

Spare Parts Pricing Optimization

To contend with the unpredictable global economy, industrial manufacturers need a structured approach to spare parts pricing that takes into account material costs and competitive offers and applies analytics to uncover customer perceived value.

Executive Summary

The manufacturing industry is still suffering from the effects of the global economic recession that started in 2007 and persists, at least in Europe, today. Industrial segments are slowly recovering, but overall performance remains weak. The decline in customer demand across many sectors is causing severe revenue pressure. This has caused many players not only to examine avenues for reducing capital expenditures but also to look at ways of generating new revenue streams.

As manufacturing companies look for ways to increase efficiency, lower operational costs and identify growth opportunities, an emerging area of focus (one that was previously ignored) for fueling a turnaround is after-sales service.

Aftermarket sales and services are estimated to be 75% more profitable than those of the core business (see Figure 1). However, research indicates that over 67% of companies are growing their services business more slowly than their main businesses.¹ As companies begin to realize the growth potential in the after-sales market they should take heightened interest in their services business.

Service Is More Profitable than Core Business

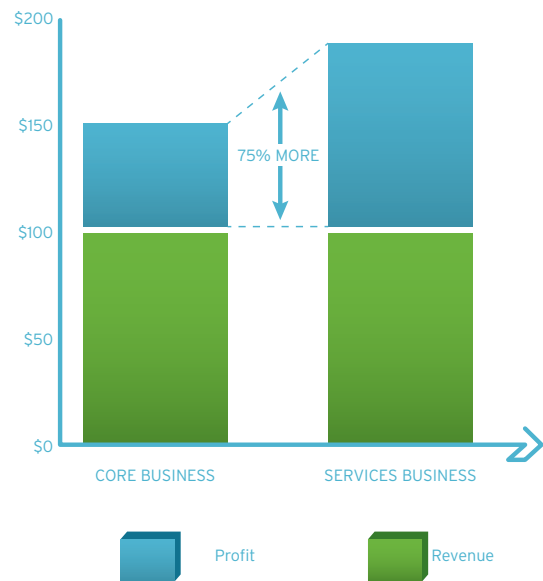


Figure 1

Pricing Strategies for Spare Parts

Historically, most revenues generated by industrial manufacturers originates from the production of components or end products. Now, some companies also earn a significant amount from offering services and solutions—and the trend is upward. As industrial manufacturers look to serve customers better, many are now helping with training, installation, ongoing monitoring, maintenance or refurbishment of the products they sell. A case in point is GE, one of the world's biggest industrial companies, which announced in its 2010 annual report that the company plans to expand service (and software) offerings above and beyond the company's installed base. In 2011, GE reported an increase of 14% in sales and 15% in operating profit compared with 2010 from its product services in key business sectors.² Another such example is the engine-maker Rolls-Royce, which now generates more than half of its revenues – over £5.5 billion – from service activities.³

As a result of this focus on service business, spare parts services and availability has gained prominence. Spare parts form an essential part of after-sales service and the overall sales cycle in manufacturing and services operations and has significant bearing on customer satisfaction. During the product sales process, the manufacturer will normally promise to

maintain an inventory of essential spare parts for the entire life cycle of the product.

Research indicates that an average industrial or automotive company generates 10% of its revenues from spare parts sales and more than 40% of their profit.⁴ Given the profitability of the spare parts market, manufacturers have realized that this element is critical for company operations (see Figure 2).

Pricing is the key for harvesting the untapped potential of the spare parts market and is the best lever for improving profitability. Industry estimates show that a 1% increase in price can lead to an 11% increase in operating profit.⁴ By using the right pricing tactics for spare parts, manufacturers can realize significant increases in sales volumes, operating profit and customer satisfaction.

