# INNOVATION & CURRENT TRENDS OF TECHNOLOGY BEING USED IN THE HOTELS

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***Abstract***

*New hospitality technology trends will play a key role in delivering a personalized experience and help in better managing operations, maximizing overall performance, enhancing the effectiveness of sales and marketing approaches, increasing efficiency and reducing costs. The objective of the research is to find out the importance and impact of technology in hotel industry and to find the upcoming new technology to the hospitality industry. The researchers had collected the primary data through structured questionnaire methods which is filled by few people at few locations individually to get the clear picture and then codify and process after redesigning it, then carry into the field. Studies have successfully shown the industries drive to improve customer service and quality through the use of technology. Incorporating technologies like smart phones, Smart room keys technology can be an effective way to increase bookings, specifically from younger travelers.*

***Keywords***: *Service, Hotel, Technology, Performance.*

## INTRODUCTION

Accompanying the technological revolution of the 1990s there are many new opportunities and challenges for the hospitality industries. Since hospitality, global industry information is its life-blood and technology has become fundamental to the ability of the industry to operate effectively and competitively. Poon (1993) suggests that the whole system of information technologies is being rapidly diffused throughout the tourism and hospitality industry and no player will escape information technologies impacts.

Whether we are keen on the technological gadgets introduced into the work place or not, we need to adapt due to the fact that technology is improving and expanding daily in attempt to make our lives easier. In this day and age, there is a technologic device or software used by a device for every operation in the hospitality world, such as reservation systems, security cameras, point of sale systems, property management systems, mobile communication, meeting matrix, energy management systems, key card encoder, etc. By incorporating the use of such devices into the workplace, it has changed the way we conduct business while saving time and money as it dismisses many time consuming tasks.

The wide range of innovations will continue to assist hotels in keeping up with their competitions. Although gadgets will bring lots of benefits to the workplace, it will bring some hotels to an all-time low for the reason that they may not be able to keep up with such investments and competitors. Regardless of what is brought to the table, the whole point will always be to meet and exceed the needs of guests.

New innovative technology trends that are currently being used in some hotels are the following:
The do-it-all remote (room personalization) – This allows guests to dim or turn on/off lights, control room temperature, open/close curtains, order room service, turn on the do not disturb sign, set wake-up calls, view TV channels and movies all on the television with the click of a button on a remote. However, understandably, some guests may be somewhat queasy at the thought of touching a remote that has been in the hands of so many others, after all, it is a hotel room. There is an easy alternative for guests who feel that way, to still take advantage of the in-room technology from their iPhone, iPad or android. They can just simply download the app called Lodge net and sync their Smartphone with the TV, which will then give access to all the functions the remote has to offer.

Self Service Concierge – This touch smart screen kiosk is located in the lobbies of hotels, which can help a guest find out information(restaurants, activities, flights) without the hassle of carrying a laptop or waiting for someone to assist them.

New hospitality technology trends will play a key role in delivering a personalized experience and help in better managing operations, maximizing overall performance, enhancing the effectiveness of sales and marketing approaches, increasing efficiency and reducing costs.

This report gives an insight into the importance of application of technologies and the use of Internet in tourism hospitality industries. This paper also aims to show how technological innovations and information systems can be beneficial for the hotel companies.

**OBJECTIVES**
1. To find out the importance of technology in hotel industry
2. To know the impact of technology in the hotel industry.
3. To analyse the challenges faced in adoption of new technology.
4. To find the upcoming new technology coming to the hospitality industry.

**LIMITATIONS**
Some of the limitations, which were faced during the research study, were:
1. It was quite difficult to find books on this particular topic in the institute's library.
2. Another limitation was the time, which did not permit us to go through all the material

available on this topic at other places.

3. The people who were supposed to answer the questionnaire were not very serious about the study being conducted which could have affected the final deduction in some way.

4. Limitation of money also did not permit to study the bars outside the city.

## LITERATURE REVIEW
### Importance of technology in hotels

Technology is always evolving, trying to make our lives that little bit easier and hopefully more enjoyable. In the case of the hotel industry, technology has to offer either value and/or comfort to the customer, or reduced cost to the hotelier. With the continued rise of social media, mobiles and tablets in everyday life, understanding how to use these technologies in the travel industry is proving a significant factor for customer satisfaction .

