The Impact of IT-enabled Customer Experience Management on Service Perceptions and Performance.

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Abstract

While information systems have been a catalyst for strategy in the hospitality industry for almost three decades, Customer Experience Management (CEM) has received substantial research attention as of late. CEM calls for the transformation of customer interactions, enabling an unprecedented scale and scope of service personalization. Such a transformation is theorized to benefit hospitality firms through increased service perceptions and loyalty. The work empirically addresses these questions by evaluating an IT-enabled CEM strategy in seven hotels. The work provides three contributions: first, it shows that IT-enabled CEM significantly increases customer preference elicitation during the service personalization process. Second, it demonstrates that tailored customer experiences translate into higher customer service evaluations and comfort perceptions of the hotels. Third, it shows that IT-enabled CEM improves disintermediation from high-cost distribution channels to low-cost direct channels.

Keywords: Customer Experience Management; service personalization; IT-enabled customer service systems.

1. Introduction

Information Systems (IS) have had a dramatic impact on the hospitality industry in the last few decades (Law, Leung, Au & Lee 2013; Piccoli & Ott 2014). The effective use of technology to manage and personalize customer experience is expected to be a major brand differentiator in the hospitality industry (Talwar 2012). As a consequence, firms are increasingly using IT to provide high quality and personalized service (Buhalis & Law

2008), with IT being at the core of a hospitality organisation's competitive profile (Zamani 2016). These technology advances have enabled the emergence of a holistic approach to managing service encounters in the industry, namely, Customer Experience Management (CEM).

Despite the importance of CEM in the hospitality and tourism industry, many studies remain conceptual and there is a need for further empirical investigation (Hwang and Seo 2016). However, past studies on personalization in the industry focus on extracting and delivering personalized information to users (Kim & Mattila 2011), exploring personalization as one of the factors affecting hotel services and hospitality (Ariffin & Maghzi 2011) or the dilemma between personalization and privacy (Morosan & DeFranco 2015). There is little empirical research to date that investigates the use of IT in service personalization and delivery fulfillment as part of an overall CEM initiative (Xu, Benbasat & Cenfetelli 2014).

Personalization, the ability to tailor products, services, and the transactional environment to individual customers' needs, is a general process. A Customer Service System (CSS) empowers the firm to predict and identify customer needs (Chatzipanagiotou and Coritos 2010) and to react to their requests promptly and effectively, thus allowing providers to personalize service delivery (Tan, Benbasat & Cenfetelli 2013).

Given the strategic significance of service and personalization to the hospitality industry, and the widespread use of IT-enabled CSS, it is important to investigate the role of technology in service personalization (Lui and Piccoli 2016).

The objectives of the study is to empirically evaluate the immediate impact of IT-enabled CEM on preference elicitation and its distal effects on customers' satisfaction and hotel performance. It extends research on IT-enabled service personalization by showing how the use of technology as part of a CEM initiative leads to greater preference elicitation. It then empirically demonstrates how tailored customer experiences increase customer

satisfaction. Finally, it shows how superior satisfaction translates into financial benefits by way of disintermediation and share shift from costly intermediated travel agencies to inexpensive direct distribution channels.

2.   Theoretical Framework

Digital technologies have been transforming customer service since their widespread adoption in business organisations in the 1970s and 80s. The emerge of the public Internet accelerates this trend (Piccoli, Spalding & Ives 2001) and nowadays IT-enabled CSS represents a critical resource for hospitality firms (Piccoli & Lui 2014) , which is the collection of information systems that mediate and enable the delivery of service experiences with the objective of increasing overall customer value (Piccoli, Brohman, Watson & Parasuraman 2004).

