

Pricing and Revenue Optimization – Driving Value from CRM Investments

Achieving Return on CRM Investments

At a high level, companies interact with their customers in four ways:

Strategic Marketing: Establishing and managing advertising and marketing campaigns targeted at establishing customer awareness, maintaining competitive differentiation, and maintaining corporate and brand image.

Pricing and Revenue Optimization: Determining what products and services to offer to which customers at what prices through which channels at any given time. This includes promotions, discounting, and list pricing through retail, wholesale, direct, indirect, and e-commerce channels.

Tactical Marketing: Managing tactical advertising campaigns and product placements.

Customer Experience Management: Managing the experience of the customer through all contacts with the company including initial inquiries (on-line and off-line), follow-up, the sales experience, customer service, aftercare, and loyalty programs.

Successful marketing requires managing all four types of customer interaction effectively and efficiently. Further, consistent management across these interactions is critical – a company cannot maintain a premium brand image if it provides poor customer service and consistently offers deep discounts through its major distribution channels. Customer Relationship Management software promises to provide rich information about customer interactions along with analytics needed to support the management of all these interactions – particularly tactical marketing and the customer experience. **At their best, CRM systems enable companies to identify customers at each point of contact with the company and to tailor each interaction according to their previous behavior and interest.** For example, when a customer first enters the Amazon web site, the company uses past purchase history to recommend books or music that might interest that customer. It provides a classic—and highly successful—example of using CRM to improve the customer experience and drive higher sales and profitability.

While a number of companies are successfully using CRM systems to support pieces of the marketing process, CRM, must support the entire marketing process – especially pricing and revenue optimization –if it is to realize its full potential. This is a big task. According to a *Computerworld* Survey of 96 global companies, **enterprises implement CRM systems primarily in order to: 1) increase customer retention, 2) respond to competitive pressures, and 3) improve customer service.** These are important goals with huge potential profitability impacts. More importantly, they are customer-facing goals. CRM's primary orientation toward changing the customer experience and improving revenue differentiates it from previous generations of 'three-letter' software such as ERP (Enterprise Relationship Management), SFA (Sales Force Automation), and SCM (Supply Chain Management) that were designed primarily to help companies reduce cost and improve efficiency. (Table 1 provides short descriptions and representative vendors for each of these software categories.) While CRM systems can reduce cost (by reducing the time needed to implement sales campaigns, for example), they focus primarily on increasing revenue through better understanding and targeting of customers.

Software Category	Function	Vendors
Enterprise Resource Planning (ERP)	Establish common data "backbone" to support processes across all functions in an organization.	SAP, Oracle, Peoplesoft
Supply Chain Management (SCM)	Provide decision support and visibility across all	i2, Manugistics, SAP

	supply chain functions including manufacturing, scheduling, transportation, and logistics.	
Customer Relationship Management (CRM)	Manage all information related to customer contacts and support customer-facing functions such as marketing, promotions, and customer service	epiphany, Siebel
Revenue Management (RM)	Manage the availability of fare classes to optimize profitability in industries with constrained capacities such as airlines and hotels.	Manugistics, PROS
Pricing and Revenue Optimization (PRO)	Utilize customer information to determine the right prices to offer to each customer segment through each channel at each time	Manugistics, Khimetrics, Profitlogic
Sales Force Automation (SFA)	Automate sales force functions including lead generation and tracking, quoting, and follow-up	Salesforce.com, Siebel

Table 1. Key Software Categories, Functions, and Representative Vendors

CRM's customer focus holds the key to both its promise and to its challenges. The promise is clear: better treatment of customers should lead to higher profitability. However, better customer treatment requires more than just additional data and more analysis, no matter how sophisticated. It requires changes to the way a company interacts with its customers. A company that implements CRM without a corresponding willingness to change its approach to customers is wasting its money. This may sound obvious, but it is a primary reason that many CRM efforts fail to deliver benefits. Many CRM implementations were designed to provide comprehensive '360-degree customer views' that, in the words of a Mercer Management Consulting study, "resulted in too much data of too little consequence." In other words, more customer data, by itself, achieves nothing.

How will companies be able to achieve the returns needed to justify investment in CRM systems—particularly given their magnitude? Companies have struggled with how to measure the returns from their CRM investments. However, one thing is clear: given the magnitude of most CRM investments, merely tweaking existing marketing programs to generate positive returns won't suffice. In fact, for most companies, improving the customer experience alone will likely not provide enough benefit to justify a substantial CRM investment. This means that **positive returns from CRM will require improvements in the Pricing and Revenue Optimization side of customer interaction.** The good news is that this is a natural and highly leveraged use of CRM data—in fact, CRM and PRO is a marriage made in heaven!

