensive in scope than repairing (e.g. the restoration of a used blade)
5. **Inspections**: periodical examination of physical product for flaws (e.g. scheduled inspections of a passenger train)
6. **Maintenance**: day-to-day tasks required to keep the physical product in proper condition (e.g. regular oil-level checks in a mechanical part of a machine); major types are preventive, scheduled and unscheduled maintenance.

7. **Technical support**: provision of advice to users of the physical product via hotline, helpdesk etc. (e.g. the global call center of an automation machine producer).

8. **Technical consulting**: offering of technical expertise such as engineering skills and IT tools to solve a specific problem related to the physical product (e.g. a technical study of how to improve processes in a steel mill).

9. **Customer training**: after-sales customer training or activities to familiarize customers with the use of hardware and software (e.g. a training class for the operators of a new steel melting machine).

10. **Operation**: day-to-day running of physical product/plant including all related services (e.g. operation of an entire power plant for a car manufacturer).

11. **Financing**: supplying funds for purchase of a physical product (e.g. a leasing contract for a new train).

All of these types can be offered/requested individually or as service bundles. Bundles can be unique combinations of hardware, services and capabilities packaged as a “solution” to a specific problem.

Broader services such as facility management, logistics services or general IT support, which are not specific to capital goods (i.e. not related to production equipment), are not explicitly considered in our study.

According to this study, spare parts constitute the largest portion (approximately 45%) of industrial service revenues across all industries (see Exhibit 1). This type of service typically generates more than 60% of the industrial service profits, which is partly due to the fact that certain services, such as customer training and technical support, are often provided free of charge or at cost to attain profits from parts replacement. Often the value of services in and of themselves has not been understood and, in the worst case scenario, is considered to be very low.

Nonetheless, service revenues from performance upgrades, inspections and reconditioning are on the rise. While there are individual examples of pilot projects that involve financing and/or operation, we have generally found little demand for these two types of services.
While the market penetration of services differs from industry to industry depending on the respective development stage (see Exhibit 2), all covered industries share three important criteria:

1. Made-to-order/heavy engineering production and constructions
2. Capital intensity
3. Saturation of the respective OEM market
Based on the comparison of industries and analyses from both the service provider and service user perspectives, our study provides a detailed understanding of the status quo. It highlights matches and mismatches between the service provider and service user and clearly identifies opportunities and future trends. Finally, the study deduces strategic guidelines for each industry.

In 2003/2004, major global service providers and service users from the five industries listed above were interviewed for this study. In addition to the findings, we provide detailed analyses of each industry (see chapter 5).
III. The Service Opportunity

At the time of the study, the market for traditional original equipment manufacturer (OEM) products, such as turnkey metallurgy plants or combined cycle power plants, is experiencing general stagnation and declining margins for EPC-products. Fundamental changes such as globalization and deregulation, currently most notable in the power and the rail markets, are forcing all players to rethink their traditional strategies, which remained largely unchanged for several decades. In addition to this, new entrants like the power service provider Wood Group or the public transport company Connex (a service user) augment competition with innovative business models.

The industrial services market still offers considerable growth and profit opportunities across all covered industries. The estimated annual growth rate of services (2000-2005) ranges from 5-10% in the machine tool and metallurgy equipment industries to 15% in the rail vehicles industry (see Exhibit 3). Service margins could be as high as 15-20% (in the power equipment and the metallurgy equipment industries), exceeding the average margins in the product business by a factor of 4 to 5. Today these margins are also subjected to increasing pressure.

Exhibit 3

<table>
<thead>
<tr>
<th>INDUSTRY</th>
<th>WORLD OEM + SERVICE MARKET 2003 (US$ bn)</th>
<th>WORLD OEM + SERVICE MARKET GROWTH (CAGR 00-05)</th>
<th>SHARE OF SERVICES</th>
<th>WORLD SERVICE MARKET GROWTH (CAGR 00-05)</th>
<th>MARGINS IN OEM BUSINESS</th>
<th>MARGINS IN SERVICE BUSINESS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Power Equipment</td>
<td>100</td>
<td>3%</td>
<td>45%</td>
<td>10%</td>
<td>2-5%</td>
<td>15-20%</td>
</tr>
<tr>
<td>Rail Vehicles</td>
<td>62</td>
<td>6%</td>
<td>35%</td>
<td>15%</td>
<td>3-6%</td>
<td>8-10%</td>
</tr>
<tr>
<td>Machine Tools</td>
<td>33</td>
<td>-1%</td>
<td>27%</td>
<td>5-10%</td>
<td>1-12%</td>
<td>5-15%</td>
</tr>
<tr>
<td>Paper Machines</td>
<td>20</td>
<td>3%</td>
<td>45%</td>
<td>10%</td>
<td>1-3%</td>
<td>10-15%</td>
</tr>
<tr>
<td>Metallurgy Equipment</td>
<td>8</td>
<td>-1%</td>
<td>13%</td>
<td>5-10%</td>
<td>-3-6%</td>
<td>15-20%</td>
</tr>
</tbody>
</table>

Source: Monitor Analysis

2 EPC = Engineering, Procurement and Construction
In addition to higher margins in the service business, the statistics in Exhibit 3 highlight the fact that growth only stems from the service business while OEM business is stagnating in all five industries.

According to our study, OEMs are generally aware of this market dynamics and the underlying potential. They quote “improved profit margin” and “revenue growth” as the main reasons for entering and/or broadening their offering in the service market (see Exhibit 4). Service users also have economic expectations upon entering service contracts. While their main motivation is “increased flexibility”, which often constitutes an economic benefit in itself, “cost savings” is the third most important impetus for purchasing industrial services.

These findings also point out that the economic benefit of using industrial services has to be demonstrated more clearly to both existing and potential service users. Our analysis indicates that by outsourcing at least part of the functions that are no longer core competences, such as repair, maintenance and inspections, to service providers and allocating the freed up capital resources to core competences, service users can in fact increase turnover and profitability. Moreover, outsourcing non-core areas provides additional advantages to service users such as:
• Cost predictability and feasibility
• Access to innovative technology
• Improved service availability
• Implementation of advanced maintenance systems

However, after over 10 years of outsourcing experience in several industries, the survey participants also identified the following list of obstacles to buying/using industrial services:

• Insufficient experience to manage an outsourcing relationship
• Bad experience with previous service providers
• Dependency and greater risks (e.g. quality risk, cost risk depending on the nature of the service contract, dependency on external know-how)
• Difficulty in separating business processes and having “two companies under one roof”
• Resistance from the work force and workers’ councils, part of which will either be transferred internally, transferred to the payroll of the service provider or made redundant
• Restrictive labor laws

These important factors have recently even caused major industry players to re-integrate previously outsourced parts of the value chain. However, these obstacles can be overcome. The next chapter illustrates how this can be done and what conditions need to be met by both partners to reap the mutual benefits of industrial services. Furthermore, based on experience in the IT area for example, we believe that once a certain threshold of learning and experience is achieved, outsourcing will also increase in the industries examined in this study.