Pricing of spare parts is challenging since each spare part has different competitors, consumption behavior and market potential. The most common pitfall in pricing is applying standard markup (cost-plus) pricing or competition-based pricing, both of which are attempts to elevate earnings without understanding the implications (i.e., failing to tailor the service delivery model due to lack of authority and resources to spare part managers). This white paper demonstrates how a structured thought process applied to spare parts pricing can lead to competitive advantage.

Spare Parts' Contribution to Revenue and Profit

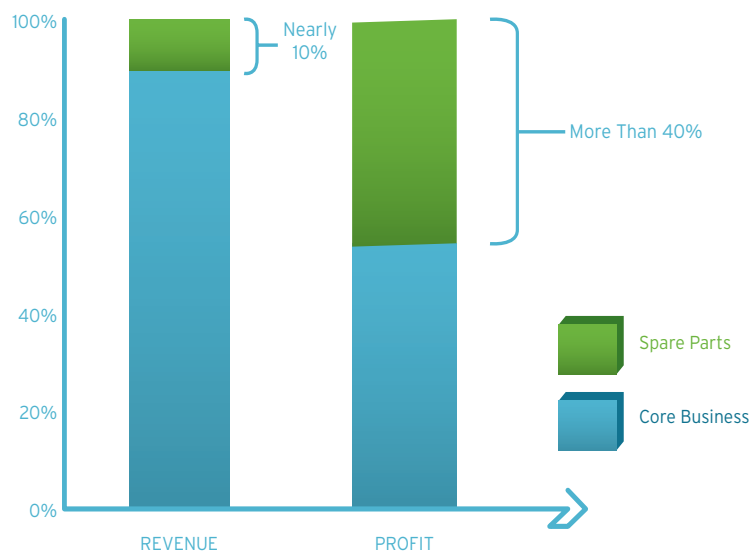


Figure 2

Cost-plus Pricing

Most industrial companies rely on standard markup (i.e., cost-plus) to price spare parts. Prices are set at unit variable cost plus unit allocation from the fixed cost multiplied by the markup. Industrial manufacturers often opt for this method because the data on price elasticity and customer demand is difficult to gather. The pitfall in this approach to pricing is that markup is applied to spare parts irrespective of the value of the spare parts and customers' willingness to pay.

Let's take a look at an example in the automotive industry (see Figure 3). The cost of the navigation system is higher than the customer's willingness to pay. Not considering the customer's perspective, and applying a markup of 50% on the cost, will result in a price that is higher than customer expectations. This likely will result in customer dissatisfaction.

Another disadvantage of cost-plus pricing is the lost profit opportunity. For example, consider the case of metallic paint, as also shown in Figure 3, which the customer perceives to have a high value and is willing to pay a higher price for. Companies that use the standard cost-plus method end up with a

price that is far below the price the customer is willing to pay, resulting in lower profits.

Competitor-based Pricing

Competitor-based pricing is offered by companies that want to adjust their pricing vis-à-vis the competition irrespective of the perceived value of the spare parts. In this strategy, the products are priced to outsell the mainstream competition without considering the impact on reduced profit margins. Even while considering the competition, only mainstream manufacturers are accounted for—not so-called imitators. However, this kind of pricing will be applicable for standard spare parts that compete in a commodity market.

Differentiated Cost-plus Pricing

In this approach, spare parts are separated into various segments based on specified parameters and a differentiated markup is applied to each segment. Figure 4 illustrates two parameters used for price segmentation: complexity and competition. Based on these two parameters, there are roughly eleven segments identified. Depending on the segment, an extremely high markup can be applied to raise profit margins or a low markup can be applied to match the competitor's price.

