

**How does Marketing Strategy Change in a Service-based World?
Implications and Directions for Research**

Roland T. Rust
Robert H. Smith School of Business
University of Maryland

Debora Viana Thompson
Robert H. Smith School of Business
University of Maryland

08/10/04

Introduction

Scholars have recently discussed a paradigm shift in the marketing discipline. For example, Vargo and Lusch's (2004a) recent article, published in the *Journal of Marketing*, argues in favor of an emerging new dominant logic for marketing. This paradigm shift or new logic, sometimes referred to as the "service revolution", relies on the notion that the core element in the exchange between firms and customers is service provision. The boundaries between goods and services are increasingly becoming blurred and the conventional characteristics that differentiate goods and services have been shown to be artificial and ineffective (Vargo and Lusch 2004b). Thus, a broader perspective of marketing considers physical products as distribution mechanisms for service provision (Vargo and Lusch 2004b). Consumers acquire products to obtain the services that they provide.

The shift towards service can be seen worldwide in several industries. For instance, software companies, personal computers and electronics manufacturers are experiencing a massive change in their business mission, from manufacturing goods to providing services to customers. Companies such as IBM, Dell, Oracle and HP are relying on services as their most important source of profits. This trend from tangible to intangible products does not seem restricted to high-technology industries, and includes conventional channels such as grocery store chains and car manufacturers. Along with this process, it becomes imperative to review the firm's internal structure, strategic goals and, most importantly, the relationships with customers.

The service revolution affects both macro and microeconomic levels of our society. At the macro level, for example, the growing service-based economy is changing the requirements for the workforce. The U.S Federal Reserve chairman recently stated that Americans face a never-ending necessity to learn new skills because of the ever-growing *conceptualization* of

economic output (The Washington Post, 02/21/04). At the micro level, managers from a wide array of industries are being urged to move away from marketing strategies and tactics based on brands and product lines to strategies based on developing relationships with individual customers.

The expression, “paradigm shift”, implies the notion of change from one philosophical and theoretical framework to another. We believe that several of our theories will need to be revised to incorporate (and explain) all the impacts of a service-based view of the firm. This does not mean, however, that everything we know so far is invalid or outdated; rather, it suggests that we need to rethink some of our key marketing concepts and reevaluate the way marketing strategy is formulated and implemented.

In this chapter, our goal is threefold. First, we will address the driving force of this new service logic – information technology (IT). Second, we will describe why the customer equity framework fits a service-based view of the firm and summarize its advantages as the central element of marketing strategy. Lastly, we will comment on the impact of this service perspective on firm and consumer behavior and suggest important new areas for investigation.

Information Technology and the Service Revolution

We believe that information technology drives services. It is the ability to generate, transform and distribute information that ultimately enables firms to provide services to customers. Developments in digitization of information and advances in computing and telecommunications have created higher levels of mobilization and unbundling of intelligence, which in turn have altered how value is created in the economy (Sawhney and Parikh 2001). As Sawhney and Parikh (2001, p.80) summarized, economic value is now linked to improving the utility of information: “where intelligence resides, so too does value.” Overall, information

technology allows firms to have more complex transactions with customers (transactions that involve a larger volume of information) and complete these transactions at a greater distance from the firm's site (Xie and Shugan 2001).

We will focus on four main outcomes from information technology that shape firms' capability to offer services: 1. e-service opportunities, 2. demand-driven production systems, 3. personalization of communication, and 4. organizational agility.

The accelerated progress in information technology during the twentieth century developed a wide array of technologies to generate, transport and transform information, such as the Internet, wireless networks, smart cards, agent technologies, customer relationship management programs, supply chain management networks and data mining tools, just to cite a few. These technologies substantially increase firms' capacity to decompose and reassemble information in different ways; they allow the firm to learn and store more information about the market and its customers, which in turn leads to an enhanced understanding of customers needs and greater ability to offer services and develop relationships with customers.