Several of the capital goods companies interviewed are designing their service offerings based on user benefits in an effort to develop long-term relationships with their customers. For example, the paper machine manufacturer Metso has developed the so-called “Metso Future Care” concept aimed at maintaining its customers’ competitiveness.
We share Metso’s view that long-term relationships between service providers and users, covering the entire life cycle from the capital goods deal to disposal of these goods, are essential. These relationships are invaluable to sustained OEM profitability. Here again, increased profits for the OEMs do not automatically result in lower profits for the customers, because certain activities can be carried out better and more efficiently by the service providers. As a matter of fact, contractually agreed upon efficiency improvement programs can lead to

**METSO CASE STUDY**

Transformation from an OEM to a solution and performance provider

Metso is the global market leader of papermaking lines and processing systems for rocks and minerals. The major customer sectors are the pulp and paper industry, construction and civil engineering, mining and the power industry.

Metso’s vision is set forth in the Metso Life Cycle business concept, which constitutes the basis for the development of an augmented product and service range to serve its customer processes throughout their lifecycles.

“We aim to increase the share of aftermarket and maintenance services in our net sales. We estimate that this will enable our business to grow faster than our customer industries, whose demand is usually dependent on GDP.”

“Our customers are increasingly concentrating on the needs of their own customers. This emphasizes the role and responsibility of equipment suppliers for the delivered processes throughout their entire lifecycles.”

With its Life Cycle business concept, Metso aims to be a long-term partner for its customers, developing and offering solutions and services throughout the lifecycles of its customers’ processes. The services help their customers maximize the economic benefit throughout the lifecycles of their machinery and equipment. The services include planning and implementation of new investments, process modernization, optimization, maintenance and aftermarket services as well as improvement of environmental performance.

Future development of value-enhancing solutions will be based on Metso’s equipment and machinery manufacturing know-how.

As the role of services increases in Metso’s business, the relative proportion of turnover from traditional equipment and machinery production will diminish.

Source: www.metso.de
higher profits on both sides (e.g. a power plant operator using a service provider to optimize automation of a plant and to upgrade components to latest technology).

As illustrated, there are clear opportunities for industrial services in general and the need to adapt to market changes is pressing in all industries. From a macroeconomic standpoint, the results of our survey show that service opportunities vary in each of the five industries covered. The higher the relation of installed machines (installed base) to annual sales in an industry, the more compelling it appears to focus on services (see Exhibit 5). The paper machines industry provides a good example. From the high installed base factor of 101, one can derive that, for every new machine sold, there are 101 machines for which services could be provided. In general, annual unit sales of new products are significantly lower than the installed base in all five industries, which means that service revenues are less exposed to business cycles.

Exhibit 5

<table>
<thead>
<tr>
<th>INDUSTRY</th>
<th>ANNUAL SALES (AVERAGE)</th>
<th>INSTALLED BASE</th>
<th>INSTALLED BASE FACTOR</th>
</tr>
</thead>
<tbody>
<tr>
<td>Paper Machines (units)</td>
<td>85</td>
<td>8,600</td>
<td>101</td>
</tr>
<tr>
<td>Metallurgy Equipment ('000 tons)</td>
<td>15,000</td>
<td>890,000</td>
<td>59</td>
</tr>
<tr>
<td>Power Equipment (capacity in GW)</td>
<td>100</td>
<td>3,800</td>
<td>38</td>
</tr>
<tr>
<td>Rail Vehicles (no. of wagons)</td>
<td>50,000</td>
<td>1,700,000</td>
<td>34</td>
</tr>
<tr>
<td>Machine Tools (€bn)</td>
<td>25</td>
<td>383</td>
<td>19</td>
</tr>
</tbody>
</table>

Note: 1 Installed Base Factor = Installed Base / Annual Sales
2 Including freight railroad, high speed trains, locomotives and regional trains
3 Very diverse and fragmented - for illustrative purpose manufacturing automation market has been analyzed

Source: Statistical Abstract, OECD, IG Metall, vdp-online.de, Deutsche Bank, Internet Advertising Report, Monitor Analysis

The second factor to be taken into account in this context is the comparison between margins in the OEM and service businesses. The margins in the service businesses of the covered industries are generally higher. In addition to this, the “leverage factor” (i.e. the ratio between the service and the OEM margins) ranges from 2 in the rail vehicles and machine tools industries to 5 in the paper machines industry (see Exhibit 6). This variance results from differences between the industries as regards technology, availability, risk, know-how and competitive structure.
The results of the study indicate that our five industries can be categorized as following (see Exhibit 7):

- **The “service champions”** are the paper machines and the metallurgy equipment industries, which have the highest installed base factor in combination with significantly higher margins in the service business than in the OEM business.

- **The “service specialists”** include the power equipment industry, which seems to have one of the highest average profit margins in services.

- **The “underleveraged”** industries refer to the rail vehicles and machine tools industries, in which service still yields higher margins than the OEM business and the installed fleet is more than 19 times larger than the annual sales unit volume. However, this represents a relatively small leverage compared to the other industries.
There are basically two different routes to unleashing service potential. One is user/demand driven and the other is provider/offer driven. In the paper machine and the power equipment industries we have observed a close relationship between a high level of customer service affinity and a high level of service offering by the OEM. It is in these two industries that the service business has comparably good conditions for growth (see Exhibit 8). In contrast, the rail vehicles and machine tools industries are less well developed.

Service opportunities can be developed based either on existing demand or potential offers.

Note: * Installed Base / Annual Unit Sales
     **Service Margin / OEM Margin

Source: Monitor Group “Industrial Service Study”
The overall service attractiveness of an industry can be derived by taking this one step further and combining the collected insights (see Exhibit 9). In this regard, it appears that the paper machines industry is most attractive, as also supported by the Metso case study (see page 18). We can expect a significant shift towards more industrial services, especially in this industry, due to an increasing demand by service users (customer service affinity) and the fact that service providers are capitalizing on this advantage (margin leverage).

However, this does not imply that players in the rail vehicles or machine tools industries, for instance, can afford to stay away from additional industrial services altogether. On the contrary, the respective OEMs need to develop their service capabilities and current or future service users should review their existing business models. Together they should carefully observe developments in the more “service-predestined” industries and close the service gap if these developments would lead to success for both the service user and the service provider. They also need to find their own path to running a successful service business and to determine whether it is demand driven or offer driven. It is important to understand that the three introduced portfolios are truly dynamic in the positioning of the industries and represent our understanding of the present situation. For example, the positioning of the power equipment industry in the service attractiveness portfolio can move down if more new market entrants attack attractive pockets of its business. This can even be accelerated if OEMs start attacking each others’ fleets, a strategy which has been unmentionable in the industries until now.
In addition to this, we assume that competition will drive prices down across the entire product and service range over time. OEMs will therefore only be able to maintain their overall profitability by implementing the following measures:

1. Enhancing customer retention through higher integration with service customers
2. Increasing service buying frequency among existing customers (not possible for all types of services)
3. Offering new service products to existing customers
4. Winning new service customers (either first time outsourcers or from competitors)
5. Clearly focusing on creating economic benefits for service customers
6. Becoming a leader in innovation for technology as well as in creating value for customers

But why should service users form long-term relationships with their service provider if they have the option of switching to another one that offers more competitive prices? This question is especially interesting as our survey indicates that service users are starting to question their OEM as a “natural partner of choice”. Roughly one-third of services is not provided by the OEMs and service users are tendering their service requests much more intensively than perceived by the OEMs (see Exhibit 10).

Exhibit 10: Way of Finding Service Providers

Rising competition is witnessed by OEMs contending for third-party bids and by new specialized pure service providers entering the market. Perfect examples of the latter are Wood Group and Sulzer in the power equipment industry. New entrants do not cover the entire playing field, but offer services selectively at lower prices or faster than the OEM does.