Pricing and Revenue Optimization

Pricing and Revenue Optimization is the science of determining what products should be offered to which customer segments through which channels at what prices in order for a company to maximize profit and meet strategic objectives. In effect, it is where 'the rubber meets the road' in terms of managing customer relationships. For most companies, using CRM data to drive better PRO decisions

will be the highest-leverage use of their CRM systems. **By scientifically managing prices according to what customers are willing to pay, when, and through which channels, companies can extract the maximum revenue from each transaction.** Since Pricing and Revenue Optimization is based on making the most of existing assets, the vast majority of the resulting increase in revenue drops straight to the bottom line as profit.

In fact, the better management of pricing is the fastest and most cost-effective way to increase profits. That was the conclusion of a pioneering study by McKinsey & Company in 1992. Examining the economics of more than 2,400 companies, the McKinsey researchers concluded that a 1% improvement in price creates an improvement in operating profit of 11.1%. By contrast, 1% improvements in variable cost, volume, and fixed cost produce profit improvements, respectively, of 7.8%, 3.3%, and 2.3%. And, as the McKinsey researchers note, given the enormous gains in profit from even small improvements in pricing, there is no company that cannot improve.

The key to Pricing and Revenue Optimization is to set the price for each product or service through each channel to each customer segment that best balances the likelihood of winning the business with the maximum contribution to profit or other strategic goals such as sales, volume, revenue, or market share targets. PRO systems use analytical models based on prior customer behavior to calculate these prices and update them as market conditions change. In determining what prices should be offered to each customer through each channel for each product or each product combination, PRO systems explicitly incorporate all available information about product cost and availability, competitive pricing, market conditions, and product lifecycle information.

Pricing and Revenue Optimization systems originated in the domestic airline industry. In the 1980's, airlines found themselves needing to manage thousands of fares that changed daily. Further, they offered a highly perishable product in highly competitive markets whose sale needed to be managed for over 200 days before departure. Finally, they had little or no flexibility to adjust their production rates (the seating capacity of their aircraft) within the last month before departure. In response, the airlines developed sophisticated *yield management* or *revenue management* systems to adjust the availabilities of different fares in different markets according to the anticipated balance between supply and demand. The systems were needed, in part, to manage the velocity and number of fare changes that faced the airlines, but the airlines soon learned that using sophisticated analytic engines to optimize fare and availability decisions could lead to major improvements in profitability—improvements of 8% to 10% of revenue or more. Not surprisingly, automated revenue management systems quickly became *de rigueur* among the major airlines as well as in similar industries such as hotels, rental cars, and cruise lines.

While revenue management was (and continues to be) highly successful at the airlines, the analytic engines behind airline revenue management systems cannot be directly translated to most other industries without significant enhancement. Airline revenue management systems are, in essence, highly sophisticated *opportunity cost* calculators. The marginal cost of selling an airline seat is low, airline capacity is fixed, and seats are sold to different segments at fixed fare classes. In this environment, it makes sense to direct most of the analytic effort toward determining whether or not selling a seat to a customer today may preclude a more profitable sale to a higher paying customer for the same seat some time in the future. Issues of customer response to different prices and changing costs are either not considered or are included only as secondary effects.

In contrast, the newest generation of Pricing and Revenue Optimization systems focuses on customer price response and the opportunity to manage pricing through a wide variety of channels and mechanisms. Consequently, these systems apply much more broadly across industries and company settings. For example, retailers use markdown-management systems to determine the right timing and magnitude of sales for fashion goods. Promotion optimization systems enable companies to determine the impact of promotions offered through different channels to different customer segments in order to optimize the use of their promotions budget. For large catalogs of goods, dynamic pricing optimization systems determine how list prices should change—either on-line or off-line—in response to market changes and supply chain changes of state. Customized bid pricing systems help enable companies to craft bids in competitive bidding situations that maximize their expected profit, taking into account full knowledge of both the customers and the competition. Price administration systems manage the updating of prices and consistently distribute them through multiple sales channels.

Some companies have achieved spectacular successes using PRO systems. **A recent Harvard Business Review article estimated that some retailers are achieving "... gains in gross margins in the range of 5 - 15%" from the use of optimization-based assortment and pricing optimization systems.** Early adopters include J.C. Penney, ShopKo, and Gymboree. Ford Motor Company has used a promotions management system to significantly improve the use of its \$9 billion annual North American Promotions budget. The United Parcel Service has long used a customized bid pricing system to help manage the more than 100,000 competitive bids that it makes every year in North America. Not surprisingly, given this track record of success, a wide variety of companies from many different industries—ranging from telecommunications to semiconductor manufacturing to industrial goods and freight transportation—have invested in Pricing and Revenue Optimization. However, in each case, successful Pricing and Revenue Optimization requires clean, accurate, and timely data. This is where CRM comes in.

