“From high tech to high touch: enhancing customer service experiences via improved self-service technologies”

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From high tech to high touch: enhancing customer service experiences via improved self-service technologies

Abstract

Research on servicescapes, both physical and virtual, and experience-centric services is reviewed and then integrated with existing SST research in order to provide a set of managerially useful recommendations to service firms for SST improvements. Enhancing customers' SST experiences through improved appearance and design, ease of use, interactivity, and sensory stimulation will lead to greater SST functionality and therefore elicit more positive cognitive, affective, and behavioral responses from consumers. A conceptual model of SST functionality is presented to guide future research.

Keywords: SST, self-service technologies, experience-centric service.
JEL Classification: M31.

Introduction

Two trends in service delivery are growing in importance simultaneously, yet the academic research streams in these two areas are developing independently. Current academic research suggests that these two trends are incompatible. Yet one service trend offers potential solutions to the perceived weaknesses of the other, suggesting an interesting paradox and a ripe opportunity to explore common ground, propose new research avenues, and find innovative service technologies. The two trends are: 1) the growth in the usage of self-service technologies (SSTs) across a wider variety of service environments (e.g., Bitner, 2005; Bitner, Brown and Meuter, 2000; Cunningham, Young and Gerlach, 2009; Elliott, Meng and Hall, 2012; Kim et al., 2014; Meuter et al., 2003; Oghazi et al., 2012), and 2) the growing importance of experience-centric services to create more memorable, emotional, and engaging customer experiences (Edvardsson et al., 2010; Pullman and Gross, 2004; Rosenbaum et al., 2009; Voss, Roth and Chase, 2008; Zomerdijk and Voss, 2010).

The nature of their incompatibility stems partially from incongruent goals with respect to self-service technology versus experience-centric service delivery. By removing service employees from the environment and replacing them with technological service delivery, SSTs reduce service providers' costs (Bitner, 2005; Cunningham, Young and Gerlach, 2009; Dandapani, 2004; Kim et al., 2014), expand their potential market (Dabholkar, 1996; Zeithaml, Bitner and Gremler, 2012), and improve consistency in service operations (Bitner, 2001, 2005; Kim et al., 2014). It is exactly this removal of service personnel, however, that can interfere with a company's ability to deliver a meaningful and memorable service experience to the customer. The design of effective experience-centric services typically involves "requiring front-line employees to engage with customers" and "closely coupling backstage employees to front stage experience" (Zomerdijk and Voss, 2010, p. 69). This creates a conundrum for service firms in that cost reduction via increased SST adoption may be achieved, but it might be at the expense of satisfying, memorable, distinctive experiences for customers. Reliance on technology for service delivery can potentially be detrimental to a customer's emotional attachment to and engagement with a service brand (Mick and Fournier, 1998). Lower customer engagement and satisfaction can ultimately lead to fewer referrals and repeat customers, less positive word of mouth, reduced profitability, and even lower stock value (Anderson, Fornell and Mazvancheryl, 2004; Anderson and Mittal, 2000; Anderson and Sullivan, 1992; Brodie et al., 2011; Hart, Heskett and Sasser, 1996; Rust, Zahorik and Keiningham, 1995; Zeithaml, 2000; Zeithaml, Berry and Parasuraman, 1996). The customers' entire service experience must be improved to increase SST usage (Meuter et al., 2005).

The objectives of this research, therefore, are to address the following questions: How can the theoretical insights from the research on experience-centric services be successfully applied to SST improvements? Specifically, how can organizations enhance SST service delivery by creating more positive, memorable, experiential services that both engage their customers and increase SST acceptance and usage? This research contributes to the theory on SSTs by incorporating theory from two areas: 1) experience-centric service delivery, in particular the dimensions of personal connection and physical environment (e.g., Pine and Gilmore, 1999; Zomerdijk and Voss, 2010), and 2) servicescape design, both physical and virtual (e.g., Booms and Bitner, 1982; Bitner 1990, 1992; Rosenbaum, 2005; Rosenbaum and Massiah, 2011). It proposes that enhanced design of the SST servicescape can improve a customer's personal connection to and engagement with a service provider, thereby providing customers with more positive SST experiences. Improved SST experiences should then lead to greater SST usage.

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The paper is organized as follows. Section 1 gives the theoretical background. An overview of SSTs is provided, followed by discussions of both consumer and service provider use of SSTs. Then, experience-centric services are examined. Included in this discussion is the review of two specific dimensions of experience-centric service: 1) personal connections with service providers, and 2) the physical environment of services. The physical design of services is examined using Bitner's (1990, 1992) original servicescape framework, and then expanded to include the virtual servicescape (Mari and Poggesi, 2013). Section 2 provides theory on both servicescapes and experience-centric services integrated with SST research to develop recommendations for SST improvements in order to enhance the customer's service experience and increase SST usage. The final section proposes a unified, conceptual model of SST functionality to guide future research.

