# SETTING PRICES FOR THE INTEGRATED SOLUTIONS IN BRAZIL

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**ABSTRACT -** This study presents an analysis of how integrated solutions (products + services) are priced based on the value added. Three global suppliers of integrated solutions were thoroughly investigated. All the companies' manufacture equipment with long service life cycles (over 10 years). The equipment is sold to various organizations (from hospitals and shopping malls to small businesses). Delivery performance is the only value demand capable of influencing the prices of integrated solutions for these customers. This value demand consists of three variants: uninterrupted operation, operation tolerant to brief interruptions (up to 1 hour) and operation tolerant to medium interruptions (up to 4 hours). Prices are flexible and were classified as penetration, competitive and premium. The definition of prices considers the value demand, the customer profile (e.g., hospitals or construction companies), the level of competition, the alternatives to generating revenue in the future and the service life of the equipment. Because the equipment has a long service life, winning and retaining customers is crucial to generate sales in the long run. To achieve this objective the manufacturers can cut the prices of the new products or of the services. Losses derived from these price cuts must be offset by future sales of repair parts at premium prices and/or services at prices ranging from penetration to premium. The supply of repair parts on an exclusive basis induces manufacturers to sell such items only at premium prices. This situation increases the manufacturer´s revenues along the equipment life cycle.

*Key words: Integrated solutions; Revenue management; Pricing; Value.*

*Work in progress*

## INTRODUCTION

The combination of products and services is known as integrated solutions. Integrated solutions increase the interdependence between customers and suppliers (Windahl, 2007). Manufacturers are interested in such integration in view of the increased revenues that come from services provided throughout the long life cycle of the product (Potts, 1988), the higher margin of the product-service combo (Anderson et al., 1997), the stability of the revenue from services and the improved customer perception that integrated solutions provide (Windahl and Lakemond, 2006). Integrated solutions are attractive to customers because they reduce costs and increase

customer´s flexibility. Four categories of offered integrated solutions are present in the literature: (1) Rental, where the equipment belongs to the supplier who leases it to the customer; (2) Maintenance, where the equipment belongs to the customer but the supplier is responsible for providing the maintenance service for it; (3) Operational offers, where the equipment belongs to the customer and the supplier operates it; and (4) Performance offer, where the supplier provides products and services and assumes the customer's operational processes (Windahl and Lakemond, 2010).

Revenue management consists of a set of strategies that permit companies with limited capabilities to obtain the most profit possible from their operations (Withiam, 2001). Assuming that customers are price sensitive, the objective of revenue management is to forecast and influence the demand. Price setting (or price definition) does not receive the attention it deserves from the upper management of companies, although the price is an important component of revenue generation (Richards et al., 2005). Price setting can be based on the product cost, competition prices or the value perceived by the customer (Ingenbleek and van der Lans, 2013). Prices are classified as skimming, penetration and similar (Indounas and Avlonitis, 2011). Skimming pricing consists of offering higher starting prices to maximize results in the short term. Penetration pricing refers to offering low starting prices to attract customers to services with little differentiation. Similar pricing consists in setting prices that are similar to the competition prices. This practice is adopted for cases of intense competition and little differentiation between the bidders. The pricing strategies hinge on the construction of long-term relationships with customers. Customer satisfaction and loyalty are two indicators of the business relationship quality. Customer loyalty is defined as "a construct that measures the likelihood that the customer will again perform partnership activities with a certain supplier" (Bowen and Shoemaker, 2003). Satisfaction is "a positive affective state resulting from the evaluation of all aspects of the work relationship of a company with another" (Anderson and Narus, 1984). The satisfaction of the B2B customer is influenced by the following value elements: Price (Čater and Čater, 2009, Ulaga and Eggert, 2005, Ulaga and Eggert, 2006), quality, delivery performance, supplier's know-how, support services and personal interaction (Čater and Čater, 2009).

The literature suggests the need for deep insights into certain elements: the influence of integrated solutions on the interdependence between customers and suppliers (Windahl and Lakemond, 2010), the influence of the value delivered by the supplier on the customer satisfaction (Čater and Čater, 2009), the price-setting alternatives for products and services in the B2B market (Ingenbleek and van der Lans, 2013, Avlonitis and Indounas, 2005), and the potential to generate revenue by bundling or unbundling products and services (Huefner and Largay III, 2008).

