Self Service Technology Failures and Its Effect on Guests’ Behaviors: An Exploratory Research on Self Reservation Technology in Hotels
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Abstract
Self-service technologies (SSTs) are widely used in all industries. Hospitality industry nowadays depends on SSTs in various operations. Most guests make their room reservations by internet. This research paper aims to explore the behavior of guests when they failed to make their room booking through internet application offered by a hotel. Most researches related to SST applications in hospitality industry focus on advantages of such applications and how such applications approve guest satisfaction. No researches have been observed to scope on what happened when guests fail to use SST applications effectively. This research aims to explore the results occurred when guests fail to interact with self reservation technology (SRT) offered by hotels. Depending on descriptive analytical method, the research was done through gathering data from internet users to explore their behavior (as potential guests) when they fail to reserve a room in a hotel. The developed questionnaire was distributed by internet to 347 Face-book users. 177 questionnaires were returned. 168 of them are available to analysis. 117 of participants indicated that they tend to use a hotel websites when making a hotel room reservation. These 117 participants composed the research sample. Statistical techniques of descriptive statistics and One-way ANOVA were used to achieve the objectives of this research Results. For the results; When guests fail to reserve by internet, they tend to make a reservation in the same hotel through any other traditional reservation channel (mail, fax, phone, etc), as failure in reservation by using internet doesn’t lead to reserve in other competitor hotel.

Keywords: Self-service technologies (SSTs), self-reservation technology (SRT), guest satisfaction and internet reservation.

1. Introduction
Advances technology and expensive labor cost has made the service providers to develop Self-service technologies and investigate the self service delivery option (Shamdasani et al., 2008). Today, using technologies based on self service to replace traditional human-touch service has become a trend (Chen, 2011). Self-service technologies (SSTs) are defined as technologies that enable customers to receive and consume the service in the absent of service employees (Meuter, et al., 2000; Salomann, et al., 2006). SSTs have become a changing force in hospitality industry (Lema, 2009), as the proliferation of self service technologies has changed the way customers interact with service employees and technology. There are now a growing number of consumers interacting with technology to create service experiences, and outcomes, which were traditionally performed by service employees (Ong, 2010). Services traditionally delivered by service staff, such as reservation, check-in and check-out, are now available through the internet, mobile devices, standalone kiosks or other forms of SSTs. Employees in those processes are no longer required if SSTs are implemented. In another word, people can be replaced by the machines (Kit, 2011).
SSTs are widely found in banking, retail, healthcare, transportation, hospitality and other various industries around the world (Pantano and Di Pietro, 2012). The hospitality industry understands how SSTs can help alleviate the myriad challenges faced by hoteliers. The most important
challenges can be concluded in the shortage of hospitality professional workers (Makarem, et al., 2009) and the increasing demands from customers to improve current service standards (Beatson, et al., 2006; Ong 2010).

2. Background
2.1. The evolution of service delivery
Over the last two decades, services has migrated from human interaction to the substitution of technology for service employees or, where possible, to electronic services that can be deployed anywhere at any time (Fitzsimmons, 2003; Ong, 2010; Wang, et al., 2012; Hilton, et al., 2013). Hotels traditionally distributed their rooms through intermediaries such as travel agents, and tour operators. However, the rise of the Internet created fundamental changes to the way hotels conduct their businesses. The Internet allowed automated self service in the form of online bookings to take place (Kang, et al., 2007; Ong, 2010; Oh, et al., 2013).

2.2. The popularity of SST
The recent growth in self-service technology has progressed from conventional low contact service such as filling the car with petrol to high contact services such as hotel check-out (Dabholkar and Bagozzi, 2002). The rise of information technologies have greatly transformed how business processes work. The hotel industry has been confronted with technological advances which have resulted in the transformation of traditional service delivery practices. Customers who were once frustrated with incompetent and inexperienced service employees, long waiting queues, closure of businesses at the time the customer prefers are now turning towards SSTs (Kasavana, 2008; Ong, 2011; Wang, et al., 2012).

More self-service technology applications are appearing across all industries slowly replacing the full-service options (Kumar, 2007). With the wide popularity and acceptance of SSTs in the marketplace, more hotels are now eager to leverage on SSTs to improve service standards, operational efficiencies, and improve customer service. It is believed that the drastic progression from interpersonal service encounters to SSTs is crucial for the hospitality and service industry to continue thriving (Cunningham, et al., 2009; Ong, 2010; Pantano and Di Pietro, 2012).