1. Theoretical background

1.1. Overview of SSTs. Service providers worldwide are taking advantage of increasing technological innovation and integrating SSTs into their service delivery systems (Curran and Meuter, 2007; Elliott, Meng and Hall, 2012; Kim et al., 2014; Meuter et al., 2003; Oghazi et al., 2012; Robertson, McQuilken and Kandampully, 2012; Walker et al., 2002; Zhu, Wymer and Chen, 2002). SSTs (also known as TBSS, technology-based self-service, e.g., Dabholkar, 1994) are defined as any use of a technological interface (e.g., pc, laptop, tablet, telephone/smartphone, kiosk, interactive television, video/DVD, etc.) to produce a service for the consumer without the direct involvement of a service employee (Meuter et al., 2000). SSTs represent the ultimate in customer participation in that the service is produced entirely by the consumer – with no assistance from or interaction with service personnel (Elliott, Meng and Hall, 2012; Zeithaml, Bitner and Gremler, 2012). It was projected that almost $2 trillion would be spent on self-service transactions in North America by the end of 2012 (Kinard, Capella and Kinyard, 2009).

Common examples of services delivered via SST include ATM banking, online and mobile banking, airline check-in kiosks, pay-at-the-pump gas, online auctions, online brokerage services, tax preparation software, grocery self-checkout, automated car rental, online education, and a variety of internet services. Replacing human service encounters with technological encounters (i.e., substituting "high tech" for "high touch") has allowed service firms to decrease labor costs and improve consistency in service operations (Bitner, 2005; Kim et al., 2014; Meuter et al., 2005). Consumers also benefit from SSTs as they experience 24/7 service availability, cost and time savings, greater perceived control, and for some consumers, a reduction in the anxiety caused by interacting with service representatives (Bitner, 2001; Houliez, 2010; Kim et al., 2014; Lee and Allaway, 2002; Meuter et al., 2000; Oghazi et al., 2012).

While many service providers enjoy considerable savings to their bottom lines as a result of greater technology use, not all outcomes of technology-based service encounters are positive (e.g., Mick and Fournier, 1998). Substantial company savings accrue only if customers are motivated to use SSTs. For many services, customers still have choices between interpersonal versus technological service options which may limit the cost saving benefits to service providers. Consumers may choose to buy from traditional brick-and-mortar stores (e.g., Nordstrom) or from online options such as Zappos.com or eBay. Despite considerable online competition and the increasing availability of SSTs, consumer dissatisfaction with SSTs is still fairly widespread (Harris et al., 2006; Johnson, Bardhi and Dunn, 2008; Robertson and Shaw, 2009). This suggests that SST service delivery still has considerable room to improve, and increased usage by customers will need to be preceded by substantial changes in some SSTs.

1.2. Consumer usage of SSTs. Consumers are more likely to use SSTs when they perceive that SSTs are useful, easy to use, reliable, and fun (e.g., Elliot, Meng and Hall, 2014; Kim et al., 2014; Weijters et al., 2007). They are also more likely to choose an SST over other service delivery options when they have strong role clarity, motivation, and ability with respect to the technology (Meuter et al., 2005). Other consumer individual differences such as consumer trust (Suh and Han, 2002) and experience level (Meuter et al., 2005) also influence consumer adoption of SSTs. In some cases, situational differences such as group influences and waiting time have impacted SST trial (e.g., Wang, Harris and Patterson, 2009).

Despite the increase in SST usage, however, many consumers are dissatisfied with service technologies. Some customers continue to resist them because they view self-service as unattractive, frustrating, or failing (Haksever et al., 2000; Harris et al., 2006; Johnson, Bardhi and Dunn, 2008; Parasuraman, Zeithaml and Malhotra, 2005; Robertson and Shaw, 2009; Yen, 2005). Several reasons for this include a lack of perceived benefits, poorly designed technology (Bitner, Ostrom and Meuter, 2002; Meuter et al., 2000, 2003), preference for human over technological interaction (Dabholkar and Bagozzi, 2002; Walker et al., 2002), concerns about privacy and confidentiality (Bitner, Brown and Meuter, 2000), lack of perceived usefulness and enjoyment (Oghazi et al., 2012), and limited "consumer readiness" regarding SSTs (Meuter et al., 2005). Consumer readiness refers to a combination of personal motivation, ability to use the SST, and role clarity/understanding (Meuter et al., 2005). SST usage is also hampered by consumers'

technology resistance or anxiety (e.g., Meuter et al., 2003), a concern addressed in the technology acceptance model (TAM) proposed by Davis, Bagozzi and Warshaw (1989).

TAM has served as the theoretical basis for considerable empirical research on consumer uses of a variety of technologies. Technology anxiety (TA) is the general fear or apprehension consumers feel when using technology or considering the use of technology (Meuter et al., 2003). They found that, as TA increases, use of SSTs decreases, and dissatisfaction with SST interaction increases. Thus, service providers must find ways to reduce consumer anxiety associated with SSTs. Lessons learned in two service areas might successfully address the obstacles to SST adoption: 1) the delivery of experience-centric services, and 2) the effective use of servicescape design.