The purpose of this research is to identify how companies that provide maintenance services associated with products generate revenue from the sales of integrated solutions (Windahl and Lakemond, 2010). The investigation considers the following steps: identification of customer requirements, analysis of revenue generators as a function of the requirements, and price-setting practices (Ingenbleek and van der Lans, 2013, Avlonitis and Indounas, 2005, Čater and Čater, 2009). The research question is as follows: How do firms define the price of their integrated solutions based on the value added? Case studies were conducted with three global suppliers of integrated solutions. All the companies manufacture long-life-cycle equipment (over 10 years).

## THEORETICAL BACKGROUND

### Integrated Solutions

Greater market complexity and increasing competitive intensity are forcing manufacturers to seek new business by rendering services associated with their products (Vargo and Lusch, 2004). This association is known as an integrated solution (Windahl and Lakemond, 2010). Integrated solutions require manufacturers to become service-oriented organizations (Windahl and Lakemond, 2010). To that end, organizations need to enhance the supplier-buyer relationships (Oliva and Kallenberg, 2003) to prioritize long-term trust-based relationships (Brady et al., 2005). The enhancement of manufacturer-supplier relationships is also necessary (Windahl and Lakemond, 2006).

Four categories of offered integrated solutions are present in the literature (Windahl and Lakemond, 2010): *Rental offers,* where the manufacturers lease the equipment to their customers; *Maintenance offers,* where the manufacturer services (and maintains) the products their customers buy; *Operational offers,* where the manufacturer operates the customer's equipment, and *Performance offers,* where the manufacturer assumes the operational risks and total responsibility for the operational processes of the customer (Gebauer, 2008). The operational offer constitutes the highest degree of interdependence between the parties. The more connected the offer is to the customer's main process, the more dependent this customer becomes of the service provided by the supplier (Windahl and Lakemond, 2010).

### Revenue Management

Revenue management apparently surfaced in 1985 at *American Airlines* (Cross, 1997, Smith et al., 1992). It rapidly expanded into other segments with characteristics similar to airlines, such as restaurants and hotels (Hanks et al., 2002). The purpose of revenue management is to combine the understanding of demand elasticity, demand variability and cost adherence. Turning price variations into profit constitutes the main objective of revenue management (Talluri and van Ryzin, 2005).

Revenue management requires the following requisites to be met (Kimes, 2005): (1) a relatively fixed operational capability (companies cannot rapidly suit capability to demand variations); (2) high fixed cost in relation to variable costs; (3) inventory perishability (typically related to services because the capability to render services cannot be stored for the future); (4) variable or cyclical demand patterns; and (5) ability to forecast demand (companies can segment customers in such a way as to make them differentiated offers). Four elements must be managed to achieve success in managing revenue (Withiam, 2001): calendar (ability to forecast demand); clock (ability to meet the demand at the available service times); capability (quantity and configuration); and cost (pricing). Revenue management in businesses with capability constraints requires attention to the length and price of the service (Huefner and Largay III, 2008). Revenue management requires three types of decisions: (a) structural decisions, such as the price format, the sales terms and the bundling of products; (b) decisions on the variation of prices through time

and mark-up strategies; and (c) quantitative decisions, which involve allocating capability across segments, products, and sales channels and the definition of parameters for accepting or refusing orders (Talluri and van Ryzin, 2005).

## Service Price Setting

Pricing strategies are developed to create conditions for companies to achieve their revenue generation goals and profits (Ingenbleek and van der Lans, 2013). Price setting consists of a set of activities designed to determine the price of a product or service (Ingenbleek et al., 2003). Price setting is a creative exercise that involves mathematics and economic behavior where organizations focus on the profit (Kohli and Suri, 2011). Three price-setting situations are present in the literature (Ingenbleek and van der Lans, 2013): Pricing of new products, pricing in a competitive environment, and pricing of product lines. The pricing of new products and pricing in a competitive environment can be associated because they consider the same elements in different situations. Table 1 shows a synthesis of these elements.

| **PRICING STRATEGIES** |
|---|
| ***Penetration pricing*****:** sets lower prices attempting to attract new customers for products and services with little differentiation (Indounas and Avlonitis, 2011, Noble and Gruca, 1999, Ingenbleek and van der Lans, 2013). |
| ***Competitive Pricing*****:** sets prices similar to competition prices. This pricing strategy is used if there is an intense competition between the suppliers and little differentiation between them (Fill and Fill, 2005, Kasper et al., 2000, Nagle et al., 2010). This price setting practice is used by companies looking for prices relatively equal to competitors' prices (Guiltinan et al., 1997, Ingenbleek and van der Lans, 2013). |
| ***Premium Prices*****:** sets higher prices (*premium prices*). A great deal of attention is required to identify and communicate the value added to the customer (Ingenbleek and van der Lans, 2013). The purpose of premium prices is to maximize the supplier´s profits in the short term (Noble and Gruca, 1999, Lovelock and Wirtz, 2001, Monroe, 2003). |

