

The Social Engagement of Digital Hotel Services

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Abstract— Digital Social Engagement (DSE), a new digital service for hotel, is proposed. The DSE can provide new enhanced capability to service hotel guests. The workflow architectural design concept of the DSE is to support guests' staying experiences by providing a vehicle by which hotel guests can communicate unobtrusively with each other based on permission. The DSE provides three chat spaces for social communication which are: Guest to Guest, Guest to Neighbors, and Guest to City. The connected entities must be registered with the hotel servers in order to ensure safe and private communication in the DSE chat spaces.

Keywords - digital hotel; digital twin; hotel digital social engagement; chat spaces; hotel guest life cycle; guest to guest; guest to neighbor; guest to city

I. INTRODUCTION

The tourism industry is one of the top industries in Thailand with more than 600 five-star hotels with a combined of more than 164,015 rooms which are available for tourists [1]. With such an important industry, it is imperative that a strong research foundation is needed to strengthen the competitiveness of hotels in the industry. It definitely needs a new business model, new innovations, and new applications which utilizes correct digital technology.

The new generation of tourists are all technology savvy, and most can travel independently [2]. Hence, it is critically important to innovate by developing a new class of hotel services supplementing the traditional hotel operation system. This paper will present a new digital service for hotels that has not been realized before.

Consequently, the result of this research can be the foundation of creating a commercial strength add-on system for proving a new innovative service for hotels' guests.

In general, the application of new innovation approaches can be implemented in the following ways: creation of better products, invention of better services, development of new markets for new products or services, development of new markets for suppliers, and improvement of the management organization. Presently, all hotel innovations are in some form of new physical products or services. Dzhandzhugazova, E.A. et al. [16] has provided an innovation space for hospitality comprising of product innovation and process innovation, as shown in Figure 1.

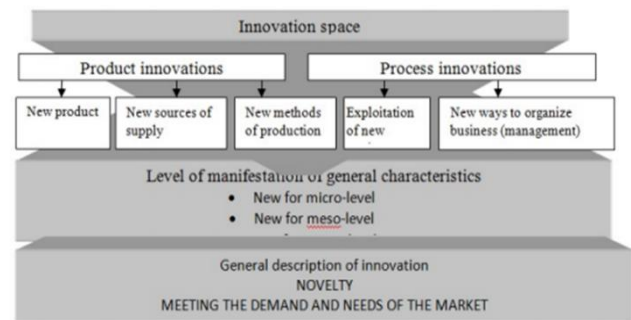


Figure 1. vision, innovation and process innovation [16].

Andrea Nagy [12] has reviewed tourism innovations to identify trends concerning interesting issues such as "tourism innovation" or "service innovation" in many databases such as Science Direct, Emerald, Sage

Publications, and the Service Research Center of Kern University. Related findings such as factors that influence innovation in tourism and hospitality were identified. From their result as well as other researchers results [5-15], all the innovations were based on physical services or products to improve the experiences of hotel guests. No new digital services have been proposed and reported so far.

II. ARCHITECTURE OF THE DIGITAL HOTEL

The digital hotel is the counterpart of the physical hotel. It is the digital twin [15] paradigm. The digital hotel, as proposed by Galayapha Lekvanijthamvitak [3], has four major components of the digital twin of a hotel as shown in Figure 1. The four are The Digital Spaces, The Digital Social Engagement, The Digital Concierge, and the Digital Operations of a hotel. The digital operations are traditional computerized operations of a hotel to support the reservation, check-in, check-out, payment, guest services, access to hotel information, and services. In a digital hotel, all the digital services functions are designed to support the life cycle of a guest from the reservation, to arriving, staying, visiting, and leaving the hotel. All the services are context aware. For example, when a guest is in a room, the function of room services will be highlighted when they are in the room. In this paper, the Digital Social Engagement will be described. This digital service is a new function that can be deployed by any physical hotel to enhance the experiences of a guest.