1.3. Service provider use of SSTs. Substantial cost savings for service firms make it highly likely that rapid growth in SST offerings will continue (Bitner, 2005; Bitner, Brown and Meuter, 2000; Cunningham, Young and Gerlach, 2009). For example, at one point IBM saved over $2 billion when it transferred almost 100 million customer service calls to an online service provider (Burrows, 2010). Oghazi et al. (2012) reported a cost differential of over one dollar per transaction between online vs. teller-based banking. Yet both customers and service firms have concerns about technology's ability to deliver "high touch" service.

Some marketing managers perceive SSTs to have a negative impact on the customer-employee interaction, rendering service experiences less meaningful and less enjoyable for consumers (Curran and Meuter, 2007). They are therefore reluctant to embrace SSTs too readily, noting that technology can eliminate the highly personal touch provided by service personnel, thus weakening social bonds and eroding customer loyalty (Gremler and Gwinner, 2000; Selnes and Hansen 2001). The relational benefits to customers that go beyond the core service, e.g., social and confidence benefits, friendship, special treatment (Bendapudi and Berry, 1997; Gwinner, Gremler and Bitner, 1998; Price and Arnould, 1999), are especially important for gaining long-term loyalty and therefore greater revenue and profits, (e.g., Reichheld, 1993; Reichheld and Teal, 1996). Developing friendships, providing special treatment, and creating customized offerings (one of the most important determinants of service quality, e.g., Fornell et al., 1996) all often require interpersonal interaction, sometimes "down to the individual customer level" (Gwinner et al., 2005, p. 131). In business-to-business relationships, major concerns with SSTs have been the loss of client control and client retention (Mulligan and Gordon, 2002), as well as customer service problems and service recovery issues (Pujari, 2004).

Consumer dissatisfaction with SSTs, combined with marketers' concerns about the relational limitations of SSTs, suggest that current SST practices are sub-optimal. Considerable business and research potential exists in exploring improved self-service technologies and their ability to deliver high quality, satisfying service experiences which customers will seek to repeat. The second service trend, growth in experience-centric services, is explored next to determine how insights from this research can potentially mitigate the negative aspects of SSTs.

1.4. Overview of experience-centric services. While the SST invasion has been changing the service landscape, a simultaneous shift in another service arena has taken place-increased attention on experience-centric services (Haeckel, Carbone and Berry, 2003; Hinestroza and James, 2014; Rodrigues et al., 2011) and the physical environment in which they take place (Zomerdijk and Voss, 2010). Experience-based services are those in which a service firm proactively designs and delivers a distinctive, personal, sensory-laden, and memorable experience for each individual customer by staging an event. In these cases, the service is played out like a drama to be performed, the customer is an audience member, the service facility is merely a stage for the service performance, and contact employees are all actors (Grove, Fisk and Bitner, 1992; Pine and Gilmore, 1998; Stuart and Tax, 2004). This 'service performance as theater' metaphor was part of Disney's impetus to employ service personnel as "frontstage actors" and "backstage actors."

While some early academic literature did note that the customer "experience" was the heart of service strategy (e.g., Shostack, 1977), only recently has research focused on tangible service design elements intended to provide consumers with "peak" service experiences and elicit specific personal, social and emotional responses (Pullman and Gross, 2004; Rosenbaum and Massiah, 2011; Zomerdijk and Voss, 2010). A very recent development, for example, has been the study of the online service experience and its corresponding servicescape environment (aka the virtual servicescape or cyberspace).

Examples of experience-centric services can be found in a variety of businesses, including theme restaurants (e.g., Hard Rock Café and House of Blues) and children's birthday party venues such as Chuck E. Cheese's and Discovery Zone. These experiences can also be delivered in retail stores (e.g., Build a Bear stores), and in vacation packages (e.g., Carnival Cruises, Walt Disney World resorts and parks). Fitness vacations, personal training programs, luxury spas, and golf course simulators (e.g., Golf World) also qualify as experience-centric services. In fact, experience-centric service is even showing up in unlikely places such as health care (e.g., the Mayo Clinic, Berry and

Bendapudi, 2003). Pine and Gilmore (1998) went so far as to suggest that we have entered a fourth period of delivering economic value – one that has progressed from extracting commodities to making goods to delivering services and now to staging experiences. Staging successful SST experiences for consumers is possible if service firms consider two important dimensions of experience-centric service and then apply their theoretical insights to SST service delivery. These dimensions are examined next.

1.5. Dimensions of experience-centric service: personal connections and servicescape design. There are two important dimensions related to the delivery of experience-centric services that are relevant for application to SSTs: 1) the personal connection between the service provider and the customer, and 2) the physical servicescapeor "stage" for service delivery (including the virtual servicescape). Each dimension is now examined with respect to SST functionality, i.e., the capability of SSTs to effectively serve the intended purpose for which they were designed and developed.