In our opinion, one of the most important business impacts of such IT developments is the ability to provide service over electronic networks (including Internet, wireless networks, ATMs, smart card networks, etc), or *e-services*. Today, several industries are transforming their physical products into e-services. As the transport of voice and data become a commodity, telecommunication businesses face the need to provide other services like hosting, maintenance, portals with content for end users, etc. The same trend appears in personal computer and information products. "The functionality that was once built into computers or sold as software packages can now be delivered over the Internet, much as utility companies deliver electricity through power lines. Just as corporations and consumers no longer need to own their own

generators, they'll soon be freed from having to own their one computing hardware and applications.” (Sawhney and Parikh 2001, p.82-83). For instance, Microsoft is viewing software as a service to which customers can subscribe, Yahoo! offers the ability to store e-mail messages, digital photographs and other files, and Dell Computers recently launched “Dell E Works”, which consists of e-services such as e-consulting and web hosting (Sawhney and Parikh 2001).

Moreover, the development of smart card networks (including electronic tickets, smart cards and online prepayments) has facilitated advance-selling services, where sellers allow buyers to purchase (online or offline) at a time preceding consumption (Xie and Shugan 2001). Advance selling strategies increase firms' profits by increasing the number of buyers or by allowing a premium advance price (Xie and Shugan 2001), and risk of arbitrage is controlled due to the encryption of personalized information in the card or ticket.

A very important aspect of the nature of e-services resides on its revenue-expansion effect. In contrast with the early e-service applications (traditional e-commerce perspective) which were primarily developed to decrease operational costs and increase efficiency through automation, an emerging view of e-services focuses on its ability to improve the level of customer service (enhance the service experience), increase customer satisfaction and lead to higher profits (Rust and Kannan 2003). Based on this perspective, e-services should be used to foster relationships with customers and increase customer equity, i.e., their lifetime value to the firm. In a recent research project funded by IBM and by the Center for e-Service at the University of Maryland, we studied the impact of governmental e-services (e-government) on small businesses in three states of the United States. We found that governmental e-services were significantly improving the performance of small companies through revenue-expansion, rather than through cost reduction. Small firms that used governmental online services more frequently

generated greater amounts of market intelligence and showed superior financial performance, relative to firms that had a lower usage rate (Thompson, Rust and Rhoda 2004).

Advances in information technology have also allowed companies to migrate from supply-driven production (build-to-forecast) to complex and flexible demand-driven production systems (build-to-order) (Dedrick and Kraemer 2002). Sophisticated internal information systems can now integrate all the fulfillment process, from order entry, manufacturing, and billing to delivery. Information technology allows the three main stages of customization to be integrated in a seamless network: elicitation, the mechanism to interact with the customer and obtain specific information, process flexibility to fabricate the product according to the information, and logistics to deliver the right product to the right consumer (Zipkin 2001). Thus, it is the information system connecting the different players in the supply chain that made possible what researchers are calling co-creation of value.

The impact of such flexible production systems that allow consumers to configure their own products is tremendous. Firms are substantially reducing inventory, offering higher levels of customization and giving more power to consumers. Consumers can choose from larger assortments and can match product configurations to their exact preferences, possibly increasing the value of the products they buy. For instance, Levi Strauss sells custom-fitted jeans, Andersen Windows can produce windows to fit any house, and Nike allows you to personalize your own tennis shoes.

A third important outcome of information technology that enhances the quality of firms' services is the opportunity to design communications or marketing programs at the individual level (one-to-one marketing). In this case, the personalization of information is initiated by the firm itself, which can filter information about individual customers. The Internet allows a high

level of targetability - the possibility of reaching individual customers at low cost. Further, the interactivity of the Internet allows firms to collect and update information about customers' preferences obtained from on-site surveys and from clickstream data. This intelligence can be later integrated with algorithms in an optimization approach to provide unique content to each customer (Ansari and Mela 2003).

