

Interactive Services: A Framework, Synthesis and Research Directions

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Abstract

This article briefly reviews marketers' current knowledge about interactive services. It defines interactive services as services that have some form of customer–firm interaction in an environment characterized by any level of technology (i.e., a high or low technology environment). Customers may interact with the firm's physical elements (including technology), processes and people in both service creation and delivery. Consequently, customer participation directly influences service quality and behavioral outcomes (e.g., service usage, repeat purchase behavior and word-of-mouth) — as well as firm outcomes (efficiency, revenues and profits). Hence, a recurring theme throughout our article is that the nature of customer participation is critically important for the effective creation and delivery of interactive services. The article identifies key research areas and their relevance to managerial practice. This analysis yields a set of research questions that provides an agenda for future research.

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Interaction has traditionally been considered a defining characteristic of all services. The primary reason is that services are characterized by simultaneous production and consumption, thereby requiring customer–firm interaction. Many people equate service with customer service — that is, service provided in support of the company's core products. However, services are typically broadly defined as 'deeds, processes and performances' (cf., [Berry 1980](#)). Service industries include government, transportation, communications, finance, hospital-ity, education, retail, computing, and information services. Recently, marketing thought leaders have expanded the notion of services to include derived services ([Vargo and Lusch 2004](#)). In other words, the value that the customer derives from physical goods is considered to be a service provided by the good ([Zeithaml et al. 2006](#)). It is not inherent to a good because it cannot be extracted without customer interaction. For example, a pharmaceutical drug provides medical service and information appliances – e.g., computers, cellular telephones, personal digital assistants – provide electronic services ("e-services") via the Internet that complete tasks and solve problems. From a modern perspective, many marketing thought

leaders would argue that all products (goods and services) are inherently interactive services.

Nevertheless, for the purpose of this article, we will consider a somewhat narrower conceptualization of interactive services (rather than all services). We begin with the observation that, as people have gained access to technology and especially the Internet, consumers frequently interact with technology-mediated services such as online banking services, digital services (e.g., music), mobility services (e.g., car telematics) and so forth. This trend is likely to continue as low-cost microprocessors and network connections are embedded in consumer durables (e.g., networked household appliances). At the same time, business customers increasingly interact with technology-mediated services, such as digitally delivered products in a client server network configuration.

Interestingly, in common parlance, the term "interactive services" has frequently been used to refer to interactive television services! (See Wikipedia.org.) For this reason, we will use interactive television services to illustrate certain key features that characterize (more broadly defined) interactive services. First, interactive television services can be represented on a continuum ranging from low interactivity (e.g., consumer locally controls TV on/off, volume and channel changes) to moderate interactivity (e.g., movies on demand) to high interactivity (requiring two-way communication with the

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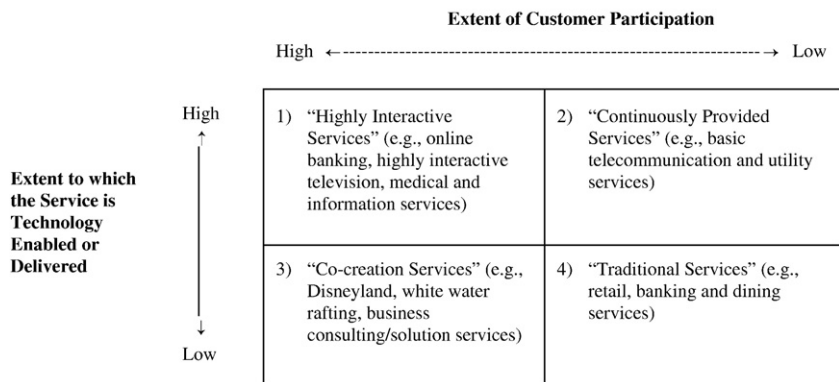


Fig. 1. Interactivity in services.

service provider). Second, the extent of interactivity is dependent on how technology enables or delivers the service. For example, a low-level interactive television service might offer a movie downloading service where viewer controls are exercised (only) at the local level; the technology might not enable a “return path” for communication with the service provider. Third, the extent of interactivity is dependent on the level of consumer participation. Thus, a highly interactive television service might offer real-time voting (via a return path to the service provider), so that audience members can choose to participate and collectively make decisions about how a program evolves.

We believe that interactive services exist in many industries in both consumer and business markets. As the preceding example illustrates, it is useful to characterize interactive services along two dimensions: (1) the extent to which the customer participates and (2) the extent to which technology is utilized in the creation and delivery of the service. This categorization scheme is depicted in Figure 1, where the *x*-axis represents the extent of customer participation and the *y*-axis represents the extent to which the service is technology-enabled or delivered. Although these two dimensions are continuous, most services can be usefully classified into one of the four quadrants in Figure 1. Many marketing academics and managers consider interactive services to encompass only those services that fall in the first quadrant: high levels of technology and high levels of customer participation. For example, many web-based services fall in this quadrant. Similarly, many marketers do not consider traditional service offerings that fall in fourth quadrant (i.e., low levels of technology and low levels of customer participation) to be interactive services. For example, many traditional retail services, such as retailers on Main Street, fall in this quadrant.

However, as Figure 1 illustrates, this viewpoint overlooks the continuous nature of the two underlying dimensions. Services that fall in the second quadrant (i.e., low customer participation and high levels of technology) have some degree of interactivity. For example, conventional landline telephone service requires some customer participation (with an operator and/or equipment) to make an overseas long-distance call. Similarly, services that fall in the third quadrant (i.e., high customer participation and low levels of technology) still require enabling technologies. For example, a visit to Disney-

land entails extensive customer participation but technology provides the foundation for many aspects of the service experience (albeit not necessarily apparent to the consumer). Lastly, even traditional services (in the fourth quadrant) have some degree of customer participation and technology. For example, many retail environments employ in-store kiosks to assist with search, customization and delivery of goods and services. Consequently, we define interactive services *as services that have some form of customer-firm interaction in an environment characterized by any level of technology (i.e., a high or low technology environment)*.

