

Digital Transformation in the Hospitality operations.

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Abstract

The way we purchase and consume hospitality services is changing dramatically as lodging industry transforms its offerings, products, services and infrastructure to meet the needs of digital age. By 2025, many technologies that are just emerging today will have moved into mainstream operation Robotic process automation (RPA). Loyalty and streamlined rewards redemption will be another key focus. Hotels are actively partner with other providers as they expand their role in the travel experience, leading to loyalty networks among hotels, airlines, restaurants and retailers. Guests' growing comfort with technology is driving several disruptive trends. Staff-less hotels appeal to independent-minded travellers – and slash human resource-and operating-related costs. Guest acceptance of tech-enabled hotel lobbies will green-light hospitality companies' big bet on the Internet of Things (IoT). For innovative enterprises, the efficiency of interactivity is of key importance for the success of their business. The rapid development of information and communication technology ICT solutions has brought immense changes in the Hospitality industry. The traditional decision-making processes are gradually being replaced with personalized offers. With the development of shared economy, greater emphasis is put on social well-being, as user experience slowly becomes more important than ownership. This new approach is also expressed in novel forms of payment, which can seriously decrease the profits of intermediate activities.

KEY WORDS: - biometrics, green-light hospitality, IOT internet of things, ICT, Robotic, tech-enabled.

01.Introduction

Technology impacts and assists the growth of practically every industry in the present age. Hotel industry too isn't insulated from its effects. The importance of technology in hospitality industry today is irrefutable. From a small B&B to a global hotel chain, every single accommodation provider across the world is indebted to technology in one way or another! The scene has changed dramatically with the advent of information technology in the hotel industry. Hotels, globally, are tapping into the power of technology in order to catalyse their sales and to improve customer relations. By 2025, however, guests will expect hyper-personalization. They'll look forward to customized amenities such as real-time notifications on dining specials in restaurants, or openings with their favourite spa providers. Families traveling with young children might receive offers of babysitting services. Hotels will need systems that leverage social network data and also interact with each other in a frictionless manner. Hoteliers and other hospitality providers are learning that digital platforms – enablers of vibrant customer experiences, personalized interactions and community – are key differentiators and will only increase in importance. (Micah Friedman, Samrat Sen, 2017)

This makes it evident how the internet is playing a key role in the development of the hotel industry today. Social networking portals like Facebook, Twitter etc. are increasingly playing a dominant role in strategies of hotels all over. User generated feedback and reviews on such websites play a huge role in popularizing the services of hotels by word of mouth. Further, the use of information technology in hotel industry has also enabled hoteliers to stay in touch with and nurture relationships with guests by making use of online tools. Hotels has to find new form of technologies which helps in maintain the hotel presence on social networking sites as well as with online companies (OTAs) in order to increase hotel sales (Alessandro Inversini, Lorenzo Masiero 2014).

1.1. Role of technology in the hospitality and tourism industry.

Both customers and businesses can benefit from advances in communication, reservations and guest services systems. There are various benefits of digital transformation which ease the operations of hospitality business (figure 01). Technology allows continuous communication and streamlines the guest experience, from reservation to checkout.

Internet

The Internet has a powerful impact on hospitality and tourism. For many businesses and locations, the experience starts long before a traveller arrives—it begins with the first visit to the website when a person sees photos of the location and gets a sense of what to expect. In the hospitality and tourism business, effective use of Internet technologies can improve revenue. Websites, blogs, online advertising, social media, online ordering and information repositories all help convince customers to choose a location or business.

Reservations Systems

Booking engines to allow easy access by consumers and travel professionals; the systems enable individuals to make reservations and compare prices. Many, like Expedia and Orbitz, are available through online interfaces. Booking engines cut costs for travel businesses by reducing call volume and give the traveller more control over their purchasing process.

Computer Systems

Because many tourism businesses are large and dispersed, they use computer systems to stay connected. Computer systems allow communication between branches and locations which makes it easier to streamline reservations and cross-company policies. They are also used internally to keep all of the staff on the same page and make it easier to access information that can improve the guest experience: guest preferences, housekeeping Role of information technology in the hospitality industry Find latest hospitality resources at information and reservation details can all be kept on a single system.

Mobile Communication

Many travellers take some form of mobile communication device with them on the road, whether it is a tablet computer or a mobile phone. To keep customers advised of changes many tourism and hospitality businesses use mobile communication; they send delay notices, offer deals and sponsor location-based advertising. Depending on the type of business the communication might happen through emails, text messaging or GPS tagging, for example.