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3 The Monitor Group Company “Innovation Management Inc.” (IMI) focuses on the creation and capture of significant and sustainable value through innovation and technology.
In order to fend off the threat of new entrants in the industrial services market, OEMs have to make long-term service contracts more attractive for their customers. This can be achieved by offering individually designed service bundles (“solutions”), which could be based on the model of risk and gain sharing. The idea of gain sharing is especially relevant because we estimate that the specific expertise of the service provider combined with economies of scale can reduce overall service costs up to 15-20%. This situation can obviously be beneficial for both parties. Service users benefit from lower overall costs and service providers generate additional revenue. We believe that service agreements will only be lasting if emphasis is placed on developing the mutually beneficial nature. Once one side overplays its negotiating power, the other side will quickly terminate the relations.

In order to take full advantage of the service opportunity, it is important for OEMs to focus on services that add real value for their customers, because customers will only be willing to pay for this type of services. Other services are most likely to be seen as marketing giveaways. The findings of the present study confirm this. Customers are more willing to pay for performance upgrades and inspections than for services such as technical consulting or training units (see Exhibit 11). Interestingly, OEMs appear to overestimate customers’ willingness to pay for the latter two items. This gives an initial indication of the need for OEMs to improve their understandings of customers and revise their offerings and pricing systems accordingly.

Exhibit 11: Willingness to Pay for Services

Note: Low importance, 5=High importance
Source: Monitor Group “Industrial Service Study”
While industrial services offer remarkable opportunities for both service users and service providers, merely taking notice of these opportunities will not suffice to effect sustainable transformation of business relationships in the capital goods industries. Strategies have to be developed for each party involved. The extent to which the service provider will become involved in the service user’s value chain remains yet to be seen. Will a business model in which the service provider takes over full operation of the service user’s production facilities ever be possible or even viable?

**Offering your customers integrated solutions for their often complex global problems is a way to differentiate yourself from competition and to increase your margins.**

**Introduction**

Many big traditional companies are facing increased competition and tremendous price pressure due to increasing commoditization of their core markets. Their often complex products have now matured and the innovation-driven competitive advantage they had has disappeared. As a result, many smaller players are entering the market, offering the same products traditionally supplied by the industry giants and often at much cheaper rates. This is leading to decreasing market shares and margins for the large companies.

Monitor Group proposes a change of strategy for these traditional firms. They should not enter into price competition on products/components, but rather differentiate from these smaller companies by leveraging know-how, global dimensions and extensive product/service portfolios. This can be done by offering customers integrated solutions to their often complex global problems. The good news: due to increasing globalization and deregulation, the customers are also being subjected to price pressures. This is leading the customers to seek out companies which provide solutions to increase their own competitive advantages and allow them to focus on their own core businesses.

**What is a solution?**

A solution addresses specific customer needs or challenges. In order to develop a value-generating solution, a company should slip into the shoes of its customers and find out exactly what they need. A solution is a combination of products, services and support that creates value beyond the sum of its parts. It is often a mixture of existing and/or potential new offering elements. For example, a player in the electronic security business created a solution for one
of their important customers, which included a number of existing products and services such as cameras, access control systems and maintenance services. It also meant, however, that they had to offer new kinds of support including risk assessment, security training and providing expertise on regulatory issues. It is the level of customization and integration that places solutions above products, services or product/service bundles. The way in which elements are integrated and the extent of customization determine the added value for the customer and earn the added financial benefits for solution providers.

As a solution generates additional value, developing solutions is an excellent way to value-based (as opposed to cost-based) pricing. In this way, solutions should benefit both you and your customers. Last but not least, a solution has an external and an internal dimension. **Externally**, a solution is integrated and customized. **Internally**, solutions need to be modular and standardized.

### Challenges to becoming a successful solutions provider

Developing solutions is difficult. Selling solutions is new territory for product organizations. The skills required are far broader and the accountability assumed is greater if success is measured based on a customer’s improved business performance instead of the performance of a product. To become a successful solutions provider, one should overcome the following challenges and pitfalls:
**Build value propositions for customers**

- Solution should be created based on customer’s needs.
- Use the customer’s desired outcome as the point of departure.
- Understand customer’s business processes and operating economics.

**Focus on the right customers:** Not all customers need solutions. Pick customers within the right segment and make sure you are focusing on a large enough profit pool with the respective offering.

**Price the solution correctly**

- Selling solutions is more time-intensive than selling products. It requires extra service and more skilled sales teams. Solutions are more costly.
- Pricing should therefore be made based on the value generated for the customers and not on a cost-plus basis.
- Guaranteeing delivered value or assuming risks is necessary for customers to pay a premium.

**Create an integrated solution:** The solution elements should be tightly woven together so that a customer cannot de-bundle and demand discounts or cherry pick solution elements.

**Changing the sales approach, capabilities and incentives**

- Solution-selling team needs to have a deep understanding of the customers’ businesses.
- Develop partner-like relationships with senior decision makers (usually the ones responsible for purchasing solutions).
- The incentive system should:
  - *Reflect the longer sales cycle for solutions,*
  - *Not be based on the sales manager’s ability to close deals, but instead*
  - *Be based on the business value the customers receive and include the entire team behind the solution effort, not just the department that books the revenue (commission issue).*

**Adapt the organizational set-up:** Selling solutions requires different parts of the organization or even outside parties to work together.

**Conclusion**

Shifting the focus of your organization from being a purely product/service oriented company towards being a solution provider is a long and challenging journey. However, once you have managed the transformation, it proves to be worthwhile as it gives you a competitive advantage which is not easy to
copy. Not only do solutions allow both provider and user to create higher value for customers and concentrate on core competencies, but this shift will also increase profitability.

The following chapter presents selected strategic models for enhancing industrial services by placing primary emphasis on intertwining service provider and service user value chains.
IV. The Challenge of Managing Services

The biggest challenge of managing industrial services consists of defining and implementing strategies which enable the company to adapt to changing market trends and capitalize on service opportunities. In order to clearly define industrial service strategies, two main questions have to be answered: “Where will we play?” and “How will we win?”

According to the study, participants are currently implementing a wide range of different service strategies. In fact, some companies have not even begun to develop real service strategies at all (see Exhibit 12).

Exhibit 12: Quotes of Study Participants

**SERVICE PROVIDER**

- “We fully recognize services as a great growth opportunity. However, we are still in the process of developing the right strategy”
- “We are continuously expanding our service offering”
- “We focus on overhaul and repair of existing systems”
- “We want to become a worldwide leader of machine tools services”
- “With innovative products, systems and solutions, we increase our customers’ economic success”
- “Life cycle management and future concept are our new industrial services strategies”
- “The aftermarket has a strategic focus because higher margins are expected”

**SERVICE USER**

- “We have our own service unit”
- “We put a strategic focus on leasing contracts”
- “We concentrate on a limited number of OEMs which offer us JIT services”
- “We use industrial services primarily for cost-cutting”
- “We focus on our core competences and outsource all non-essential business except for maintenance”

Source: Monitor Group “Industrial Service Study”

The two questions are essential to both providers and users of services. However, especially service providers will need to answer the questions “Where will we play?” and “How will we win?” with regards to their service customers and the respective service offering. Through gaining an understanding of their own customers, service users can derive the required configuration of capabilities and discover how buying services can help them succeed.
Exhibit 13 outlines the necessary approach, which can be broken down into five steps:

**Step 1:** Clear goals and aspirations on corporate and business unit levels are required to set the right context for a successful strategy process. This includes defining whether a service provider plans to become the innovative leader, providing its customers with latest technologies and trend-setting performance improvements or rather being the market share leader sacrificing the price level. There is no right or wrong answer here. Examples show that you can be successful using different aspirations, but it is key to be successful with your derived strategy.