As an aside, we might easily enlarge our conceptualization of interactivity by considering the role of employees, thereby converting Figure 1 into a three-dimensional cube. This expansion is consistent with traditional services research that focused on customer–employee interactions. For example, Solomon et al. (1985) described a service interaction as a ‘fusion’ of employees and customers, where the success of the service delivery depends on how well both parties perform their roles. Hence, service interactions were typically considered to be reciprocal social exchanges, in which the customer’s participative behaviors are just as important as those of the employee.¹ We acknowledge that employees may participate in the creation and delivery of interactive services. However, due to space limitations, we will assume that employees may be involved, but limit our discussion of their role. See Fisk, Grove, and John (1999) for a book-length treatment of interactive services – emphasizing employees – with theater as a metaphor for service.

Customers interact with the firm’s technology, people and processes in the creation and delivery of services, so that customer participation directly influences service quality and behavioral outcomes (e.g., service usage, repeat purchase behavior and word-of-mouth) — as well as firm outcomes (efficiency, revenues and profits). Thus, a recurring theme

¹ Employees who are in direct contact with customers represent the firm to customers and enhance the firm’s image (Booms and Bitner 1981, Bowen and Schneider 1985). Customers’ perceptions of service quality are directly influenced by employee satisfaction and productivity (Heskett et al. 1994). Employee courtesy, assurance, responsiveness, reliability and empathy influence consumer perception of the firm’s service quality (Parasuraman et al. 1988).

throughout this article is that customer participation is critically important for the effective creation and delivery of interactive services. The remainder of this article reviews marketers’ current knowledge about interactive services and identifies new directions for research. Our conceptual framework is depicted in Figure 2. We organize our discussion around this framework, discussing key customer behaviors and firm actions that take place within interactive service experiences. The customer behaviors that we consider are: participative behaviors (including information sharing), consumer search, purchase and usage, social networks and word-of-mouth. The firm strategies and actions that we consider are: innovation, service design, service execution and delivery. We discuss customer behaviors and firm actions in the context of the key building blocks of service infrastructure, namely people, processes and technology (see Table 1).

Customer participative behaviors and behavioral outcomes

Customer participative behaviors

Co-production versus co-creation

In considering customer participation, it is useful to distinguish between co-production and co-creation. In the services marketing literature, ‘customer co-production’ is typically defined as customer participation within organization-defined parameters (Bowen 1986; Lovelock and Young 1979). Customer co-production implies that work is transferred from the organization to the customer. Examples include self-checkout at the grocery store or online retailer, or business customers who use FedEx software and/or hardware to begin the shipping process. In a sense, customers become “partial employees” — and can influence service quality. Rodie and Kleine (2000) identify four

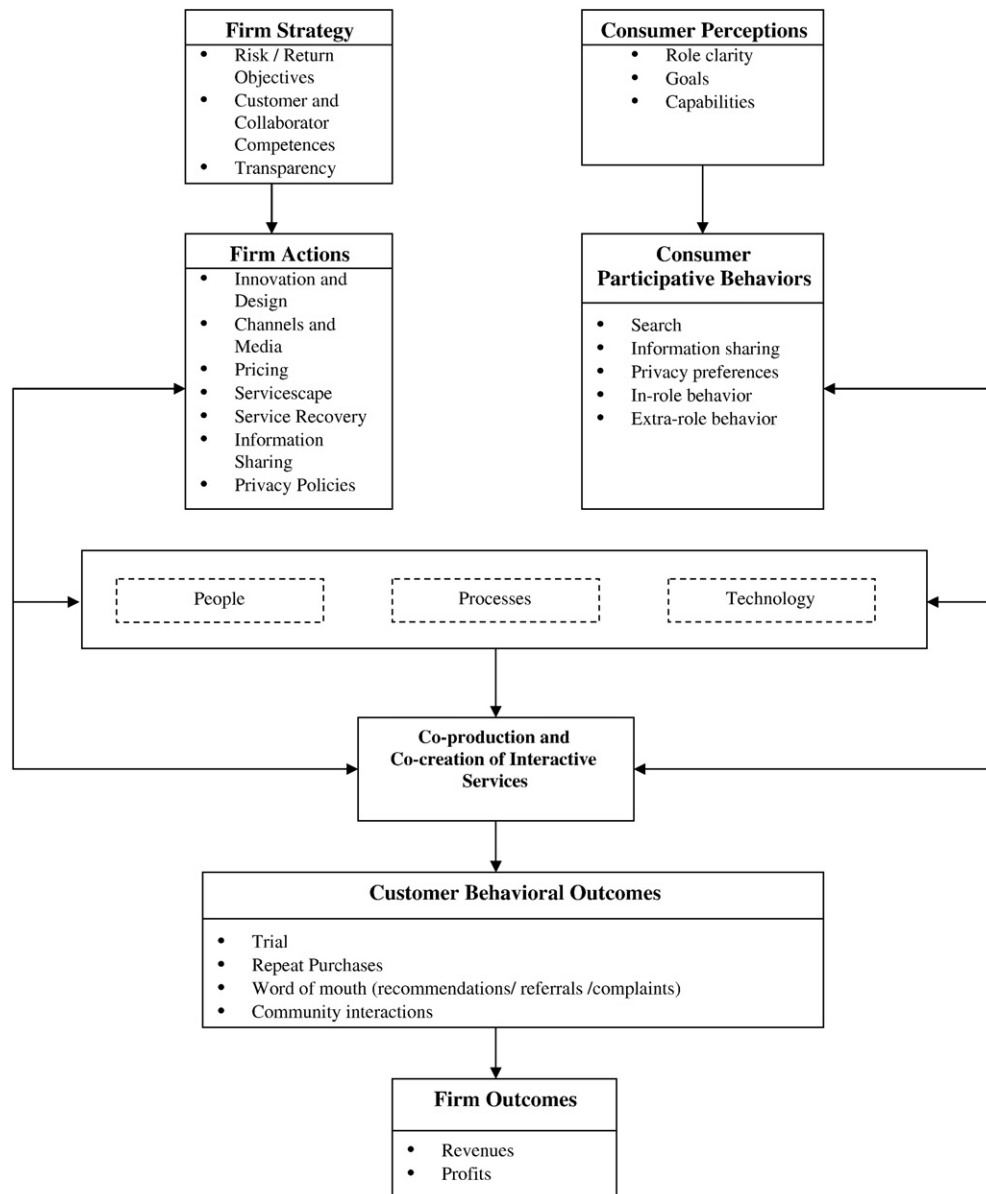


Fig. 2. Interactive services framework.