Automotive Industry Example

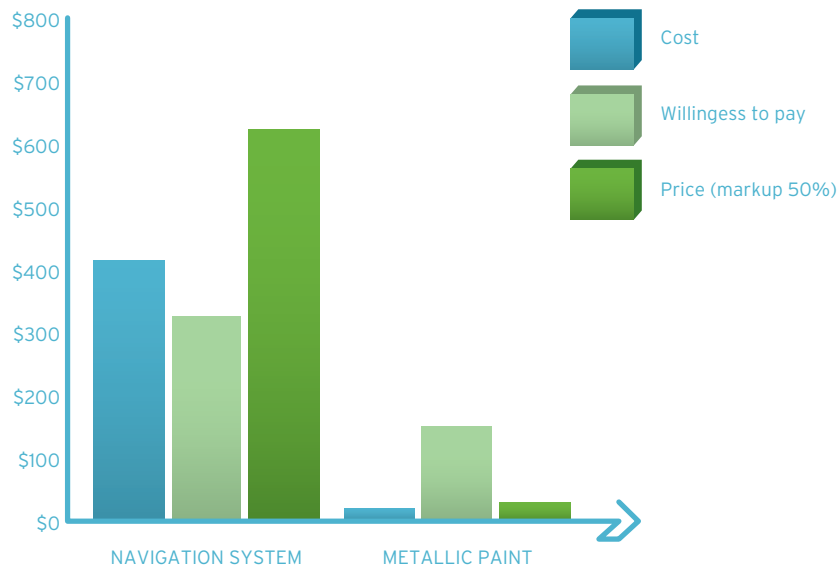


Figure 3

Creating a Differentiated Cost-plus Pricing Model

	MANY COMPETITORS	COMPARABLE COMPETITION	COMPARABLE FUNCTIONALITY	NO COMPETITION
Standard Parts	≤ Competitors Price	Low Markup	–	–
Medium Complexity Not Critical	≤ Competitor/ Comparable	Comparable	Medium to High Markup	–
Medium Complexity But Critical	Comparable	Medium to High Markup	High Markup	High Markup
Highly Complex Parts	–	–	Very High Markup	Very High Markup

Figure 4

Value-based Pricing

Value-based pricing is a strategy in which the price of a spare part will be set at the value

perceived by the customer rather than the product's cost, competitor's price or historical trends. The goal is to price the parts at the perceived value delivered (see Figure 5).

