Holy Adventure with IOT

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Abstract:

Internet of Things (IoT) is the current talk of the town which is widely affecting hotel and temple areas these days, it is very important to focus out its practical implementations. This study features the multidimensional tasking of the hotel and temple area with the growth of IT-with more services the hotel and temple in the current scenario is highly relying on computerized system for most of its operations and management reports all things happening with the help of internet of things. To remain competitive it is very much essential to achieve high guest satisfaction. Technology-enhanced hotel services in various manners starting from arrival to revisit of guest-Tracking guest satisfaction, optimizing perishable resources of hotel, global distribution system, automated energy-saving facilities such as Energy Management System, synergistic approach through multi-processor environment etc. The hotel industry involves heavy duty machinery, equipment and end number of operating devices for bulk operations. In temple also using so many IOT devices like IoT helps to optimize the devices, equipment's and instruments for better yield, for example, NFC technology for easy access of POS billing, mobile check-in application for registering complaints and to provide real time status updates.

Keyword: Customer Relationship Management, guest loyalty scale, Guest wares, mobile computing, Sales force automation, context-aware computation. Multi-processor environment, robot butlers, departmental automations

Introduction:

This article covers the empowerment of IoT services in hospitality sector. Here the important tool to summarize role of IoT is tracking guest satisfaction at various level of hotel services. IOT is commonly known as smart connection enabling objects to collect and exchange data. It makes things to communicate with the help of programmed internet features and unique identifier without human to human or human to computer interaction. In this competitive environment rendering a quality service is one the challenging task in hotel industry. The departments of operations in hotel run 24x7x365 hrs in a year. Repeat business or re-visit by the guest and remarkable feedback is a key result of quality services. IT enabled services gradually increased the hotel personals efficiency and performance standard. Most of the tasks or assigned duty are technically featured, online accessed and wirelessly handled. With ease of these features as mentioned, hotel ensures timely services and guest satisfaction. This research article also explores system software included to achieve guest satisfaction and positive on quality services.

Digitalized F&B Menu Functionality rich content management system can be used to build out engaging F&B menus, allowing the guest to browse content in their native language. GXP also import the existing menu data and synchronies updates to prices, modifiers, names, descriptions etc. on an ad-hoc or scheduled basis. Digital hotel directory: Replaced hotel directory and gives guest direct access to hotel facilities including in-room dining, hotel services and local area information. Improve guest experience Guest can order room service and control their room environment through RMS/IPTV (Room Management System/Internet protocol Television) integration. Hotels can also tailoring of messages to the guest is a common application of PMS integration. Restaurant wireless Calling System: Customers press the call button, the table number will be shown on the receiver. Enable waiter to figure out which tables need service.

Wi-Fi infrastructure:

As we know that now days Hotel guest 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. Guest expect to connect to the internet seamlessly without any 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 .Hotels are also starting to move away from user pay models meant for WIFI need. In the past, hotels charge exorbitant rates informing guest to pay if they wanted to go online. Installing and maintaining a hotel-wide wireless network may be coupled with costs, but many leading hotel groups have started to install high density Wi-Fi and started to offer in-building mobile phone coverage as Guest have come to expect these services during their stay (not only for themselves, but also for their Guest if they are hosting a conference or function at the hotel). It might not be financially feasible for hotels to completely abandon the user pay model, but many hotels are re-thinking their current infrastructure and pricing models.

Hotel Industry offers Digital conference facilities in Mathura:

Besides being able to offer high density Wi-Fi for conference and meetings, hotel also needs to be able to offer access to audio-visual (AV) and digital facilities for conferences. While the

amount of AV and digital equipment that goes into a typical conference room is fairly minimal, staging companies are often hired for various projects in order to equip the facility as required. CRM is (Customer Relationship Management) is a core to all businesses, essentially when it is about, selling good products or services of hotel industry. CRM solution is of combination of systems, people, process and strategy. CRM focus on selecting and managing customer, value and loyalty through a longterm relationship. CRM is not a single system but a comprehensive, application architecture consisting of several systems. It makes sales team more effective by automating tedious repetitive tasks. With CRM, hotel professionals can automate a big chunk of, their daily tasks such as sending out emails, generating reports, organizing leads and so on. With CRM's Mobile access, hotelier has instant access to customer information when they need it, without being tethered to computers. These are the application mostly involved in business: Software Customer Relationship Management, Customer Interaction Center, Customer Service, Document Production, EBusiness Electronic Commerce Electronic Purchasing Executive Information System ,Help Desk Management Marketing Mobile Computing Online Auctions Portals Sales & Marketing Systems Sales Force Automation Supply Chain Automation Telemarketing / Telesales Value Chain Voice Over IP Web Collaboration, Chat, Email..

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 up to 424Kbits/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 Guest at hotels as well as the next trend: smart room keys. Besides payments and an easier way to gain entry to hotel rooms, NFC technology can also be used to personalize a guest’s experience at a hotel or resort. For example, advertising can be targeted based on gender and age (so if a child walks by a digital sign in the lobby, the advertisement can change to promote a local theme park or the hotel’s kids club) and this technology could also be used to track loyalty points from a guest’s use of the conference facilities or room service. This opens many doors for hotels who want to offer a more personalized experience at their establishment.

Robots 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 Butler that is able to move between the various floors of the hotel in order to take items such as toothbrushes, chargers and snacks to Guest. These types of digital systems not only make it easy for hotel staff to deliver items to Guest, but it also offers a forward-facing digital experience to people who stay at the hotel. Infrared scanners are now also used to minimize disruptions relating to housekeeping (which is a common complaint from customers). Instead of hanging a „Do Not Disturb“ sign on doors or having cleaning staff wake up traveling Guest with knocks and phone calls, hotel staff can take a more innovative

approach by using infrared scanners that will detect body heat within a room and tell cleaning staff that they should rather come back later if the room is currently occupied. (Robinson).