**Step 2:** Answering the question “Where will we play?” is the way to continuously set the right focus for your business. This includes making decisions about which customers to focus on and which range of products and services to offer. At the same time it requires an informed choice as to which customer groups not to focus on and why. A good understanding of customers is key to answering the question “Where will we play?” and is critical to economic success. In fact, it represents one of the most important success factors in the service business according to both service providers and service users (see Exhibit 14):
Companies are tending to apply a high degree of technological sophistication and expertise. However, they often fail to achieve a systematic understanding of an offering’s economic impact. Furthermore, the companies lack understanding of specific needs of decision makers at different levels of the customer organization and the dynamics of changing customer behavior. This is especially true of larger, engineering-driven original equipment manufacturers (OEMs).

The study also analyzes the current state of customer understanding among service providers (see Exhibit 15). In general, customers and providers have a similar perception of needs. However, OEMs tend to overestimate the importance of OEM status and possessing a full product/service range. Therefore they need to improve their understanding of customer expectations and prioritize these significantly.
After having acquired a good understanding of customers, their needs, their business models and the risks of their respective businesses, providers should realize it is impossible to adequately serve all customers. Service providers need to focus on the customer segments for which they can create the highest value. This also means that companies need to take the decision not to play in specific market segments or specific parts of the value chain. Strategy is about focus. This is also true for industrial service companies.

**Step 3:** Answering the question “How will we win?” is about turning customer insights into unique and value creating solutions for them and about developing your offers in close accordance with their evolving needs. This includes choosing the right business model.

Generally, there are five types of integration between service users and service providers. Organized from low to high levels of integration, these are: supplier, packager, integrator, outsourcer and operator.

According to our survey, the supplier model is still the most widely used. However, all forms of integration except for the operator model are steadily becoming more common. Providers use different models in different customer situations. The operator model is not being used due to slow deregulation of European and, in particular, German labor markets but also because service customers still consider operations as a core activity of their businesses (see Exhibit 16). This is changing slowly in some industries such as power generation and, in very few exceptional cases, in metallurgy equipment. For each of...

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**Exhibit 15: What Needs/E xpectations Do Service Customers Have?**

| Source: Monitor Group “Industrial Service Study” | Note: 1=Low importance, 5=High importance |

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the models, service offerings have to be defined and choices have to be made. Furthermore, service providers should define their pricing strategies based on the value created for the customers\(^4\).

**Step 4:** Depending on the business model and selected level of integration between service provider and user, an appropriate set of capabilities needs to be defined. Critical success factors for the service business have already been outlined in Exhibit 14. According to the survey, service providers still need to improve performance as they are not currently meeting all customer expectations (see Exhibit 17).

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**Exhibit 16: Perceived Current and Aspired Working Relationship**

<table>
<thead>
<tr>
<th>PERCEIVED SITUATION</th>
<th>EXPLANATION</th>
<th>CURRENT PROVIDERS</th>
<th>CURRENT USERS</th>
<th>ASPIRED PROVIDERS</th>
<th>ASPIRED USERS</th>
</tr>
</thead>
<tbody>
<tr>
<td>OPERATOR</td>
<td>OEM operates facility; customer concentrates on sale and distribution of product service; requires building up operating know-how</td>
<td>![Currently meeting expectations]</td>
<td>![Currently not meeting expectations]</td>
<td>![Aspired meeting expectations]</td>
<td>![Aspired not meeting expectations]</td>
</tr>
<tr>
<td>OUTSOURCE</td>
<td>OEM expands activity into maintenance; takes over maintenance employees of customer</td>
<td>![Currently meeting expectations]</td>
<td>![Currently not meeting expectations]</td>
<td>![Aspired meeting expectations]</td>
<td>![Aspired not meeting expectations]</td>
</tr>
<tr>
<td>INTEGRATOR</td>
<td>OEM in charge of managing the entire third party supply for customers; OEM avoids being perceived as pure spare part provider</td>
<td>![Currently meeting expectations]</td>
<td>![Currently not meeting expectations]</td>
<td>![Aspired meeting expectations]</td>
<td>![Aspired not meeting expectations]</td>
</tr>
<tr>
<td>PACKAGER</td>
<td>Bundled offerings including products/services from OEM as well as other suppliers; focus on current competences</td>
<td>![Currently meeting expectations]</td>
<td>![Currently not meeting expectations]</td>
<td>![Aspired meeting expectations]</td>
<td>![Aspired not meeting expectations]</td>
</tr>
<tr>
<td>SUPPLIER</td>
<td>Focus on part supply and field service offerings; customers order specific products/services from suppliers</td>
<td>![Currently meeting expectations]</td>
<td>![Currently not meeting expectations]</td>
<td>![Aspired meeting expectations]</td>
<td>![Aspired not meeting expectations]</td>
</tr>
</tbody>
</table>

Source: Monitor Group “Industrial Service Study”

"What capabilities must be in place to win?"
Price and delivery are service components for which customer expectations are high and currently not met. There exists substantial risk of dissatisfied customers choosing a different provider. According to our survey, 38% will switch service providers if they do not adhere to delivery agreements. Low expectations with regards to full product/service portfolio indicate that customers want specialized solutions for their problems and are happy to obtain different types of services from different suppliers. The price factor constitutes a major problem because many customers feel that suppliers have a very limited understanding of service business economics.

**IMPLEMENTING SUCCESSFUL PRICING STRATEGIES TO INCREASE PROFIT**

Most companies today have nearly exhausted the options of cost reduction to increase profitability. In our experience pricing strategies, if effectively applied, can have a much more pronounced effect on both profit and cash flow.

**Alternative to Cost Reductions**

One of the biggest challenges confronting management is the development of strategic pricing initiatives. A good pricing strategy can be used to increase profit and cash flow, win market shares and even provide a foundation for suc-
cessful strategic moves against competitors. Furthermore, pricing strategies are effective alternatives or complementary actions to cost reductions for two reasons:

1. Companies have already gone through a great number of cost reduction rounds. In most cases, the remaining saving potentials are low.

2. Pricing strategies can have a stronger leverage effect on margins than do cost reduction measures. The value of pricing as a lever for growth becomes clear when comparing the impact of 1% cost improvement to a 1% increase in price.

Successful pricing strategies are based on a fair balance between price and value of the product/service for the customer. Customer demands and economic requirements are of primary importance here. If understood properly, product and service offerings can be clearly focused and, as a result, the highest customer benefit can be generated.

Two Phases of Value Pricing Strategy

The process of developing pricing strategies can be divided into two phases.

**Phase 1: Pricing to Value Contributions**

In many companies, pricing is not in direct relationship with the perceived value of products. Regardless of whether the price is too low or too high, the margin and cash flow potentials remain undeveloped (see Exhibit 18). If the price is too high, only small numbers of units will be sold with a high margin per unit but a low overall margin. If the product or service is sold too cheaply, the potential for additional margins remains untapped.

Additional benefits of price differentiation often remain unrecognized. A service or product can be of different value to a certain segment of customers in different countries or at different times. For example, if a company in a capital intensive industry experiences mid-production machine failure, then it will be willing to pay more for the needed spare part than at another time.