Spare Parts Pricing Mechanism

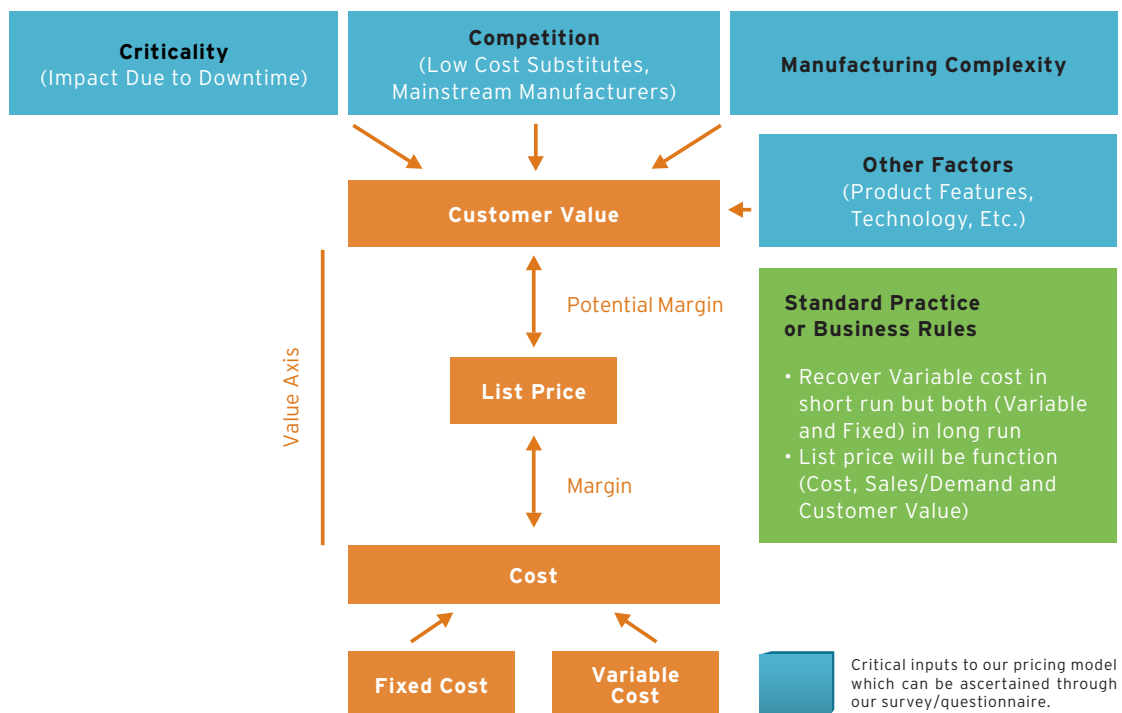


Figure 5

A Sample Value-based Pricing Questionnaire

Customer value is derived through structured and detailed primary and secondary research. Interviews with original equipment manufacturers and industry experts and customer surveys can help to determine the attributes which contribute to the value of spare parts. A questionnaire (as depicted in Figure 6) can help gather insights about factors that determine customer value.

Factors such as the criticality of the spare part (impact and downtime suffered due to

nonavailability), existing competition (substitutes and cheaper competitor parts, differentiating features, etc.), complexity in parts manufacturing and the end product features are used to ascertain customer value.

The derived customer value provides clear insight on what the customer would be willing to pay for the spare part. Since industrial companies already know the cost of the spare part, they can decide the list price by creating a delta between the part's cost and the customer-perceived value, depending on the margin target.

A Sample Value-based Pricing Questionnaire

STATED PRICE OF CONTROL BOARD MODULE FUSES IN A HEAT PUMP			
	\$50.00	\$30.00	\$28.00
1. Definitely Would Buy	4%	5%	15%
2. Very Likely to Buy	-	-	2%
3. Probably Would Buy	7%	14%	30%
4. Neutral	1%	2%	4%
5. Probably Not Buy	22%	34%	18%
6. Unlikely to Buy	2%	2%	1%
7. Definitely Not Buy	65%	54%	30%

47% of customers would buy if the price is \$28

Figure 6

Step-by-step Approach to Spare Parts Pricing



Figure 7

Recommended Spare Part Pricing Approach

Based on our experience in service pricing, pricing analytics and pricing management, we recommend that industrial manufacturers apply a structured and rational approach to optimize profit from spare parts initiatives (see Figure 7).

ABC Analysis

ABC analysis is an inventory classification method based on annualized dollar value usage. This method can be used for spare parts to determine the relative criticality of the parts with respect to their impact on plant safety, productivity and reliability (see Figure 8).

The first step in the analysis is to rank the parts according to average annual usage and list the parts from highest to lowest order. The criterion for this ranking is taken as annual usage since the demand for spare parts is independent in nature (i.e., it does not depend on demand for the product itself).

Factors such as a product's mean time between failures and history of usage can be used to forecast spare parts demand.

Following prioritization, a Pareto rule (80-20 principle) will be used to classify the spare parts into three categories (see Figure 9).