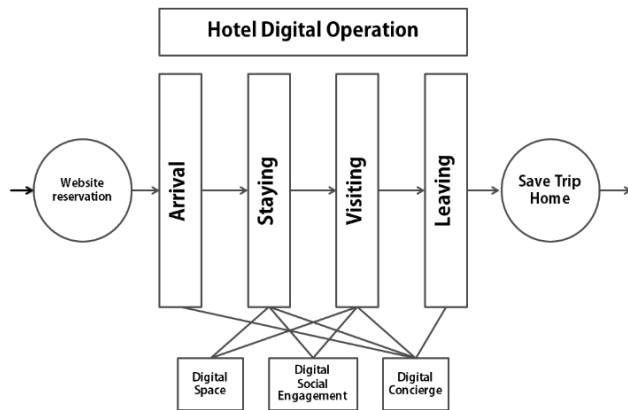


Figure 2. The main functions of a Digital Hotel supporting the life cycle of a guest from making reservation, arriving, staying, visiting, and leaving and ending with their safe trip home.

III. DIGITAL SOCIAL ENGAGEMENT SERVICES

Traveling for pleasure or business creates opportunities for finding friends, for more personal socialization, and for guest to guest connection. we have three categories of social and business engagements which are as follows:

- G2G or Guest to Guest connection on a permission-based system.
- G2N or Guest to Neighbor connection for local food and service experiences.
- G2C or Guest to City engagement for providing connection to the person representing various

establishments services such as museum guides, well-known shopping centers, medical facilities

The realization of Digital Social Engagement Services is through the design as shown in Figure 3. The basic components are three chat spaces - one for hotel guests, one for neighboring establishments, and one for the city establishments. All establishments must be registered with the Digital Hotel Servers. The same e-Commerce functions as in the Hotel Digital Space are used in the e-Commerce component of The Digital Social Engagement.

A. G2G Chat

All guests must sign a consent form to be registered in the hotel, neighbor, and city chat servers. Guests can search to find another hotel guest. Guest can response to an open request or agenda from another guest. All chat content will be retained in the server for only 24 hours and then deleted permanently.

Chat Session

- Guest1: Input request; set response type public or private, selection strategy: FCFS, select one (limit maximum three guest responses before selecting one); Wait for response
- Guest 2: See the agenda request If want to associate with, then reply. If not, just ignore.

B. G2N (Guest to Neighbor POI)

This type of chat is one to one. The objective is for the guest to chat with business owners in the neighbor of the hotel for certain information, making a reservation, or just friendly chatting.

Chat Session

- Guest: Choose the Neighbor POI open conversion input agenda wait for response
- POI: See the agenda then reply

C. G2C (Guest to City) Chat

This type of chat is one to one. The objective is for the guest to chat with business establishments in the city for certain information, shopping, may be for a reservation, or getting advice.

Chat Session

Guest: Choose a City POI from the list of City POIs

- open conversion
- input agenda
- wait for response

City POI: See the agenda then reply

As for the implementation aspects of the system, it should be noted that any new services must be integrated into the hotel’s overall workflow that will provide experiences to the guests in a seamless manner. Moreover, mobile devices must be the central tool for guests to access any services or to refuse any services, and the interaction between the mobile device and the front-end system must be smooth and intuitive. Many technologies might have to be integrated in such a system so as to not create any weakness in security. The protection of the privacy and provision of security for the guests is the utmost important of the new innovative digital services of the hotel

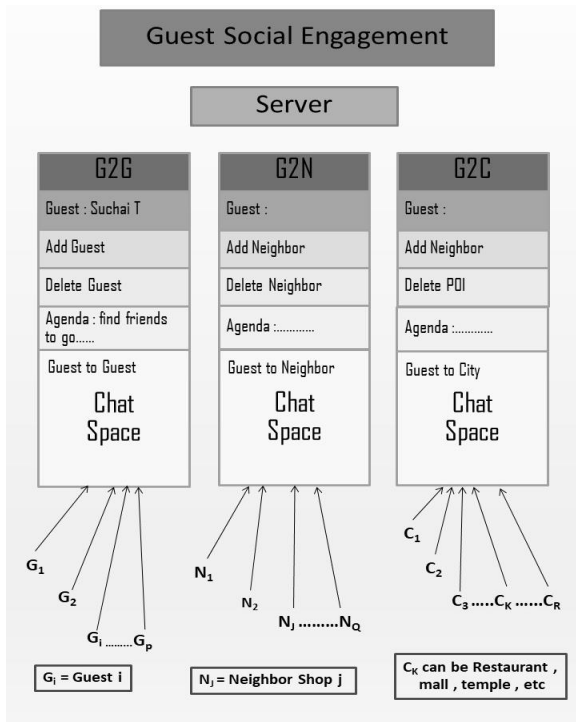


Figure 3. The Guest Social Engagement Diagram, showing the chat space and the connected e-commerce for each engagement.