The integration of knowledge about customers' preferences and optimization algorithms has also led to collaborative and content filtering systems, which use data on users' preferences to recommend products or content (Ansari and Mela 2003), such as the ones used by Amazon.com, Yahoo!, Macys, Blockbuster, among others. Firms use these systems to offer recommendation services and other decision aid services (e.g., product comparison services, search engines, matchmaking services, etc) to help consumers to search for information and make purchase decisions. Research in marketing has shown that the usage of such services significantly reduces consumers' search effort and improves the quality of their purchase decisions (Haubl and Trifts 2000).

The fourth outcome of information technology that directly impacts firms' capability to offer services is corporate agility – the ability to quickly detect and seize market opportunities (Sambamurthy, Bharadwaj and Grover 2003). Previous research shows that firms with wide-ranging information networks were more responsive in turbulent business environments due to the possibility of quickly leveraging assets and knowledge of suppliers, manufacturers and other partners (Zaheer and Zaheer 1997). Technologies that facilitate interorganizational collaboration such as portals and supply-chain systems are primarily responsible for higher level of agility in service innovation. Yahoo!, for example, has migrated from a search engine to a portal by developing alliances to provide content and several other services in the web site. AOL has

followed a similar trend and offers a myriad of services from weather information, to financial and real estate resources.

Further advances in information technology will happen in the years to come, thus we expect that the service orientation in business will only intensify. All industries, including packaged-goods, which historically have focused on short-term transactions, will be able to use information technology tools: 1) to understand customers' needs better and offer customized products or personalized content, 2) to unbundled or bundle different useful pieces of information and deliver them to customers, and finally, 3) to strengthen the customer relationships and increase customer equity.

Customer Equity Framework

The essence of the business movement towards service is the shift from product-centered thinking to customer-centric thinking. Service provision aims at developing relationships with customers, increasing their satisfaction, inducing switching costs over time, building customer loyalty, and, ultimately, improving performance by expanding revenues. According to the service logic (enabled by information technology), the key unit of analysis is the value of the relationship between the firm and each individual customer. The lifetime value of the customer base is firms' most important asset. Therefore, as companies become increasingly service-oriented, marketing strategy will need to accompany this shift and become less product-centered and increasingly customer-centered. We propose that the customer equity framework is a flexible, customer-based approach that should be the central element in marketing strategy. By using this approach, firms can focus on marketing actions that lead to the greatest payoff.

In the remaining of this section, we will discuss the rationale behind one specific model of customer equity: the framework proposed by Rust, Zeithaml and Lemon (2000). Our goal is to

discuss advantages of this model over other models that measure financial impact of marketing expenditures and point out how it reflects some of the foundational premises of the service dominant logic presented by Vargo and Lusch (2004a). For those interested in how to implement the customer equity framework, we suggest two readings: Rust, Zeithaml and Lemon (2000) for broader managerial implementation issues, and Rust, Lemon and Zeithaml (2004) for statistical and computational details.

Customer equity is the total of the discounted customer lifetime values summed over all the firm's current and potential customers (Rust, Lemon and Zeithaml 2004). The ultimate goal of the customer equity model is to link marketing actions to firm's financial return, making marketing a financially accountable investment. Customers' lifetime values to the firm mediate the relationship between strategic actions and return on investments. The chain of effects behind this approach is the following: 1) marketing investments produce improvements in drivers of customer equity (i.e. improvements in dimensions that affect customer satisfaction and retention, such as brand associations, product improvements, etc), 2) improvements in these drivers lead to improvements in customers' perceptions and enhance customer attraction and retention, 3) attraction of new customers and retention of current customers increase customer equity, and 4) increased customer equity, relative to the cost of marketing actions, results in favorable returns on investment.

The estimation of customer equity is based on data about individual customers' frequency of category purchases, average quantity purchased, brand switching patterns and firm's contribution margin. Model inputs such as drivers of customer equity, estimated shift in customer ratings, size of the total market, competitors and discount rate are obtained through exploratory research. A key piece of information is the estimate of the shift in customers'

perceptions induced by a specific marketing action. A shift in a driver of customer equity produces an estimated shift in customer's utility, which in turn, produces an estimated shift in the conditional probabilities of choice. The revised choice probabilities are used to compute customer's lifetime value.