Three Stages of an ABC Analysis

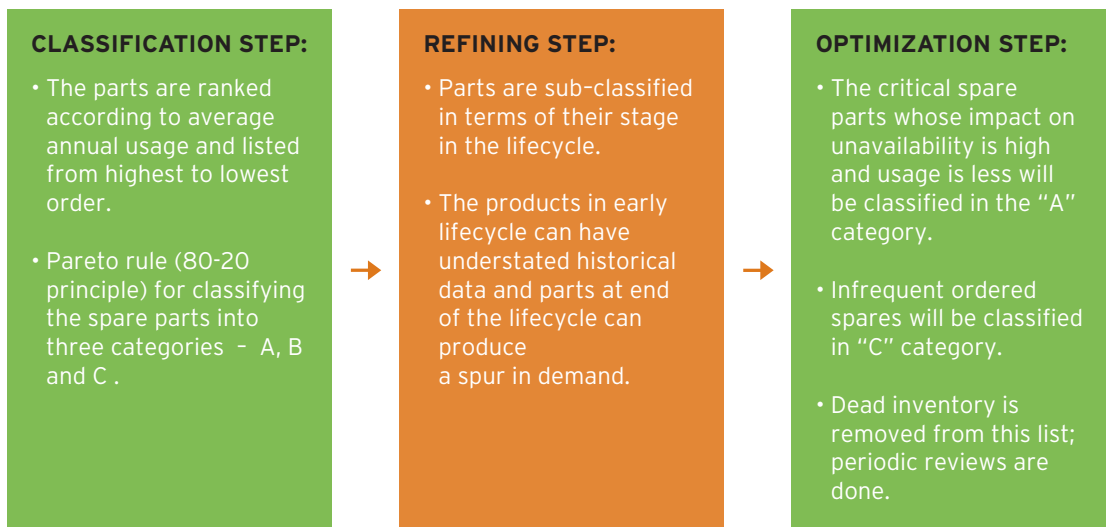


Figure 8

- Category A consists of 20% of the spare parts that will deliver approximately 80% of annual revenue to the company. These parts are considered critical and must have a tight inventory control.
- Category B consists of those 50% of spare parts that provide about 15% of the company's annual revenue. These parts are less critical and a reasonably accurate inventory control is required. Though these parts are of less annual dollar value, they add volume to orders.
- Category C consists of 30% of the spare parts that generate roughly 5% of the

company's annual revenue. These parts are least critical and are stored to fulfill some irregular customer demand.

This categorization scheme will also help in determining the velocity of fulfillment within the supply chain and help dedicate separate processes and workflows based on contribution to revenue.

The second step is to refine the classification based on the lifecycle of the product where the spare parts will be used. Industrial companies can use data points such as sales volume, profit and competition to decide in which part of the lifecycle the product fits.

A Pareto Rule Breakdown for Inventory Management

SPARE PARTS CATEGORIES	NUMBER OF ITEMS	ANNUAL DOLLAR VALUE = QUANTITY * PRICE	CRITICALITY	INVENTORY CONTROL
A	20%	80%	Critical	Tight
B	50%	15%	Less Critical	Reasonably Accurate
C	30%	5%	Least Critical	Minimum

* The percentages indicated in the columns "Number of Items" and "Annual Dollar Value" differs from industry to industry and can be adjusted in accordance with the opinion of the experts.

Figure 9

Figure 10 indicates the spare parts demand in each stage of the product lifecycle. In the introduction phase, the chances of product failure are lower and hence the spare parts demand will be minimal. However, as the product reaches its decline phase, the number of product failures increases, leading to a peak in the demand for spare parts. Taking into account such scenarios, while refining inventory requirements, may result in spare parts ascending or descending ABC categories.

The final step involved in the ABC analysis is optimization. The critical spare parts – those whose impact relative to unavailability is high and usage is less – are identified in this step. Such parts will be classified in the "A" category. The infrequently ordered spares will be moved to the "C" category, and finally the dead inventory is removed from this list. Periodic reviews are conducted to refine and optimize the classification of spare parts.

Decide Price Range

ABC analysis will help to classify the products into categories. Following ABC, the next step is to decide the price range for spare parts in each category. The price range for any spare part will be more than the cost of goods sold and less than the true economic value. The price will then be set lower than the perceived value and will be fine-tuned by pricing experts. Different pricing strategies can be used to determine the range for products in each of the categories identified by the ABC analysis.

Since the products in category "A" are critical to the company, a tighter control of inventory is required and hence the price range will be determined with detailed analysis and effort. A strategy of value-based pricing is best suited to this category, as it takes into account the customer's perceived value of the product.