The current hotel information system main purpose is to support key operations such as reservation, check-in, check-out, website for marketing, and back office using some ERP software and interfaces to the global tourism and hotel value chain systems. This type of information system is designed to support traditional functions. As technology evolves, it pushes the hotel boundary far beyond the physical space of the hotel. It extends the presence to the neighbors and to certain POIs of the city. Also, guests nowadays are savvy in using social media and hence it might be useful to provide another limited channel for guests to know each other on a personal permission basis.

The architecture of a Digital Hotel will provide functionalities for hotel customer services far superior to the existing hotel management information system. Hotel guests will be able to be taken care of and can obtain the required information and services as needed immediately and in a timely manner. Both service requests and information request are available.

The implementation of the Digital Social Engagement as described in this paper can be done using many off-the-self standard components. Guests can use social engagement system announcing the intention of finding a friend or friends, to the discussion of some business issue, to go on to a short trip, to attend an event, or go to a restaurant, on a permission basis.

The Digital Social Engagement architecture proposed in this paper will provide a conceptual design idea for the next generation digital hotel. In the report “The Hotel of the Future,” the hotel guest social engagement is described as the matchmaker role of the hotel to connect people [14]. This paper has bought some of these concepts and create a Digital Hotel Architecture that is implementable. It is under the digital twin paradigm to enhance the services of the physical hotel by providing additional functionalities from the cyber counterpart.

IV. CONCLUSION

This paper has attempted to answer two important research questions: What new innovation that can provide the guest with safe and ease of mind staying experience. What does the service workflow look like in providing the seamless services to the guest knowing the context of the guest in the guest life cycle?

We propose the Digital Social Engagement as a way to provide new services for hotel guests. This new service is the main answer to the above questions as will be elaborated here.

The Digital Social Engagement service’s main objective is for guests to know each other based on mutual approval. The guest to guest social engagement is one of the concepts mentioned in the report “The Next Generation Hotel” by Deloitte [17].

In our work, we extend this concept, not just guest to guest (G2G) engagement, but also allows businesses neighboring the hotel to register with the hotel’s social engagement server so that guest can engage with the neighbors for social and business communication (G2N). Likewise, points of interest (POI) in the city can also register with the hotel social engagement server so that a communication channel is open up between guest and the POI with assigned specific officer to handle DSE (G2C).

For example, the POI may be a popular shopping mall. The shopping mall registers with the hotel social engagement server and a person from the shopping mall side is assigned to communicate via guest to city instant messaging systems, to chat with the hotel guest for

ticketing, reservation, shopping information, purchase consultation, etc.

The DSE digital service is a new digital innovation for a hotel, be it physical or digital. It will provide a new enhanced experience for hotel guests. This innovation when implemented will be a great marketing tool for the hotel to attract mobile-savvy guests to enjoy the time they stay with the hotel.