Researchers stress the importance of technology for the hospitality industry and highlight that it has became an indispensable part of hotels' everyday operations (Collins & Cobanoglu, 2008; Ham, Kim, & Jeong, 2005; Kasavana & Cahill, 2003; Squires, 2008). Interestingly, the bigger a hotel and the wider the number of services provided (restaurants, sport facilities, spa centers, golf courses, etc.) the higher reliance on technology (Piccoli & Torchio, 2006; Siguaw, Enz, & Namasivayam, 2000). This happens because technology has entered all the spheres of hotels' life influencing both back of the house and front of the house operations (Kasavana & Cahill, 2003). One application that addresses different back and front office functions and has had a significant impact on overall hotels' operation is a property management system (PMS) (Collins & Cobanoglu, 2008).

Back of the house technologies include essential processes and operations that cover hotels internal communication that do not involve guests (Kasavana & Brooks, 1995). Back office packages may include numerous applications and differ depending on the operations performed (Kasavana & Cahill, 2003). Such packages can consist of several modules such as accounts payable/receivable, payroll, inventory and purchasing accounting, reports module. In other words, these technologies help to manage all financial activities of the property that occur between a hotel and its employees, partners, vendors, different financial institutions and customers.

Technology adoption enables Human Resources managers to handle employees' queries, organize databases, communication, training, and develop reward programs (Rutherford & O'Fallon, 2007). One of considerable problems of the hospitality industry is employee turnover. Hinkin and Tracey (2006) described the web-based tool that can help to estimate the overall cost of employee turnover and develop "industry norms for turnover-related factors, such as wages, training duration, recruiting practices, drug testing, orientation programs and many other human resources practices".

Technology has played an important role in hotels' revenue management activities (Squires, 2008). Automation helps managers to get accurate reports about pricing recommendations to reach higher profitability and to leave more room for analytical work. All the decisions taken within revenue management programs are usually implemented by means of reservation systems. Proper handling of reservations is an essential and critical issue for hotels' successful operations (Kasavana & Cahill, 2003). In other words, a reservation module is one of the crucial applications of PMS that enables managers to check room availability, place individual and group reservations, generate confirmations and handle numerous other functions (Collins & Cobanoglu, 2008). A central reservation system (CRS) is an important asset for a hotel chain that provides a unique platform for chain reservations. To broaden distribution channels and increase occupancy rates, property (or central) reservation systems may be interfaced to the Internet reservation module, enabling customers to book hotel rooms on-line on the corporate web-site; and global distribution systems, providing an opportunity for travel agents worldwide to make their reservations in real time.

## IMPACT OF TECHNOLOGY IN THE HOTEL INDUSTRY

The applications of technology to the hospitality environment. Front office information processing systems such as reservations, guest accounting and room management systems are discussed, as well as their impact on the efficiency of operations. Effects of developments in telecommunications and, more recently, teleconferencing on the lodging (hotel) industry are discussed. Technology benefits, such as energy management and the safety and security of guests and their property.

A study conducted by Griffin (1998) investigated how information (through data warehouses) was being utilized by hotels, through the investigation of 12 of the largest hotel firms in the industry. In this study, only 7 of the 12 hotels were involved with data manipulation and 2 of the 7 had successfully developed and implemented their own data warehouses. Even though some of the hotels did not have data houses in place they were planning on the future development of this technology. Most of the hotels in the study were, using information for support of strategic market analysis including, targeting new customers, fine tuning loyalty programs, sales analysis and conducting trend analysis.

## CURRENT & UPCOMING TRENDS OF TECHNOLOGY IN HOTELS

Technology is advancing at a faster pace than ever before, and this is changing both the expectations of patrons as well as the way in which the hospitality industry conducts its business. Some of the trends in industry are leading to great improvements and savings for hospitality industry companies; while some are changing how hotel developers plan their buildings, infrastructure, management structure and staffing requirements. Some of the latest trends in the hospitality industry are :

## 1. WI-FI INFRASTRUCTURE OVERHAULS

Nowadays, hotel guests who travel with devices such as phones, tablets and computers

no longer see Wi-Fi as a perk, but as a must-have when they check in at a hotel.
Hotel guests expect to be able to connect to the internet seamlessly and without too many interruptions, leading hotels to invest in better, faster Wi-Fi infrastructure so that people can do business and use their technology devices with ease when they book their stay.

## 3. MOBILE COMMUNICATION AND AUTOMATION

In many airports, it's no longer necessary to stand in a queue to check in and people are expecting the same kind of easy, technology-driven check-ins at hotels. Guests want to be able to do everything from checking in at a venue's automated kiosk to ordering room service with a digital device instead of standing in queues and moving around the hotel premises to order food.

Thanks to digital innovation and social media, guests also expect digital interactions with the hotel to be personalized. When investing in digital apps for check-ins, room service and other customer-oriented digital interactions, hotel operators are investing in systems and technologies that can personalize the experience for guests, including a guest's name being displayed on the welcome desk at a digital check-in station; their food preferences or past purchases being displayed in a digital room-service order system; and similar.