Product Lifecycle Breakdown for Calculating Spare Part Demand

PRODUCT LIFECYCLE	SALES VOLUME	PROFIT	COMPETITION	SPARE PARTS DEMAND
Introduction	Less	Less	Less	Low
Growth	Increase	Increase	Growing	Steady
Maturity	Increase	Decrease	Growing	Steady
Decline	Decrease	Decrease	High	Peaks

Figure 10

Category “B” products will have a more relaxed pricing approach. A strategy of differentiated cost-plus strategy can be used. Here, the products will be classified into different segments based on numerous parameters such as complexity of the product and competition for the product or other parameters selected by product managers.

Category “C” products, which have minimal impact on the company, should follow a simple cost-plus or competition-based pricing strategy.

Enforce Business Rules

Once the price ranges are set, industrial companies should enforce business rules to govern the pricing strategy and dictate guide lines that need to be adhered to during the pricing process (see Figure 11). Rules help in automating the process of raising notifications in case they are not met. Rules such as the discounts for a particular segment of parts, discounts for particular geography, sales volume, margins, allowable price variation, time period for variations, etc. can be preset in the system to assist pricing managers.

Inputs to Business Rules that Help Set Prices

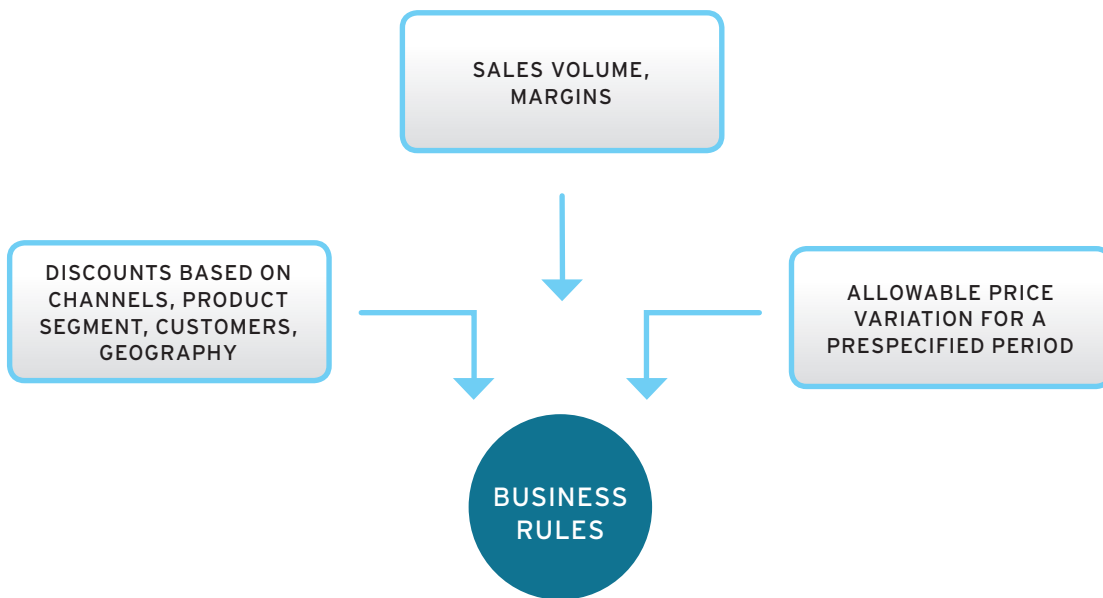


Figure 11

Choose a Commercialization Strategy

Commercialization defines the go-to-market strategy for the OEMs. Go-to-market is usually decided by considering three important criteria for spare parts: when (scheduled time), where (locations) and whom (target market). From an industrial manufacturing perspective, while planning the commercialization of spare parts, companies should additionally consider the nature of spare parts.