Modern Pricing and Revenue Optimization systems, like their airline predecessors, have a tremendous appetite for data. Pricing and Revenue Optimization systems need continual input on transactions, prices, and customer responses to promotions and offerings—both on-line and off-line. Customer Relationship Management systems can track and provide this information, as needed, to the Pricing and Revenue Optimization system. The PRO system then performs the quantitative analysis needed to derive specific pricing and availability recommendations from the raw transactions and market data. Working together, the two systems can support today's sophisticated, fast-moving pricing environments where hundreds of thousands—sometimes millions—of pricing decisions must be made quickly and correctly.

The Pricing and Revenue Optimization Process

As we noted, Pricing and Revenue Optimization forms a key element of a company's customer interactions. Given its importance, PRO needs to be managed effectively and consistently and, in most cases, supported by appropriate decision-support tools. As shown in Figure 1, the key steps in the Pricing and Revenue Optimization process are :

Segment the market: Transaction data is used to segment customers based on their buying behavior and their response to price and product offerings. For Pricing and Revenue Optimization purposes, this segmentation must be statistically significant and predictive, based on customer characteristics that are known at the point of purchase, and also based on customer characteristics that can be used to drive differential pricing. Some examples of market segmentation in different industries include:

For off-line retailers, market segmentation usually begins at the store level. Metropolitan stores may have different buying patterns than suburban stores, or stores close to a competitor may need to price more aggressively than those that are located farther away.

For business-to-business sales, market segmentation usually takes place at the customer grouping level. Therefore, large, frequent buyers in the Northeast may form a different segment (and receive different sales discounts) than small, infrequent buyers in the Southwest.

For on-line retailers, promotions rather than differential list pricing are usually the dominant mode for price differentiation. In other words, rather than displaying a different on-line price to two different customers, it is usually better to offer them both the same price and provide one of them with a targeted on-line promotional discount.

Note that PRO requires its own customer segmentation, which may vary from other segmentation studies that can be performed. For PRO purposes, we must understand how customers specifically differ from each other in terms of price responsiveness for different products through different channels. PRO segmentation may be quite different from other segmentations based on response to various advertising pitches, product image, etc.

Estimate price response: Once we have established a stable and predictive segmentation, we need to determine how customers within each segment will respond to different products being offered at different prices under different market conditions. For example, large corporate customers in the Northeast may turn out to be less sensitive than small corporate customers in the Southeast for a particular product. Assuming that we have the freedom to offer different prices to these two groups, the Pricing and Revenue Optimization system would estimate two different price-response curves, as

shown in Figure 2. These curves would be used to drive pricing recommendations to these two different groups of customers under different market conditions. Of course, price responsiveness depends not only on customer segment, but also on the product being purchased and on the pricing actions of competitors. A comprehensive PRO system incorporates all of these factors (at least to the extent that they are known) into its price response curves.

Optimize prices: Once we understand the price-responsiveness of different customers through different channels, we can determine the price that maximizes expected margin contribution. As shown in Figure 2, this is the price that optimally trades off margin with probability of making a sale (or overall sales rate). Of course, the need to coordinate pricing with other marketing decisions means that the price that we actually offer may not equal this unconstrained optimal price. For example, we may wish to increase market share in a particular market segment, which means that we need to price more aggressively than the 'optimal' price indicates. On the other hand, our desire to maintain a certain price image may preclude us from deep discounts through certain channels—even though such deep discounts may lead to increased short-run profitability. Optimizing price offerings is a complex, multi-dimensional problem – one that must incorporate strategic considerations and tactical requirements as well as customer response and costs.

Update continually: Effective Pricing and Revenue Optimization should be a closed loop process. As sales and transaction results are received from the market place, they need to be incorporated as quickly as possible into the process. Only in this way can PRO decision-making continue to track changes in the market. In particular, PRO decisions are made based on an understanding of how different segments of the market will react to our prices and product offerings. It is critical therefore that we use feedback from the market to ensure that our understanding is up-to-date. In mathematical terms, we need to update our demand forecasts and the parameters of our price-response curves: if we sell more of our product to a particular segment at a given price than we anticipated, then we need to update our forecasts and our estimates of price-sensitivity accordingly.

Summary

Implementing Customer Relationship Management system has proved to be a perilous enterprise as likely to fail as to succeed – at least up to now. While CRM systems can effectively provide reams of customer and transaction data, companies have found that translating this new torrent of information into real business benefit is not straightforward. Through Pricing and Revenue Optimization companies can drive real benefit (i.e., profit improvement) from their CRM systems. By using CRM systems to feed data to the Pricing and Revenue Optimization function and continually track the results of PRO decisions, companies can generate positive returns from their investments. CRM and PRO are truly synergistic: CRM provides the data needed for Pricing and Revenue Optimization, and PRO enables companies to make better decisions using their CRM data.