Service experiences represent "the outcomes of the interactions between organisations, related systems/processes, service employees and customers (Bitner, Faranda, Hubbert & Zeithalm 1997, p. 193)." Such interactions occur through touch-points, defined as "any place at which a company seeks to manage a relationship with a customer, whether through people, technology, or some combination of both" (Rayport & Jaworski 2005, p. 49). The recent interdisciplinary literature on IT-enabled customer value creation and service experience has coalesced around the notion of Customer Experience Management (CEM). Gartner defines CEM as "the practice of designing and reacting to customer interactions to meet or exceed customer expectations and, thus, increase customer satisfaction, loyalty and advocacy" (Gartner n.d.). The scholarly literature echoes this definition by referring to CEM as "the process of strategically managing a customer's entire experience with a product or a company" (Schmitt 2003, p.17). Within the hotel industry, by enabling tailored experiences and service personalization, CEM is increasingly seen as a vehicle for differentiation and strategic advantages (Palmer 2010). Specifically, the literature posits how CEM initiatives lead to value equity (i.e., customer

satisfaction), brand equity (i.e., brand image), and retention equity (i.e., increased loyalty) (Rust & Oliver 2000). However, empirical validation of these claims is limited.

Service personalization is the process of using individuals' own information to tailor the service and improve the benefits delivered to them (Lee & Cranage 2011). In the context of service personalization, IT can be deployed to enable preference elicitation and personalization fulfilment. The property of a technology design that communicates, implicitly or explicitly, available behaviour to a user is called a signifier (Norman 2013). Signifiers are important to ensure that options provided to guests don't remain latent, but are in fact recognized, helping to reduce the high cognitive burden and difficulties in making choices during personalization (Broniarczyk & Griffin 2014). Customers may not be aware of, or clear about, their own preferences for personalized service thus failing to make requests that would ultimately improve their experience (Padmanabhan, Zheng & Kimbrough 2001). A CEM initiative that supports preference elicitation will instead result in enhanced customers' awareness of personalization options, ensuring that those who are interested in personalizing their experience are more likely to communicate their requests to the firm.

Hypothesis 1a: Use of IT-enabled CEM increases the intensity of preference elicitation.

Hypothesis 1b: Use of IT-enabled CEM increases the frequency of service personalization.

Service quality theory predicts that individuals that better specify their service requirements experience a narrowing of the expectation-delivery gap with a subsequent improvement in perceived satisfaction (Ho & Zheng 2004). A CEM initiative that elicits appropriate customer preferences will lead to higher perceived service quality and comfort ratings (Murthi and Sarkar 2003). That is, a proactive service personalization effort through CEM makes available the benefits of personalization to individuals who were unable to experience it before.

Hypothesis 2a: IT-enabled service personalization increases service ratings.

Hypothesis 2b: IT-enabled service personalization increases comfort ratings.

Through an IT-enabled CEM strategy, an organisation can develop an electronic relationship (O'Toole 2003) with those individuals that adopt the service personalization process and finally reaching higher levels of loyalty. Service personalization indeed increases perceived service quality, customer satisfaction, customer trust and ultimately customer loyalty toward the firm (Coelho & Henseler 2012). Customers' perception of participation and firm's responsiveness when engaging in a personalized service process can lead to a long-term relationship with the firm (Lee, Hu, Cheng & Hsieh 2012) and provide economic benefits through disintermediation (Sheth & Sharma 2005; Buhalis & Law 2008). In the hotel industry, a direct reservation corresponds to a substantially higher profit margin than intermediated reservations due to the saving on the commission paid to a third party online travel agency. Thus, fostering disintermediation from high-cost distribution channels to low-cost direct ones is an imperative for hospitality firms. Considering how personalization induces affective attachment and customer commitment to stay with the website (Fung 2008), it follows that service personalization through CEM initiatives should contribute to shifting transactions to the direct channel.

Hypothesis 3a: IT-enabled CEM result in increased disintermediation.