For example, if the spare part is captive in nature (i.e., no comparable competition) and

forms almost a monopoly in the market, then the OEM should take control of maintaining inventory and distribution until the part reaches the customer. However, for a non-captive part, the OEM should collaborate with distributors or dealers for inventory management (see Figure 12).

With the multiple channels available for distribution, OEMs should also decide the channel partners and the distribution model they want to follow.

Partner Collaboration



Figure 12

Use Analytics to Support Pricing Decisions

Price analytics can be used as an iterative exploration of historic pricing information to gain insights that enhance planning for the next pricing cycle. These analytics make use of statistical, quantitative and fact-based analyses to drive decision-making. Since any pricing improvement for critical spare parts

can lead to better returns for the company, pricing analytics can be applied for critical spare parts belonging to “A” category. Figure 13 highlights analytical approaches which can be used, depending on the circumstance.

Such analytics will provide insights that help to identify opportunities for improving the spare parts pricing process.

Analytical Approaches to Pricing Determination

PRICE SENSITIVITY ANALYSIS	COMPETITIVENESS ELASTICITY ANALYTICS	REVENUE/PROFIT MAXIMIZING ANALYTICS	PRICE WATERFALL MODEL
<ul style="list-style-type: none"> Identify critical price points for the spare parts – i.e., the correlation between purchasing decisions and various pricing drivers. Understand the price sensitivities of each individual customer/segment; manufacturers to keep the price within control limits. Gain insights such as how sales volumes are impacted by price changes and if cannibalization of other product sales will take place due to price change. 	<ul style="list-style-type: none"> Benchmark the price vis-à-vis the competition and identify the price premium/differential that the consumer would be willing to pay for competitors' product. Determine the premium that the consumer would be willing to pay for buying from the firm. 	<ul style="list-style-type: none"> Choose the correct pricing strategy during the various stages of the product lifecycle. Change the price range of a product/family post-transition to a new stage in product's lifecycle – namely, launch to growth, growth to steady, steady to saturation phase. 	<ul style="list-style-type: none"> Find out how much revenue companies really keep from each of their transactions. Identify the components of discounts, allowances, rebates and incentives, and constantly try to improve so they can add an additional 1% or more of the price to their pockets.

