Management Information System (MIS) in Hotel Industries to Improve Overall Efficiency

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Abstract— Management information system, or MIS, broadly refers to a computer-based system that provides managers with the tools to organize, evaluate, and efficiently manage departments within an organization. In order to provide past, present and prediction information, a management information system can include software that helps in decision making, data resources such as databases, the hardware resources of a system, decision support systems, people management and project management applications, and any computerized processes that enable the department to run efficiently. Since tourism is now growing all over the world, the role of hotels is becoming greater than before. Hotels take a big place in the market, so using manual system may lead to erroneous management. Therefore, using a computerized system is more efficient. Reservation is the most important part of any hotel system as it serves the commercial goals of the hotel. There are two types of customers in a hotel; individual customers and group customers. The person responsible for all reservations is the front office manager. Group customers have higher priority over individual customers in high season because group customers are more stable. So, the front office manager should take decisions about the reservations which can be supported by the computerized system. This system provides many tools that the front office manager could use in taking his decision for allocating rooms and reserve for groups. This system can't operate alone in a hotel because it concentrates mainly on reservation processes. The system needs an accounting system and a management information system so it can serve all the needs of the hotel effectively.

Keywords— MIS, Hotel Reservation, Hotel efficiency, Computerized reservation Process.

I. INTRODUCTION

Management information system, or MIS, broadly refers to a computer-based system that provides managers with the tools to organize, evaluate, and efficiently manage departments within an organization. In order to provide past, present and prediction information, a management information system can include software that helps in decision making, data resources such as databases, the hardware resources of a system, decision support systems, people management and project management applications, and any computerized processes that enable the department to run efficiently.

Since tourism is now growing all over the world, the role of hotels is becoming greater than before. Hotels take a big place in the market, so using manual system may lead to erroneous management. Therefore, using a computerized system is more efficient.

Reservation is the most important part of any hotel system as it serves the commercial goals of the hotel. There are two types of customers in a hotel; individual customers and group customers. The person responsible for all reservations is the front office manager. Group customers have higher priority over individual customers in high season because group customers are more stable. So, the front office manager should take decisions about the reservations which can be supported by the computerized system. This system provides many tools that the front office manager could use in taking his decision for allocating rooms and reserve for groups. This system can't operate alone in a hotel because it concentrates mainly on reservation processes. The system needs an accounting system and a management information system so it can serve all the needs of the hotel effectively.

We wish to explore the financial benefits and risks associated with managing a hotel. This study explores the advantages, disadvantages, and critical success factors required to expand beyond the borders of global marketplace. We have considered few hotels in Mysore more than 3 star hotels. Extensive research has to be conducted concerning the cultural, political, and social environment.

Hotels need to deliver services and solutions focused on each customer’s needs, with particular emphasis on serving their customers more effectively. They also need to integrate three core disciplines in providing solutions and services to their customers:

- Business Integration,
- Systems Integration and Applications Development,
- Information Technology and Infrastructure Services.
II. HOTEL PROFILE-SANDESH THE PRINCE

Hotel Sandesh the Prince is a luxurious 4 star hotel in Mysore with its location as distinctive as its design and interior. Conveniently situated in the heart of historic city of Mysore, it provides a luxurious stay for a variety of tourists from all over the world.

With its majestic palaces, magnificent gardens and ancient temples, it is no wonder that Mysore has gained great eminence as a princely city. Combining tradition with modern opulence - Sandesh the Prince is reminiscent of the city’s bygone era.

The hotel is the ideal abode for those who want to fall into the lap of luxury. They seek your comfort in every detail. The 108 luxurious rooms, each with its unique view, are homely, clean and well thought out. Practicality is the prime criterion to make the guests feel at ease. A stay in their rooms can alleviate your mood and relax your senses.

A. Business Centre
Sandesh the Prince presents a lavishly decorated and elegantly furnished business center.

Mysore Silk Emporium: A very wide range of world famous Mysore silk sarees, fabrics for men and women, scarves, ties & readymade silk garments, which will be everlasting mementos of Mysore, are on display and also for sale and export.