3. Methodology

3.1. Context

This study uses an archival research methodology in the context of 7 independent Swiss three- and four-star hotels. The properties belong to the Swiss Quality Hotels International (SQHI) chain and represent a range of sizes (45 to 106 rooms), segment focus (leisure and business) and locations (city and resort). SQHI, a believer in the value of IT-enabled CEM

as a competitive lever, partnered with Innotour, a Swiss association focused on the improvement of competitiveness of Swiss tourism. Hotels applied for the project on a voluntary base, implementing a CEM work system, called Hoxell, which enables a deep interaction between guests and hotel staff at multiple touch points in the customer experience – including pre-arrival, occupancy and post-departure. A key element of the Hoxell system is the service personalization process, enabled by a dedicated module called MyPage. When guests receive a reservation confirmation, they are directed to a personal page (i.e., MyPage) where they can select different options for personalizing their hotel stay. The SQHI hotels in the study provided a range of personalization items (from 52 to 133) – from preferred room temperature to pillow and bedding types, to drink and touristic amenities. The preferences are laid out by categories with images and restrictions, thus serving as signifiers and making guests aware of the specific possibilities to customize their experience. Transmitting stored preferences to service personnel on the date of the guest's arrival via an iPad, available to all housekeepers during the shift, ensures personalization delivery.

3.2. Data

Through MyPage as well as via traditional means (e.g., in person, phone call), at any time between placing a reservation and checking-out, guests can request any product or service that will make their experience more pleasant. When requests are received via traditional means, such as via phone or reception desk, hotel staff annotates them in a specific field of the Property Management System (PMS), referred to as traces.

The dataset is comprised of 104,465 reservations, with related information about guests' profiles and personalization requests, beginning one year prior to the implementation of the IT-enabled CEM initiative. Hypotheses 1 is tested with data on stays whether personalized through virtual means (i.e., MyPage), traditional means (e.g., phone) or not requesting personalization.

Hypotheses 2 are tested by matching reservations with online review scores from Booking.com and retaining the ratings of services and comfort. Two hotels were dropped from this analysis. The first one had internal policy restrictions resulting in more than 80% of requests not being delivered. The other had a small number of reviews on Booking.com, thus resulting in no personalized reservations having a corresponding review.

To test hypothesis 3, the proportion of guests who move from intermediated channels on their first visit to a direct channel on their second visit (positive share-shift) is used.

3.3. Measures

Preference elicitation has been operationalized (a) as the number of personalization items that customers requested for service personalization; and (b) as the number of personalizing reservations, including the number of instances where individuals engaged in the personalization process via traditional means as well as MyPage once the system became available. Review ratings are collected from Booking.com, where only verified guests are allowed to share their perceptions about service aspects. These are assessed on a four-point ordinal scale with anchors "poor," "fair," "good," and "excellent", and then converted into a quantitative scale: 2.5, 5.0, 7.5, and 10. This data have been directly linked to reservation data stored in the Hoxell system, allowing for individual guests' analysis. Booking channel is investigated through classification of reservations among ones related to (a) direct channels (i.e., hotels' webpages, call, walk-in, or a partner national association), (b) indirect channels (i.e., OTAs, tour operators, GDS). Controls for ADR, length of stay in days (LOS), price paid for personalized items, number of adults and children on the reservations are used for H2. Controls for ADR, number of adults and children are used for H3.

4. Results

Hypothesis 1a is tested using 5,143 reservations of guests who personalized their stays (2,219 through MyPage and 2,924 via traditional means), and the data include service personalization channel as the independent variable and the number of items requested as the dependent one. The number of items requested is modelled via a Poisson regression with a log link. A value of 1 for the dependent dummy variable indicates service personalization requested through MyPage and 0 refers to the traditional personalization process. The results provide strong support for preference elicitation increase showing that, on average, guests request 1.05 items per stay when using the traditional personalization process (p-value < 0.01) and that the average number of items increases to 3.59 item per reservation when guests use MyPage (p-value < 0.01).

