1/3. PROPERTY MANAGEMENT SYSTEMS

Objectives of this lesson: After completion of this lesson, the learner will be able to:

✓ Define a PMS and explain its advantages to a hotel
✓ Explain the various modules of a PMS
✓ Explain the various factors to be considered when selecting a PMS for a hotel.
✓ Explain CRS and GDS

COMPUTER APPLICATIONS IN HOSPITALITY

The application of computers in the hospitality sector is of great importance because this area offers the greatest potential for improvement—cost reduction, better management information, reduced training and manpower costs and prospect of more interesting work. Today, even smaller hotels have turned to the use of computers to manage their enterprise.

PROPERTY MANAGEMENT SYSTEM (PMS):

In recent times, hotels have started using PMS in order to manage and respond to guest needs efficiently and effectively. A PMS is a single site version and is need-specific to an individual property.

A PMS is a generic term used to describe the computer applications (computer hardware and software) in managing the interface of various departments in a hotel in order to manage the property effectively.

A PMS is important and essential to front office operations in modern hotels. It includes the process of reservations, registration, guest accounts, guest check in and checkout, handling discounts and allowances and the night audit. Interfacing, electronic sharing of data of departments such as Front Office, F&B through points of sale, Maintenance through monitoring of energy and heating and cooling systems and Security through control of guest keys are a few of its applications in a hotel, mentioned below:

- Energy Management System (EMS)
- Material Management System (MMS)
- Point of Sale (MICROS)
- Human Resource Information System (HRIS)
- Accounting System
- Call Accounting System (CAS)
- Management Information System (MIS)

BENEFITS OF A PMS:

✓ The operations are improved by the reduction of repetitive tasks.
The internal operations of a hotel can be kept in a standardised manner making it easier to control which would be difficult in a manual system.
The information needed by management to make decisions is current and accessible.
Better internal control can be exercised with quicker and current information being available.
Information is more difficult to compromise with user records being maintained by the system.
The service provided to the guest can be improved with regard to timing and accuracy of information and with greater levels of personalisation.

PMS Modules:

A. FRONT OFFICE SYSTEMS

1. RESERVATIONS :

When a prospective guest calls to make a reservation, this is the module of the PMS that is accessed. The programme allows any user to enter the details of the guest reservation, change the details or simply cancel the reservation.

a. The clerk first checks the availability of the room and type requested. The system will indicate whether the room is available matching the guest request. If yes, the system will require the clerk to check the room rates by accessing the “Rates Query” section of the programme.

b. Then the clerk enters the details of the guest in a Profile - full name, address, contact details, etc.

c. Next it moves to entering the details of the current reservation - date of arrival, departure, room type, room rate, number of guests, flight details, special requests and deposit requests or credit card details for guaranteed reservations.

d. In case the guest is part of a group, the rate code specified for the group will be displayed. If the guest is coming through a company or for a conference for which a special rate has been set up, this special rate would be picked up by the system. The same would happen for special packages or promotional rates set in the system which would also show the complimentary breakfast or airport pick up included in the rate.

e. If the guest is being reserved through a travel agent, this information would also be incorporated and automatically linked to the reservation. The ‘commission deducted’ filed will record the amount of commission that the travel agency has deducted towards the deposit sent. This will prevent the hotel from paying more than the amount of commission agreed upon.

f. If the requested room is not available, the guests name may be placed on the waiting list.

g. During certain seasons or periods a minimum length of stay is required from the guest in order to take the reservation- say a festival or a holiday period. In this case if the guest reservation adheres to this minimum requirement only then will the system allow for the reservation to be made.

h. In the ‘deposit requested’ filed the FO clerk will enter the amount of deposit the guest is required to pay by a cut-off date. This is also mentioned in the confirmation letter despatched to the guest. This helps to keep an eye on deposits received or still pending
against reservations. Once the deposit is received it is clearly displayed in the reservation.

i. Specific confirmation letters can also be designated and despatched for the reservation. The letters are typically printed at the end of the day.

j. Special requests regarding room features may be noted in the guest profile for proper allocation at check in.

k. Sharer reservations are possible when two or more guests will be occupying the same room with different folios. Here separate reservations, confirmations and folios will be generated along with separate registration cards.

l. Another PMS feature allows the clerk to copy the reservation information from one reservation to another - this is useful when several people from the same company are making separate reservations.

m. When a reservation must be cancelled, it is simply a job of using the ‘Cancel’ function. The system will retain the cancellation on the file till the arrival date, just in case the guest shows up. If the guest arrives, the clerk can simply access the cancelled reservation and give the details of the cancellation request made by the guest. In case rooms are available, he can check him in after reinstating the cancelled reservation with a few steps involved.

n. A ‘transfer’ refers to the ability to transfer a reservation and deposit to another hotel in the same chain when using a multi-property system. So, by simply typing in the information, the reservation screen displays the request for which the clerk has booked a room, block a specified room and set up a confirmation to be sent. All these steps in a manual system would require greater effort and time and manpower.