## 4.  NFC TECHNOLOGY

Near field communication (NFC) technology is the next-generation short-range high frequency wireless communication technology that gives users the ability to exchange data between devices. Communication between NFC devices can transfer data at up to 424 kbits/second and the communication is enabled when two devices touch each other, which makes mobile payments (by touching the smart phone to a credit card) an instant, secure process. This technology is also ideal for self check-ins by guests at hotels as well as the next trend in this article: smart room keys.

## 5. ROBOTS AND INFRARED SENSORS

Some hotels are already offering more futuristic experiences, with robots delivering any items ordered through room service to a guest's door. A boutique hotel that is nestled between Apple's headquarters and other tech companies, called Aloft Cupertino, has a robot butler called Botlr that is able to move between the various floors of the hotel in order to take items such as toothbrushes, chargers and snacks to guests. These types of digital systems not only make it easy for hotel staff to deliver items to guests, but it also offers a forward-facing digital experience to people who stay at the hotel.

## 6.  SMART ROOM KEYS

Hotels will increasingly install smart room access systems that allow guests to unlock their doors by simply swiping their phones across a keyless pad on the door. Starwood (owner of the Sheraton, Weston and "W" hotel chains) has already upgraded 30,000 room locks across 150 hotels with this system and Hilton will be implementing a similar

system at 10 of their US properties this year. In 2016, they will be deploying the smart room key technology globally. This technology will mean that guests don't have to worry about picking up keys and front desk staff won't have to issue new keys in the event that a guest loses their room key.

Another innovative way to offer a keyless experience is through fingerprint-activated room entry systems and retina scanning devices. Retina scanning is even more accurate and secure than fingerprint scans and hotels like the Nine Zero Hotel in Boston have already installed an iris scan system in place of key cards to control access to the hotel's presidential suite.

## RESEARCH METHODOLOGY

The methodology for gathering the needed information calls for decisions on the following :
1. Data sources
2. Research Approaches
3. Research instruments
4. Sampling plan
5. Contact methods

Type of Research: It is a survey research method collecting actual facts and figures. Secondary data is used to conceptualize the type of individual and the recent trends in the hotel industry. It consists of information that already exists somewhere, have been collected for another purpose. Whereas Primary data is used to collect actual scenario regarding the future prospects of the hotel industry and it consists of original information for specific purpose.

## TYPES OF DATA

1. **Primary data**: The researcher had collected the primary data through structured questionnaire methods which is filled by few people at few locations individually to get the clear picture and then codify and process after redesigning it, then carry into the field. Primary data includes the type of customer (Individual) & hotel employees.

2. **Secondary data**: The researcher started the investigation by examining secondary data to see whether the appropriate information is solving the problem or not. Secondary data were collected through various sources such as:-
A.  Books and journals in the institute library which has given a fair idea about the topic.
B.  Reports taken from different websites.
C.  Information collected from the hotels brochures and websites.

3. **Sample Size**: The researcher has used Random sampling method for individual customer. 50 persons including customers (30) & hoteliers (20) were surveyed for this research.

**DATA ANALYSIS**
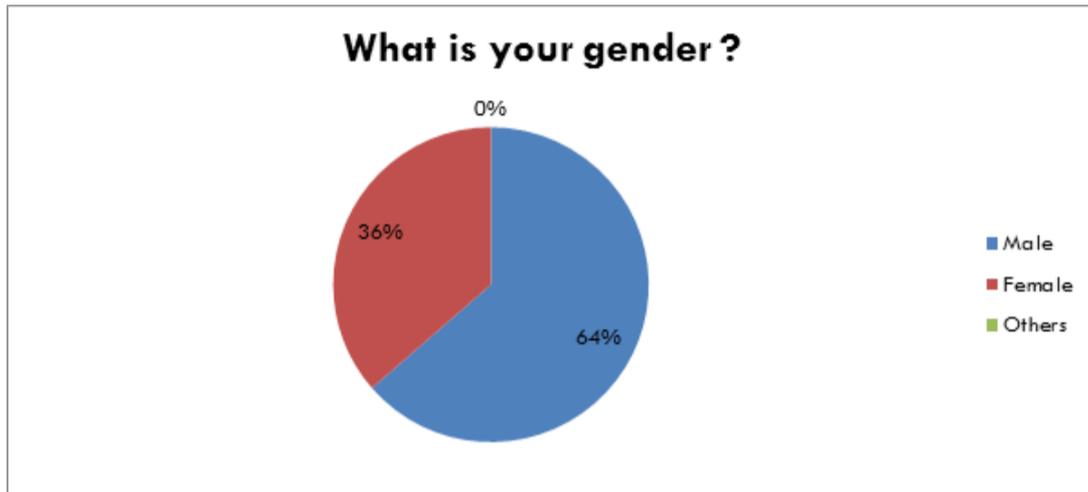


(50 responses)