The customer equity framework presents several important advantages over previous models of customer lifetime value and models of financial impact of marketing actions. First, the customer equity framework allows managers to project the comparative impact of alternative marketing expenditures, providing a data-driven basis for trading-off marketing actions and making marketing financially accountable. Second, the customer equity framework incorporates customers' switching behavior. To capture the flow of customers from one competitor to another, the model uses a Markov switching matrix, where each customer has a probability of being retained by each brand in the subsequent purchase occasion. This feature of the model allows managers to consider the impact of competitors' actions on firm's customer equity. Third, the customer equity framework considers the impact of both current customers and prospective, future customers. Thus, it is a forward-looking model that considers customer acquisition and retention. Fourth, to implement the customer equity framework, firms do not need to have longitudinal data on customers' purchases. The model can be implemented with cross-sectional data, using purchase intentions. Fifth, firms can use the customer equity framework to segment their customers in terms of the distribution of customer lifetime value. Finally, the mathematical models behind this approach are easily implemented using standard, commercially available software.

What main changes does the customer equity approach bring to marketing strategy? We believe that the customer equity view changes five important components of marketing strategy, which we briefly describe below.

Focus of Strategic Efforts. In the customer equity perspective, firms use increasingly personalized expenditures to increase the value of an individual customer relationship. So, the focus is on the value of individual customers, rather than on aggregate sales responses, and marketing efforts are closer to one-to-one interactions, rather than to mass marketing actions.

Competitive Advantage. Previous theories on marketing strategy such as Porter's product differentiation are based on product characteristics. In contrast, customer equity shifts firm's focus from its products to knowledge of customers' needs and to drivers of equity. Customer lifetime value, a strategic asset *outside* the firm, becomes the main strategic resource.

Measuring the Financial Impact of Marketing. The customer equity approach shifts firm's attention from market share and other aggregate measures to measures of current and future individual customer profitability. This shift to measures that capture revenues and costs of serving individual customers allows managers to segment the market based on individual current and/or future profitability to the firm.

Product Utility. Product utility has been traditionally a function of its attributes (attribute-based models have been extensively used in economics and consumer behavior). Market research models, such as conjoint analysis, estimate consumers' choice based on how they trade-off different levels of product attributes. This view of product utility assumes a transactional choice and do not take into consideration the context of the customer relationship with the firm. In the customer equity framework, product utility is a function of product value, brand *and* relationship history, such as switching costs and emotional ties to the company.

Product attributes (physical, tangible aspect) are reframed as benefits to the customer (intangible aspect).

Marketing Planning. Historically, firms have organized their marketing departments and marketing planning around products and brands. For instance, advertising campaigns, product differentiation strategies, product line and brand extension efforts are all centered on product and brand managers. Resource allocation is also based on product lines. Conversely, the customer equity framework is centered on customers, so, logically, marketing planning activities revolve around customers and drivers of customers' lifetime value. The customer relationship focus on marketing planning relies on the fact that brand equity is not equal across customers and products will inevitably change as technology develops.

To conclude our reasoning of why customer equity fits a customer-centric, service-oriented view of marketing strategy, we would like to highlight the links between this approach and three specific foundational premises of the service dominant logic presented by Vargo and Lusch (2004a). First, according to Vargo and Lusch (2004a), in a service-based world, *knowledge* is the fundamental source of competitive advantage. Consistent with an information driven approach to strategy, the customer equity approach relies on knowledge about customers' needs to maximize their lifetime value and their contribution to firm's profits. It is the intelligence about customers that drives firm's efforts to improve customer equity drivers, which in turn, improve acquisition and retention. Second, service-oriented enterprises can only make value propositions, rather than value distribution (Vargo and Lusch 2004a). This proposition directly addresses the notion that products and brands have no intrinsic value by themselves, but only in the context of developing relationships with customers. The customer equity framework is consistent with this proposition. It argues for a replacement of the main marketing asset: from

brand equity to the discounted lifetime value of the firm's relationships with all its current and future customers. Finally, a service-centered view is customer oriented and relational (Vargo and Lusch 2004a). The customer equity approach is a relational model to measure (and maximize) firm's financial return from individual relationships with customers.