**Table 1 – Pricing Strategies. Source: adapted by the authors (2013).**

The literature presents a synthesis of three pricing strategies (Ingenbleek and van der Lans, 2013): (a) complementary pricing, where the company adopts a competitive price for the product and premium pricing for accessories, services, and replacement parts (Guiltinan et al., 1997); (b) price bundling, where the idea is that the sum of the prices of each part can be less than the price of all the products together (Monroe, 2003); and (c) customer value pricing, which considers the segmentation of customers, the versions of products with slightly different features, and the price levels associated with the type of customer (Monroe, 2003, Nagle et al., 2010).

## Sales Based on Customer Value

The creation of customer value is key to the growth and survival of a company in the long term (Slater, 1997, Woodruff, 1997). Research on customer value has focused on the co-creation of value. These studies highlight the active role that the customer plays in the process of co-creation of value for products or services provided by the supplier (Gronroos, 2008, Vargo and Lusch, 2004). Three perspectives of value are presented in the literature (Terho et al., 2012): (1) the supplier perspective, which comprises the identification of how the company can create, increase, and capture value to maximize the value of its economic activities, (2) the customer perspective, which tries to identify the value demanded by customers, and (3) the dual perspective of value, which integrates the two other perspectives. The sale of added value is developed in three steps. The first step involves trying to understand the customer's business model and the model of the customer's customers. The second step involves preparing a value proposal that will solve the customer's problem and bring tangible benefits to him (Liu and Leach, 2001). The identification of tangible benefits requires, among other items, simulations, studies about the return on investment, and life cycle calculations. The third step comprises the communication of value to the customer, particularly a demonstration of the supplier's contribution to the customer's targets. This demonstration must be supported by convincing evidence (Terho et al., 2012).

## METHODOLOGY

### Research Project

The research structure was developed to conduct an analysis of the revenue generated from the sale of integrated solutions for maintenance (Windahl and Lakemond, 2010). First it was analyzed how maintenance services can aggregate value to the customer. The following value drivers were considered: price, quality, delivery of service, knowledge, support and personal interaction (Čater and Čater, 2009). The second research stage investigated how manufacturers can use those value drivers to increase their revenues. The following alternatives were considered: bundling/unbundling of products and services (Huefner and Largay III, 2008). The value drivers and the alternatives to generate revenues supported the analysis of the prices charged by the manufacturers. The following pricing strategies were considered: penetration, competitive and premium (Ingenbleek and van der Lans, 2013, Avlonitis and Indounas, 2005, Čater and Čater, 2009).

The conceptual model of the research is shown on Chart 1.