Figure 13

Criteria for Selecting a Pricing Tool for Spare Parts

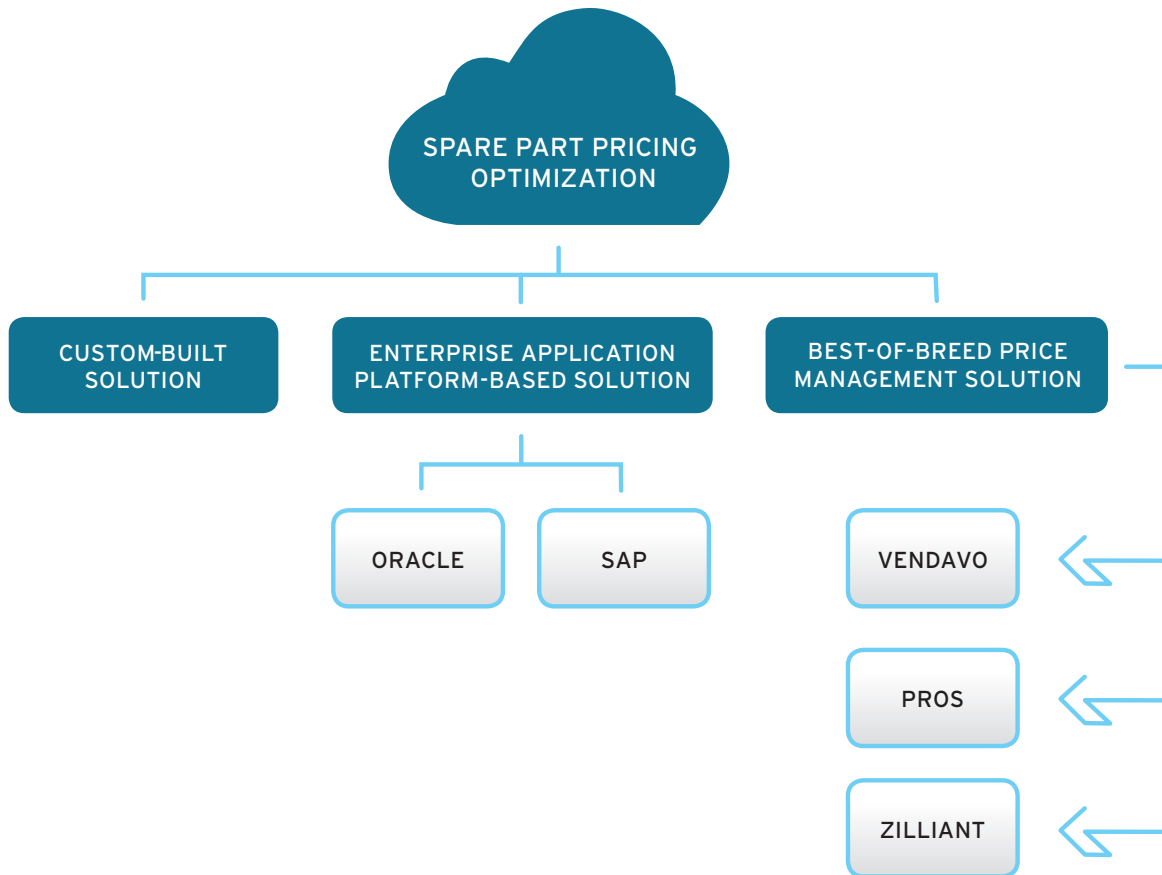


Figure 14

Tool Selection to Assist Spare Parts Pricing

The current market scenario makes price management indispensable. Industrial companies can choose a custom-built solution or enterprise application platform-based solution or best-of-breed systems for their pricing needs (see Figure 14). Custom-built solutions are preferred since they are more cost-effective and serve specific needs.

Enterprise applications are simpler to implement but may not have built-in capability for price enforcement. Best-of-breed solutions provide the maximum capability and may need to be configured to make them suitable for companies' requirements. These solutions not only provide advanced analytics, but also allow spare price optimization and enforcement.

Conclusion

Spare parts can evolve into a key profit center for industrial companies if the parts are correctly priced. Companies should avoid the trap of merely applying cost-plus pricing for all spare parts, and should instead tactically price spares to satisfy customer expectations while keeping an eye on profit margins. They should revisit their spare parts pricing process and reengineer the process if it is not optimal.

We advise industrial companies to identify the nature of their spare parts before segmenting them and applying an ABC analysis. They should also select a price range for products by using customer perception feedback and then fine-tune pricing based on expert opinion and industry surveys. From there, they need to enforce business rules to account for key business terms and conditions and apply analytics to assist decision-making. Only then can they effectively decide upon the best IT application to inform the spare parts pricing process.

Footnotes

¹ "Service Parts Management: Bringing Industry Leadership to Your Service Parts Business," Deloitte Research, 2006.

² GE Annual Reports, 2010 and 2011.

³ "Full-Year Results," Rolls-Royce Group plc, 2010.

⁴ Compustat, McKinsey Analysis.

About the Authors

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About Cognizant Business Consulting's Manufacturing/Logistics Practice

Cognizant Business Consulting's manufacturing and logistics consultants are experts in supply chain planning and can help organizations create new revenue streams by applying service and spare parts availability as a differentiator in the competitive landscape. Our consultants leverage their industrial industry experience to advise clients on each step of pricing, from deciding the business rules that best suit particular parts to creating price waterfall models, which can indicate and plug revenue leakages. For example, we recently advised an industrial client on setting a price for its new service offering for various industry segments along with a pricing model to evaluate profitability. We also have experience helping clients to select the most appropriate vendor-supplied price management solution.

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