This first step of pricing strategy can be carried out without any decisive changes in the company or modifications of the marketing mix. It merely requires the ability to segment markets and understand the customer’s specific demands and economic needs. The translation of customer understanding to strategic action, however, requires sound skills, experience and the right technology.
Phase 2: Gearing Towards Differentiated Offerings

In the second phase of developing a successful pricing strategy, the value contribution of performance has to be understood in terms of current and future customer requirements. This results in differentiated offerings based on individual customer needs. Conjoint analysis plays an important role in the development of such differentiated offerings. The marketing mix is adjusted to move the price elasticity curve. The result should be that the incremental cost of adjusting the marketing mix is much lower than the incremental value created for the customer. For example, the construction machine producer Caterpillar has introduced a 24-hour spare-parts service. This results in shorter repair times and customers are willing to pay a premium for the service.

Companies involved in high-volume business are able to develop new differentiated-offering possibilities. Generally, the competition provides the primary motivation for developing differentiated offerings. The pricing strategy can be used in the struggle against competitors in a well-directed way.

The Six Commandments of Successful Pricing

Monitor has derived the following major lessons from its experience in pricing projects:

- Pricing is a core component of competitive strategy, not just a tactic. It requires considerable top management attention and thought. It cannot be delegated to the sales force.
process for identifying and assessing potential cooperation or outsourcing options. They should also develop an effective approach to implementing and monitoring cooperation/outsourcing decisions. In recent years, equipment owners have increasingly realized that service providers very often do not have the experience and capabilities to meet their requirements. This can only be solved if the service provider and service customer engage in a joint problem solving process. Providers need to understand that they initially have to invest and customers should realize that very often they need to transfer knowledge and capabilities to the service provider to reap further economic benefits from sophisticated service solutions.

**Step 5**: With regards to the organizational aspects of the service strategy, there are generally four different ways for an OEM to position the service unit within its organizational structure:

1. In the sales department
2. In the engineering/manufacturing department
3. At top management level in a separate unit
4. As a subdivision of each business unit

Historically, OEMs have been product-driven and industrial services have been considered less important. Therefore, a separate service unit did not exist. As the study indicates, this is changing increasingly in all of the industries covered. While we have seen many organizational setups in our study, individual industry players such as Alstom Power successfully established separate service units years ago.

“*What systems and structures need to be in place to win?”*
Establishing a separate service unit with profit and loss responsibility generally appears to be the best way to successfully implement a serious service strategy for the following reasons:

• Without separation it is almost impossible to determine the amount of services provided or to measure the economic success of the service business.

CASE STUDY: ALSTOM POWER SERVICE

ALSTOM Power is one of the world’s leading suppliers for the power equipment industry. The division was responsible for over 50% of ALSTOM’s sales in the 2003 fiscal year and offers a comprehensive range of power equipment solutions, from turnkey power plants to all main components of turbines, generators, boilers, emission reduction systems and control systems. In addition to these products, the company provides a full range of services including plant modernization, maintenance and long-term operation.

Due to rapidly changing market conditions in the late 90s, the whole industry was faced with severe challenges, i.e. increased competition with heavy pressure on margins. As a result, management decided to focus more on service businesses by creating a separate unit called ALSTOM Power Service.

ALSTOM Power Service placed emphasis on providing on-time services to different customer segments. This entailed gaining an in-depth understanding of customer needs, buying criteria and specific economic models. The acquired knowledge served as a foundation for offering tailored customer packages which are providing measurable additional value for the utilities.

This kind of value packages includes spare parts, maintenance and access to emergency stock for several inspection intervals, linked to attractive commercial conditions.

Internal processes at ALSTOM Power Service had to be optimized in order to better serve customers with the specific service requirements (i.e. shorter delivery times).

Service currently constitutes 36% of the global power equipment market values (tendency growing). More than 40% of ALSTOM Power’s total sales is generated by services. ALSTOM Power Service is a profitable and a growing market leader with double-digit profitability, while the turnkey plant business is struggling in a competitive environment with rapidly changing demands.

Source: Alstom Power Service
• A management team reporting only to the CEO should be focused on the service business and will make every effort to grow the business successfully.

• Several factors such as customer needs, duration and frequency of customer interaction, required personnel skills and growth rates differ significantly between the capital goods and service businesses.

Nevertheless, the OEM and service businesses need to collaborate closely on certain projects and should share resources such as automation or field service to avoid duplication. They also need to jointly manage the product life cycles of their customers.

With regards to IT capabilities, several service providers currently use electronic interfaces with their customers solely for marketing and informational purposes. Some players are beginning to realize the wider implications of e-business for their industrial service business models. Voest Alpine, for instance, believes that the internet will play a significant role in the areas of transaction monitoring, order status, service history, remote monitoring and integrated workflow systems. Siemens Automation and Drives has developed its e-business platform into an important pillar of its industrial service offering.

In our analysis we saw many different examples of how the service business is organized. The most glaring mistakes we observed were the following:

• Service not organized as a separate business unit represented in the company’s executive committee

• Service unit split off but insufficient resources allocated

• Service unit in charge of only a portion of the service business. The huge profitable portion remains in the new equipment business

• Service business organized around local factories with lack of global integration and insufficient capabilities to develop and implement a global strategy

• The manager of the service business reports to the head of the new equipment business

Organization also needs to take markets and customers into account. For example, as China and India will increase their share in the global demand in the analyzed industries dramatically, we think it is only a matter of time until major global players set up headquarters in that region. A well defined strategy, providing answers to the questions “Where will we play?” and “How will we win?” will always rely on anticipation of future market developments and competitors’ moves to prepare for this future.
V. The Industry Perspective

The previous chapters should have clarified general developments in the industrial service arena and provided an upper-level comparison of the survey’s results in the five industries covered. The following section covers short industry-specific analyses as well as a cross-industry comparison.

5.1 Power Equipment

Four main original equipment manufacturer (OEM) service providers dominate this truly global 100 billion U.S. dollar market. As in some of the other markets covered in the study, the large international OEMs face competition from small, local craftsmen and smaller non-OEMs who are often more flexible and provide simpler services at relatively low prices. In German markets with inflexible labor market legislation for example, power producers increasingly create separate service units from their maintenance departments and offer services for competitors. (see Exhibit 19).

The demand for power equipment is driven by two factors: first, a global increase in electricity consumption requires new capacity additions to meet the growing demand. Second, old equipment that does not adhere to environmental regulations or is not economically viable must eventually be replaced.