Smart room key:

Hotels are increasingly installing smart room access systems that allow Guest 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 deployed the smart room key technology globally. This technology enables Loss and found control which means that Guest 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 hotels are offering a keyless experience is through fingerprint-activated room entry systems and retina224 scanning devices. Retina scanning is even more accurate and secure than fingerprint scans and hotels like the Nine Zero Hotel in Boston installed an iris scan system in place of key cards to control access to the hotel's presidential suite.

Literature Survey

The Internet of Things is interconnection of uniquely identifiable embedded computing devices within the existing Internet infrastructure". Typically, IoT is expected to offer advanced connectivity of devices, systems, and services that goes beyond machine-tomachine communications (M2M) and covers a variety of protocols, domains, and applications. The interconnection of these embedded devices is expected to usher in automation.

Entertainment-on-tap:

According to a Smith Micro Software trend report entitled The Future of Hotel In-Room Entertainment; people are increasingly plugging in their own devices for in-room entertainment. The hotel room‟s television, radio and clock are taking a backseat as travelers use their own technology to keep themselves entertained. An earlier survey by Smith Micro Software showed that 81% of respondents wanted to access to mobile video content at hotel and 55% said that mobile content availability at a hotel influence guest to choose their stay. There is a need to monitor and update the Hotel Information System to meet guest expectation. (Robinson)

Facilities and Operations:

: Smart sensors in connected devices such as „smart‟ thermostats, drop-cams, coffee makers, connected mirrors, robot butlers and smart light bulbs works together to automatically personalize environmental conditions for Guest based on their proximity and movement patterns. Lighting and temperature can be automatically adjusted based on sensor data from IoT devices, it not only increases the efficiency but also eliminates waste. In the airline industry, gate agents can locate late passengers through NFC beacons, expediting departures

Personalized Service Delivery:
Travelers and Guest can experience dramatic improvements in service with the latest „smart" innovations. Hotels can automatically send electronic key cards to their Guest" mobile devices, providing a comprehensive self-check-in and room key service. Smart locks with NFC readers can allow Guest to restricted access to facilities on demand for improved security. Moreover, for returning Guest, hotels can save room preferences and automatically load them at each visit, ensuring all Guest enjoy a consistent, customized experience.

Logistics and Security:
One of the important factors which impact guest stay is security and logistics, the day-to-day business functions of travel and hotel businesses improved through the transport automation provided by IoT innovations. Hotels can track supply chains more efficiently through sensor-enabled shipments, allowing them to plan for any contingency and prevent service disruptions to Guest. Hotels and airlines can also easily and more cost- effectively deploy security mechanisms in facilities and structures, with centralized management of these IoT-enabled cameras and proximity sensors possible from any desktop or mobile device. All the abovesaid IoT solutions are available in hospitality market now. Future IoT products and innovations will no doubt bring even more dramatic transformations in the travel and hotel industry. Companies are preparing by incorporating IoT into their current initiatives to take advantage of future innovations when guest arrive. The travel industry and the hospitality sectors embraces this "technology" will ultimately aim to achieve revenue generation and retention.

Methodology /Implementation

Analysis of the guest survey:
Table 2 summarizes the key satisfaction measures from the guest survey. In areas of operations which deal with IoT and IT enabled services are listed with the guest satisfaction and dissatisfaction of respondents. The guest details of Table.1 clearly denote that the guest is mostly visited for the purpose of business. The nationality is taken under consideration for guest survey which enables to read the Indian markets and growth in terms of hospitality and technology. IHG crown plaza mostly targets the corporate and international profile guest in optimizing the available resources.

Mobile Engagement – Today, there are almost as many cell phones (6.8 billion)as people on the planet (7.6 billion), with over 85% of the world's population receiving cellular coverage. Mobile can be seen as a front and be application. Guests can use their phone as the key to their room or for submitting requests to the front desk. Mobile engagement is also a back of the house tool through the use of an EAM CMMS application. Engineers can access work requests or work orders that need to be performed on the property to increase guest satisfaction eliminating the need for a paper request that could go left unnoticed.

Drawbacks in Hospitality

Bringing our everyday devices online and connecting them to each other introduces enormous efficiencies, optimizations, and applications. But, it also introduces threats like cyber-attacks and security breaches.

Each device incorporated into a hotel's digital infrastructure can be exploited by hackers. For example, there was a case in a hotel casino in London where a hacker accessed the high-roller database through a thermometer in the lobby fish tank.

The attackers used the thermostat to get a foothold in the network and they then found the high-roller database and pulled that data back across the network, out the thermostat and up into the cloud.

Result analysis and conclusion

The IoT can best be described as a CAS (Complex Adaptive System) that will continue to evolve hence requiring new and innovative forms of software engineering, systems engineering, project management, as well as numerous other disciplines to develop it further and manage it the coming years. The application areas of IoT are quite diverse to enable it to serve different users, who in turn have different needs. The technology serves three categories of users, individuals, the society or communities and institutions. As discussed in the application section of this research paper, the IoT has without a doubt a massive capability to be a tremendously transformative force, which will, and to some extent does already, positively impact millions of lives worldwide. According to [25], this has become even more evident, as different governments around the world have shown an interest in the IoT concept by providing more funding in the field that is meant to facilitate further research. A good example is the Chinese Government.

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