1.5.1. Personal connections in services. A customer's connection with a service provider, or with a specific service employee, is believed to be central to the delivery of experience-centric service (Pullman and Gross, 2004; Zomerdijk and Voss, 2010). A highly personal, emotional connection is considered vital in order to create truly memorable experiences. Rosenbaum and Massiah (2011) go so far as to propose that employee-customer interactions are so vital to the customer's service experience that employees should be considered part of the servicescape environmental stimuli, just like Bitner's (1990) original three dimensions (ambient conditions, spatial layout, and signs/symbols). Pine and Gilmore (1998) also argue that interaction with service personnel is critical in achieving personal connection. Yet human interaction is clearly not an element of SSTs. Pine and Gilmore also suggest, however, that incorporating five design principles into a service experience will engage customers and form a connection with them – either emotionally, physically, or intellectually. This suggests that, in the absence of any interaction between an employee and the customer, these design principles could help customers engage more fully in SSTs and establish a connection with the service firm.

These five service design principles include: 1) creating themed experiences; 2) creating positive impressions with affirming cues; 3) eliminating negative cues; 4) incorporating theme-related merchandise (i.e., "memorabilia"); and 5) engaging all five of the consumer's senses. The fifth principle, effective sensory design in a service environment, is particularly important. It can stimulate the consumer's senses, provide a direct route to consumer emotions, make the service experience more engaging and more memorable, and positively influence behavioral responses (Ezeh and Harris, 2007; Zomerdijk and Voss, 2010). These processes have been supported by subsequent research in sensory marketing (e.g., Hinestroza and James, 2014; Houliez, 2010; Rodrigues et al., 2011).

Thus, research on experience-centric services points to the use of the physical and virtual landscape to help create customer engagement, stimulate desired responses, and build important connections with customers that are emotionally laden and memorable. This suggests that, in the absence of service employees and/or the interaction those employees provide to service customers, environmental sensory cues (e.g., music, sound effects, color, lighting, odors, graphics, and other design choices) incorporated with service delivery can help establish a pseudo- or substitute relationship. Sensory effects, in particular, can impact consumers' emotions and behaviors toward service firms and SSTs (Bitner, 1992; Ezeh and Harris, 2007). A depth of sensory information is needed in virtual environments to provide a sense of presence and encourage customer engagement (Williams and Dargel, 2004). Because SSTs eliminate the employee-customer interaction, the SST environment must take on a new role, and enhancing sensory SST design becomes paramount. SSTs could potentially help build and strengthen customer relationships and generate positive customer responses, as supported by earlier research on servicescapes in traditional, non-SST services (e.g., Booms and Bitner, 1982; Bitner, 1990, 1992; Mari and Pogessi, 2013).

1.5.2. Servicescape design. In addition to sensory laden environments, a second and related dimension of experience-centric service is the physical environment in which the service is delivered. Often referred to as the servicescape, it can influence both customer and employee perceptions and behaviors (Bitner, 1990, 1992).

Included in the services cape, besides the physical facility itself, are three environmental dimensions: ambient conditions, spatial layout/functionality, and signs/symbols (Bitner, 1992). While space, function, and signs provide the foundation for service delivery, atmospherics such as lighting, music, scents, colors, temperature, and other ambient conditions are closely linked to strong reactions in consumers. These ambient conditions are considered key variables that influence consumers' cognitive, emotional, and even physiological responses to a service (Aubert-Gamet, 1997; Zeithaml, Bitner and Grewal, 2012; Zomerdijk and Voss, 2010). Thus, servicescape research supports the research in experience-centric services with respect to the importance of sensory cues in a given service environment.

Some services rely heavily on the physical environment to create the actual service experience (e.g., hospitals, resort hotels, golf courses), while for other services, the servicescape serves primarily to communicate something about the service or facilitate service delivery (Zeithaml, Bitner and Gremler, 2012). For example, the Mayo Clinic's facilities were "designed explicitly to relieve stress, offer a place of refuge, create positive distractions, convey caring and respect, symbolize competence, minimize the impression of crowding, facilitate way-finding, and accommodate families" (Berry and Bendapudi, 2003, p. 105). Servicescape design has profound, multiple effects on the customer experience in that it can affect the actual service delivery as well as the customer's emotional responses to the service delivery (Berry and Bendapudi, 2003; Zomerdijk and Voss, 2010). This includes the customer's satisfaction with the service experience (Bitner, 1990). These findings are supported by research which found a connection between the design of a service, i.e., traditional versus SST, and both customer perceptions (e.g., Cunningham, Young and Gerlach, 2009) and loyalty (Shankar, Smith and Rangaswamy, 2003).

The original servicescape framework, however, was developed for application to retail settings in which the physical environment and its dimensions were posited to impact both customer and employee responses (Booms and Bitner, 1982; Bitner, 1990; Bitner, 1992). In fact, in a comprehensive review of 188 servicescape research studies, Mari and Pogessi (2013) found that 75 percent of the empirical papers were studies in a retail setting. They called for additional research in a variety of service environments, in particular the online environment. As the shift toward online purchases continues and the purely physical, tangible environment becomes less relevant for service delivery, the servicescape framework needed adaptation toward the virtual environment. The virtual servicescape (also known as the cyberscape) is addressed next to examine the online SST experience.