Exhibit 19

<table>
<thead>
<tr>
<th>Service Providers</th>
</tr>
</thead>
<tbody>
<tr>
<td>4 main OEM suppliers in the power market:</td>
</tr>
<tr>
<td>- GE, USA (19%)</td>
</tr>
<tr>
<td>- Alstom, France (28%)</td>
</tr>
<tr>
<td>- Siemens, Germany (19%)</td>
</tr>
<tr>
<td>- MHI, Japan (6%)</td>
</tr>
<tr>
<td>Non-OEM suppliers include:</td>
</tr>
<tr>
<td>- Wood Group</td>
</tr>
<tr>
<td>- Sulzer Turbo Machinery</td>
</tr>
<tr>
<td>- Elbar</td>
</tr>
<tr>
<td>- Small, local craftsmen and other small service providers</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Service Users</th>
</tr>
</thead>
<tbody>
<tr>
<td>4 general types of players in the power market:</td>
</tr>
<tr>
<td>- Utilities, often state owned</td>
</tr>
<tr>
<td>- Merchant Power Providers (MPP), who sell to individual groups of power users</td>
</tr>
<tr>
<td>- Independent Power Producers (IPP), who sell into the power grid</td>
</tr>
<tr>
<td>- Industry, i.e. major players from other industries with own power production</td>
</tr>
</tbody>
</table>

Note:*Global market shares excluding small third party providers (e.g. local craftsmen)
Source:Monitor Analysis, Deutsche Bank, Goldman Sachs
As is generally seen in the power equipment industry, the service business has thus far been dominated by sales of spare parts (see Exhibit 20). As mentioned above, the power equipment industry is one of the most advanced industries covered in this survey with regards to industrial services. This is exemplified by the facts that some service providers operate power plants for their customers and all providers offer services for selected third-party technologies in addition to their own brands.

Exhibit 20: Power Equipment Industry Only: Share of Service Sales / Spending Volume by Type of Service

As Exhibit 21 indicates, service users in the power equipment industry seem to be relatively satisfied. Whether or not this is cause for the advanced state of the industry remains debatable. Price, just-in-time delivery and responsiveness are the three factors service providers are expected to improve.
Another indicator of the advanced state of the power equipment industry is the fact that several OEMs appear to have significantly improved their price point vs. third-party providers over the last couple of years. This takes away a main competitive advantage of third-party providers, who also suffer from disadvantages with regards to scale economies and technology leadership in comparison to the large OEMs.
5.2 Metallurgy Equipment

In contrast to the power equipment industry, the metallurgy equipment industry is still locally oriented and very fragmented (see Exhibit 22). We estimate the value of the global metallurgy market at around 8 billion U.S. dollars, about 50% of which comprises investments in rolling mills. This represents a contraction of 20% as compared to 1997, resulting from huge overcapacities in a time of declining demand. As in other industries, China is the main driver for growth, based on a double-digit increase in the production of crude steel.

Exhibit 22

The service business in the metallurgy equipment industry is also mainly dominated by spare parts. This can account for up to 85% of the service business volume. Performance upgrades and reconditioning are next, mainly driven by modernization of existing equipment. Nevertheless, Exhibit 23 displays a relatively high variance in terms of service sales (from a service provider perspective) or spending volume (from a service user perspective) respectively. This indicates that individual players in this industry have also adopted new service strategies.

Note: *Market shares exclude small third party providers (e.g. local craftsmen)
Source: Monitor Analysis, Hoovers.com, Deutsche Bank, VA Tech
According to our study, customers in this industry are relatively satisfied. In fact, the metallurgy equipment industry is the only one in which customers are moderately satisfied with current price levels despite high expectations (see Exhibit 24).

Exhibit 23: Metallurgical Equipment Industry Only: Share of Service Sales/Spending Volume by Type of Service

Source: Monitor Group “Industrial Service Study”

Exhibit 24: Metallurgy Equipment: Expectation and Satisfaction with Service Providers

Note: 1=Low importance, 5=High importance
Source: Monitor Group “Industrial Service Study”
5.3 Paper Machines

The market for paper and pulp machines is dominated by three big OEMs (see Exhibit 25). It amounts to approximately 8-10 billion U.S. dollars and is growing at less than the global GDP average. However, upon including aftermarket figures, this reveals itself to be a 20 billion U.S. dollar opportunity.

Exhibit 25

Note: *Market shares exclude small third party providers (e.g. local craftsmen)
Source: Monitor Analysis, Hoovers.com, Metso

Exhibit 26: Paper Machines Industry Only: Share of Service Sales/Spending Volume by Type of Service

Paper Machines Industry Only: Share of Service Sales / Spending Volume by Type of Service

- Spare parts
- Performance upgrade
- Technical support
- Inspections
- Repair
- Reconditioning
- Financing
- Customer training
- Technical consulting
- Remote maintenance
- Operation

Average paper machines industry
Range of answers

Source: Monitor Group “Industrial Service Study”
While we have found an almost homogeneous landscape of critical success factors across all five industries covered (see Exhibit 14), we have identified different levels of user satisfaction with their current service providers. Users in the paper machines industry are less satisfied than users in the power equipment and in the metallurgy equipment industries (see Exhibit 27).

Exhibit 27: Paper Machines Industry: Expectation and Satisfaction with Service Providers

Note: 1=Low importance, 5=High importance
Source: Monitor Group “Industrial Service Study”
5.4 Rail Vehicles

In comparison to the other industries surveyed, the rail vehicles industry has recently been a dynamic one. Driven by deregulation, crowded highways, the development of new and the expansion of existing mass transit systems, the market continues to grow at a double-digit pace. High growth elements of the business are represented by services and turn-key systems with an expected CAGR of over 20% for the next three to five years. In addition to the 40 billion U.S. dollar market volume, there remains the untapped potential of services currently provided in-house with a value of approximately 22 billion U.S. dollars globally. This applies especially to the maintenance functions operated by incumbents. Apart from those who perform service functions, there are two types of OEMs: global integrated providers of rolling stock and specialized OEM component providers. Due to the level of integration of the incumbents, there are almost no small local providers of industrial services (see Exhibit 28).

Exhibit 28

<table>
<thead>
<tr>
<th>Service Providers</th>
<th>Service Users</th>
</tr>
</thead>
<tbody>
<tr>
<td>Main integrated OEM providers of rolling stock, signaling technology, rail infrastructure are*: &lt;br&gt; - Bombardier, Canada (21%) &lt;br&gt; - Alstom, France (13%) &lt;br&gt; - Siemens, Germany (11%) &lt;br&gt; - GE, USA (6%) &lt;br&gt; - GM, USA (4%)</td>
<td>There are 4 general types of users in the rail market: &lt;br&gt; - Incumbents: e.g. Deutsche Bahn, Germany, ÖBB, Austria, SBB, Switzerland &lt;br&gt; - Pure private operators: e.g. Connex, France, Virgin, UK &lt;br&gt; - Local authorities, &lt;br&gt; - Leasing companies: e.g. Angel Trains, UK</td>
</tr>
<tr>
<td>These players are complemented by several specialized OEM component providers like &lt;br&gt; - Kneis, Germany &lt;br&gt; - Herbingau, Germany</td>
<td></td>
</tr>
</tbody>
</table>

Note: *Market shares exclude small third party providers (e.g. local craftsmen)
Source: Monitor Analysis, Alstom, Siemens

Based on the market structure described above, the service business in the rail vehicles industry is again dominated by spare parts sales (see Exhibit 29). Due to safety regulations, the share of inspections, repair and reconditioning is higher than in other industries. In addition to this, the figure highlights that especially new entrants in the rail market often operate new business models and have outsourced a large portion of maintenance functions.
As indicated in Exhibit 30, the level of satisfaction among the users of services (i.e. the train operators) is relatively low. We primarily attribute this to the fact that deregulation efforts in the early 1990s significantly changed the supplier relationships. Expectations of customers have risen, but performances of suppliers have not caught up.

Exhibit 30: Rail Vehicles Industry: Expectation and Satisfaction with Service Providers

Note: 1=Low importance, 5=High importance
Source: Monitor Group “Industrial Service Study”
5.5 Machine Tools

The machine tools market comprises a variety of end markets (see Exhibit 31). Therefore, we cannot draw an overall picture of the machine tools industry but have focused our analyses on machine tools used in the automotive industry, which has historically been a front-runner and trend-setter for many other industries.