Handicrafts Emporium: A wide range of exquisite sandalwood carvings, rosewood shade screens, engraved and inlaid tables and decorative furniture are on display and sale.

B. Hotel Amenities

- Executive Superior Rooms - King and twin beds
- Premier Rooms – All king-sized beds
- Executive Suites - All king-sized beds
- Premier Suites - All king-sized beds
- The Castle – Multi-cuisine restaurant
- The Road – Unique pub
- Sandy’s - 24/7 coffee shop
- Khedda – Biggest lounge bar
- Pool side barbeque
- The Mahal - Modernized convention hall
- The Park View - Two opulent
- The Senator - An up-to-date convention / boardroom
Ayurvedic massage parlor
SPA - Beauty zone
Children’s play area
Fitness center

C. Hotel Facilities

- 108 luxurious rooms
- 24 hours room service
- Jacuzzi in premier suites
- Wi-Fi connectivity
- Wired broadband
- Mini bar
- Hair dryer
- In-room safe locker
- In-house laundry
- Business center (24 hours)
- 24 hours hot water
- Complimentary newspaper
- Swimming pool
- Health club
- Doctor on call
- Foreign currency exchange
- Travel desk
- Flat screen TVs
- Wheelchair on request
- Weighing scale
- In-room coffee/tea maker
- Non-smoking rooms

D. Other Amenities and Features

Food fiesta:
- The Castle - Multi-cuisine restaurant
- The Road – Unique pub
- Sandy’s – 24*7 coffee shop
- Khedda- Bar lounge
- Pool Side Barbeque

The Castle is a multi-cuisine restaurant that serves an exotic range of Indian, tandoor, continental, Chinese and mughlai delicacies.

The Road takes the customer on the ride of their life - from the most sought after DJs to an ambience and décor that fits for the highway, there’s always ‘one for the road’. It is the most unique and biggest bar lounge in Mysore.

The Sandy’s is a 24*7 café – piping hot and happening. Across the world and in your plate, a continental concoction of some of the choicest snacks, shakes, and pastries are prepared.

D. Other Amenities and Features

The Khedda is a warm and welcoming themed bar. With vintage wines, premier labels and some of the finest spirits that the city has to offer, it truly is a connoisseur’s delight.

The pool side barbeque restaurant serves succulent snacks during the day and opens in time for dinner with live counters and a well-stocked bar. A beautiful cascade sets the party mood and this suave ambience can also be converted into a banquet where it can host 350 guests.

Conference and banqueting:

- The Mahal
- The Parkview
- The Senator
- The Pool area

The Mahal supports the most modern audio-visual, internet and multimedia equipment. It can accommodate 400-450 guests and is ideal for Business Conferences, Product Launches, Training Sessions and Seminars.

The Park View - Two opulent banquet halls that overlook a beautiful park and tastefully decorated and designed to accommodate 200 to 250 guests each. These are idyllic for marriages, receptions and other social gatherings. They offer sumptuous cuisine & finesse in service.

The Senator is an up-to-date convention/boardroom with a 20 people capacity that has AV equipment, Wi-Fi connectivity, stationery, computers, fax machine, photo copying facility and a laptop on request.

Social and business get together can be done amidst the blue water at their pool area. They can accommodate 350 members.

Health Club Facilities:

- The ayurvedic massage parlor
- Spa- Beauty zone
- Children’s play area
- Fitness center

The ayurvedic massage parlor offers a wide range of options from authentic Swedish massages to most traditional Ayurvedic massages like shirodhara, hot and cold stone massages, marma massages, thigh yoga lymphatic massages, sports massages, and de-toxication massages. Different type of body polishes, various body scrubs to stimulate blood flow followed by lepas and uptans (body packs) to sooth.

Spa – Beauty zone offers a very unique approach towards all grooming, relaxing, and beautification services by creating a perfect balance between power of nature and advancement of science. Most treatments work on personalized approach conducted by well trained professionals.

The children’s play area consists of cool games for kids to enjoy their time.