Research Implications of the Service-Dominant Logic

Research about Firm Behavior

The cornerstone of the service-dominant logic and the customer equity framework is a customer-centered firm. Therefore, the key resource to competition is knowledge about customers' needs. Hogan, Lemon and Rust (2002) proposed that the ability to acquire, manage, and model customer information to initiate and maintain profitable customer relationships is the key source of competitive advantage for customer-centered firms. The role of marketing is, then, to maximize the profitability of such relationships.

We believe that three bodies of literature provide useful and insightful conceptual frameworks for research on the strategic behavior of service-oriented firms: the resource-based view of the firm (RBV) (e.g., Peteraf 1993), core competency theory and organizational learning (e.g., Day 1994a, 1994b), and market orientation studies (e.g., Jaworski and Kohli 1990). Taken together, the ideas and empirical results of these research streams are consistent with the simple notion that those who know their customers better profit the most.

RBV and core competency theories assume the firm as a bundle of resources. Resources that are valuable, distinctive, relative to those of competitors, and hard to imitate become the source of competitive advantage. Some of these resources are internal and tangible such as machine capacity, others are internal and intangible, such as bundles of skills and technologies called competencies (e.g., production experience and IT capability), and others are external to

the firm's boundaries, such as customer loyalty, mergers and acquisitions (Wernerfelt 1984). The shift from product to service orientation emphasizes one internal core competency as the key to competitive advantage: the firm's capability to acquire and process information about customers and to apply this information to increase customer equity. Using Vargo and Lusch (2004a) terminology, knowledge about customers is the firm's *operant* resource. Moreover, the organizational learning literature focuses on how firms actually learn information about the market (and customers) and on the strategic benefits of learning. Learning implies more than "simply taking in information" and includes the ability of managers to ask the right questions, absorb the answers into their mental models, share the information and make decisions (Day 1994a, 1994b). Finally, the concept of market orientation (as a corporate culture) remains current and appropriate to understand the behavior of a service-oriented firm. Jaworski and Kohli (1990) defined market orientation as the organization-wide generation of market intelligence pertaining to current and future customer needs, dissemination of the intelligence across departments, and organization-wide responsiveness to it (Jaworski and Kohli 1990, p.54). We believe that the market orientation is the most important source of competitive advantage of service-oriented firms.

Even though these previous literatures seem appropriate to guide our understanding of the service-dominant logic, they cannot fully answer several new important questions. We present below three broad areas that we consider particularly relevant for future research about firm behavior.

What is the impact of information technology on business performance? The information system literature has long debated this topic, but there is no consensus about how exactly information technology leads to superior performance. Recent managerial literature has

challenged the positive effect of information technology on performance. Carr (2003) argues that companies overspend in information technology. For instance, from the 7,500 largest U.S. companies, the 25 companies that presented the highest economic returns spent, on average, just 0.8% of their revenues on IT. The relationship between information technology and superior performance is a complex one. Future research should investigate the *indirect* effects of IT on economic returns. The strategic value of IT is, probably, linked to how firms use their IT capabilities to generate knowledge, develop relationships with customers and expand revenues, rather than just increase efficiency and cut costs.

How can information technology resources be transformed to superior customer equity management skills? This is a crucial question for the effective implementation of the customer equity model. How firms can make use of available technologies to generate knowledge about their customer base and enhance their level of services? Ansari and Mela (2003) study on e-customization is a good example. They propose an optimization approach for customization of the design and content of e-mails with customers. Rust and Verhoef (2004) present a hierarchical model to personalize a mix of CRM interventions at the individual level, which led to higher profitability than other common segmentation approaches. Much more work should be done on how managers can use current technologies to foster relationships with customers.