In-Room Technology

Today's traveller carries numerous electronic devices, and reliable, wireless Internet connectivity ranks at the top of the list for customer needs. Some luxury hotels provide iPads or smartphones to the customers for use during their stay. Guests can use the hotel's Web application to access room service options via an e-dining Internet site, or use an interactive service that finds nearby restaurants, transportation or shopping.

Internet of things in hospitality (IoT)

The Internet of Things (IoT) has the potential to transform the hospitality industry by profoundly altering how hotels, resorts, cruise ships, casinos, restaurants and other leisure service businesses gather data, interface with users and automate processes. So far, the main use of the Internet of Things within the hospitality management has centred on hyper-personalisation. For example, Hilton and Marriott have experimented with slightly different takes on the 'connected room' concept, where users are able to control many of the room's features from their mobile phone, or from a provided tablet. Examples of IOT in hospitality Hyper-Personalised Hotel Rooms, Location-Based Information, Predictive Repairs & Maintenance, Electronic Key Cards, Voice-Controlled Customer Service

Robotic process automation in Hospitality (RPA)

Robotic process automation (RPA) is an emerging application of software embedded with artificial intelligence (AI) and machine-learning capabilities to capture, interpret and automate existing high-volume and repetitive tasks which were done manually previously. Many hotels have already begun embracing automation to streamline their operations and improve guest experience. Robotic process automation can play a key role in ensuring the seamless customer service. Hotels using robots in their operations Hilton's concierge robot. A loft's butler robot. In 2014, Aloft Hotels became the first hotel brand to use robot technology. Crowne Plaza's delivery robot. Henn na Hotel 's front desk robots.

Service Automation Through Artificial Intelligence (AI)

Automation continues to be a trend that is changing the way guests are served. With the advancements in Artificial Intelligence (AI), hotels are looking at new ways to interact with guests digitally while freeing up hotel staff to work on other tasks. This also improves the travel experience as language differences can be eliminated, ensuring clear communication with travellers wherever they may be from. Creating a realistic human experience has been a challenge for developers in the past, but it is evolving every day. While many people are put

off by the idea of talking to software that can understand language and respond easily, the day is coming where the difference between a real human and a computer will be indistinguishable.

Guest friendly Applications

The vision of the connected guest entails nearly every aspect of the guest experience. Something as complex as that needs a single hub from which to operate—and guest apps for personal mobile devices are the natural place to host all of these functions. A smartly designed application combines everything from deal notifications to hotel services to loyalty programs. If you see a guest used the group rate for a conference, you could use the app to electronically send your guest the event itinerary, complete with an interactive map of meeting spaces where sessions will be held. Most hotels have some mobile application available already, but they're adding new features every day. Likewise, innovative developers serving the hospitality industry have are offering interesting capabilities that can be integrate into these hotel applications that grant guests increased ability to engage with hotel staff and other guests at the hotel. (Hal Werner, 2020) Some of the major flags have already started investigating new ways to create unique, personalized experiences for their guests on their mobile devices. Ultimately, the hotel with a truly connected experience will be full of very happy, very empowered guests.

Touchless services

As important as automation and self-service has become, the pandemic has illuminated the need to reconsider how guests can interact with amenities. From motion sensors that turn on lights, to voice-activated control of appliances, advancements in IoT devices and natural language processing (NLP) have given hotels and the developers who serve them, the toolkit to tie these emerging technologies with their integrated guest applications providing futuristic experiences. Even existing features like digital room keys that allow guests to unlock doors using their phones are gaining renewed interest. Reducing contact with commonly touched interfaces allows guests to stay safe and housekeeping staff to sanitize and prepare rooms faster.

Staff interface technology

Already popular in the hospitality space and other industries in Europe, SIP-DECT is a mobility-enabling alternative to VoWLAN and radio-based networks that's starting to get attention in North America. Many SIP-DECT setups bring the kind of features usually found on a fixed network to mobile workers all over your hotel or campus without tethering them down to specific locations. Since hotel service staff, like housekeeping, valet, concierge, and event staff are often on the go, SIP-DECT a natural fit for hoteliers. With relatively low cost compared to the alternatives, ease of deployment and quality, predictable voice quality, is poised to take off in a big way.

Location-Based Services

Being able to understand where hotel staff and guests are located at any given time creates all kinds of opportunities to improve the guest experience—from delivering services to guests wherever they are on property to helping event staff operate more efficiently to turning over rooms more quickly and beyond. Some employee location-based features are already available using SIP-DECT technologies, but this is just the beginning. This is a category to keep an eye on.