2. GUEST HISTORY:
   a. Personal history on each guest is compiled, maintained and updated automatically. The guest history saved would be the most recent one. This would include guest profile (name, VIP status, residential and company billing addresses, contact details, passport number, guest loyalty membership numbers, etc.)
   b. Remarks related to likes and dislikes, arrival and departure dates, room type, room number, mode of settlement, etc would also be included.
   c. Guest history is an important tool for guest satisfaction index. Since this is electronically monitored, the front office has enough information about the guests who has previously stayed in the hotel, to upsell the hotel products effectively and to ensure greater personalised service thus ensuring greater guest satisfaction.

3. REGISTRATION: This is linked by information transferred from the reservations module. Pre-registration, quick guest room assignments and online verification of room status increase the efficiency during the check in process. The information gets updated automatically which further speeds up the process of handling guest check in, issuing of key cards and card keys as well as handling group arrivals.

4. GUEST ACCOUNTING & CHECK OUT: This provides accurate online posting of guest charges when interfaced with the POS. Split charges and multiple folios with specific billing instructions that have been set for each guest speeds up the accounting process. Master and Incidental folios can be monitored easily and effectively. Foreign exchange vouchers control
flow of foreign currency and helps in handling settlement of guest folios with different payment methods. Guest check outs can be handled more efficiently and smoothly.

5. **ROOMS MANAGEMENT (HOUSEKEEPING):** this module allows for constant updating of room status and maintenance status of all room types in the hotel. This information can also be communicated and made accessible for confirmation to the Front Office. It can display work area allocations of different staff on the floors and can create room occupancy reports and other reports required by housekeeping. It can store statistics related to occupancy with room history records that can help in future planning and in providing better maintenance services to keep rooms in shipshape condition.

6. **NIGHT AUDITING:** the most important function of daily operations of a hotel is the night audit. This process posts room tariff and taxes automatically on the guest’s folio and helps confirm and reconcile the final balance of the entire day’s transactions. During the night audit procedural rights of front office staff are limited and therefore the PMS needs to have features that can allow other non-accounting tasks to be carried out during the night audit process.

7. **SALES & CATERING (S&C/BANQUETS):** This function of the PMS deals with banquet activities and reservations regarding the booking status for any function space, specific occasions as well as days and time of the booking. More advanced systems also record the number of pax and employee assignment. The most important function is billing or posting of transactions to the Sales ledger which can be handled efficiently by the F&B staff.

**B. BACK OFFICE SYSTEMS OF THE PMS**

Other modules used by the hotel management for operating efficient hotel operations usually include:

**i. MATERIAL MANAGEMENT SYSTEM-MMS (Stores & Purchase):**
This covers the entire material management operations such as requirement planning, purchase, receiving of stock, costing, etc. The system also provides information for effective decision making and budgeting.

- Purchase requirement is effectively managed helping in better management.
- It stores the history of purchase vendors in order to efficiently study cost analysis for lower purchase costs.
- It gives automatic reminders on pending purchases which is helpful during high occupancy this ensures orders for timely supplies.
- Easy monitoring of stock.
- Assists management in making effective purchase in relation to proper storage area.
- Provide for automatic stock accounting details.
- Facilitates on the spot checking of stock.
- Facilitates comparison of market trends for analysis and decision making.