2.3. Most Importance Types of SSTs in hospitality industry
There are a wide range of SSTs available in hospitality industry which can be concluded in the following:

2.3.1. Vending
Vending is a stand-alone machine providing tangible products to customer once the payment is accepted (Kasavana, 2008). Vending in a hotel can provide food and beverage items, general retail products such as souvenir, and personal hygiene etc. The advantage of a vending is its simplicity: the product is highly exposed in the environment, customers understand what they will be getting even if he/she doesn’t understand the language on the machine, and also they are able to purchase the item without going through long process. In contrast, the nature of vending makes it difficult to deliver products that are complicated in nature, hence it is unlikely to find a vending that provide full dinner service. To do so it requires a more complicated and sophisticated technology (Kit, 2011).

2.3.2. Self-service kiosks
Self-service kiosks’ technology nowadays is one of the most popular applications introduced in the hotel service escape (Ong, 2010). Self-service Kiosk is an interface that provides service, products and information through cashless transaction. Different from a vending, a kiosk doesn’t display and dispense tangible products (Kasavana, 2008). Check-in/check-out kiosks are the most popular self service technology application offered by hotels; Guests browse through the interface, select the service, input the necessary information and wait to receive services (kit, 2011).

2.3.3. Internet based self-services
Online consuming has become a global phenomenon and is expect to play a more important role in the future (kit, 2011). The Internet provides a wide range of self-service possibilities. (Ong, 2010). Hotel reservation website is one of the most adopted of its kind. Consumers are able to finish, monitor and modify their reservation through the internet without any human interaction (kit, 2011).

2.3.4. Mobile-commerce
The next generation of self-service applications is focused more on consumers’ own technology, such as cell phones (Fiserv, 2009). More operators are increasingly aware of, and open to the use of Web-enabled phones for hotel check-in (Lorden, 2009). Mobile devices introduce new operational costs to hospitality industry, but it is considerably the lowest-cost channel and the most potential functionalities that available (Fiserv, 2009; Chuan, 2010). The rising numbers of mobile device users contribute to the growth of mobile-commerce (m-commerce). In terms of the business potential, m-commerce differs from e-commerce as it allows real time information to be viewed at the fingertips of the customer, giving consumers the absolute control and access to information (Ong, 2010).

Digital technology has enabled consumers to use the telephone to access self-service solutions. Businesses are replacing dual tone multi frequency (DTMF) systems with interactive voice response (IVR) phone systems that allow consumers to interact with a computer system through speech recognition technology. Companies can provide information over the telephone using text-to-speech technology (Castro, et al., 2010; Chuan, 2010).

With this increasing adoption of smart-phones by consumers, the hotel industry has grown to recognize the importance of m-commerce as a fundamental part of many customers’ travel experiences. More hotels are now utilizing the mobile environment to deliver services. Some hotels offer check in conveniences, mobile marketing, and location based promotions (Ong, 2010).

2.4. SSTs from the firm’s perspective
From the firm’s viewpoint, there are 3 reasons why SSTs are being introduced: Cost-cutting, increase customer satisfaction and loyalty, and to satisfy the new market. (Bitner, et al., 2002). However, implementing SSTs need an initial expensive investment (Ong, 2011), by eliminating service encounters, hotels with SSTs are able to save considerable amount of budget in the area of human resources on the long run. By providing one check-in/check-out kiosk in the lobby, the hotel saves the costs of at least 3 front-office agents in three shifts. A kiosk can work 24/7, the only variable costs are electricity, maintenance and updates, which, are considered minor if compared to the payroll of employees required (Kit, 2011).
Besides the obvious, SSTs can also increase customer satisfaction and loyalty by providing efficiency and convenience. Guests now can finish their check-in within 2 minutes using the kiosk, instead of waiting in line for an indefinite amount of time (Meuter et al., 2005; Kit, 2011). Lastly, as technologies continue to integrate with our daily life, more and more customer will expect and welcome a more high-tech approach to the traditional service pattern, SSTs would be an appealing features for this new market (Avery, 2008; Kit, 2011; Dotzel et al., 2013). Although there are many potential benefits that SSTs can bring to the firm, there are also some concerns. The lack of human to human interaction can result in the possibility of a service failure with inadequate or slow service recovery strategies, and service failures which are not evident at the moment of the service delivery (Holloway and Beatty, 2003; Sousa and Voss, 2006; Girman et al., 2009; Ong, 2010). The perfect solution might be a customer-centric system that designed to provide necessary information and friendly interface which consolidated into a pleasant user-experience (Kit, 2011).