From the above pie chart we could see that the male responses were higher with 64% as compared to female responses i.e. 36% which shows that male respondents were almost two times more than the female respondents.
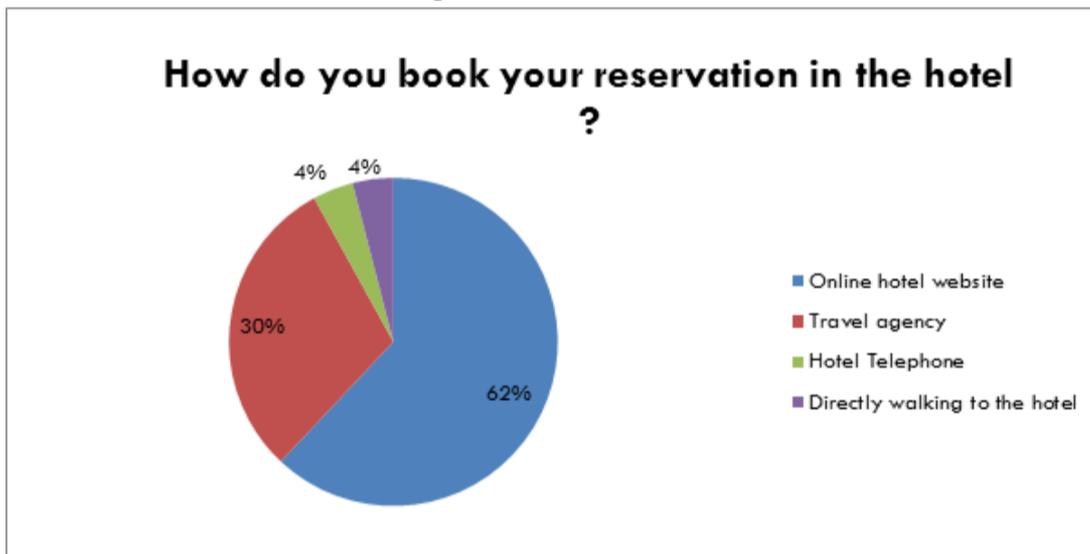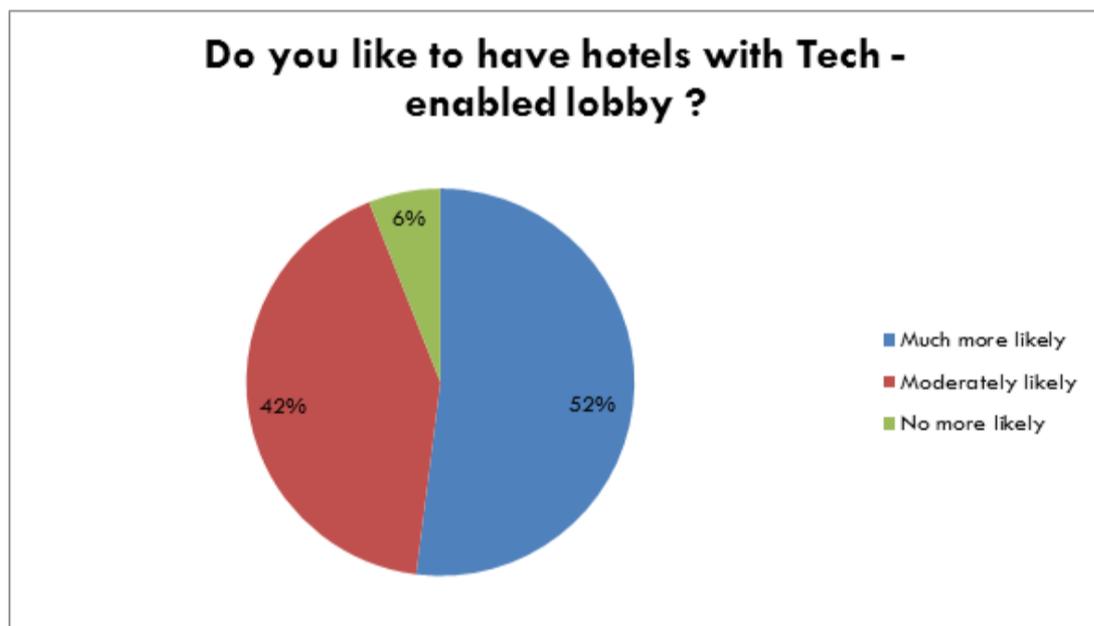


(50 responses)

The above pie chart illustrates the medium of technology used for reservation in the hotel in which the reservation through online hotel website was mostly preferred with 62% followed by booking through travel agent with 30% while the reservation through hotel telephone and direct walking to the hotel remained same with 4% .