Hypothesis 1b is tested using the entire dataset of 104,465 reservations, estimating the proportion of guests engaging in service personalization with a binomial regression with a logit link. The dependent variable is represented by the number of personalized stays, while the independent variable is a dummy variable representing the actual choice of service personalization. The binomial regression models the possibility of guests' requesting personalization (i.e., the possibility of the independent dummy variable is equal to 1, where 1 indicates that the guest requested personalization via either the traditional channel or MyPage). The model controls for actual availability to the virtual channel, via a dummy variable coded as 1 for reservations occurring after the introduction of the IT-enabled service personalization process and 0 when the only available option was the traditional personalization process. The results provide strong support for preference elicitation increase, showing that the IT-enabled service personalization process generates an increase in number of personalized stays, and that the CEM initiative does not cannibalize the traditional personalization process.

Hypotheses 2a and 2b are tested using reservations for which there was a matching review posted to Booking.com. *Personalization* is a dummy independent variable, with 1 indicating personalization requested through MyPage and 0 representing the lack of request of personalization via the CSS. Due to the ordinal nature of the review scores, representing the dependent variables of the model, proportional odds regression models are used.

The results generally support the contention that an IT-enabled CEM initiative significantly improves ratings of service and comfort. Specifically, the odds ratios for *Personalization* are 1.58 when measuring service (p=0.01) and 1.69 when measuring comfort (p=0.03). Thus, for each rating level in the scale, customers who experience IT-enabled service personalization have a 58% (and 69%) higher chance than their counterparts to give a higher service (and comfort) rating category.

Hypothesis 3a is tested using a sample of 1,611 guests who visited the same hotel more than once during the timeframe of the study with a binomial regression models with logit link. *Direct* is a dummy variable where 0 indicates the use of an intermediated channel and 1 indicates a reservation made through a direct channel. *Personalization* represents whether the guest used MyPage (1) or not (0) during the first visit (at time 0). The results show that IT-enabled service personalization increases beneficial share-shift (p=0.03). Specifically, the odds of transacting using the direct booking channel in their next stay more than double for customers who experienced IT-enabled CEM in their first visit than for customers who did not.

5. Discussion

This study focuses on the effects of IT-enabled CEM. The first objective of the work is to validate the finding that IT can be used to improve preference elicitation from guests, as consequence of the lower effort of selecting preference items when using CEM tools instead of traditional means. The ability to tailor the guest experience, a prerequisite for

effective CEM, is predicated on collecting customer preferences. Previous work shows how CSS that employs signifiers to support the learning phase of the service personalization process (Murthi & Sarkar 2003) leads to an increase in both the number of guests who engage in personalization and the number of items they request (Piccoli & Lui 2017). The study finds that, across the hotels in the sample, IT-enabled service personalization enables guests to tailor the experience by identifying appropriate items to personalize their stays. It ascribes the result to the reduced friction created by the online system as well as the presence of signifiers that direct guests' attention to the available options. This process is not feasible without IT, such as via phone, where guests end up only requesting critical personalization items, despite the best effort of the hotel to welcome personalization requests (Piccoli & Lui 2017). More interestingly, not only the number of preferences increases, but their variety as well.

While those individuals who requested specific personalization using the traditional approach focus on items that are essential during their visits. (e.g., extra bed on 24% of cases, dedicated treatments for special occasions on 19% and kids amenities on 17%), when doing so via the MyPage individuals are empowered to express a more diverse set of preferences, including non-essential ones (drinks on 45% of cases, pillow type on 42% and bath amenities on 39%). The work also corroborates CSS literature proposing that IT-enabled CEM enables the firm to foster direct relationships with customers (Becerra, Santaló & Silva 2013) and, as consequence, improves loyalty. More specifically, it finds that the hotels in the study achieved strong positive share-shift and were able to shift returning guests to the low cost direct channels. While these findings are stable and withstand replication, significant questions still remains. As guests move increasingly to the mobile as the platform of choice for interaction with firms (Tesoriero, Gallud, Lozano & Penichet 2014), how should the preference elicitation process be redesign? As conversational interfaces and natural language voice interfaces become increasingly common, how can hotels ensure that guests can easily customize their travel experiences?

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