**ii. MANAGEMENT INFORMATION SYSTEM (MIS):** the MIS should provide statistical information to the management to assist in decision making and revenue control.
• MIS provides the database regarding forecasts and budgets which helps management in establishing room rates.
• Comparison of budgeted figures along with actual figures established by sales & marketing department in relation with front office helps the management to address the problem in case of losses.
• An MIS should provide data which is comprehensive, accurate and detailed with business and sales analysis to ensure increased revenue and higher occupancy.

iii. FINANCIAL ACCOUNTING SYSTEM: this module provides information required for basic accounting as well as financial management of the hotel. Its main features are:
• Integration of account receivable, account payable, material management, ledgers, and payroll in the financial accounting system.
• An accounting system facilitates the administration in audit reconciliation on a daily basis, comparing of cash with raised vouchers, etc.
• Monthly information regarding balances, profit and loss statements is also prepared.
• Provides timely updated and accurate financial information to accounts receivable for future financial control.
• Forecasts daily cash flow for better cash management.
• Comparison of budgeted to actual revenue and related expenditure is efficiently managed.
• Timely financial statement of account is made available.

iv. F&B CONTROL SYSTEM: this is the most important area of concern as a major POS which can raise revenue and create a lot of savings through control of F&B by minimising wastage of material.
• An efficient control system should establish standards of raw material usage in order to minimise wastage.
• This should highlight raw material consumption reports in case consumption is exceptionally high.
• It should automatically pick up sales details for the POS system.
• This should also control and check beverage consumption through the POS.

v. HUMAN RESOURCE INFORMATION SYSTEM (HRIS): the human resource of the hotel is the most important and the most expensive asset. A good HRIS should integrate the requirement for effective career planning, personnel administration, and payroll information.
• The system should include comprehensive data regarding personnel career development as well as future manpower requirements.
• Should facilitate extensive reporting on appraisals.
• Should facilitate a complete database on leave and attendance.
• Should facilitate comprehensive and detailed payroll system with automatic salary calculation and printing of payslips.
C. MISCELLANEOUS FUNCTIONS OF A PMS

a. HOTEL SECURITY: this includes electronic locks and computerised card systems.
   ✓ Other locking systems such as recording signatures, fingerprints (for biometric scanners and access), and attendance of employees are all a result of technology.
   ✓ This also facilitates guest room video check in and checks out in some hotel properties.
   ✓ Telephone services, hotel security alarms, guest’s wakeup call services are all managed by telephone operators but are an important part of hotel security.
   ✓ Energy conservation features may be associated with the computerised key system to ensure like the light connections being incorporated with the card key when placed in a slot.

b. ENERGY MANAGEMENT SYSTEM- EMS- (Engineering &Maintenance): an EMS is used to keep track of energy consumption as this provides a more effective control by highlighting excessive consumption an important application of this is in monitoring and adjusting lighting and temperature requirements in guestrooms and public areas of the hotel.

c. TV INTERACTIVITY: through this interactive system guests can view and have access to their favourite programmes at their convenience. The tv can also be interfaced with the telephone and front office for viewing their folios and even settlement. The TV can also be used for accessing local or city information in many hotels.

d. E-CONCIERGE (Electronic Concierge): this facility helps the guest to make a multimedia graphic and sound assisted virtual tour of the hotel. This also provides and facilitates a virtual tour of the city, local areas and attractions, restaurants and shopping centres in addition to guest rooms. This may even assist a guest in making reservations at local restaurants and theatres, etc.

e. POINT-OF-SALE (POS) SYSTEM: a POS system is made up of a number of terminals located at various outlets or points of sale in the hotel. Each POS terminal contains its own input and output components which are interfaced with a remote central processing unit. The interface allows the electronic data to be processed, and transferred to guest folios when required, thus reducing the time required to post a charge in the appropriate guest folio and recording of the F&B sale at the same time.
   a) The essential information input at the POS is the identity of the server, location of the customer (table number), number of covers and menu items being ordered.
   b) This order is electronically transmitted to the kitchen where it is printed as a KOT. This reduces the number of trips of the server/waiter to the kitchen.
   c) An additional function could be that the order for hot items can be printed at one location and that for cold items at another location.
   d) The prices of all menu items, food and beverages, can be stored allowing for printing or settlement of the check.
   e) When the guest settles the check, the settlement method (cash, credit card, city ledger or room settlement) can be entered and specified from the terminal on the check.
   f) At the end of the shift, a server can obtain the report of all unsettled or open checks. Usually all checks are required to be settled or closed by the F&B supervisor.
g) Each check raised for a room settlement (for an in-house guest) should be signed by the respective guest.

h) A credit card EDC (Electronic Data Capture machine) will have all the details of all credit card sales.

i) Once all checks are settled, a check settlement report showing details of total sales and its breakdown will be printed. This report will be the basis of balancing of F&B sales during the night audit.

f. CENTRALISED RESERVATION SYSTEM (CRS):

A CRS is used for a **chain or group of hotels** to enable the **sale of their rooms more effectively**.