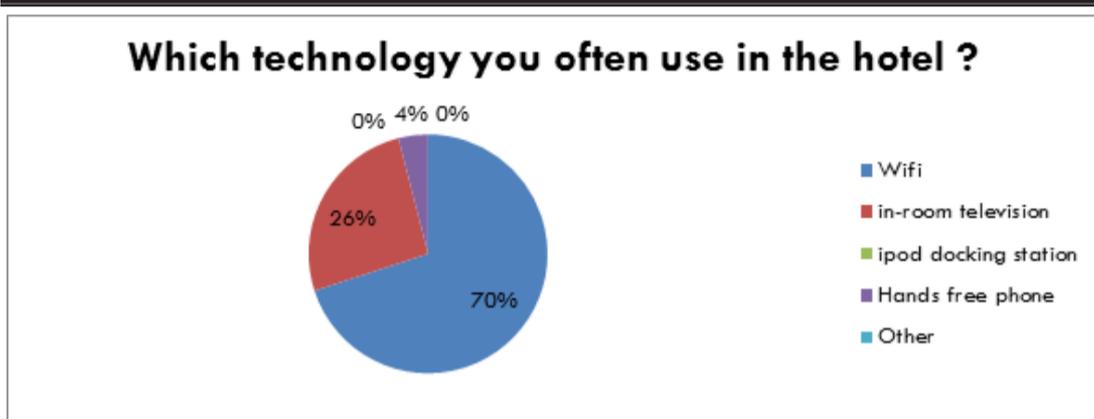This shows that online reservation in the hotels is been largely done in the current scenario by the people.

(50 responses)
The above pie chart depicts the gadgets used for reservation in the hotel, Smartphone is the mostly used gadget (52%) followed by laptop (40%) and the least used is tablet (8%).
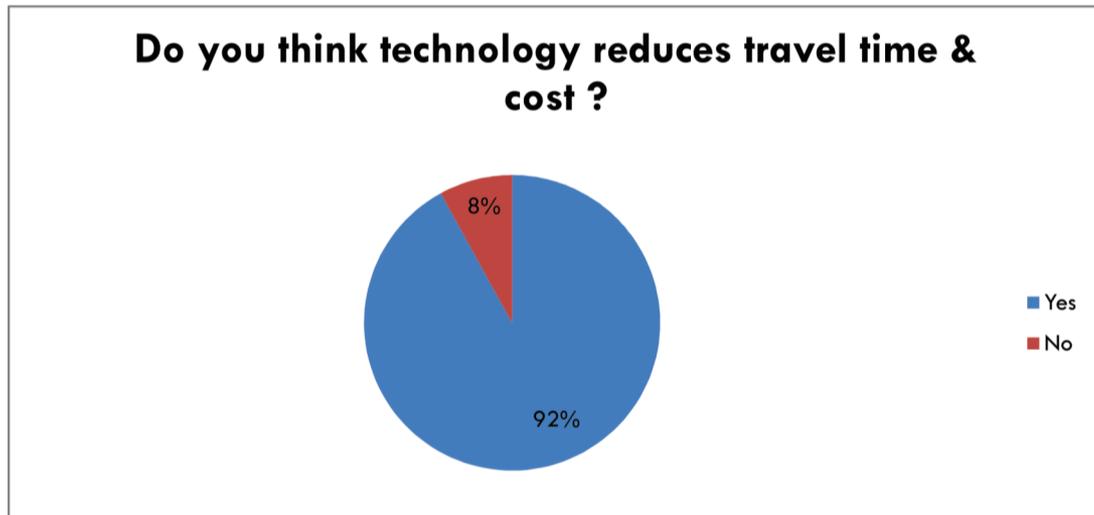


(50 responses)
The above pie chart shows the requirement of Tech- enabled lobby in the hotels that is hotel lobby with touch screens and check-in kiosks, as a result 52% responses (26 respondents) were in favor of having such technology in the hotels while 42% responses (21 respondents) were neutral (moderately likely) and only 6% responses (3 respondents) did not find this technology any helpful.

Which technology you often use in the hotel ?