1.5.3. The SST servicescape. Many different terms have been used to describe the physiccal environment of online experiences, including the cyberscape (Rosenbaum, 2005; Williams and Dargel, 2004), the virtual servicescape (Ellway, 2014), the expanded servicescape (Rosenbaum and Massiah, 2011), the e-servicescape (Ezeh and Harris, 2007; Hopkins et al., 2009), and others. Research on the virtual servicescape is limited, however, by its focus on electronic retailing – purchases of physical goods online – as noted by Mari and Pogessi (2013) in their comprehensive review. As a result, research on true SSTs, i.e., the production and delivery of non-product related services, either online or via other technological platforms (e.g., telephones, kiosks, DVDs, televisions, scanners), has been limited. That is, there is limited research on the delivery of "pure" services (as compared to online transactions related primarily to the purchase of goods). Pure services are considered to be high in both experience and credence qualities (Darbi and Karni, 1973; Nelson, 1970). These two characteristics mean that it is difficult (experience qualities) or even impossible (credence qualities) for consumers to evaluate a market offering prior to, during, or even after consumption. Self-service technology, therefore, must simulate and enhance the customer service experience (experience qualities) as well as create trust and belief in the service provider (credence qualities) for consumers.

In addition to the retail-focused nature of cyberspace research, research on various voice technologies has been extremely limited (Ellway, 2014 notwithstanding). And this is despite the fact that 70 percent of all contacts between companies and their customers occur via call centers (Cheong et al., 2008). Thus, significant gaps exist in the research on technology-driven servicescapes.

Early research on virtual servicescapes focused on various servicescape dimensions and effectiveness, consumer usage trends, and individual differences of expert versus novice users (e.g., Elliott, Meng and Hall, 2012; Meuter et al., 2005; Rosenbaum, 2005; Rosenbaum and Massiah, 2011; Santos, 2003). For example, research has identified a large variety of important dimensions of the virtual servicescape that positively impact consumer responses, including appearance and attractiveness (Cox and Dale, 2001; Santos, 2003; Rosenbaum and Massiah, 2011); ease of use (Elliott, Meng and Hall, 2012; Hernandez, Jimenez and Martin, 2010; Santos, 2003; Weijters et al., 2007); usefulness (Elliott, Meng and Hall, 2012; Hernandez, Jimenez and Martin, 2010; Weijters et al., 2007); fun (Dabholkar, 1994, 1996; Elliott, Meng and Hall, 2012; Kim et al., 2014; Wang, Shen and Witterfield, 2009); and navigability (see Mari and Pogessi, 2013 or Rosenbaum, 2005 for reviews).

Across these studies, two dimensions related to experience-centric services appear fairly consistently as predictive of more positive servicescape responses, suggesting that, across SST environments, types and consumers, these characteristics are cardinal. These two dimensions are appearance and sensory design. Thus, these two dimensions are included separately in the proposed conceptual model of SST functionality. Recommendations for SST improvements follow.

2. Recommendations for SST improvements

This paper suggests that research on two dimensions of experience-centric services may be applied to SSTs in order to improve the quality and value of SSTs and create more personal, engaging, and memorable service experiences for consumers. Enhanced SST service experiences should then lead to greater

consumer acceptance and usage. The two dimensions include the customer's personal connection with a service brand/provider and improved physical and virtual design of SSTs. With SSTs, the personal connection can be at least partially achieved via the use of sensory cues. The recommendations that follow stem from the integration of research on physical and virtual SSTs (design, dimensions, and usage) and experience-centric services.

2.1. Enhancing SST experiences through improved design. There are a number of ways that the lessons from successful experience-centric services can be applied to SST experiences. Some improvements relate to the different physical environments where customers use SSTs; others relate to the online or virtual experience. In both cases, improved sensory design is an important focus.

Service firms should design their online SSTs (virtual servicescapes) so that they are simple, intuitive, attractive, easy to use, informative and useful, easy to navigate, fun, and appealing to consumer senses (e.g., Dabholkar, 1994, 1996; Kim et al., 2014; Rosenbaum, 2005; Santos, 2003; Williams and Dargel, 2004; Weijters, 2007). Involving customers in early planning and design stages of an SST, including pre-market testing of any SST, would help firms create these improvements. Both novice and expert consumers should be included, as well as customers with varying degrees of technology acceptance. This will be particularly important when evaluating perceived ease of use and usefulness of SSTs. Reducing consumers' technology anxiety is possible with simple, intuitive, user-friendly SST design. Consumers' viewpoints should also be included when developing SST usage instructions to be incorporated into SSTs.