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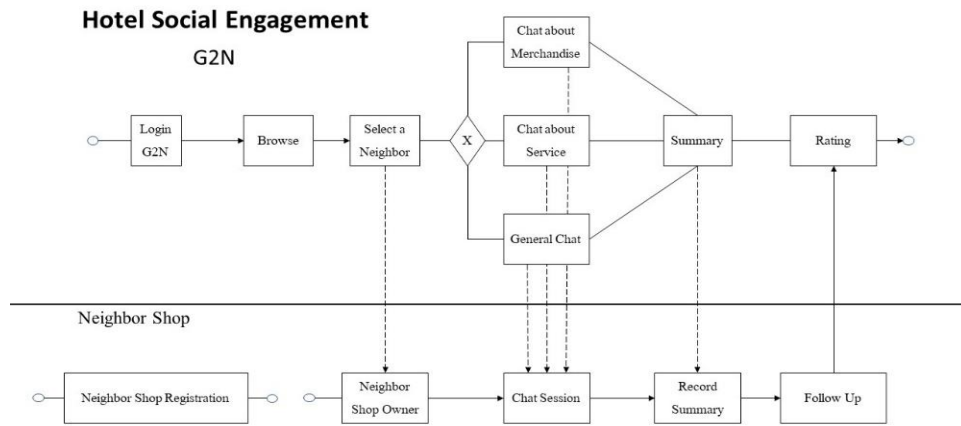


Figure 4. The Guest Social Engagement Diagram shows the chat workflow architecture for guest to guest socialization. (In the second diagram, there is an empty box that needs to be identified.)

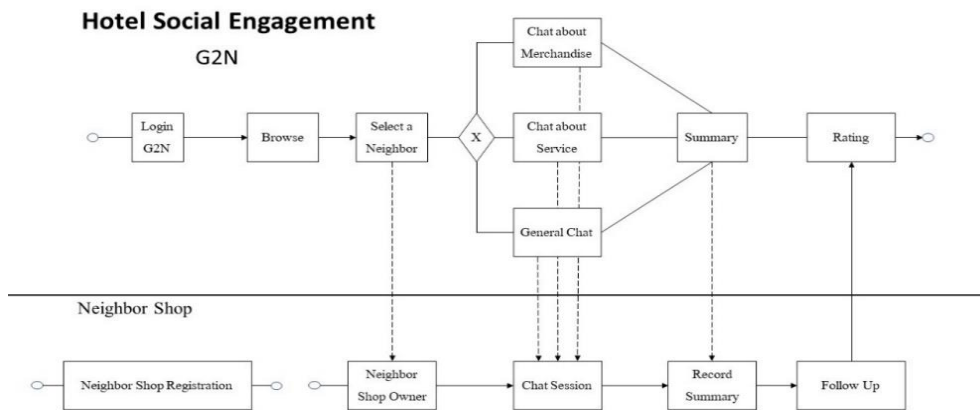


Figure 5. The Guest Social Engagement Diagram shows the chat workflow architecture for guest to neighbor socialization.

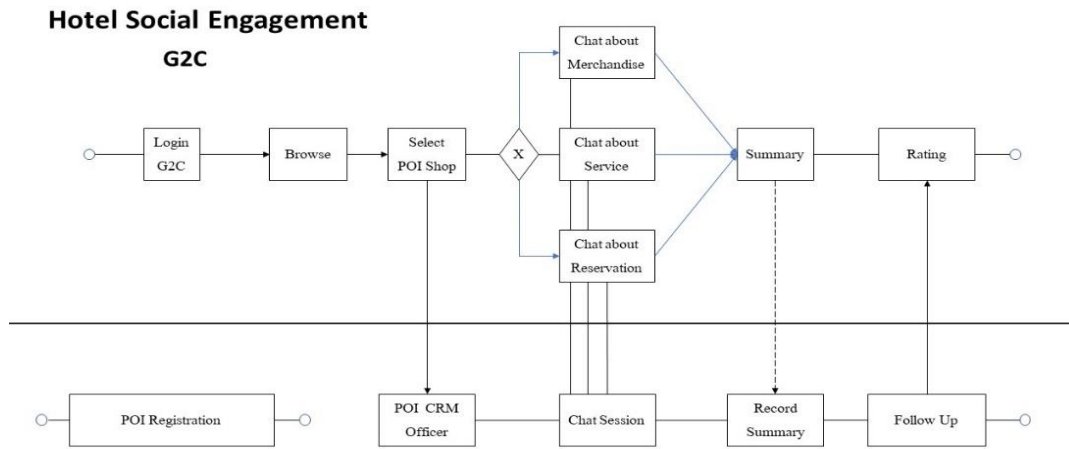


Figure 6. The Guest Social Engagement Diagram shows the chat workflow architecture for guest to city POI socialization.