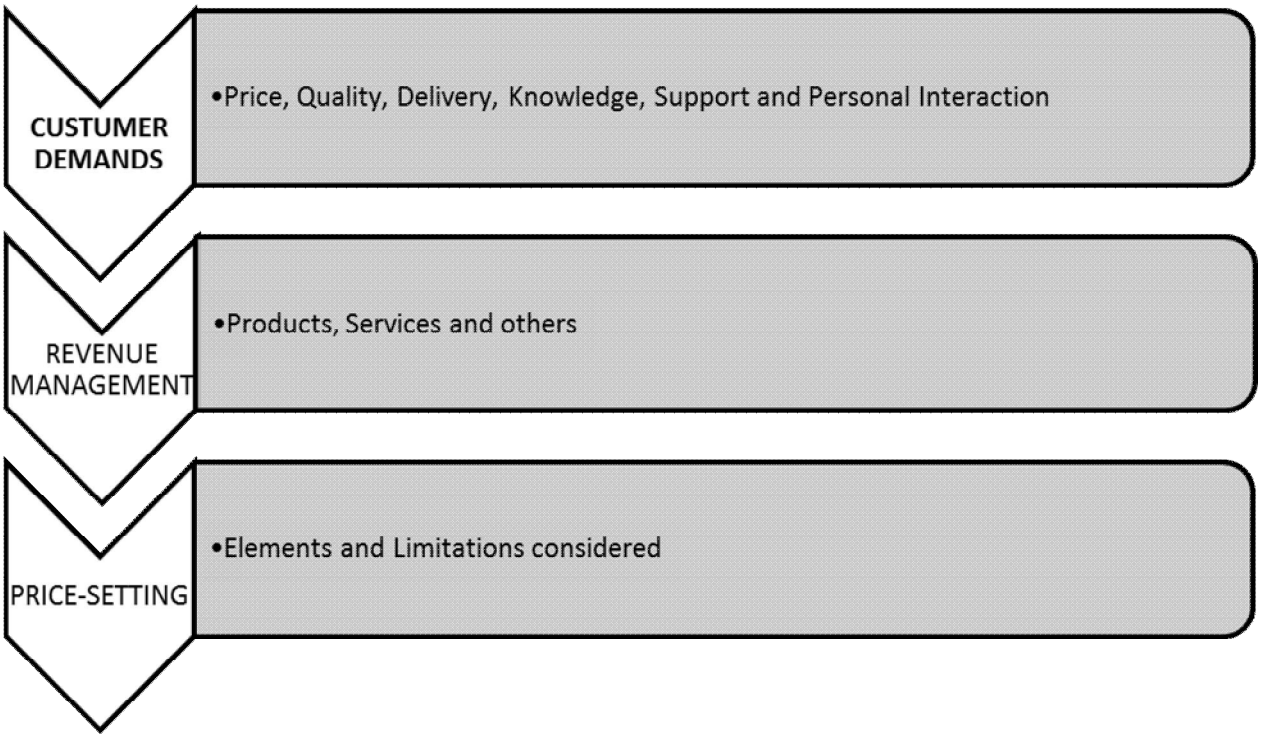


Chart 1 – Research Model (Source: the authors, 2013)

## Method

A study of multiple cases was conducted. According to (Yin, 2005), the case study permits the investigation of a phenomenon in its context by means of a thorough analysis of one or more objects of analysis, which allows a profound insight into the phenomenon studied. The research protocol developed for the suppliers of solutions can be found in Attachment I at the end of the paper. The validity and reliability of the case study results are strengthened due to the utilization of multiple sources of evidence, such as interviews and documents (Gibbert and Ruigrok, 2010).

## Data Collection

Initially, three global suppliers of integrated solutions with production plants in Brazil were identified. All the manufacturers identified produce equipment with a long life cycle. In each company, the market managers were interviewed.

## FINDINGS

The customers' main value demand is the delivery performance (Čater and Čater, 2009). This demand consists of three variants: uninterrupted operation, operation tolerant to brief interruptions (up to 1 hour) and operation tolerant to medium interruptions (up to 4 hours). Manufacturers generate their revenues in four different ways: sales of new products, sales of services for new products, replacement parts, and services for equipment no longer considered new (hereinafter referred to as non-new). Prices of products and services are defined based on the value demand (delivery performance), the customer profile (e.g., hospitals or construction companies), the level of competition and the future revenue-generation prospects. The interviewers do not furnish quantitative data about prices, only their rating as either penetration, competitive or premium (see Table 1). According to the interviewers, the main objective is to win and retain customers, even if it means sacrificing some margin in the short term. Thus, initially, the prices offered are always top prices. Depending on the course of the negotiation and the competition power, these prices are slashed down to a minimum previously defined by the company. No prices are reduced below these levels. Price cuts must be offset by selling replacement parts (at premium prices) and/or maintenance services (at prices ranging from penetration to premium). Being exclusive suppliers of replacement parts enables manufacturers to sell replacement parts at premium prices. Next, it will be presented in detail how prices vary based on each value demand.

### Uninterrupted operation

Uninterrupted services are required by hospitals. This type of value demand necessitates that manufacturers maintain a permanent support team at the customer's disposal. Hospitals hire maintenance services exclusively from the equipment manufacturer (Cases 1, 2 and 3). The product prices for these customers, however, are not always premium. Prices range from premium to penetration (Case 1) and from premium to competitive (Case 2 and 3). Company 1 understands that its greater flexibility is the result of the pressure from qualified competition. The large market share dominated by Company 3 (more than 62%) and the large service networks of Companies 2 and 3 account for their lower flexibility in negotiating products. Companies 1, 2 and 3 cut down the prices of their new products to win customers. The loss resulting from price cuts is later offset by the sale of replacement parts at premium prices. These items do not suffer from competitive pressures because the replacement parts are sold exclusively by the manufacturers. In all investigated cases some pricing patterns were observed: services provided for new products have their prices ranging from premium to competitive, parts are always sold at premium prices, and the services provided for non-new products have their prices ranging from premium to competitive.