What is the impact of customer equity on the value of the firm? The ultimate role (and credibility) of marketing in the service-oriented firm will depend on how a superior customer base can potentially affect shareholder value. How does customer lifetime value impact cash flow measures? Does it impact the stock market? Rust, Lemon and Zeithaml (2004) and Srivastava, Shervani and Fahey (1998, 1999) provide conceptual frameworks that integrate marketing and finance and discuss the links between market-based assets, such as customer

relationships, market performance (e.g. market penetration, price premium loyalty, etc), and shareholder value. Empirical work documenting this chain of effects is much needed.

Research about Consumer Behavior

The service-dominant logic carries important implications for consumer behavior. We will focus here on the proposition that *customer is always a coproducer* (Vargo and Lusch 2004a). We believe that the assumption that consumers will (and should) have a proactive involvement in their exchanges with service firms is more complex than it seems, and actually may have negative consequences to consumer welfare. So, our goal is to incite interest and encourage research on how and to what extent consumers will be coproducers.

First, we think that exchange relationships must be truly considered *from the consumers' point of view*. Fournier and her colleagues, in an insightful article entitled "Preventing the Premature Death of Relationship Marketing", argue that consumers feel trapped in a confusing, stressful and insensitive marketplace. They say (Fournier, Dobscha and Mick 1998, p.42):

"Companies may delight in learning more about their customers than even before and in providing features and services to please every possible palate. But customers delight in neither. Customers cope. They tolerate sales clerks who hound them with questions every time they buy a battery. They muddle through a plethora of products that line grocery store shelves. They deal with the glut of new features in their computers and cameras. They juggle the flood of invitations to participate in frequent-buyer reward programs."

Consumers cannot keep close, one to one relationships with all the firms they interact. Further, many times they do not want to. This extends to coproduction. Consumers do not have the cognitive resources to customize all the products they buy. And several times, they may not want to customize products or to have a personalized connection with the firm. This is a challenge for firms whose primary goal is to maximize customer lifetime value. How to exactly calibrate the optimal amount of customization and personalization?

Gateway, a direct computer seller, used to offer twenty-three million combinations of computers. The company recently reduced this number (due to costs) to hundreds of possible configurations. Starbucks can currently prepare a cup of coffee in nineteen thousand different ways. The service revolution brings more power and control to consumers, but this empowerment also implies higher levels of purchase involvement, that is, consumers tend to spend a greater amount of cognitive resources configuring products, choosing and trading off alternatives, etc. However, after decades of research in decision-making, we know that consumers frequently cannot accurately predict what they want. Thus, the possibility to customize and configure their own products does not lead, necessarily, to better decisions. A recent book by Barry Schwartz (2004) expands on what he calls the paradox of choice: that fact that today's world offers more choices but less satisfaction. Consistent with Fournier, Dobscha and Mick (1998), Schwartz argue that, under the customer's point of view, opportunities can become so numerous that individuals feel overwhelmed, and the supposedly increased control is experienced as a loss of control.

From the customer's point of view, when companies attempt to give them more flexibility, more options and more power over the exchange process, companies may end up creating more problems. We are currently investigating some of these issues. One of our projects (Thompson, Rust and Hamilton 2004) is examining the effects of increasing the number of features offered by e-services, such as online media players (music and video players), on consumers' evaluations. We tested only features that are considered important individually. Preliminary results suggest that before usage, consumers prefer media players that offer a high number of features, relative to players that offer a low number of features. Consumers tend to focus on desirability issues, such as "what can this player do for me?" However, after using the

service, users of more complex media players (high number of features) indicated lower levels of satisfaction and behavioral intentions (e.g. likelihood to recommend), compared to those obtained from users of simpler players (lower number of features). After using the service, consumers seem to focus more on the usability dimension. Thus, what a priori seems to be a strategy to increase the value of the e-service (adding more features) may actually decrease its value to customers.