2.5. SSTs from the customer’s perceptive

However many guests are happy to serve themselves with the help of SSTs, hospitality organizations need to determine the right mix between SST and personal service as many other guests viewed personal service as the core of any service operation (Beatson et al., 2006). From the customer’s perceptive, some of the potential benefits of using SSTs include time savings from the reduced waiting times, cost savings, and a greater control over the service delivery (Curran et al., 2003). Thus, most customers prefer SSTs that have easy interfaces, guidance and assistance from the firm to ease their transition from traditional services to SSTs (Lin and Hsieh, 2006; Ong, 2010; Wang et al., 2012).

The major disadvantage of depending on SSTs is that the introduction of SSTs can exclude customers who do not wish to be involved in the service delivery process. Customer who do not see a perceive need, or any benefits from the use of SSTs may also opt out from this new technology (Curran and Meuter, 2005; Robertson, 2012). The lack of human touch while customers receive the service may turn the experience less than desirable. It occurs particularly when the SSTs are treated as a stand-alone, separated function from the operation, where customers are all on their own, helpless and desperate (Kit, 2011). Salomann et al. (2006) suggested the concept “High-tech, high touch” for the solution. “High-tech, high touch” is a hybrid model in which machine and human work.

2.6. SSTs key success factors

Meuter et al., (2005) suggested some key success factors related to SSTs. These key factors can be concluded in the following 3 points:
- Ability: It refers to the customer’s self-assessment, whether they consider themselves capable of following the instruction and get the services. The less complex the system, the more likely the customers feel they have the ability to handle.
- Clarity: customer need to know precisely what is expected from them. If they feel uncertainty in the process, most likely they will give up on the SSTs and turn to the closest employees.
- Motivation: It refers to the perceived tangible and intangible benefit (money and time saved and convenience) customer expects to gain through using the technologies.

3. Research Objective

This research aims to explore the guest behavior in case of failing in interacting with self-
reservation technology (SRT) offered by hotels.

4. Research Problem
The research problem can be concluded in the following question: "What happened when potential guests fail to reserve a room by internet in a hotel?"

The assumed answers can be one of the following two answers:
- When guests fail to reserve by a hotel website, they tend to make a reservation in the same hotel through any other traditional reservation channel (fax, phone, etc).
- When guests fail to reserve by a hotel website, they tend to make a reservation by using internet in other competitor hotel. The research problem can be illustrated by figure 1.

5. Research Importance
Most researches related to SST applications in hospitality industry focus on advantages of such applications and how such applications approve guest satisfaction. No researches have been observed to scope on what happened when guests failed to use SST applications effectively.

6. Research Methodology
Depending on descriptive analytical method, the research was done through gathering data from internet users to explore their behavior (as potential guests) when they failed to reserve a room in a hotel. The developed questionnaire was distributed by internet to 347 Face-book users. 177 questionnaires were returned. 168 of them are available to analysis. 117 of participants indicated that they tend to use a hotel websites when making a hotel room reservation. These 117 participants composed the research sample. Statistical techniques of descriptive statistics and One-way ANOVA were used to achieve the objectives of this research.

Figure 1: Guest’s expected behavior when failed to reserve a hotel room by internet

7. Results
7.1. Data Description
7.1.1. Demographic Characteristics of Research Participants
As shown in table 1, the highest percentage of participants was from 20 to less than 35 years (42.9%). Most of them are male (64.9%). The results revealed that the majority of research participants are post graduates (39.9%) and highly educated (31.5%).

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Table 1: Demographic Characteristics of Research Participants

<table>
<thead>
<tr>
<th>Demographic Characteristics</th>
<th>N 168</th>
<th>% 100</th>
<th>Central Tendency Measures</th>
<th>Dispersion Measures</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>Mean</td>
<td>Median</td>
</tr>
<tr>
<td>Age Category</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Less than 20 years</td>
<td>9</td>
<td>5.4</td>
<td>2.68</td>
<td>3</td>
</tr>
<tr>
<td>From 20 to &lt; 35 years</td>
<td>72</td>
<td>42.9</td>
<td></td>
<td></td>
</tr>
<tr>
<td>From 35 to &lt; 45 years</td>
<td>59</td>
<td>35.1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>From 45 to &lt; 60 years</td>
<td>20</td>
<td>11.9</td>
<td></td>
<td></td>
</tr>
<tr>
<td>60 years and more</td>
<td>8</td>
<td>4.8</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Gender</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Female</td>
<td>59</td>
<td>109</td>
<td>1.65</td>
<td>2</td>
</tr>
<tr>
<td>Male</td>
<td>35.1</td>
<td>64.9</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Educational Level</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Intermediate education and less</td>
<td>5</td>
<td>3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Upper intermediate education</td>
<td>43</td>
<td>25.6</td>
<td>3.08</td>
<td>3</td>
</tr>
<tr>
<td>High education</td>
<td>53</td>
<td>31.5</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Post Graduates</td>
<td>67</td>
<td>39.9</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