Exhibit 31

Service Providers

No clear OEM market leader as the market is very fragmented:
- ABB, Atlas Copco, Dürr, Gildemeister, HWKA, Sandvik, Schneider Group, Siemens etc.

The regional market split is:
- Japan 22%
- Germany 21%
- Italy 12%
- USA 10%
- China 7%

Non-OEM suppliers include:
- Small, local craftsmen and other small service providers

Service Users

Machine tools are used in different end markets:
- Automotive
- Aerospace
- General industrial
- Defense
- Construction
- Power equipment
- Oil and gas
- Mining
- Electronics
- Retail

Note: *Geographic split exclude small third party providers (e.g. local craftsmen)

Source: Monitor Analysis, JPMorgan

Exhibit 32: Machine Tools Industry Only: Share of Service Sales/Spending Volume by Type of Service

Machine Tools Industry only: Share of Service Sales / Spending Volume by Type of Service

Source: Monitor Group “Industrial Service Study”
Spare and wear parts business and performance upgrades are the most significant service business areas for machine tools producers (see Exhibit 32). Our sample does not include any automotive companies already employing “pay on production” schemes. Our interview partners insisted that operation (i.e. of car producing machines) is and will most likely remain a core competence.

Exhibit 33: Machine Tools Industry: Expectation and Satisfaction with Service Providers

[Diagram showing expectations and satisfaction levels for various service providers, including reliability, responsiveness, price, short delivery, customization, service/consulting, and more.]

Note: 1=Low importance, 5=High importance
Source: Monitor Group “Industrial Service Study”

In general, we have observed a high level of dissatisfaction among the users of industrial services (see Exhibit 33). As in other industries, service providers were accused of “promising too much” in some of the interviews they gave.

Interestingly, participants from the automotive industry had the highest expectation of further outsourcing. The bottleneck towards more outsourcing is missing capabilities on the supplier side, as we were told by automobile managers. Some of them will now engage in even closer relationships with service providers to transfer capabilities and know-how, giving them more responsibility for managing maintenance and parts of the car production process.
5.6 Cross-Industry Comparison

All five industries covered share the following three characteristics: all operate with made-to-order industrial equipment, all are capital intensive and all face an environment of saturated OEM-markets. On the other hand, they are quite different in size and they are all at different stages of service market development. The analysis of the interviews by industry, especially with regards to the breakdown of service sales, is a direct reflection of these differences. More obvious still, as an indicator of the differences between the industries, is the comparison of the current level of integration between service providers and users in each industry as defined in chapter 4 (see Exhibit 16): While the “classical” supplier relationship appears to characterise the machine tools industry, the power equipment industry is the only industry in which the operator model is already being applied (see Exhibit 34). This can be attributed to the fact that for several industries, e.g. for the automotive industry, power generation is a necessity for its activities but not part of the core competence. Therefore, the power equipment industry is also the only industry in which the operator model is currently viewed as an aspired future level of integration (see Exhibit 16). The metallurgy equipment industry intends to “practice” the operator model in very special start-up situations for limited time periods.

Exhibit 34: Current Level of Integration

Source: Monitor Group “Industrial Service Study”
Despite these differences we strongly believe that in all observed industries the service business will be one of the main catalysts for growth in the near future. This view is shared by both service providers and service users. Outsourcing is expected to continue being a major trend (see Exhibit 35).

Exhibit 35: Expected Changes in Industry Structure

Furthermore, we believe that despite the illustrated differences and the fact that there are different levels of customer satisfaction with their respective service providers in each industry, there is a set of challenges faced by players in all five industries. The next chapter reflects our views on what form these challenges will take and how they can be overcome.
VI. Future Outlook

The basic notion is clear. Development in the area of industrial services will continue. Based on the findings illustrated so far, we have derived six main hypotheses of what we think the next three to five years will bring for service providers and users:

1. Total Competition in the Industrial Service Business is a Reality

As companies continue to look for new sources of revenue and profit, there will be no protected markets or protected internal fleets. Being an original equipment manufacturer (OEM) will no longer ensure high price realization per se. OEMs will not respect the old limits of their own products and new entrants will continue to find the most attractive product market segments and attack these segments selectively. Value chains will be deconstructed and having a full service portfolio will no longer be the primary success factor. How can you win in such a market? The part of the market that will inevitably become commoditized will be won by the lowest-cost provider. However, these providers should not forget innovation, technology and customer integration as they are the most powerful means for achieving competitive advantage. New technology is making for shorter life cycles. Those who configure their innovation activities carefully, those who run efficient technology development processes and those who attract the best engineers will have good chances in this game. The speed of successful new technology development and its application to products or solutions is one of the key success factors today, and it will become more critical still in the future. Of course OEMs will continue to yield an advantage if they succeed in managing the new equipment business together with the service business, thereby catering perfectly to customer needs along the entire customer life cycle. The other complementary success factor consists of customer understanding, customer integration and being able to create measurable economic benefits for service customers. Those who understand the needs of their customers throughout the customer life cycle and choose the right areas to play in, while at the same time engaging in competition with others based on profound customer insights, will have a higher chance of winning than those who choose to simply sell spare parts at ridiculously high prices. This also includes developing and managing customer relationships through joint learning processes resulting in new collaboration models. These models can then be implemented together to generate more value and less frustration. However, all of this is only true if the following basic performance requirements are met: delivering on the promise made along with excellence and efficiency in...
execution. Deeper understanding of value creating mechanisms compared with increasing cost pressure will lead to more value-based and performance-based pricing models.

2. End Game Scenario and Emerging Player Typologies

The industrial service business will become a commodity business as customers increasingly become cost-driven due to changes in governance. In the process, customers will gain much more experience managing service providers for their equipment. Margins will decrease here and in the area of installing new equipment. The old model, in which OEMs aspired to serve all customers in their “own” fleets, will soon belong to the past. This will be replaced by a new model that we call a customer centered value model. The only justification for generating profit in a market containing educated customers is to create value for the customers. Based on this customer understanding, companies will develop focused offerings and reconfigure their resources accordingly. Will the traditional (full product/service-portfolio) OEMs continue to be emerging players? Those who continue to see markets and customers in the traditional way will certainly lose. OEMs have to evolve from wanting to “own” their fleets to embracing a value-creating approach. The greatest advantage possessed by OEMs is their technological know-how and a broad access to their customer base. These advantages should be effectively leveraged. However, this not only means creating customer focused value-creating offerings and solutions. It also means identifying which business areas should be brought to a halt. For example, selling low priced parts for equipment based on old technology could be licensed out to low cost suppliers or given up entirely. New players will inevitably continue to enter the markets as well. These may include “pirates” who offer a limited product range and add limited technology or just lowest-cost producers of spare parts, which will make the role of the OEM obsolete in these low cost areas. OEMs might even decide to start their own “pirate” units to protect their share of the market. A new network of players will emerge to compete and selectively join forces in cooperative agreements. An example of this model is an OEM working with a third party service provider. This requires development of the capability to lead and orchestrate a number of third party suppliers to offer customers a full service spectrum. Being a full service provider as required by some customers does not necessarily entail the OEM carrying out all activities of the package by itself. We also see that, in most of the industries examined here, the development from simply being a supplier to becoming a packager, integrator, outsourcer and finally an operator will not become reality. Only one or two industries will actually attain operator level whereas the majority will retain an integrator role and some in an outsourcing role. In regulated
markets and countries with rigid labour law legislation, service customers will also continue to compete with their service providers to some extent as they will not be able to restructure their organizations and outsource parts of the businesses which they themselves are not able to run competitively. The public transport organizations of Germany, France and Austria as well as the power equipment industry in Germany are good examples of this.