Table 1
Selected articles on interactive services

Article	Type of data	Industries affected	Type of innovation
Technology			
1 Ward and Ostrom (2006)	Qualitative frame analysis	Online services (protest websites, hate sites and complaint sites)	New innovative service (electronic word of mouth)
2 Meuter et al. (2000)	Critical incident study using web survey	Self service industries	Integrate technology to expand markets and access
3 Shugan (2004)	Conceptual	Online search services; biometrics and smart cards; m-commerce and GPS Tracking	New innovative service/integrate technology to expand markets and access
4 Hoffman and Novak (1996)	Conceptual	Large scale networked environments (Internet); online services-electronic commerce	New innovative service (Internet)
Processes			
5 Solomon et al. (1985)	Conceptual	Services	Differentiative service culture
6 Heskett et al. (1994)	Conceptual/Anecdotal	Services with boundary spanning employees	Differentiative service culture
7 Prahalad and Ramaswamy 2004	Conceptual	Entire marketplace—all industries	New innovative service/differentiative service culture
8 Pine and Gilmore (1999)	Conceptual/Anecdotal	Entire marketplace—all industries	New innovative service/differentiative service culture
9 Schmitt (1999)	Conceptual/Anecdotal	Entire marketplace—all industries	New innovative service/differentiative service culture
10 Rayport and Jaworski (2005)	Conceptual/ Anecdotal	Entire marketplace—all industries	Integrate technology to expand markets (integration of technology into front office)
11 Brynjolfsson and Smith (2000)	Data set of price observations	Retailing	New offerings within an industry (price comparisons between Internet retailers and conventional outlets)
12 Pan et al. (2002)	Empirical analysis of price	E-tailing	New offerings within an industry (price comparisons across sellers for different product categories)
13 Jap (2002)	Conceptual with an exploratory survey	Business-to-business	New innovative service (reverse auctions)
14 Zeithaml et al. (2002)	Conceptual	Online services	Exemplary service/new offerings within an industry —e-service quality
15 Parasuraman et al. (2005)	Focus groups, online survey	Online services	Exemplary service/new offerings within an industry —e-service quality
People			
16 Meuter et al. (2005a)	Survey	Self service industries	Integrate technology to expand markets and access
17 Curran et al. (2003)	Survey	Self service industries	Integrate technology to expand markets and access
18 Lynch Jr. and Ariely (2000)	Experiments	Online search and electronic shopping	(Internet) Services as revenue producing offering (purchasing wine online)
19 Jap (2003)	Interviews and quasi-experiments	Business-to-business (automotive industry)	New innovative service (reverse auctions)
20 Chernev (2003)	Experiments	Online services	New offerings within an industry (comparison between 2 online pricing strategies)
21 Grewal et al. (2004)	Experiments	E-commerce	New offerings within an industry (comparison between pricing segmentation tactics)
22 Muniz and O'Guinn (2001)	Interviews	Services	Differentiative service culture (brand communities)
23 McAlexander et al. (2002)	Ethnography; survey	Services	Differentiative service culture (brand communities)
24 Hennig-Thurau et al. (2004)	Online survey	Online services	New innovative service (electronic word of mouth)

reasons why consumers participate in the production of services: efficiency in process, efficacy of the outcome, hedonic and emotional benefits and increased perceived control. Co-production, combined with the provision of alternative service options, allows for the mass customization of services.

Lusch and Vargo (2006 p. 284) argue that “value can only be created with and determined by the user in the ‘consumption’ process and through use or what is referred to as value-in-use.” They further differentiate co-production from co-creation by noting that co-creation “involves the (customer) participation in

the creation of the core offering itself. It can occur through shared inventiveness, co-design, or shared production of related goods, and can occur with customers and any other partners in the value network.” Thus, co-creation occurs when the customer participates through spontaneous, discretionary behaviors that uniquely customize the service experience (beyond the selection of pre-determined options). For example, consumers co-create the experience of visiting Disneyland or participating in Second Life, an Internet based virtual world that encompasses schools, clubs, cars, houses, relationships and ‘avatars’ of different ages, cultures and countries (Smith 2007). Co-creation is especially apparent in business-to-business contexts, such as solution selling of high technology services — where interactive services are jointly designed and delivered over a period of many years.

When services are co-created, firms must consider customers as a ‘source of competence’ — and as potential competitors (Prahalad and Ramaswamy 2000). Consequently, a firm’s marketing strategy must encompass the entire enhanced network of the company, its suppliers, its partners and its customers. In the business-to-consumer domain, this notion is extremely challenging because it means allowing heterogeneous consumers to proactively customize their interactive service experience over time. These observations lead to our first research questions.

1. How do firms identify and articulate a value proposition for an interactive service recognizing customers — as well as technology and employees — as a source of competence?
2. How do firms develop and orchestrate a coherent strategy for an interactive service that integrates the resources and capabilities of the firm, its customers and network relationships?

Customer heterogeneity

Marketers have long acknowledged differences in consumers through concepts such as market segmentation. With the growing importance of interactive services in which customer participation plays an important role, it is imperative for firms to develop new ways to manage heterogeneity in consumers. This approach must go beyond mass customization or niche marketing in which the firm initiates actions that target certain consumer groups. Instead, theory-based research is needed to better understand customer-initiated behavior that occurs during interactive service encounters.

Customers’ willingness to participate in co-production will depend on a variety of factors. Customers are likely to weigh their motivations, the emotional gratification of participating in the service experience, their need to control their service experience and their perceptions of the trustworthiness of the organization in making their decision about participation. As customer participation increases, some of the risks associated with the performance of the service may be shifted from the organization to the customer. For this reason, customers have been initially slow to adopt some new self-service technologies, such as automatic teller machines operated by banks, but have readily embraced others, such as buying computers or books

from Internet retailers (Meuter et al. 2000). Prahalad and Ramaswamy (2004) argue that dialog, access, risk-benefits and transparency are the building blocks of participative customer–company interactions.