Fitness center – It is a hi-tech A/C multi gym with all the latest equipments and state of the art fitness modules.
III. HOTEL RESERVATION SYSTEM

Reservation is the most important part of any hotel system as it serves the commercial goals of the hotel. There are two types of customers in a hotel; individual customers and group customers. The person responsible for all reservations is the front office manager. Group customers have higher priority over individual customers in high season because group customers are more stable.

So, the front office manager should take decisions about the reservations which can be supported by the computerized system. This system provides many tools that the front office manager could use in taking his decision for allocating rooms and reserve for groups.

This system can't operate alone in a hotel because it concentrates mainly on reservation processes. The system needs an accounting system and a management information system so it can serve all the needs of the hotel effectively [1][2][7].

A. Computer Reservation System

A computer reservations system or Central Reservation System (CRS) is a computerized system used to store and retrieve information and conduct transactions related to air travel, hotels, car rental, or activities. Originally designed and operated by airlines, CRS was later extended for the use of travel agencies. Major CRS operations that book and sell tickets for multiple airlines are known as Global Distribution System (GDS). Airlines have divested most of their direct holdings to dedicated GDS companies, who make their systems accessible to consumers through internet gateways, Modern GDS typically allow users to book hotel rooms, rental cars, airline tickets as well as activities and tours. They also provide access to railway reservations and bus reservations in some markets, although these are not always integrated with the main system[3][11].

B. Origins

In 1946, American Airlines installed the first automated booking system, the experimental electromechanical Reservisor. A newer machine with temporary storage based on a magnet, the Magnetrionic Reservisor, soon followed. This system proved successful, and was soon being used by several airlines, as well as Sheraton Hotels and Goodyear for inventory control. It was seriously hampered by the need for local human operators to do the actual lookups; ticketing agents would have to call a booking office whose operators would direct a small team operating the Reservisor and then read the results over the telephone. There was no way for agents to directly query the system [14].

C. Remote Access

In 1953, Trans-Canada Airlines (TCA) started investigating a computer-based system with remote terminals, testing one design on the University of Toronto’s Manchester Mark I Machine that summer. Though successful, the researchers found that input and output was a major problem. Ferranti Canada became involved in the project and suggested a new system using punched cards and a transistorized computer in place of the unreliable tube-based Mark I. The resulting system, ReserVec, started operation in 1962, and took over all booking operations in January 1963. Terminals were placed in all of TCA's ticketing offices, allowing all queries and bookings to complete in about one second with no remote operators needed[12][13].

Online hotel reservations are a popular method for booking hotel rooms. Travelers can book rooms on a computer by using online security to protect their privacy and financial information and by using several online travel agents to compare prices and facilities at different hotels. Prior to the internet, travelers could write, telephone the hotel directly, or use a travel agent to make a reservation. Nowadays, online travel agents have pictures of hotels and rooms, information on prices and deals, and even information on local resorts. Many also allow reviews of the traveler to be recorded with the online travel agent.

Online hotel reservations are also helpful for making last minute travel arrangements. Hotels may drop the price of a room if some rooms are still available. There are several websites that specialize in searches for deals on rooms.

IV. RESEARCH WORK

A system is a group of interdependent items that interact regularly to perform a task. A computerized system is developed through a process called System Development Life Cycle (SDLC).

SDLC is a logical process used by a systems analyst to develop an information system, including requirements, validation, training, and user ownership. Any SDLC should result in a high quality system that meets or exceeds customer expectations, reaches completion within time and cost estimates, works effectively and efficiently in the current and planned Information Technology infrastructure, and is inexpensive to maintain and cost effective to enhance. It adheres to important phases that are essential for developers, such as planning, analysis, design, and implementation. The system will be deployed via the Internet.