- The CROs (Central Reservation Offices) are linked for an effective and real time management
- It primarily works on WAN- Wide Area Network
  
  Examples are:
  
  MARSHA, TAJ, Leading Hotels of the World, WELCOMNET, Holiday Inn World Wide, OCC (Oberoi Call Centre), and more
- The CRS can operate in two ways. One, it can be a CRS for **one group of hotels** in different locations (affiliate members). Second, it can sell **rooms belonging to different hotels** which are not connected or linked to each other but use the services of the CRS to sell their rooms on a wider scale thus reducing their investment and reaching a greater market which may not have been possible on their own.
- All properties featured in the CRS database can be accessed by a search criterion- this means that a reservationist can assure customised service based on the needs of a prospective client. Hotels fitting in the search criteria and displaying availability for the requested dates will be displayed on the screen. This enables the reservationist to offer a hotel that may be a better option for a scheduled date.
- Repeat guest history data for each hotel can be stored in the CRS. The past stay information on each guest history is updated at the time of the last departure. When the guest wants to return to the same hotel, this data can guide the reservationist to offer appropriate rooms.

**SELECTION OF A PMS**

Since the PMS is a capital investment, great thought goes into the decision for the shift of a manual working system to a fully automated one.

**STEP 1: NEEDS ANALYSIS**

It includes such issues as analysing the ease with which the telephone system can be used; the availability of room status; the length of time taken to complete a reservation request; analysis of needs includes such issues as how do the F&B report guest charges? How does Engineering monitor and control energy usage in guestrooms? etc. Similar information is researched and various operational and administrative needs are combined to determine which computer application would be appropriate for the property in question. So, the needs analysis enables to know what is needed and what is not needed and will help choose from the many PMS available in the market.

**PROCEDURE FOR PERFORMING A NEEDS ANALYSIS:**

A. Select **a team** to analyse needs.

B. Analyse the **flow of guests** through the lodging property:
C. Analyse the flow of information from other departments to the front office.
D. Analyse the administrative paperwork produced in other departments.
E. Review information in steps B, C and D above.
F. Evaluate the needs that have been identified, such as control reports, communication, and administrative paperwork produced in other department, etc. in terms of importance.
G. Combine needs to determine desired applications.

STEP 2: SOFTWARE SELECTION

Today, software is available in modules to cater for different areas in a hotel.

- Based on requirements based on the conclusion of the need analysis in step 1, a hotel may go in for the entire PMS or parts of it, i.e. certain modules. Many hotels combine modules for different departments from various PMS available. A hotel may have the rooms’ module of Fidelio, the payroll and accounting module of Shawman, and so on.
- Proper software selection is important as it involves heavy investment.
- It should be configured or customised as per the need of the hotel.
- Other features of a software that should be considered are:
  a. Growth and flexibility: it should be able to handle present needs and grow with the hotel; i.e. can be added on with increased number of services.
  b. User friendliness: should be well designed with clear menu prompts, self-explanatory input screens, simple error correction, should require minimum training, etc.
  c. Operating system should be carefully selected and compatible with the hardware.
  d. Multi-user capability: several users can have access to and enter data at the same time.
  e. Report generator: to meet special requirements of the hotel those are meaningful to management.
  f. Stability: PMS should be able to operate without crashing and causing loss of information.
  g. Secure: the PMS should be able to incorporate security needs of the property-establishing user rights, tracking changes with user ID, etc. in order to establish accountability of actions of the users.

STEP 3: HARDWARE SELECTION:

Hardware selected should be appropriate to run the selected software with the basic concept to:

- Processor speed – how fast a CPU makes calculations per second
- Disk drive: in megabytes is the access time- the time taken by the processor to retrieve information from the hard drive in milli-seconds.
- I-O ports (Input and out put devices): keyboards, printers, monitors, mouse, modem, CD drives, etc.
- Other supplies: paper, ink, toner, CDs, DVDs, etc.
Other factors to keep in mind are:

- **Positioning of hardware:** this is based on the workflow analysis done during the needs analysis.
- How does it benefit the guest? Who will operate it? Who all will require access to the system at that position? And so on.
- **Climatic conditions:** whether location will be where air-conditioning is required, especially in back-of-the-house areas?
- **Ergonomics:** ergonomics is the study of the psychological and physiological effects of designs of equipment and other work conditions on people in the workplace as these affect productivity.
  For example, glare and flicker from the cursor, a flashing point on the monitor that indicates where the data can be entered, can cause eyestrain. Neck pain may result from improper positioning of the monitor, extreme pain in finger joints caused to excessive use of keyboard, and so on.