In-role versus extra-role behavior

Similar to employee behavior, we can distinguish between in-role behaviors (i.e., co-production), in which customers’ behavior is determined by firm guidelines, and extra-role behaviors (i.e., co-creation), in which customers use their discretion (cf., Netemeyer and Maxham III 2007). Customer in-role and extra role behaviors can be considered as a form of codified and tacit knowledge involved in a service exchange (Chesbrough and Spohrer 2006). Codified knowledge refers to ‘knowledge that is transmittable in formal, systematic language’ while tacit knowledge is knowledge that is ‘difficult to state explicitly (on) how to perform the function’ (Chesbrough and Spohrer 2006, p. 38). As service interactions involve combinations of tacit and codified knowledge and exchanges between the firm and the customer, the importance of service brand equity becomes very important in such exchanges. Services brands can sometimes dictate consumer brand loyalty and perceptions of value, which may (in turn) drive customer participative behavior.

Consumer extra-role behavior is especially important for services that are complex, customized and delivered over time because firms’ success is driven primarily by customer behavior and the firm–customer relationship (Dellande et al. 2004). In such a case, the firm needs to facilitate customer role clarity, ability and motivation to ensure effective customer in-role behavior and extra-role behavior. Hence, additional research on antecedents (goals, emotions, perceptions) of in-role and extra-role customer behavior will be very helpful to understanding customer participation in interactive services. We believe that organizations can influence participation levels by clarifying customer roles, reducing their perceived risk, improving the design of the physical environment and rewarding desired behaviors. For example, airline companies encouraged consumers to use self-service machines to print boarding passes by temporarily providing personnel to demonstrate the equipment and reassure consumers regarding the new procedures, as well as providing incentives for compliance with the new procedures (reduced waiting time). Their efforts overcame consumer concerns about privacy and potential financial risk. Teaching consumers new roles will pay off in the long run when organizations become more effective and efficient.

3. What theoretical mechanisms and marketing actions explain in-role and extra-role customer behaviors (including information sharing), as well as service usage levels, for interactive services?
4. How should firms design the servicescape (including technology), communicate via conventional and electronic media and train/support employees to encourage specific in-role and extra-role customer behaviors during service interactions?

5. How do consumers' goals, emotions and perceptions (e.g., role clarity) influence their perceptions and participation in interactive services over time?
6. How can firms build interactive service brands? Can interactive services where technology plays a primary role build brand loyalty/equity? What are the differences in the antecedents of loyalty for interactive services which are technology intensive versus participation intensive? Or both?

Mathematical models will also be required that help firms better manage their capacities both internally and externally (with their partner networks). Such studies will especially benefit from cross-disciplinary work in other related business disciplines such as supply chain and operations management.

Information sharing and privacy concerns

Since interactive services require that customers and firms have both tacit (experiential) knowledge and codified knowledge (Chesbrough 2004), information sharing is a critical component of participation in interactive services. In some situations, consumers share information freely: providing reviews and recommendations on Amazon.com, viewing preferences to TiVo, personal information on websites at facebook.com and orkut.com, videos on YouTube.com, and so forth. In other situations, firms use technical tools like cookies and web bugs to collect information about consumer activities over the Internet. Websites can collect and update customer preferences from on-site surveys and from 'the traces customers leave as they navigate through a website' and use this information to customize interactions, such as permission-based email communication. Ansari and Mela (2003) show that customizing at the individual level helps accommodate preference heterogeneity among consumers, thereby increasing web site traffic and improving the targeting of consumers.

Although customized communications and services should be attractive to consumers, firms' use of personal information during the customization process may stimulate concerns about privacy. Direct marketers have been especially interested in consumer privacy concerns and attitude towards information sharing (Milne and Boza 1999; Nowak and Phelps 1995). Phelps et al. (2001) studied the antecedents and consequences of consumer privacy concerns and showed that a consumer's attitude towards direct marketing and his/her desire for information control are antecedents to privacy concerns, where privacy concerns are negatively related to purchase behavior. However, consumers face challenges in controlling their private information. Research is required to understand the circumstances under which consumers are willing to share information (i.e., boundary conditions), as well as when and how marketers can use consumer information in a non-threatening manner. This topic has not been investigated from the perspective of customers as participants in the creation and delivery of interactive services. Research is also needed to examine how consumer privacy relates to existing research in areas such as service quality, satisfaction, trust (e.g. Pan and

Zinkhan 2006). Online trust issues are also discussed in Urban, Amyx, and Lorenzon (accepted for publication).

7. During interactive service experiences, what service design features and firm actions encourage consumers to share different types of information with the firm?

Consumer search, purchase and usage behavior

Search

Despite important work (Newman and Staelin 1972; Okada and Hoch 2004; Punj and Staelin 1983), customer search and consideration formation (as opposed to choice) is an under-researched topic in marketing. There is likely to be a resurgence of interest in this topic because online tracking represents a unique opportunity for marketers to study customer search over time. Lynch Jr. and Ariely (2000) study how search costs in electronic shopping affect consumers' shopping experience. They conclude that lowering the cost of search for *quality information* reduces price sensitivity, makes cross-store comparison easier and increases consumer price sensitivity for undifferentiated products (but not unique products). Furthermore, when the information environment was more transparent, the consumers enjoyed the shopping experience more and their retention probability was higher. For more discussion of online search please refer to Rangaswamy, Giles, and Seres (this issue) and clickstream data analysis in Bucklin and Sismeiro (this issue).

In recent years, many researchers have focused on the role of price in consumer search on the Internet. In their analysis of Internet retailers and conventional retailers, Brynjolfsson and Smith (2000) found that Internet retailers charge lower prices than conventional retailers and that conventional retailers will find it increasingly difficult to compete on price. Internet retailers make price changes in smaller increments than comparable conventional retailers, thereby allowing Internet retailers to more efficiently adjust their prices to structural changes in the market. Internet prices vary by as much as 47% across Internet retailers and retailers with the lowest prices do not make the most sales largely due to heterogeneity in customer awareness, and heterogeneity in retailer branding and trust. Pan et al. (2002) report similar results. They define price dispersion as "the distribution of prices of an item with the same measured characteristics across sellers, as indicated by measures such as range and standard deviation of prices." They find that e-tailers may not always be able to translate superior service attributes into higher prices. Other characteristics such as number of competitors, online trust and brand name can drive online pricing. In their study, the effects of e-tailer service attributes on price did not appear to reveal any pattern across categories, suggesting that different product categories have different effects.