- Wifi
- in-room television
- ipod docking station
- Hands free phone
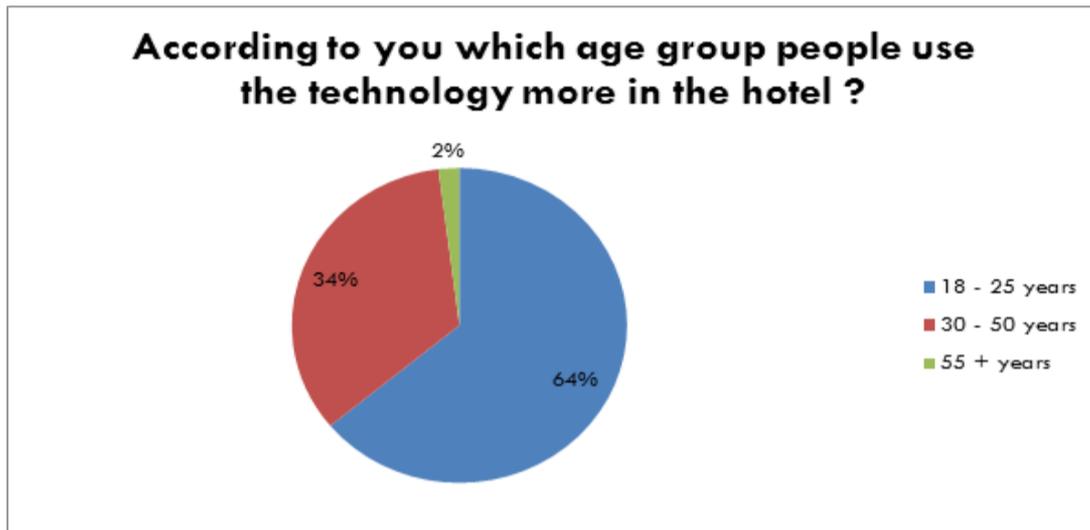- Other

(50 responses)

The above pie charts gives the information regarding the different types of technology used by the guests while staying at the hotels.

Wi-Fi is the technology to which maximum responses came that is 70% (35 respondents) while in- room television got 26% responses (13 respondents) and hands free phone got the minimum responses that is 4% (2 respondents) whereas iPod docking station got no response.



Do you think technology reduces travel time & cost ?
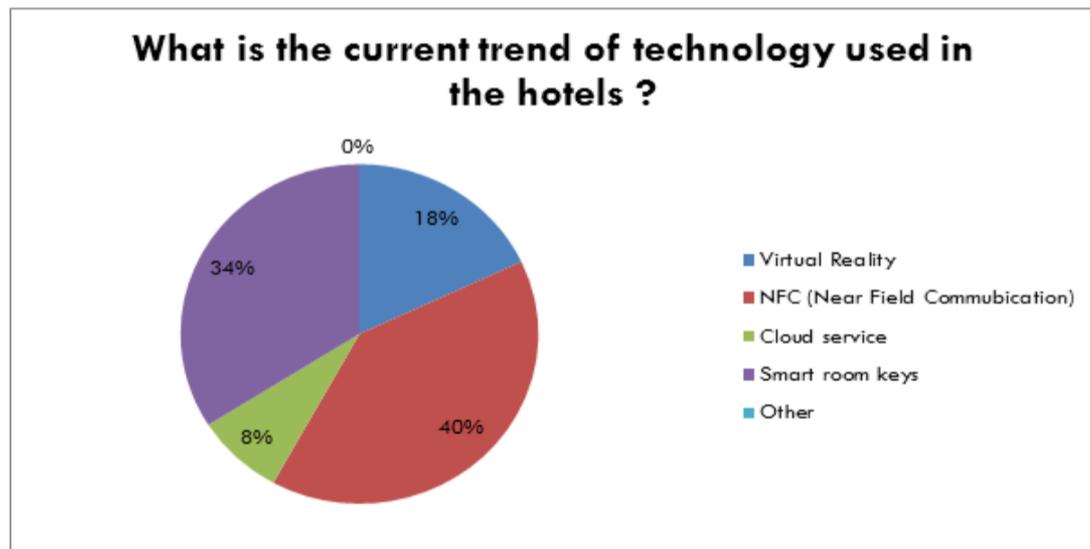
- Yes
- No

(50 responses)

The above pie chart shows the effect of technology in reducing travel time and money. About 92% responses (46 respondents) agreed that technology reduce travel time and money while 8% (4 respondents) disagreed with it.

According to you which age group people use the technology more in the hotel ?

- 18 - 25 years
- 30 - 50 years
- 55 + years

(50 responses)

The above pie chart illustrates the age group of people which use the technology more frequently in the hotels.