Physical and sensory design of the SST servicescape can also be enhanced in many cases. For example, retailers that employ self-scanners at checkout can greatly improve the scanning/checkout servicescape. These improvements might include the installation of automated conveyors to facilitate faster and easier checkout, improved lighting, wider aisles, enhanced visual appeal via color, and automatic bagging stations in order to enhance customer experiences and encourage usage. The addition of low-volume, upbeat music would help consumers by speeding up their pace of behavior (Milliman 1982, 1986), thereby improving SST checkout efficiency, and making the experience more enjoyable. Major improvements such as product recognition via RFID could potentially eliminate the need for any traditional checkout, moving busy customers on their way more quickly. Even pay-at-the-pump gas technology can be vastly improved by focusing on design additions such as video screens at the pumping stations, music, cleaner, brighter surroundings (even nearby trash receptacles), and colorful signage.

2.2. Enhancing SST experiences by incorporating fun and a sense of presence. Recent research on service technologies found that both fun and a sense of presence contributed positively to consumers' intentions to reuse the technology (Kim et al., 2014; Wang, Shen and Witterfield, 2009). The potential fun of an SST experience is said to reduce customers' stress and the psychological costs associated with producing a service on their own, as well as provide emotional rewards (Dabholkar, 1996). Earlier, Dabholkar (1994) also found that enjoyment was an important determinant of perceived SST quality. Making SSTs fun and enjoyable could be as simple as adding more color, music, or perhaps short, interactive quizzes or games where consumers earn rewards for participating.

A sense of presence refers to a technology's ability to place a consumer in a real experience, separate from their current physical situation. This is the success factor behind virtual simulations or virtual reality simulators (e.g., Kim et al., 2014) in which customers feel as if they're experiencing a live event or interaction, despite being in a different physical location. This suggests that successful SSTs should find innovative ways to virtually place consumers, both cognitively and emotionally, in their desired service environment. This can be done by creating customized service transactions, promoting interactivity, and using traditional servicescape tools such as music, color, design, and, in some SST environments, lighting, to create specific mood states. Promoting greater interactivity is discussed next, as it is particularly important for creating personal connections with consumers and building the customer-service firm relationship.

2.3. Enhancing SST experiences by incorporating greater interactivity. As noted earlier, Pine and Gilmore (1998) argued that interaction with service employees is needed to achieve a personal connection with the customer. In addition, research on both customer engagement (Brodie et al., 2011; Mollen and Wilson, 2010) and the service-dominant logic of marketing (Lusch and Vargo, 2010; Vargo and Lusch, 2004, 2008) has emphasized the importance of interactive experiences for customers in order to build strong, positive service relationships. A high need for interaction was also found by Dabholkar (1992).

Clearly, the SST environment does not allow for human interaction, but some SSTs offer interactivity through customized websites. Not all SST interaction must be via website construction, however. Some ATMs now include live video featuring service employees who can answer questions or initiate service recovery in the event of problems. And some

airlines offer a degree of interactivity when they include screens on seat backs with interactive maps on overseas flights. These maps allow passengers to track a plane's current geographic location, time and distance to their destination, and other travel information. Whether it's by video, website, or other technology, incorporating physical or virtual interactive elements into SST servicescape design should enhance the overall SST experience for consumers and build connections.

2.4. Enhancing SST experiences by generating emotional responses. Emotion drives continued use of SSTs (in addition to habit and self-efficacy) according to Wang, Harris, and Patterson (2013). Feelings of pleasure and accomplishment are considered "intrinsic motivational factors" related to SST usage (Meuter et al., 2005, p. 64). And based on the research in sensory marketing (Hinestroza and James, 2014; Rodrigues et al., 2011), innovative SSTs must consider how the consumer experience can be enhanced via multi-sensorial strategies. These findings suggest that any new or improved SST should consider the emotional responses to both the physical SST interfaces as well as the SST online experience. Music, color, movement, and lighting can all create specific mood states (Bitner, 1992; Ezeh and Harris, 2007; Williams and Dargel, 2004), suggesting that websites and online services must incorporate multiple sensory elements. The same holds true for physical interfaces such as ATMs and free-standing or in-store kiosks.

2.5. Enhancing SST phone and kiosk experiences. Over 60 percent of America's 167 million smart-phone subscribers access the Internet on their phones each day, an increase from just 25 percent four years ago (cnn.com/money, 2015). For SSTs delivered via mobile technology, optimization of websites for mobile applications must be improved and increased. Customizing mobile phone cases for customers, as part of a sales promotion for example, could even improve service brand memorability when customers use their smartphones for services. In the case of traditional telephone services, the customer experience could be enhanced by having customized music choices available during wait times rather than advertizing messages or traditional Muzak® (i.e., "Press one for classical, two for country/western, three for jazz, etc.").

For free-standing or in-store kiosks, service firms should focus on creating a more enjoyable experience with attractive kiosks that perhaps incorporate music (appropriate for the service), more customizable touch-screens, comfortable chairs or stools so customers don't need to stand during the SST experience (or floor rugs/mats for more comfortable standing), and built-in ledges for customers to place belongings while using the kiosk. More comfortable kiosks, ATMS, and other free-standing SSTs could also be made adjustable (to a car's distance to an ATM, for example, or for consumers' height differences). ATMs which automatically move toward a driver's side window, regardless of the driver's distance from the bank's exterior would be helpful and efficient. In addition to functional design, aesthetic elements such as color, materials, size/scale, style, and specific architecture have all been found to promote sensory pleasure in service experiences (Aubert-Gamet, 1997).