Clearly, there is a pressing need to understand search and consideration set formation for interactive services, rather than focusing simply on e-tailers of goods. Given the prominent role of customer participative behavior, it will be important for such research to understand how customers' perceptions and prior experiences with interactive services influence their subsequent search, consideration set formation, and purchase behavior.

Adoption of interactive services

Most research has focused on the adoption of self-service technologies – which are often a component of an interactive service (Dabholkar 1996; Meuter et al. 2005a; Parasuraman 2000) – rather than the adoption/purchase of an interactive service bundle. Self service technologies (SSTs) are defined as “any technology interface that enables a customer to produce and consume services without direct assistance from firm employees” (Meuter et al. 2000). Selnes and Hansen (2001) explore the factors influencing firms’ decision to replace employee-provided service with SSTs. They highlight potential negative consequences of SSTs, such as weaker consumer–firm social bonds and (ultimately) erosion of consumer loyalty. Ultimately, they conclude that firms require a better understanding of the factors influencing the relative effectiveness of firms’ investments in employees versus technology for interactive services.

The benefits of SSTs for firms are cost savings, new service delivery channels, access to new customer segments, global reach, greater efficiency and mass customization. The benefits of SSTs for customers are the ability to solve intensified/urgent needs (through wider availability, flexibility in operation), better alternatives (because SSTs are easy to use, save time, money, avoid personnel and are available when and where desired) and their ability to perform in a predictable fashion (Meuter et al. 2000). Role clarity and motivation are the strongest factors influencing consumer adoption of SSTs (Meuter et al. 2005b). Despite some progress in this area, there is a need for additional theory-based research on the antecedents of firms’ decisions to invest in interactive services and customers’ assessments and decisions to adopt interactive services.

8. How does the design of interactive services influence consumers’ emotions, perceptions of service quality, perceived risk and participative behaviors over time?
9. What factors influence the relative effectiveness of firms’ investments in employees versus technology for interactive services?

Purchase and usage of interactive services

Most of the theoretical and empirical work on consumer search and purchase behavior has focused on e-tailers selling goods — where customer participation is relatively low. Two notable exceptions are studies by Bolton and colleagues (Bolton and Lemon 1999; Bolton and Myers 2003). Both studies concern the pricing of technology-mediated interactive services — and they stress how customers’ usage behavior and response to price are influenced by their experience using the service, as well as their assessments of service quality and price fairness. Bolton and Lemon’s (1999) study modeled consumer demand for telecommunications services and an interactive entertainment services. Their findings suggest that consumers assess the subjective expected value of their future usage of the service by considering their prior experiences with the service provider. Consumers seek to maintain “payment equity” (price fairness) in the service relationship, adjusting their activities (service usage

levels) in response the firm’s price changes and perceived changes in service quality. The adjustment mechanism is guided by mental accounting principles and mediated by service pricing structure — that is, whether total service cost (price) is dependent upon usage level (i.e., fixed and/or variable rate pricing). Their model provides a behavioral basis for understanding customers’ usage decisions, enabling researchers and managers to understand how to manage customer usage levels for interactive services.

Bolton and Myers (2003) studied technology-enabled interactive services in a business-to-business context. They find that buyers’ price sensitivity for service contracts depends on service quality, service type, and level of service support. They also show that horizontal market segments exist, providing support for pricing strategies transcending national borders. Taken together, these two studies suggest that much more research is required on customer search, purchase and usage of interactive services, as well as the role of price. They also suggest that, since many interactive services have an experiential component (arising from customer participation) that differentiates them from competitors, consumers’ perceptions of service quality will influence search behavior, price sensitivity, participative behavior and purchase behavior over time.

The role of price

A novel aspect of technology-enabled interactive services is that consumers may have the option of either price generation (name your price) or price selection (Chernev 2003). Research shows that consumers often prefer to select rather than to generate a price and the pre-choice articulation of reference prices can simplify consumer choice by imposing a structure consistent with the nature of the decision task (Chernev 2003). When comparing the pricing segmentation tactics used by firms on the Internet, Grewal et al. (2004) found that consumer perceptions of trust, price fairness and repurchase intentions were more favorable to the firm when the firm used a ‘purchase timing tactic’ rather than a ‘buyer identification tactic.’ Results also showed that when consumers made internal attributions to the cost increases (as in the case of purchase timing tactic), the firm need not provide explanations for the cost increases. On other hand, when consumers made external attributions as in the case of buyer identification tactics, additional cost information will help the buyer–firm relationship. This latter finding is likely to be especially useful for interactive service providers because they typically require buyer information to create and deliver customized service.

In business-to-business contexts, there has been an increase in the number of online reverse auctions for manufactured goods. In these auctions, sellers bid instead of buyers, and prices are bid down instead of up (Jap 2003). This form of buyer–seller interaction is becoming popular for three reasons: immediate financial savings, the process efficiencies that auctions create and the enabling capabilities of emerging technologies (Jap 2002). As this practice becomes more common in the business-to-business sector, the buyer–seller relationship has changed. Jap (2003) studied quasi-experiments and learned that online reverse auctions (versus sealed-bid

auctions) increased both new and current suppliers' beliefs that buyers were acting opportunistically, and that current suppliers are generally more willing than new suppliers to make dedicated investments toward the buyer. Again, since many interactive services have an experiential component (arising from customer participation) that differentiates them from competitors, we might expect that interactive service suppliers will find it profitable to make dedicated investments towards firms making repeat purchases.

Xie and Shugan (2001) believe that – as new technologies such as electronic tickets, smart cards and online prepayments (prepaid vouchers, discounted advance tickets) become common – transaction costs in advance sales will reduce and more complex transactions will be possible. These technologies will also prevent or discourage arbitrage. Another growing trend that must be actively researched is the bundling of a large number of “information goods” — that is, services (Bakos and Brynjolfsson 1999). Bundling interactive services may make it easier to predict consumers' valuations. Firms are likely to benefit most by offering a menu of different bundles aimed at each consumer segment (For more on online pricing, please refer to Ratchford this issue). Clearly, much more research is required on pricing interactive services in consumer and business-to-business contexts.

8. How does the customized and experiential nature of interactive services – which necessarily influences customer perceptions of service quality – influence search, purchase, usage and price sensitivity?
9. How do customers form assessments of price fairness and value for interactive services, when prices can include fixed and variable components (i.e., dependent on usage)?
10. How do customers' valuation processes (which may vary depending on firms' pricing practices and their own usage patterns) influence the optimal bundling and pricing of interactive services?