The young age group that is 18-25 years got maximum responses (64%) from 32 respondents while the middle age group that is 30-50 years got 34% responses (17 respondents) and old age group that is 55+ years got minimum responses with only 4% (2 respondents).



What is the current trend of technology used in the hotels ?

- Virtual Reality
- NFC (Near Field Commubication)
- Cloud service
- Smart room keys
- Other

(50 responses)

The above pie chart shows the current trend of technology used in the hotels that is the latest technology mostly seen in the hotels in the present scenario.

The Near Field Communication (NFC) got the highest responses with 40% (20

respondents) followed by Smart room keys with 34% responses (17 respondents) then virtual reality with 18% responses (9 respondents) and cloud service with the least number of responses that is only 8% (4 respondents).
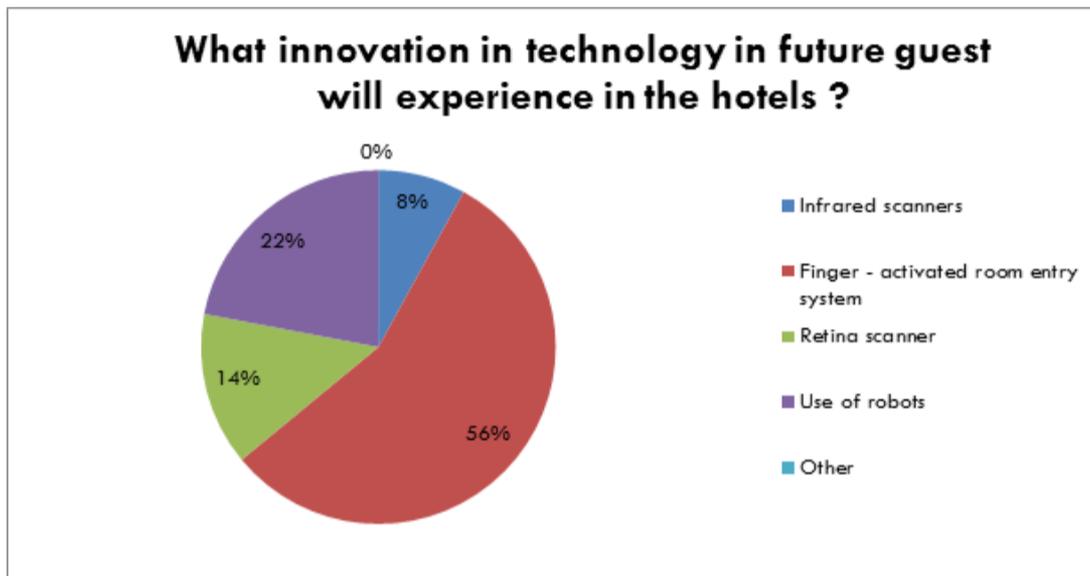


(50 responses)
The above pie chart depicts the information regarding the innovation of technology that the guest will experience in the future.

The finger – activated room entry system got the highest responses (56%) from 28 respondents followed by robots with 22% responses (11 respondents) then retina scanner with 14% (7 respondents) while the infrared scanner got the least responses that is only 8% from 4 respondents.
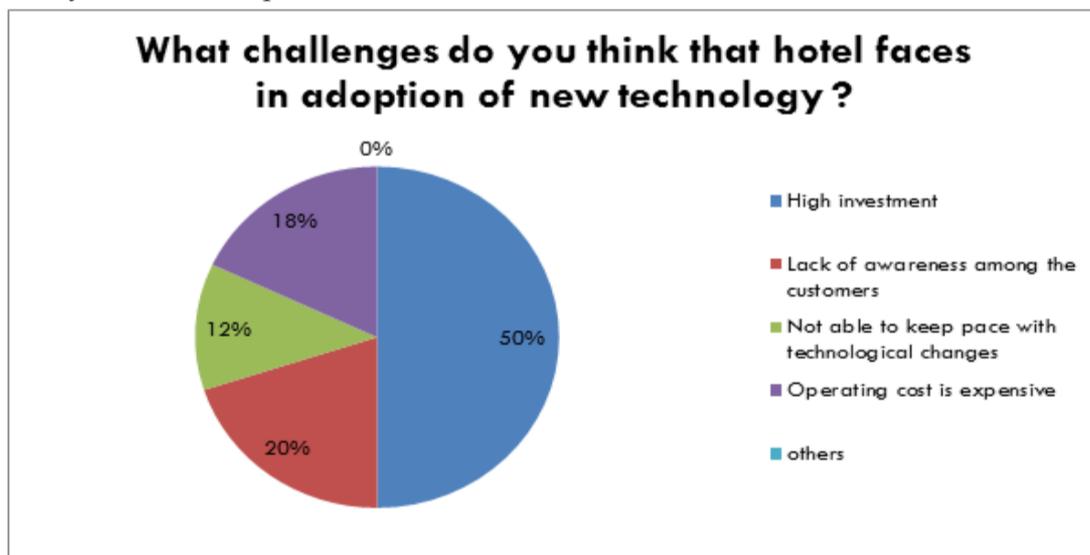
(50 responses)

The above pie chart illustrates the problems and challenges that the hotels face in the adoption of new technology.