3. The Outsourcing Myth: From Excitement to Frustration to Market Penetration

A source of growth in many service industries is the outsourcing of customer activities and processes. We believe there are two important lessons to be learned in this area. First of all, outsourcing can only work among educated partners who have experience and a joint objective to broaden the scope of services provided. Furthermore, some areas will never be outsourced and, with the exception of the power equipment industry, plant operation is not expected to be outsourced. The example of the IT industry in the last 20 years shows that companies need to ride down the experience curve, from excitement to frustration. Successful outsourcing is based on this educational process. The ability to outsource services is not only important to service providers. In fact it will prove more important for service customers to cultivate this skill. The process includes deciding whether to make or buy, designing the activities and processes to be outsourced and managing the outsourcing contract, which in turn includes performance management. This will continue to be important until a company decides to reintegrate processes or switch from one service provider to another. Experience also shows that outsourcing contracts in many cases requires close interaction with service providers and customers to create value not only by lowest-cost processes but by engaging in a joint learning process to continually develop the scope and content of the outsourcing contract. This helps the service provider develop those new capabilities required to offer a solution for new, changing requirements on the customer side and to penetrate the customer’s organization in a sustainable way. There is great untapped potential in users that want to outsource activities not currently offered by service providers simply because they are not able to deliver. Outsourcing will fail if the value proposition is not clear or if it changes over time. It will also fail if the service customer is not experienced in outsourcing or if outsourcing contracts are obviously based on the provider’s advantage rather than being geared towards value creation and mutual benefit.
4. Value Creation as the Source of the Service Business

The following success factors in the industrial services business have clearly been identified: reliability, price and just-in-time delivery/ responsiveness. These should come as no surprise to insiders. Players will have to provide these factors as a bare minimum to stay in the business. In order to outperform the competition, service providers need to develop a value creation approach based on a deep understanding of customers. Further requirements are mastery of technologies such as segmentation and customer portraits, choosing battles wisely, focusing resources and not trying to win in all fields. Everyone is talking about it, but it has not yet been implemented on a broad scale. Of course many customer expectations, such as increasing efficiency and reliability of the equipment and minimizing downtimes, are well known. Winning service providers will identify the most attractive areas and then develop sophisticated solutions, which will create value for the equipment operator. As a consequence, they will gear their capability and their resource base to identifying those opportunities. This in turn will help quantify attractiveness and develop and deliver those solutions. Many service providers will fail because they are entering an area which is unattractive due to low margins. Others will not be able to develop a solution for an identified customer compromise. Now the biggest misunderstanding is that value can be created simply by adjusting a few of the processes as defined above. It is not that easy. In the industries discussed in this study, value creation is closely connected to innovation and technology and its application to customers’ needs. Key issues are how innovation can be accelerated, how access to new technology can be secured and how long new technology can be protected. In addition to this, the service provider needs to be able to engage in a dialogue with the service user to help both parties understand the mechanism of value creation as well as the mechanism of value sharing between supplier and customer. Experience shows that this can be best achieved in joint learning and development activities with suppliers and customers. On the service customer side, the “make or buy” process needs to be driven by value creation potentials and with a clear vision as to how this potential can be realized. Service providers will be selected based on this vision to help cut costs or engage with partners in joint development of new solutions. Over time all service customers will gain experience in value pricing and will expect the same from providers. The way the automotive industry has dealt with its equipment suppliers is clearly a benchmark here.
5. Organizing to Win

Organizing services is the key to implementing service strategies to maximize bottom line impact. Business responsibility needs to be clearly linked to responsibility for resources and assets. For original OEMs with a new equipment business and a service business, an organizational form needs to be chosen that supports separate management of the different businesses while at the same time taking into account the coordination required to manage the entire customer life cycle. This results in two separate business units managed as profit centers with agreements for joint management of shared resources (e.g. field service, automation, etc.), supply agreements (e.g. parts) and technology transfer agreements for new products. Top management should not compromise margins in the new equipment business for higher margins in the service business. Higher margins in service will attract new entrants, which will eventually pull margins back down. When this happens, low or even negative margins will destroy the industry’s profit pools. Nevertheless, many questions remain to be answered on a case-by-case basis upon reorganizing the service business.

How are innovation processes and technology development organized? Would it make sense to duplicate capabilities (e.g. having two automation departments, one in service and one in the new business organization)? How do we coordinate on the customer end? As is often the case, service unit employees previously worked in the new equipment organization. They bring valuable technology and product understanding but often do not understand the nature of service businesses. Building on what we have identified above, it is of primary importance to gear the service organization towards two objectives. The first of these consists of building a lowest-cost supply chain capability to execute parts orders quickly at the lowest possible cost. This is only possible with the right processes and a fully automated end–to-end supply chain. The second objective consists of gaining an in-depth understanding of value creation opportunities for customers and transforming them into unique, profitable solutions. This requires the development of new capabilities in understanding mechanisms of value creation and the ability to organize for value based pricing as the next step. The look and feel of such a new service organization is significantly different from the organization of new equipment sales.

6. The Battle Has Begun: Attack, Defend and Win

The recent recession has accelerated competition in all of the examined industries. New entrants in the industrial service markets have attacked incumbents in profitable areas where it hurts most. The game has become much faster, which hits the big OEMs even harder as many of them are still acting in slow traditional mode. The managements of OEMs are faced with the task of teach-
ing “the elephant to dance” with reference to their large, often sluggish, organizational structures. Services will have to be organized to enable fast reactions to customer requirements, requests for quotations, competitive intelligence, immediate reactions to price changes and customer offerings as well as the ability to attack competitors, be it other OEMs or pirates in areas with attractive profits and reasonable retaliation potential. Furthermore, the companies have to cope with a range of pricing problems from dramatic price reductions to sophisticated high tech products sold much too cheaply. But when the time comes for companies to react to these problems, they are often too slow: it is time to do strategy homework, think about how to outperform the competition and decide on the next plan of attack before the competition does. A nice quiet business is suddenly developing cutthroat competition and is facing a new pace of change which could not have been foreseen. It is time for engineers and the MBA’s to team up and to decide wisely “where to play” and even more importantly “how to win”. Managers now need to step up and start managing their strategic game board more actively. As Michael Porter\textsuperscript{5} says: “The essence of strategy is choosing to perform activities differently than rivals do.”
About Monitor Group

Founded in 1983 by Professor Michael Porter and colleagues at Harvard Business School, Monitor Group is a leading global strategy consulting firm with more than 1,000 consultants in 29 offices around the world. Since its founding, Monitor Group has remained focused on a core mission: Applying leading-edge analysis to help its clients define robust strategies as well as actions to transform these strategies into sustainable advantage. Monitor’s clients are primarily from the financial services, industrial goods, chemicals, pharmaceuticals, telecommunication, automotive, consumer goods, retail, and media industries.

While primarily focused on strategy consulting, Monitor Group has continually developed a broader portfolio of professional services. Building on a strong foundation in corporate and competitive strategy, Monitor Group has honed leading edge skills in marketing strategy, organizational analysis, corporate finance, and private equity.
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