Social networks and word-of-mouth behavior

Consumer-to-consumer interactions

Consumer-to-consumer interactions have taken place in the past through avenues such as brand communities. A brand community is specialized, non-geographically bound community in which crucial relationships exist between the customer and the brand, between the customer and the firm, between the customer and the product in use, and among fellow customers (McAlexander et al. 2002). The emergence of Internet has propelled the growth of consumer-to-consumer based networks. Participation in electronic word-of-mouth and consumer communities is easy and low cost for consumers. Consumers' desire for social interaction, desire for economic incentives, their concern for other consumers and the potential to enhance their own self worth are the primary motivations for eWOM behavior (Hennig-Thurau et al. (2004).

Although many consumer-to-consumer interactions about brands are positive, firms also have to contend with consumer

hate sites and complaint websites. These can be considered the “dark side” of customer participation. Ward and Ostrom (2006) studied consumer protest websites and found that consumer protest site creators presented their personal betrayal as a betrayal of “the customer”, symbolic of the firm's unjust treatment of all customers and thus worthy of public opposition. Protestors exaggerated the harm created by the firm's actions and tarred the firm's executives as evil in character. They also encouraged the audience to realize a common social identity, to appreciate the collective power of this group and use this power in reprisal for the firm's disrespect.

Customer–firm interaction

It is well-known that customer–firm relationships involve the exchange of social resources (such as responsiveness and assurance), as well as economic resources (Bagozzi 1979). Consequently, there is a need for firms that offer technology-delivered services to consumers to take special care to show the “human aspect” of their firm. Efforts have been made to ensure this through easy access to employees (e.g. through 1–800 numbers, help lines, etc.) and use of customer service representative avatars. Unfortunately, there is little rigorous empirical research on the effectiveness of these options, despite the fact that they can be very costly. Since electronic communications can be tracked, it seems likely that both academicians and managers will soon explore these issues.

Service failure and recovery

The recent increase in hate websites on the Internet and building of consumer brand communities represent a challenge for firms when they must recover from service failures. The technical expertise possessed by such complaining customers along with ability to reach large number of consumers on the Internet has shifted the power equation in favor of customers. From the firm's point of view, complaining customers represent both a challenge and an opportunity for recovery efforts. Although complaints from customers during service interactions can be easily integrated into firm systems, it can often be harder for the firm to effectively and efficiently respond to customers' concerns. For example, in computer mediated environments there are fewer cues to help the firm determine that a service failure has occurred or diagnose whether an apology or monetary reimbursements are required, whereas in interpersonal service interactions body movements, face expressions and other variables can sometimes help the boundary-spanning employee. Moreover, online service recovery efforts must satisfy customers without turning them away from the channel or medium. SSTs and technology initiatives invariably represent firm investments that will not be recovered if the customer is dissatisfied with the firm. Research on service failure and recovery in technology-enabled interactive service environments that takes these factors into consideration is required.

11. What features of interactive services influence consumers to “broadcast” positive or negative eWOM via blogs and

websites, rather “narrowcast” (traditional) WOM to friends, family and acquaintances (who are likely to be similar to them)?

12. How do company resources – such as dynamic live chats and avenues to send emails to the company – facilitate interactive service quality? Under what conditions?
13. What are the effective and efficient ways for firms to manage service failure and recovery in technology-mediated interactive service environments?

Firm strategies and actions

Service innovation

Marketing creating service innovation

Service innovation arises from changes in how firms manage technology, people, processes or business models. Berry et al. (2006 p. 56) define “market creating service innovation” as “an idea for a performance enhancement that customers perceive as offering a new benefit of sufficient appeal that it dramatically influences their behavior, as well as that of competing companies.” Moreover, they propose that such service innovations differ from each other along two primary dimensions (Berry et al. 2006 p. 57). The first dimension is the type of benefit offered – that is, a new core benefit or a new way of delivering a core benefit. The second dimension is the degree of service separability – that is, the degree to which the service can be consumed at a different place and time from its production.

Many researchers have recognized that the value of the service innovation will ultimately be derived from the benefits provided to the customer (Bitner and Brown 2008; Sawhney et al. 2006; Vargo and Lusch 2004). There has been some useful conceptual work concerning service innovation (Chesbrough 2004; Zeithaml et al. 2006). However, research on strategies and tactics for successful innovation in the design of services – as opposed to innovation in the design of physical goods (including technology) – has been fairly limited (Hauser et al. 2006). This lack of progress is reflected in marketing practice; service innovations are generally ‘incremental improvements’ with few innovations that ‘generate new markets or reshape existing ones’ (Berry et al. 2006).

The role of technology

Certainly, technology can be a tool or way for firms to innovate. It enables firms to be flexible in how they create and deliver value to customers, as well as increasing their efficiency and reducing costs (thereby creating value for shareholders). Due to rapid advances in technology, firms are developing incremental and radical innovations (of all kinds) faster than ever before. The diffusion of innovations is also rapid, shortening product life cycles (PLC) and merging PLC stages. Moreover, convergence of technologies (e.g., web-based services delivered via cell phones) has led to new market opportunities and competitive threats to service firms. Although the convergence of technologies facilitates the development of networks of firms that jointly create and deliver services to

customers characterized by two-way interactions, innovations of this type can be especially challenging.

Shugan (2004) argues that some emerging technologies, such as search services, biometrics, smart cards, enhanced computational speed, M-commerce and GPS tracking, require focused research efforts. Although the full potential of these technologies has yet to emerge, marketers must understand how these rapidly growing technologies will influence market participants, including final consumers, the seller, the seller of complementary services, intermediaries, information providers, competitors, and other industries. Research is also needed on the development of new marketing tools to communicate the benefits and added value of the services enabled by these technologies.

Innovation in service processes, performances and business models

Consumers are becoming more knowledgeable, more actively engaged and more demanding of service organizations. They are also able to connect with other consumers through online social networks and communities. Most importantly, customers are able to participate in the creation and delivery of interactive services — and their ability to participate in the creation of value is transforming the marketplace and business practices (Prahalad and Ramaswamy 2000; 2004). Consequently, we can expect that firms will increasingly choose to focus on growing revenue (rather than reducing costs) through service innovation (Rust et al. 2002) — that is, developing new services or dramatically improving the service experience.