2.6. Enhancing SST experiences with improved service recovery options. Consumer dissatisfaction with SSTs is still fairly high, yet expectations continue to rise (Meuter et al. 2000). Meuter et al. (2000) also found that the percentage of customers willing to complain about a failed and unsatisfactory SST encounter is higher than complaint percentages documented elsewhere. Thus, preventing service failures or providing excellent and immediate service recovery options to consumers is paramount.

In the case of service failure, including highly visible devices or components by which consumers can voice a direct complaint should be considered (Robertson and Shaw, 2009). Simple tools such as button or a direct link which sets up a voice or video recording for customers to complain and initiate service recovery could be incorporated into most SSTs. The inability to achieve service recovery in the event of technology failure is cited as one of the considerable weaknesses of SSTs (Menon and Dube, 2004; Robertson and Shaw, 2009). For example, SSTs are often unable to detect when service failures occur (Ahmad, 2002). Even when detected, some SST failures go unnoticed by organizations (e.g., Pujari, 2004). SSTs can create barriers to voiced complaints by customers, thereby increasing the possibility that dissatisfied customers switch providers, leaving the service firm with no feedback or recourse (Forbes, Kelley and Hoffman, 2005).

Service organizations could potentially decrease the number of dissatisfied SST users who don't voice complaints with improved technology. Robertson and Shaw (2009) also recommend offering multiple complaint channels to SST customers in order to improve ease of voice, including setting up complaint blogs, e-mail opportunities, toll-free phone numbers, web forms, technical support communities, and more (p. 109). Technology can even help lower the cost of complaining for service firms (Bitner, Brown and Meuter, 2000).

2.7. Enhancing SST experiences by educating customers. It will be important to both educate customers on SST usage and advertise their availability as a service option. Because customers essentially co-produce a service by using SSTs, extensive training and education of some customers

will be necessary. For some customers, the first experience with service technology can be daunting. They are performing a completely new task, which brings challenges to the process. Bitner, Brown and Meuter (2000) suggested detailed, consumer-friendly instructional aids such as wallet cards and mousepads for SST interactions at home or office, and posters with specific instructions for SST usage in locations outside the home (p. 78). Creating personal, memorable, emotionally-laden service experiences for customers can be more difficult with technologically-delivered services as compared to on-site, interpersonal experiences, but it is not impossible.

Discussion

An early study conducted by Forrester Research revealed that over 40 percent of companies surveyed earned no significant return on their self-service technology investments (Zurek et al., 2001). In addition, the American Customer Satisfaction Index (ACSI) for services is consistently lower than the scores achieved by products (Zeithaml, Bitner and Gremler, 2012), suggesting that considerable work is still needed in the area of service delivery. The importance of more effective SSTs is highlighted even further in a study of customer satisfaction and loyalty in online environments (Shankar, Smith and Rangaswamy, 2003). They found that loyalty to service providers is higher when customers choose services online. Thus, improving SST experiences which result in increased SST usage is vital. Over a decade ago, Pine and Gilmore (1998, p. 99) argued that, "New technologies, in particular, encourage whole new genres of experience, such as interactive games, Internet chat rooms, multi-player games, motion-based simulators, and virtual reality." This paper is a call for more research on this long-ignored but potentially fruitful intersection between SSTs and experience-centric services. To that end, a general conceptual model of SST functionality is proposed next in order to guide future research.

Toward a general, unified model of SST functionality

To guide future research, a new and unified model of SST servicescape functionality, characteristics and effects is needed. Any potential unified model should set forth precisely and coherently the relevant constructs and processes that apply to the full range of SST servicescape experiences and outcomes in order to: 1) examine the relative importance and impact of various virtual servicescape dimensions; 2) identify the key consumer effects (cognitive, affective, and behavioral) relevant to SST servicescape experiences; 3) explain the mediation, moderation, and outcome processes of SST servicescape functioning; and 4) address the influence of different technologies used in various SSTs (i.e., SST types). The optimal model would also incorporate and differentiate between functional and dysfunctional consumer responses to SST types and dimensions (e.g., trial, adoption and usage rates vs. SST avoidance and consumer usage errors).

A dimensional approach should be taken, but one that is still parsimonious enough to be useable. If too many dimensions are included, the model could be too complex and confusing. Any unified model must be both managerially useful to service firms as well as demonstrate theoretical insights. Ideally, a coherent model would be presented that focuses on the core processes and effects that are most relevant to the SST experience. The model must also be integrative and flexible enough to account for the numerous individual differences of consumers and the large variety of outcomes. The proposed model could potentially organize and focus future SST servicescape research.