7.1.2. Usage of Reservation Methods among Research Participants

According to the collected data that shown in table 2, the heights percentage of research participants use internet to reserve before staying in hotels (69.6%), while 13.7% of them go to the hotel to reserve before staying (walk-ins). 13.1% indicated that they make a reservation by phone, while 3% of research participants depend on fax to make a reservation. Only one participant refers to other method of reservation (tour operator), while no participant refer to post mail as a method of reservation.

Table 2: Usage of Reservation Methods among Research Participants

<table>
<thead>
<tr>
<th>When Staying in A Hotel, I make A Reservation By:</th>
<th>N</th>
<th>%</th>
<th>Central Tendency Measures</th>
<th>Dispersion Measures</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>Mean</td>
<td>Median</td>
</tr>
<tr>
<td>Post Mail</td>
<td>0</td>
<td>0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fax</td>
<td>5</td>
<td>3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Phone</td>
<td>22</td>
<td>13.1</td>
<td>4.52</td>
<td>5</td>
</tr>
<tr>
<td>Walk-in</td>
<td>23</td>
<td>13.7</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Internet</td>
<td>117</td>
<td>69.6</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Others</td>
<td>1</td>
<td>0.6</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>168</td>
<td>100</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
7.1.3. Internet SSR and Demographic Characteristics among Research Participants

7.3.3.1. Internet SSR and Age among Research Participants

As shown in table 3, the highest percentage of internet self service reservation (SSR) usage among research participants are done by people who are aged from 20 to less than 35 years (50 persons), while the lowest percentage of depending on internet SSR are done by people who are aged from 60 years and more (4 persons).

Table 3: Cross Tabulation (Reservation Methods And Demographic Characteristics)

As shown in table 3, the highest percentage of internet SSR usage among research participants are done by people who are aged from 20 to less than 35 years (50 persons), while the lowest percentage of depending on internet SSR are done by people who are aged from 60 years and more (4 persons).

Table 4: Demographic Characteristics of Research Sample

7.3.3.2. Internet SSR and Gender among Research Participants

The highest percentage of depending on internet self service reservation (SSR) among research participants are among male ( Retrieve table 3).

7.3.3.3. Internet SSR and Level of Education among Research Participants

The highest percentage of depending on internet self service reservation (SSR) among research participants are among graduates (Retrieve table 3).

7.1.4. Demographic Characteristics of Research Sample

As shown in table 4, the highest percentage of internet SSR users among research sample are from 20 to less than 35 years (42.7%). Most of them are male (64.1%). The results revealed that the majority of research sample are post graduates (41%) and highly educated (29.9%).

Table 4: Demographic Characteristics of Research Sample
7.1.5. Guests’ Behaviors When Failing To Reserve by Using a Hotel Website
When failing to reserve by using a hotel website, the majority of research sample (83.8%) indicated that they tend to try later to reserve by using the hotel website to reserve a room in the same hotel. When failing again, more than half of our research sample (52.1%) indicated that they would be forced to use another traditional method of reservation (fax, phone … etc) to reserve a room in the same hotel, while about half of sample (49.6%) mentioned that they would be make their reservation in another hotel by using its website (see table 5).

Table 5: SSR Failures and Its Effect On Guests’ Behaviors

<table>
<thead>
<tr>
<th>Guest’s Behavior</th>
<th>Choice</th>
<th>Central Tendency Measures</th>
<th>Dispersion Measures</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Strongly Agree</td>
<td>Agree</td>
<td>Neutral</td>
</tr>
<tr>
<td>When failing to make a reservation by using a hotel website, I try later to reserve by using the same method.</td>
<td>31 26.5%</td>
<td>67 57.3%</td>
<td>12 10.3%</td>
</tr>
<tr>
<td>When failing to make a reservation by using a hotel website, I try later to reserve by using another traditional method in the same hotel.</td>
<td>28 23.9%</td>
<td>33 28.2%</td>
<td>21 17.9%</td>
</tr>
<tr>
<td>When failing to make a reservation by using a hotel website, I make a reservation in another hotel by using its website.</td>
<td>16 13.7%</td>
<td>42 35.9%</td>
<td>28 23.9%</td>
</tr>
</tbody>
</table>

7.2. Data Analysis
By using One-way ANOVA statistical analysis, the results showed that when guests failed to reserve by using a hotel website, they tend to try later to reserve by using the hotel website to reserve a room in the same hotel (p-value = 0.000). These results can be illustrated by data showed in table 6 and supported by figure 2.