In this new environment, marketers are still searching for ways to incorporate the customer into the service innovation process effectively. Many service researchers have argued that service innovation requires substantial changes in service processes, performances or business models — not just changes in technology (e.g., Berry et al. 2006). Bitner and Brown (2006; 2008) have identified a need for comprehensive frameworks and tools for customer-focused, revenue-generating service innovation. They suggest that these frameworks and tools will be drawn from engineering, computer science, and the social sciences, as well as business. Hence, research is required to develop managerial models and tools for innovation and improvement in business processes, similar to service blue printing (Shostack 1984; Zeithaml et al. 2006) and innovation radar (Sawhney et al. 2006). This statement applies equally to consumer and business-to-business context. Firms, such as IBM, are extremely interested in the design, integration and improvement of businesses processes and a number of research papers describe their efforts (c.f. Cherbakov et al. 2005; Crawford et al. 2005; McDermott et al. 2001).

14. What are the effective frameworks and tools for revenue generating innovation that enhance business performance and offer new benefits for customers of interactive services?
15. How will interactive services derived from novel emerging technologies influence customer perceptions and behavior, as well as social phenomena, in the future?

Service design

Service design is a difficult term to define, but [Martin \(2004, p. 9\)](#) suggests that “the skill of design at its core is the ability to reach into the mystery of some seemingly intractable problem – whether it’s a problem of product design, architectural design, or systems design – and apply the creativity, innovation and mastery necessary to convert the mystery to a heuristic — a way of knowing and understanding.” Consequently, research on service design topics spans many scientific disciplines and business functions. Perhaps for this reason, service design is currently an under-researched topic in services marketing. However, interest in this topic is growing quickly; service design is the focus of investigation at “The Design School” at Stanford University and the Rotman School of Management at the University of Toronto, as well as leading organizations such as IDEO.

The term “servicescape” is often used interchangeably to refer to service design, but the former term can be considered narrower in scope. Specifically, servicescape is defined as “the physical environment at the service site, including ambient conditions (e.g., temperature, noise, lighting), spatial layout and functionality (which influence crowding, participation etc.), and signs, symbols, and other objects, including peripheral objects (invoices and company uniforms) and the design of technology” ([Bitner 1992](#)). Another term for this research domain is “evidence management” which can be defined as “an organized, explicit approach to presenting customers with coherent, honest evidence of your abilities” ([Berry and Bendapudi 2003](#)). The importance of utilizing the servicescape to foster excellent consumption experiences has been emphasized by many researchers ([Berry et al. 2002](#); [PineII and Gilmore 1999](#); [Schmitt 1999](#)). [Pine II and Gilmore \(1999\)](#) suggest using goods as props and services as the stage to create experiences and [Schmitt \(1999\)](#) suggests using “non-traditional” methods such as “imagery, tactile materials, motion, scents, sounds or other sensations.” Due to the multitude of components, any servicescape research on service design will require holistic models and newer approaches to studying the design of services.

Service design has always received special attention from retailers, both online and offline ([Baker et al. 2002](#)). In computer-mediated environments, [Hoffman and Novak \(1996\)](#) suggest the servicescape must encourage flow to ensure a compelling experience. They define flow as “the state occurring during network navigation which is: characterized by a seamless sequence of responses facilitated by machine interactivity, intrinsically enjoyable, accompanied by a loss of self-consciousness, and self-reinforcing” ([Hoffman and Novak 1996, p. 57](#)). Flow is facilitated by the perception of a balance between a consumer’s skills and challenges involved in an online interaction. [Novak et al. \(2000\)](#) suggested that interactivity, involvement, focused attention, skill, control, challenge, arousal, telepresence, time distortion, and exploratory behavior are the dimensions that characterize flow in online experiences. Online flow is further discussed in [Hoffman and Novak \(this issue\)](#).

Service design challenges arise in traditional interactive services (where customers interface employees), interactive services that use technology (SSTs), “internal” interactive

services (within organizations and networks) and in the deployment of information technology-related internal and external services. Both service design quality (i.e., design that meets customer needs) and experience quality (arising from excellence in execution) influence the consumption experience ([Anderson et al. 1997](#)). Based on a synthesis of the literature on service quality over the Internet ([Zeithaml et al. 2002](#)), [Parasuraman et al. \(2005\)](#) proposed a scale to measure e-service quality. They suggest that service quality in an online context has the dimensions of efficiency (the ease and speed of accessing and using the site), fulfillment (the extent to which the site’s promises about order delivery and item availability are fulfilled), system availability (the correct technical functioning of the site) and privacy (the degree to which the site is safe and protects customer information). In the context of service recovery in the online context they suggest the dimensions of responsiveness (effective handling of problems and returns through the site), compensation (the degree to which the site compensates customers for problems) and contact (the availability of assistance through telephone or online representatives).

There are no universal principles for interactive service design that are equally applicable in both high technology and low technology environments. A notable exception is a study by [Rayport and Jaworski \(2005\)](#) that considers the management of humans and machines during customer–firm interactions. It takes a process re-engineering perspective and suggests three phases – “separate, relate and integrate” – which will help organizations simultaneously gain both efficiency (defined as lower costs) and effectiveness (defined as higher performance) in their customer interactions and consumption experiences. Information economics, which presupposes information asymmetry between two parties (i.e., consumers and firms) may also provide insights as firms grapple with ways to signal the (unobservable) quality of their technology-mediated services. Conceptual work by [Kirmani and Rao \(2000\)](#) describes how signaling theory applies in marketing and can stimulate ideas about how signaling theory can help firms manage perceptions of interactive service quality.

16. How do characteristics of interactive services (servicescape, design, people, processes and technology) influence consumers’ perceptions (e.g., of service quality), preferences and behavior (e.g., usage) concerning interactive services? Are there cultural differences in consumers’ responses?
17. How do characteristics of interactive services (servicescape, design, people, processes and technology) influence business customers’ preferences and behavior concerning interactive services?
18. How should firms allocate scarce resources such that they are able to efficiently and effectively deliver customizable service solutions for consumers?

Service processes and delivery through multiple channels

Service processes refer to the procedures and activities through which service is produced and delivered to customers.