The researchers used Microsoft Web Developer 2008 as a programming language. Microsoft Visual Web Developer was used to create web sites, web applications and web services using ASP.NET. It is an Integrated Development Environment (IDE) that provides a set of tools and utilities for developing ASP.Net 2.0 web applications. It is a part of Microsoft Visual Studio 2005 that can be used to develop powerful ASP.Net web applications using various tools for developing web applications included in .Net Framework. Visual Web Developer offers the programmer benefits of productivity and easy web site administration utilities along with wide variety of improvements that provide much better IDE. Microsoft
Visual Studio 2005 Edition includes many improvements that enable one to create the ASP.Net 2.0 web applications by using pre-built server controls and developing rich user-friendly features with few lines of code[4][5].

Since, the system will handle a large volume of data for creating accounts and hotel reservation it required a large storage in a form of database. A database is a repository of interrelated data organized by software called Database Management System (DBMS). For this purpose, the researchers used MySQL Server 2005. MySQL serves as a tool for storing record. It provides quick access to the data with the combination of Visual Web Developer for the proper display of information.

Hotel needs to maintain the record of guests and reserve rooms beforehand. Customers should be able to know the availability of the rooms on a particular date. They should be able to reserve the available rooms according to their need in advance. To make their stay comfortable, they are provided with food and other services. The record of the food taken by each customer and the services availed by the customer should be kept. These records help in generating bill [6].

A. Requirements

The hotel reservation system should be able to satisfy the following requirements:

1. The system should be able to keep the records of the guests and the room allotted to them.
2. Customers should be able to know the availability of the rooms on a particular date.
3. Guests should be able to book the available rooms online.
4. The record of food and services availed by the customer should be kept.
5. The system should be able to generate the bill for a customer.

B. Entities and Attributes

1. Guests can be of two types:
   - Family
   - Company
2. Family has the following attributes:
   - Family Head’s Name
   - Family Head SSN
   - Address
   - No of Adults and Children.
   - It has a weak entity - Members. Members have the following attributes:
     - Name (Weak key)
     - Age
3. Company has the following attributes:
   - Name
   - Location
   - It has a weak entity – Members. Members have the following attributes:

4. Room has the following attributes:
   - Room No (Key)
   - Rate
   - Type
   - Status (vacant or occupied)

5. Food has the following attributes:
   - Product ID (Key)
   - Rate
   - Type

6. Bill has the following attributes:
   - Bill No (Key)
   - Date
   - Time

7. Facilities has the following attributes:
   - Facility ID (Key)
   - Type
   - Rate

C. Relations and their description

1. Guests are allotted room from Check In Date to Check Out Date. One Guest (Family or Company) can be allotted to more than one room.
2. A guest must pay the bill.
3. Guests may use facilities. A guest can use more than one facility.
4. Guests can order more than one food item.

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Fig 6: Reservation Window
A typical hotel reservation system of various hotels is shown in the above pictures. Each guest will be given a unique ID throughout his stay at the hotel. This system also requires him to fill out certain personal details. Details like First Name, Last Name, Booking type, address, check in and checkout dates, type of rooms, number of members, purpose of stay, mode of payment, number of rooms required are to be filled out by the guest. She/he also has to give their phone number and email so that the hotel can stay in touch with them and communicate with them as and when needed[8][10].

V. CONCLUSIONS

Any management information system contains some static reports about the customers in hotel. These reports contain static data about the customers such as full name and room numbers which cannot be changed by removing or adding new feeds. The user, however, can change his password and name from the system that the reservation management gives to him. This system does not provide the managers with any kind of statistics about the situation of the rooms in hotel reservation. From our research work and observation we have concentrated mainly on the reservation process and components needed to connect the reservation system with the other systems needed by the hotel. First the reservation process is divided into two types. A group reservation and individual reservation distribution is done so that the user will not be confused and information needed from each entity differ from one another. The reservation process is provided with search capabilities. Locating rooms for the customers is one of the most important components of the systems which enable the front office manager and recipient to allocate empty rooms for customers. This reservation system also provides a single screen. For adding this to the customer, the recipient takes the bill and chooses the facilities from the available hotel facilities. By obtaining this we can conclude that effective usage of MIS data can lead to improvement in many departments thus increasing overall efficiency in the hotel.

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