Table 6: One-way ANOVA
8. Research Paradigm
Depending on such results, and to describe the guests’ behaviors when failing to reserve a room by using a hotel website, researchers create a developed guests’ behavioral paradigm that appears in figure 3.

9. Research Limitations
This research was accomplished through exploring the responses of random face-book users (as potential guests) not depending on actual guests. This means that the results couldn’t be generalized to both potential and actual hotel guests. The sample size was only 117 respondents. This means that we should be careful when dealing with the research results.

10. Research Recommendations and Conclusion
Depending on such conclusion, research recommendations can be classified as following:

- **Recommendations for Hotels:** Hotels should retrieve their websites in relation to the reservation operation to minimize guests’ failure in doing self reservation by minimizing steps and simplifying processes. More intention should be given to websites as a median of reservation in consecration of information revolution that characterize the recent century, especially with the observed developed increased in numbers of internet users.

- **Recommendations for Future Research:** Re-application of this research using a larger sample and the comparison between results of both researches might be lead to results’ generalization. Re-application of this research depending on a sample representing actual
guests (not on potential guests) and comparing the results with exist results might be a valuable academic scientific mission.

Figure 3: Guests’ Behavioral Paradigm When Failing to Reserve a Room by Using a Hotel Website.

(Source: Prepared by authors).

In conclusion, the research results showed that when failing to reserve by using a hotel website, the majority of research sample tend to try later to reserve by using the hotel website to reserve a room in the same hotel. When failing again, they would be use another traditional method of reservation to reserve a room in the same hotel.

References


الفشل في التعامل مع تكنولوجيا الخدمة الذاتية وأثره على سلوكيات العملاء: دراسة استكشافية بالتطبيق على الحجز الفندقي عبر الإنترنت

طارق عبد الفتاح الشريعي أ
محمد صلاح غانم ب

1 المعهد العالي للسياحة والفنادق وترميم الآثار - أبو قير – الإسكندرية
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ملخص

مقدمة: أصبحت التطبيقات المعتمدة على تكنولوجيا الخدمة الذاتية من أهم التطبيقات المستخدمة في مختلف الصناعات، ولا سيما صناعة الضيافة، والتي أصبحت تعتمد على تلك التطبيقات في تنفيذ مختلف عملياتها، فغالبية العملاء حالياً يقومون بإجراء الحجوزات الفندقية عبر الإنترنت. ومن هذا المنطلق، تسعى هذه الورقة البحثية إلى التعرف على سلوكيات العملاء في حالة فشلهم في إجراء حجوزات الغرف الفندقية من خلال استخدام تلك الخدمة. الأهداف: تنصب غالبية الدراسات والأبحاث ذات الصلة على تطبيقات تكنولوجيا الخدمة الذاتية في مجال سلوكاً للخدمة على مدى فترة تلك الخدمة. حيث لم تتفق الدراسة الحالية على أي محاولات بحثية تسعى للتعرف على ما يطرأ على سلوكيات العملاء في حالة فشلهم في إتمام الخدمة بفعالية عبر تطبيقات تكنولوجيا الخدمة الذاتية التي تقدمها منشآت الضيافة، ومن ثم، تسعى الدراسة الحالية إلى التعرف على السلوكيات التي ينتهجها العميل عندما يفشل في التعامل مع تطبيقات تكنولوجيا الخدمة الذاتية بحجز الغرف، والمفهول في المنتجات الفندقية. المنهجية: تم إجراء الدراسة على عينة عينة من 161 شخص، تم اختيارهم بناءً على شرط القدرة على استخدام تطبيقات تكنولوجيا الحجز الفندقي عبر الإنترنت، في إتمام إجراءات الحجز. النتائج: عندما يفشل العميل في إتمام إجراءات الحجز الفندقي عبر الإنترنت، فإنه عادة ما يلجأ إلى الحجز في الفندق ذاته، مستخدمًا إحدى وسائل الحجز التقليدية الأخرى (مثل البريد الإلكتروني، الفاكس، الهاتف، الخ)، إذا كان الدراسة بحثاً أن الفشل في إتمام إجراءات الحجز الفندقي عبر الإنترنت يودي إلى قيام العميل بالانتقال إلى منشأة فندقية أخرى منافسة.

الكلمات الدالة: تكنولوجيا الخدمة الذاتية، سلوكيات العملاء، الحجز، الإنترنت.