About 50% responses (25 respondents) were in favor of high investment due to which hotels do not adopt latest technology while lack of awareness among the customers with 20% responses (10 respondents) is the second highest reason followed by expensive operating cost reason with 18% responses (9 respondents) whereas failing to keep pace with technology changes got the least responses of only 12% (6 respondents).

## GIVE YOUR OPINION FOR ENHANCING GUEST EXPERIENCE THROUGH TECHNOLOGY IN THE HOTELS ?

- Technology should be made familiarise to the guest rather than complicated
- Work towards the interest of guests
- Avoid making calls to place orders, calls to laundry/ room service / restaurants should be through apps on mobile devices.
- Nothing much
- Make buffet mobile from kitchen to banquets and restaurants on mobile belt so that you just have to pickup and serve it will help you to save labour cost as well as time.
- Viruses free
- Just one click and order place
- Technology can be a boon in enhancing guest experience in the hotels if hotels keep pace with the new advancements in the IT industry.

## FINDINGS

Out of 53 persons, only 50 persons replied to the survey, yielding 94.33% response rate. Only 3 responses were not complete and thus eliminated from the study.

Overall, the technology entry into the consumer space is the Smartphone which is the device that is most likely (52%) to drive bookings to a hotel and such technology is mostly used by the people of age group 18-25 years (64%).

Respondents say they are moderately likely to use a hotel lobby touchscreens or check-in kiosks. But this is likely because many travelers, especially millennial, have come to see this technology's presence in hotels. On the other hand, 70% respondents like to use the Wi-Fi technology in the hotels.

NFC (Near Field Communication) is the most likely technology that the respondents (40%) have experienced in the current scenario. However 34% of our sample say they had experienced Smart room keys technology.

Finally, 56% of the respondents see fingerprint-activated room entry system as the technology that can be seen in the future in the hotels and only 22% respondents believe in the use of robots in the future as encouraging signs that its widespread application in hotels is not far off.

But the challenge faced by hospitality industry in adoption of new technology is the huge

investment as 50% of the respondents agreed upon this reason.

Incorporating these technologies can be an effective way to increase bookings, specifically from younger travelers.

## CONCLUSION

It is evident that technology has played, plays, and will continue to play a key strategic role in the growth and progression of the hospitality industry.

From the perspective of the hoteliers, using technology to enhance the guest experience and increase revenue will be the focus in the future. Technologies that are important to the guests such as Wi-Fi access, entertainment systems that reflect their lifestyles, and technologies that simplify their stays such as kiosks to print airline boarding passes are viewed as important, especially among hoteliers whose properties are chain hotels or who cater to business travelers. There is also an indication that hoteliers felt that the use of technology should somehow pay for itself in terms of its impact on the bottom line. That said, the focus on enhancing the guest experience might then imply that those technologies that are viewed to be "enhancements" must then also generate revenue.

From its slow beginnings the entire industry has progressed using technology to forge forward in many facets of their industry. Technological advances initially developed to aid in the efficiency of operation and reduction in labor, food and other operational costs have ultimately aided these organizations in the attainment of the ultimate goal, customer satisfaction and repeat business. Studies have successfully shown the industries drive to improve customer service and quality through the use of technology. There is little question as to the positive effects technology has on the ability of organizations to gain strategic competitive advantage. External, strategic environmental analysis is critical in enabling organizations to take advantage of opportunities. In reviewing the literature there were virtually no negative attributes discussed about what technology can do for organizations, except for costs. Cost (of the technology) is one of the main restrictors as to why the hospitality industry, both hotels and restaurants, have been laggards in the adaptation of new technology. The industry consists of many types of ownerships, both at the hotel and restaurant levels, ranging from national and regional chains to independently owned operations. Smaller companies more than likely will not be able to afford to invest in the latest type of technology, creating an additional barrier to competition. The best hopes for these types of organizations will be to try and obtain second hand information via the Internet or consulting service to make an attempt to remain competitive. Technology has already broadened the scope of how the hospitality industry functions today and will continue to forge forward in the future aiding in the development of strategic competitive advantage within the industry.

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