Service processes are sometimes referred to as “service operations.” This terminology can be misleading because it implies that service processes operate independently from customers, similar to the way a manufacturer operates independently from a retailer. However, service processes can require complex interactions between firms and their customers, such as high technology business solutions delivered over a multi-year span, or relatively simple, such as order-taking.

Service channels

Marketers are currently struggling with the proliferation of service processes, especially multiple service delivery channels and media. Consumers can obtain interactive services over the Internet, from kiosks, ATMs, call centers, cellular telephones, personal digital assistants, home shopping networks, and traditional bricks-and-mortar stores. For example, financial services organizations may have as many as 17 channels for serving customers! Some firms have developed widely praised interactive services that blend both technology and people – such as the Best Buy Geek Squad, the Apple Genius Bar, Internet-enabled BP Connect petrol pumps – whereas other firms have struggled to create value for customers (e.g., Sony Style Stores).

The existence of many alternatives encourages consumers to research a product in one channel, such as the Internet, and then purchase it through another channel, such as a bricks and mortar store (Verhoef et al. 2006) — or vice versa. The service may then be delivered and/or consumed through yet another channel. Moreover, the firm may utilize network partners or intermediaries which may or may not be visible to the consumer. In such situations, customer behavior is difficult to track, model and understand. There is a great deal to learn about how firms can create cross-channel synergies, as well as “lock-in” searching consumers so that they make a purchase and use the service. Neslin et al. (2006) identify five major challenges practitioners must address to manage the multi-channel environment more effectively: (a) data integration, (b) understanding consumer behavior, (c) channel evaluation, (d) allocation of resources across channels, and (e) coordination of channel strategies. Other issues in multi-channel customer management are discussed in Neslin and Shankar (this issue).

“New media” channels

Innovations in interactive services, such as pay-per-view (PPV) and digital video recorders (e.g., TiVo), allow consumers to choose individual services (shows and timings) rather than purchasing standardized service packages. Traditional media (e.g., television commercials, print ads) have simultaneously become more costly and less effective, resulting in the growth of non-traditional media, such as product placements in virtual world websites such as secondlife.com, Internet advertising (e.g. commercials available on YouTube.com), blogs, and so forth. For example, Reebok, Adidas, American Apparel and 1–800Flowers.com have set up shop in secondlife.com. Harvard, Pepperdine and New York University are hosting virtual classrooms in secondlife.com and American presidential candidates are campaigning there (Moore 2007; Tedeschi 2007).

Research is required on how this proliferation of service channels and media influences consumer perceptions and behaviors — ultimately linking them to brand equity, customer loyalty and word-of-mouth (WOM). For example, a significant challenge for many consumers is information overload. Information has become widely available due to the rapid growth and popularity of personal digital assistants, information sorters and search engines such as google.com and deals2buy.com. These interactive services help consumers make sense of rich information environments. However, as access to the Internet pervades households across the world – including developing nations – marketers must take into consideration how their products and services are marketed – especially through intermediaries. For example, research is required on how best to position the product/service such that it is widely featured on the search engines and understand its impact on consumers’ brand consideration set and consumer behavior variables.

19. What are the most effective ways of coordinating strategies (and creating synergies) across channels for interactive services?
20. What are the roles of channels, service intermediaries and service network partners in the formation of customer assessments and behavior with respect to the focal firm and its services?
21. How does the formation of a consumer’s perceptions and evaluations of a focal service differ depending on whether the focal firm delivers the service with the participation of service intermediaries or partners versus by traditional delivery channels (employees or SSTs)?

Emerging challenges

Service Science is an emerging area of research that is highly relevant to interactive services marketers. The working definition of Service Science is “an emerging discipline that focuses on fundamental science, models, theories and applications to drive innovation, competition and quality of life through service(s)” (Bitner et al. 2006). Service Science is dedicated to trans-disciplinary research across the business disciplines of marketing, operations, human resources, social sciences, engineering and computer science, along with the leading private sector (for profit) businesses. The focus is on developing service innovation research and transferring that learning through education across disciplines. Dedicated centers at leading companies and universities are working on this initiative. The rapid growth of the service sector, increased competition, the complexities of managing services and the overlap of service research foci among the business fields will result in increased research in Service Science (Bitner and Brown 2006; Bitner et al. 2006). Marketers may well find themselves as members of interdisciplinary research teams as this initiative grows.

Marketers are likely to see new theories to explain interactive services phenomena emerging from outside our standard paradigms (e.g., systems theory as opposed to economics or psychology). They will shift marketing thought away from existing conceptual frameworks grounded in the study of goods.

This theoretical shift will require researchers to accept diverse ways of studying services. In empirical work, we are likely to see a surge in qualitative research – such as ethnographies, consumer diaries and case studies – as researchers develop grounded theory that explains the many new phenomena that characterize interactive services. However, the proliferation of technology implies a wealth of data that is amenable to quantitative methods — so we are also likely to see theory development based on quantitative methods derived from other disciplines as well.

Research on novel topics frequently begins with qualitative techniques, but (ultimately) there will be a need to use quantitative methods from other disciplines (e.g., sociology) to study emerging issues (e.g., consumer-to-consumer networks). As firms and academics accept the growth and dominance of Internet enabled services, the use of clickstream data in extensive data analysis will also become more common especially in the consumer-to-consumer areas. An emphasis on the triangulation of data findings will greatly assist research and yield managerial insights.

Closing remarks

Marketers' surging interest in interactive services is fueled by the realization that services are a large and growing sector of most national economies. Interactive services predominate in developed economies and they are starting to play a major role in newer economies, such as Singapore, India and China. Concurrent with rising incomes and standards of living in developing nations and emerging economies, we are witnessing a fast and deep proliferation of technologies — especially those that are telecommunication based and/or Internet enabled. As these worldwide trends continue, there is a need for theory-based research on firm and customer behavior to help marketers understand and respond to fundamental changes in the marketing environment. We emphasize that – to be truly applicable – theory-based research on interactive services must consider cultural differences either as boundary conditions or moderators. We believe that the issues and the research questions discussed in this article can help identify some of the challenges that are becoming pertinent to both academics and managers. While we do not claim to have listed all the issues surrounding the growth of interactive services, we hope these research questions highlight the depth and breadth of potential research on interactive services.

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