Other interesting area of investigation is the psychological effect of customization. We are currently testing the possibility that interfaces where consumers specify at least some of the attributes of the product create an affective cost due to an increased attachment to the forgone options. This option attachment effect has been recently described in the consumer behavior literature (Carmon, Wertenbroch and Zeelenberg 2003) but has not yet been linked to product customization. According to Carmon, Wertenbroch and Zeelenberg (2003), as individuals consider or deliberate about options more closely, they become more attached to the options and experience more discomfort (consumers feel bad after considering their options more closely). When customizing the products they buy, consumers are forced to make higher number of choices, increasing the amount of deliberation on the forgone attribute options. The increased deliberation may lead to an enhanced attachment to the options and may cause postchoice discomfort (“choosing feels like losing”). We predict that consumers will not anticipate this option attachment effect. As a result, there may be a gap between consumers’ beliefs about the value of product customization and their actual responses to product customization. More specifically, consumers may overestimate the value of customizing their own products. From the consumer’s viewpoint, if our predictions are empirically supported, our results may suggest that

the best customization strategies are the ones that allow for a closer match with consumers' preferences but *do not* increase consumers' amount of deliberation on the diverse set of options.

To summarize, we think future research should address the following interrelated areas of consumer behavior:

Impact of offering more flexibility, more choices, and transferring more power to consumers. How does this empowerment influence satisfaction, quality of life, levels of stress and happiness? Schwartz (2004) presents robust evidence that this empowerment may hurt well-being. We believe these are important aspects of our work as marketers, important issues for public policy and, therefore, topics that marketing researchers should be concerned with.

Psychological effects of product customization. While from the economics point of view, customization has a value-enhancing effect, offering unique value and closer match to consumers' preferences, customization may increase the complexity of the shopping experience and also induce more attachment to the existent options. Future studies should explore the cognitive and affective costs of customization.

When and how to allow co-production. For instance, co-production probably adds more value for consumers who have the expertise to configure a product, relative to novices. Moreover, consumers may be more willing to configure certain categories of products, where they extract utility from the act of configuring the product itself (e.g., customizing a cruise vacation). Future research should explore these moderator variables on the value of co-production. Finally, firms can use different elicitation strategies to link consumers to their production systems. What types of interfaces do work better from the customer's viewpoint? How can firms concurrently increase the match between the product and customer's preferences and decrease cognitive and affective costs to consumers?

Summary

We are witnessing a transition between an economy based on tangible goods to an economy driven by information and services. This movement, enabled by developments in information technology, permeates all sectors, from labor intensive, goods-based industries to information products. Because progress in information technology is not likely to cease, we believe that firms' service orientation will only increase.

The service-dominant logic is customer-centric. Customers are the key asset that leads to superior profitability. We think that the role of marketing in service-oriented firms is to maximize customer equity, that is, to maximize the discounted lifetime value summed across current and future customers. The customer equity framework is an information-based, customer-driven, competitor-cognizant and financially accountable approach to marketing strategy, therefore, it is fully consistent with the foundational premises of the service-dominant logic.

This paradigm shift in marketing, where all products are merely distribution mechanisms of services and consumers are coproducers of value, brings several new challenges for scholars and practitioners. Our goal here was to identify a few of these challenges. We hope that future research will improve marketers' ability to maximize the welfare of both the consumer and the firm.