One such proposed model, which incorporates many of the aforementioned criteria, is shown in Figure 1. The conceptual model represents only a very basic framework, but it can be used to guide future SST servicescape research with its organization and classification of key constructs. The framework illustrates three major categories of SST characteristics: 1) SST servicescape dimensions (e.g., ease of use, interactivity, enjoyable/fun, attractiveness; service recovery options), see Mari and Pogessi (2013) for a review; 2) SST type, which refers to the specific technological interface (e.g., kiosks, DVDs, PCs, laptops, simulators, smartphones, virtual reality systems) per Meuter et al. (2005) and Shankar, Smith, and Rangaswamy (2003); and 3) SST servicescape appearance and sensory design (spatial layout, materials, colors, music/sound, graphics use, and video use), whose attributes will vary depending on the SST type (e.g., tangible elements of a kiosk vs. intangible elements of a website).

Each of these categories will impact overall SST servicescape functionality or utility, i.e., the capability of SSTs to successfully serve their intended purpose and function. SST functionality will affect consumers' cognitive (beliefs, quality perceptions, evaluations, problem-solving, categorizing), emotional (personal connection, attitude toward SSTs, enjoyment, (dis)-satisfaction, pleasure, frustration, anxiety), and behavioral (engagement, intention to use, trial, repeat usage, percentage of transactions, error-making) responses. Both functional (acceptance and usage) and dysfunctional (consumer avoidance and errors) SST behaviors are considered. This relationship, between SST functionality and various consumer responses, will be moderated by consumers' individual differences, including demographics, technology readiness, expert vs. novice user status; role clarity, and motivation (e.g. Hernandez, Jimenez and Martin, 2010; Meuter et al., 2005; Rosenbaum, 2005).

The proposed conceptual model presented in Figure 1 should help guide and organize future research studies. Subsequent empirical research should address whether improved design of the SST servicescape can provide both functional and emotional aspects of the customer service experience, as originally suggested by Pujari (2004), and as is supported here.

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Appendix

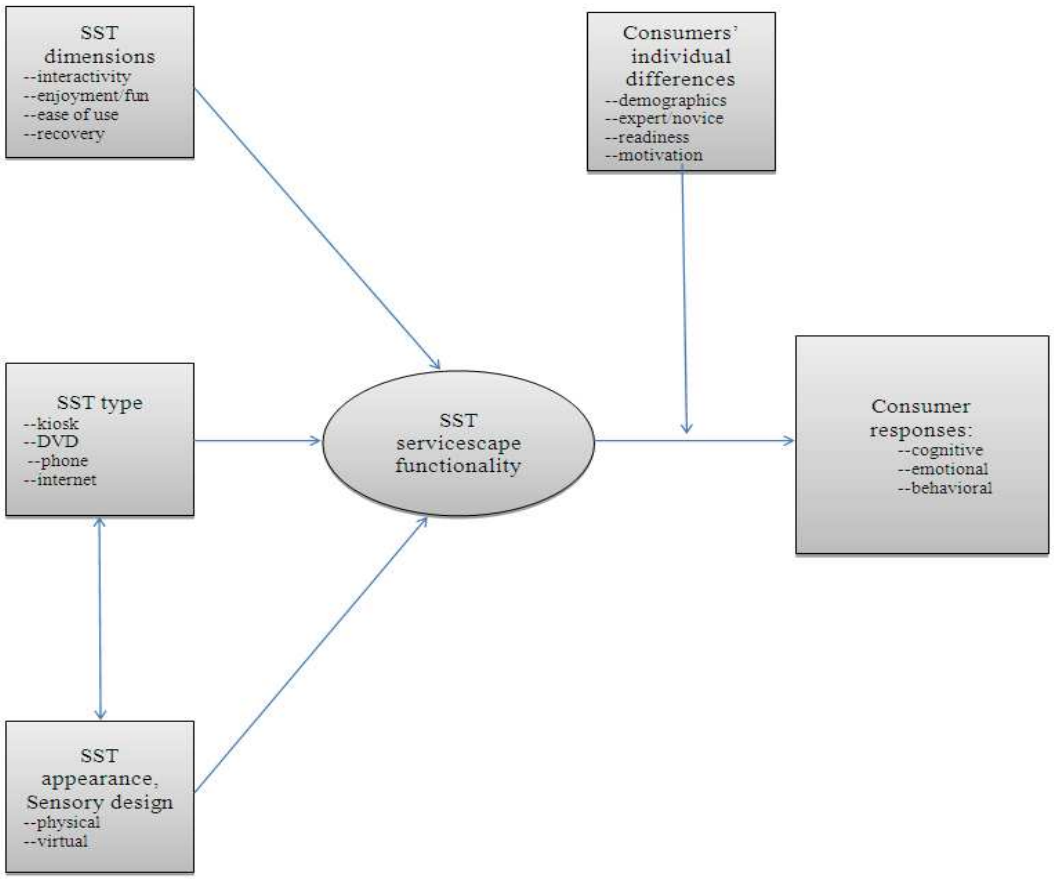

Fig. 1. A proposed unified model of SST servicescape functionality