Technology Lounges

This is place where guests can get out of their rooms but still have access Wi-Fi to relax or get work done. The use cases for technology in hospitality seem to grow every year, and savvy hospitality businesses are transforming these guest desires into stylish semi-public spaces where guests can engage tech on their terms. Many guests are even beginning to include these kinds of technologies in their online hotel search criteria, so hospitality businesses that lack them may eventually find themselves at a disadvantage.

Self-Service Meeting Spaces

The modern meeting space has evolved. No longer is it about tables and chairs and nice serving carts. Modern meetings run on technology. Business people need to make multimedia presentations and videoconference remote attendees—sometimes both simultaneously. And for the marathon meetings, they'd like access to services like catering with minimal interruptions. Most of all, smart hotels know they need these spaces to be as user-friendly as

possible. The A/V rooms of the past that required dedicated engineers are no longer an option.

Social Listening

Guests have a lot to say about their experiences at hotels, but they don't always say it directly to you. And in a hospitality world where word of mouth and online reviews have more influence every day, it's one of the reasons that more and more hotels have started investing in social listening tools. These tools allow hotels to find out about guests' wants, needs, desires, complaints and more—and jump into the conversation if it makes sense. Some even let you keep an eye on the competition. The Internet is treasure trove of business intelligence if you know how to look.

Predictive Analytics

It's been said that knowledge is power. As more technology is added to improve the guest experience, the software and devices will produce more and more data about how guests interact with staff and the amenities throughout the campus. Based on when lights or the TV turn on, staff can know the average time a guest wakes up. With the mobile app on the devices, and IoT sensors throughout the hotel, staff can know how long it takes to get from any room to the lobby. (Hal Werner ,2020) These profiles can be saved and follow guests as they go from property to property, adapting their experience to be more consistent regardless of where they stay.

02. Role of information and communication technologies (ICT) in hospitality.

Once long ago, hotels, motels and other hospitality businesses occupied a fairly simple space in people's lives—they were a place for guests to lay their heads away from home (Hal Werner 2020). But anyone who's spent time in the hospitality industry in the last several years knows that the role of technology in hospitality businesses has drastically expanded. In many cases, they're becoming hubs of activity unto themselves. Most of this activity relies directly or indirectly on technology, making IT more important to hotel operations and the guest experience than ever before. Information communication technologies (ICTs) have been transforming tourism globally. The ICT driven re-engineering has gradually generated a new paradigm-shift, altering the industry structure and developing a whole range of opportunities and threats. ICTs empower consumers to identify, customize and purchase tourism products and support the globalization of the industry by providing tools for

developing, managing and distributing offerings worldwide. Increasingly ICTs play a critical role for the competitiveness of tourism organizations and destinations. ICTs are becoming a key determinant of organizational competitiveness. (Anand Bethapudi 2013).

The Information Communications Technologies (ICT) plays a major role in tourism, travel and hospitality industry. The Integration of ICT in the tourism industry is an essential for success of tourism enterprise. ICT facilitates an individual to access the tourism products information from anywhere any time. ICT is one of the most useful and effective tools for managing the external environment of the hospitality industry. The organization can involve in effective communication with the consumers by using appropriate ICT technology. Here several social media network like Facebook and twitter can be used to interact with the consumers. Most of the organisation does not utilize the information that is available in the information system in order to use them in their strategic planning and decision-making processes. In the hospitality industry, ICTs are mainly used in booking systems which is considered as an internal technology. ICT has beyond doubts made huge contribution to the development of hospitality and tourism services. Due to the advancement in technology, the fierce competition and also due to the complexity of the hospitality and tourism markets, organizations from all over the world now depend almost on the use of ICT to plan, manage and market their services.

Applications in hospitality industry: -

- Computer reservation system (CRS)
- Global distribution system (GDS)
- Destination management system (DMS)
- Interactive digital television
- Touch screen terminals.

03. Literature review

Mihalic and Buhalis (2013) et al perceive ICT as a potential source of competitive advantage to hospitality and hospitality businesses regardless of their sizes. it is to be specified that ICT-based competitive advantages can be achieved by small hospitality companies through unique viral marketing campaigns, maintaining effective communication with various organisational stakeholders and in a number of other ways. According to Bajaj and Nag et al (2005) a range of advanced ICT systems such as Decision Support System (DSS) can be applied to gain