References

- Ansari, Asim and Carl F. Mela (2003), "E-Customization," *Journal of Marketing Research*, 40 (May), 131-145.
- Carmon, Ziv, Klaus Wertenbroch and Marcel Zeelenberg (2003), "Option Attachment: When Deliberating Makes Chossing Feel Like Losing," *Journal of Consumer Research*, 30 (June), 15-29.
- Day, George (1994), "Continuous Learning about Markets," *California Management Review*, 36 (Summer), 9-31.
- Day, George (1994), "The Capabilities of Market-Driven Organization," *Journal of Marketing*, 58 (October), 37-52.
- Dedrick, Jason and Kenneth L. Kraemer (2002), "The Impacts of Information Technology, the Internet, and Electronic Commerce on Firm and Industry Structure: The Personal Computer Industry," CRITO: Center for Research on Information Technology and Organizations, University of California, Irvine.
- Fournier, Susan, Susan Dobscha and David Glen Mick (1998), "Preventing the Premature Death of Relationship Marketing," *Harvard Business Review*, 76 (1), 42-51.
- Haubl, Gerald and Valerie Trifts (2000), "Consumer Decision Making in Online Shopping Environments: The Effects of Interactive Decision Aids," *Marketing Science*, 19 (1), 4-21.
- Jaworski, B. and A. Kohli (1990), "Market Orientation: Antecedents and Consequences," *Journal of Marketing*, 57 (July), 53-70.
- Nambisan, Satish (2001), "Why Service Businesses are not Product Businesses," *Sloan Management Review*, 42 (4), 72-80.
- Peteraf, Margeret A. (1993), "The Cornerstones of Competitive Advantage: A Resource-Based View," *Strategic Management Journal*, 14 (3), 179-191.
- Rust, Roland T., Valarie A. Zeithaml and Katherine N. Lemon (2000), *Driving Customer Equity*. The Free Press: New York, NY.
- Rust, Roland T. and P.K.Kannan (2003), "E-Service: A New Paradigm for Business in the Electronic Environment," *Communications of the ACM*, 46 (6), 37-42.
- Rust, Roland T., Lemon, Katherine N. and Valarie A. Zeithaml (2004), "Return on Marketing: Using Customer Equity to Focus Marketing Strategy," *Journal of Marketing*, 68 (January), 109-127.

Rust, Roland T. and Peter C. Verhoef (2004), "Optimizing the Marketing Interventions Mix in CRM," working paper, University of Maryland.

Rust, Roland T., Tim Ambler, Gregory S. Carpenter, V. Kumar and Rajendra K. Srivastava (2004), "Measuring Marketing Productivity: Current Knowledge and Future Directions," *Journal of Marketing* (forthcoming).

Sambamurthy, V., Anandhi Bharadwaj and Varun Grover (2003), "Shaping Agility through Digital Options: Reconceptualizing the Role of Information Technology in Contemporary Firms," *MIS Quarterly*, 27 (2), 237-263.

Sawhney, Mohanbir and Deval Parikh (2001), "Where Value Lives in a Networked World," *Harvard Business Review*, 79 (1), 79-86.

Schwartz, Barry (2004), *The Paradox of Choice: Why More is Less*. Ecco/HarperCollins, New York, NY.

Srivastava, Rajendra K., Tasadduq A. Shervani and Liam Fahey (1998), "Market-Based Assets and Shareholder Value: A Framework for Analysis," *Journal of Marketing*, 62 (January), 2-18.

Srivastava, Rajendra K., Tasadduq A. Shervani and Liam Fahey (1999), "Marketing, Business Processes, and Shareholder Value: An Organizationally Embedded View of Marketing Activities and the Discipline of Marketing," *Journal of Marketing*, 63 (Special Issue), 168-179.

Thompson, Debora Viana, Roland T. Rust and Jeffrey Rhoda (2004), "The Business Value of e-Government to Small for Small Firms," working paper, University of Maryland.

Thompson, Debora Viana, Roland T. Rust and Rebecca Hamilton (2004), "Feature Fatigue: When Product Capability is Too Much of a Good Thing," working paper, University of Maryland.

Vargo, Stephen L. and Robert F. Lusch (2004a), "Evolving to a New Dominant Logic for Marketing," *Journal of Marketing*, 68 (January), 1-17.

Vargo, Stephen L. and Robert F. Lusch (2004b), "The Four Service Marketing Myths: Remnants of a Goods-based, Manufacturing Model." *Journal of Service Research* (forthcoming).

Wernerfelt, Birger (1984), "A Resource-based View of the Firm," *Strategic Management Journal*, 5 (2), 171-180.

Xie, Jinhong and Steven M. Shugan (2001), "Electronic Tickets, Smart Cards, and Online Prepayments: When and How to Advance Sell," *Marketing Science*, 20 (3), 219-243.

Zaheer, A. and Zaheer, S (1997), "Catching the Wave: Alertness, Responsiveness and Market Influence in Global Electronic Networks," *Management Science*, 43 (11), 1493-1509.

Zipkin, Paul (2001), "The Limits of Mass Customization," *Sloan Management Review*, 42 (3), 81-87.