## Operation with brief interruptions

Shopping malls are examples of customers who tolerate brief manufacturer service interruptions of up to 1 hour (delivery performance). This tolerance enables manufacturers to share a service team with more than one establishment, thus cutting down costs. Shopping malls also choose the service provided by the equipment manufacturer for new products. After this point, the malls start considering bids from other manufacturers or independent service providers. The prices of new products for customers who tolerate brief interruptions range from premium to penetration (Case 1) and from premium to competitive (cases 2 and 3). All manufacturers provide services for new products at prices that range from premium to competitive. Parts are sold at premium prices. Prices of services provided for non-new products range from premium to penetration (Case 1) and premium to competitive (cases 2 and 3). Company 1 understands that its greater price elasticity derives from competitive pressures. The strategy of Company 2 is to keep dealers in its service distribution chain. Whenever the competition is pressuring for penetration-level prices, the dealers are called to action. Dealers then offer the service whereas the manufacturer profits from the sale of replacement parts. The large market share dominated by Company 3 (more than 62%) accounts for its lower flexibility in negotiating products for this type of value demand. All companies cut down their prices of new products to win and retain customers. Losses due to product and service cuts are offset by sales of replacement parts at premium prices.

## Operation with medium interruptions

Companies, universities and condos tolerate equipment operation interruptions (up to 4 hours). This tolerance enables manufacturers to share service teams, which cuts down costs. This group has a large number of customers with a lower bargain power (and expertise on the products or services), thus representing a great source of profits for all companies investigated. However, most of the equipment in use by this group of customers is purchased by building companies. Therefore, the negotiation of new products is characterized by strong discount demands. In such context, all manufacturers initially try to sell new products at prices that range from premium to competitive (cases 1, 2 and 3). But these manufacturers can easily change their offer to competitive price when the builder asks for a discount. The sales of new products at lower prices to the building companies must be offset by selling repair parts and services to the equipment users (companies that buy the buildings from the builders). The sale of such items is always made at higher prices. Higher prices are feasible due to the manufacturer´s exclusivity on the supply of repair parts and to the user´s tendency of buying parts and services from the manufacturer. These elements can assure good revenues to the manufacturer through the equipment life cycle (up to 20 years). Services for new products are offered at prices ranging from premium to competitive. Services for non-new products range from premium to penetration (Case 1) and premium to competitive (cases 2 and 3). The pressure from other service providers (other manufacturers or independent providers) when service contracts for non-new products are negotiated forces manufacturers 1 and 2 to cut their prices. Company 1 slashes the prices of services for non-new products to the penetration level. This action aims to assure the future sale of parts at a higher price. The reasons for this posture in cases 2 and 3 are the same as the reasons presented earlier. The supply of products and services to customers of the no-interruption group and the short-

interruption-tolerant group mitigate the pressure for lower prices on the part of companies who tolerate medium service interruption (Cases 1, 2 and 3).

## CONCLUSION

This study presents an investigation of how firms define the prices of their integrated solutions based on the value added. Findings indicated that companies adopt a flexible pricing policy. This policy combines several elements: value demanded by the customer, the customer profile (e.g., hospitals and building companies), the competition, the alternatives to generate new sales to the customer in the future (repair parts and services) and the remaining life cycle of the equipment. To conclude this we started investigating the value demands of the customers of the researched companies. Among these demands, those that influence the prices of integrated solutions were further investigated. The findings indicated that the main value demand of the investigated customers is the delivery performance. This demand consists of three variants: uninterrupted operation, operation tolerant to short interruptions (up to 1 hour) and operation tolerant to medium interruptions (up to 4 hours). In such context, winning and retaining contracts with large customers appears to be the number one objective of the suppliers of products with a long life cycle, even if reaching this objective means sacrificing prices in the short term. The interviewees rated the price levels as penetration, competitive, and premium. Initially, the sellers offer premium prices. According to the course of the negotiation and the competitive power, the prices are slashed to a minimum level previously defined by the company. Prices are never reduced below these levels. The price cuts given when new products or services are sold must be offset by future sales of spare parts at premium prices and/or services at prices ranging from penetration to premium. The sale of spare parts on an exclusive basis lets manufacturers offer these items only at premium prices, thus assuring higher profits in the future.

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