substantial benefits on practical levels not only by large organisations, but also by small and medium-sized business organisations as well. Bajaj and Nag (2005) argue that DSS integration by small and medium-sized organisations can assist management by generating a set of alternative solution options to management problems of various levels complexities. Parsons and Oja et al (2013) mention online reservations systems as one of the greatest impacts of ICT on hospitality and hospitality sector. Major travel companies such as Expedia, Orbitz, and Thomas Cook, as well as, medium and even small sized hospitality and hospitality firms have online reservation functionalities on official company website. Online reservation capabilities provide substantial cost saving opportunities for businesses in hospitality and hospitality sector that otherwise would have been spent on human resources making reservations in a manual manner. Moreover, according to Mihalic and Buhalis et al (2013), while the majority of businesses in hospitality and hospitality sector have adopted various components of ICT to certain extent, there are substantial differences between businesses in terms of extent and nature of adoption of those components. In simple terms, Mihalic and Buhalis et al (2013) argue that some hospitality and hospitality organisations have effectively included ICT to the sources of competitive advantage, whereas opportunities offered by ICT are yet to be used by others. According to Jatashankar R. Tiwari et al. Hotel is a place that has undergone an outstanding change in the past two decades with the arrival of computers. The internet is growing so fast that people now find it easier to plan their holidays online than in person. Computers are used in hotels for various reasons. In hotel front office, computers are equipped with Hi-tech software called PMS. A hotel PMS may interface with websites used in guest bookings and online reservations. According to Jerry & Vijay Mahajan et al Information technologies created new medium in relationship with selling hotel products. Guest can receive quality information on their desired interest through digital technology more easily. According to Melody ciria et al. Optimization has become a major task for hotel and now as a necessity. The use mobile apps connect with website and compatible to mobile booking engine. Reservations from smart phones has shown a huge rise in recent times. According to PR Smith and Dave Chaffey et al. The majority of web users state that they use search engine to find in information to know about the hotel. If the hotel is not registered with the search engine, you may find it difficult to get a prospective guest unless they knew your web address According to Judy Strauss and Raymond Frost et al. The strength of the online networks by targeting the main source like email and web content by using databases, it has the ability to track advertisement effectively, message length and

delivery timing depends upon the flexibility, Internet and social networking sites is one of the major sources to reach international market with one message.

04. BARRIERS TO DIGITAL TRANSFORMATION

- 60% Financial investment
- 53% Systems integration
- 36% Securing networks and Personally Identifiable Information (PII)
- 32% Maintaining systems
- 24% Vendors don't offer solutions needed
- 11% Inadequate bandwidth

05. NEED FOR THE STUDY

The hospitality industry is one of the fastest growing industry, and is attracting the billions of tourists. As it has a potential to allure both international and domestic tourists. In this study the digital transformation has changed the face of hospitality industry and has played a vital role in satisfying the needs and wants of the guests with utmost perfection and care. So as to increase the efficiency and to maintain the pace all the hospitality sectors need to digitalize their day-to-day operations.

06. OBJECTIVES

1. To study the role of digital technology in hospitality industry.
2. To study the various digital tools which are used in hospitality industry to cater their guests.
3. To study the importance of digitalization in hospitality.
4. Role of information and communication technologies (ICT) in hospitality.

07. Material and methods

The present study is qualitative and quantitative in nature. Hence, both, desk and empirical research approaches were applied to carry out this study. To accomplish the objectives laid down for the study, the data was collected from both primary as well as secondary sources. The qualitative division of the study mainly focused to examine the role of digitalization in hospitality industry. Hence the data was assembled from different published and unpublished sources. The major sources of data were government, semi government & other stakeholders' records, journals, books, magazines, reviews, newspapers and websites. Sample

and procedures. To achieve the objectives of the study, the research has analysed the hospitality trends and role of ICTs in the hospitality by referring various textbooks journals and research papers.

08. Findings

The era of big data started years ago, but as more industries learn the insights that can be gathered by collecting and analysing data, the small tweaks information can provide can be the difference between a guest thinking all hotels are largely the same, to one flag standing out, one property becoming a preferred place to stay, one that gets recommended to others. As we proceed into the future, it is clear that the broader themes affecting the hospitality industry are communications efficiency and mass customization. From integrated cloud communications to touchless, interactive service, the potential for the hospitality industry has revolutionize the guest experience and has never been as imminent as it is today. With limited travel and reduced occupancy caused by the global crisis, these digital transformations are timely and necessary to the long-term success for hospitality and hospitality industry.

09. Conclusion

The digitalization has brought the new revolution in the hospitality industry all over. The hospitality business is expanding drastically with the inculcation of the digitalization. These digital tools allow hotels to satisfy and the find out about guests' wants, needs, desires, complaints and more in an appropriate manner. And helps to keep an eye on the competition. The digitalization in hospitality has proved treasure trove. Most of hospitality activity relies directly or indirectly on technology, making it more important to the guest experience than ever before. The use of information technology in hospitality industry has also enabled hoteliers to stay in touch with and nurture relationships with guests by making use of online tools.

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