**Note:** The form of computers used today may vary from a **desktop p.c.** to a **laptop** for check in; **tablets** are being widely used in guest service while **smart phones** are also being widely utilised by hotel management today to provide the latest technology for the convenience of the guests.

**STEP 4: OTHER CONSIDERATIONS:**

a. **Vendor claims:** (claims made by the supplier) One may inquire about the product from current users whether they are satisfied using their system.

b. **Installation plans:** Proper planning of installation is essential for maintaining guest satisfaction and employee morale. One must have a complete plan laid out for hardware and questions such as who would be installing the hardware and cables, etc. should be clearly identified.

c. **Training:** Is classroom and on-the-job training provided by the vendor or not? If yes, is it charged for separately or is inclusive in the price quoted? Whether a training module is included or not?

d. **Documentation of procedures:** Clear-cut procedures and instructions, guides and manuals provided- yes/no?

e. **Back-up power supply:** Provision of UPS sources- yes/no?

f. **Maintenance agreement:** The cost of repair and replacement of hardware and software; provision of emergency services should be considered. Annual Maintenance Contracts- AMC- may be a good idea to keep the system functioning smoothly.

**STEPS: FINANCIAL CONSIDERATIONS**

The following should be considered:

- The decision regarding option of purchase or rental of a PMS since it is a heavy investment it can tie up cash flow of an organisation.
- If cost benefits are not realistically projected, profit may be difficult to come by.
- Analyse the savings in terms of overtime paid to employees, losses due to late charges, cost of marketing, database collection, etc.
Advantages of outright purchase as opposed to staggered payments (instalments) should be considered. There may be discounts offered for outright purchase in cash.

Advantages of lease-application of leased payment to purchase price, tax advantages of leasing, etc.

GLOBAL DISTRIBUTION SYSTEM (GDS):

✓ A global distribution system (GDS) is a network operated by a company that enables automated transactions between Third-parties and booking agents in order to provide travel related services to the end consumers.

✓ A GDS can link services, rates and bookings consolidating products and services across all three travel sectors: i.e., airline reservations, hotel reservations, car rentals, and activities.

✓ GDS is different from a computer reservations system which is a reservation system used by the respective vendors. Primary customers of GDS are travel agents (both online and office based) to make reservation on various reservations systems run by the vendors. GDS holds no inventory, the inventory is held on vendors reservation system itself. A GDS system will have real-time link to the vendors’ database. For example, when a travel agency requests a reservation on the service of a particular airline, the GDS system routes the request to the appropriate airline computer reservations system. This enables a travel agent with a connection to a single GDS to choose and book various flights, hotels, activities and associated services on all the vendors in the world who are part of that GDS.

✓ Various tourism-linked services, one of them being hotel accommodation among others such as air tickets, car rentals, etc.

✓ Usually the GDS terminals are with travel agents. They may be linked to the GDS through a dial-up mode or a leased line.

✓ All GDS are linked through apparent satellite.

- Examples are, Apollo, Galileo, Sabre, Amadeus, Abacus, WorldSpan, Fantasia, and more

The relationship of the PMS, CRS and GDS can be shown thus:

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Hotels                                      Travel Agent
                                    Sales Office
                                      PMS       CRS       GDS
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ROLE OF INFORMATION AND TECHNOLOGY IN HOTELS

It would be an advantage to the hotel industry to find a way to combine time with technology. New hotels are finding it advantageous to incorporate information and latest technology in their operations.

1. Internet in the hotel guestrooms: hotel guests are provided full access to the Internet on their in-room television. Innovative infrared wireless keyboards may be used. A web browser, e-mail connection, and on-line multi-lingual help can be provided to maximise Internet experience at the
2. **TV interactivity:** Through this concept, various guests can have access to the same movie at different times according to their own convenience. Another use is that the guest can refer to their TV sets at any time for viewing their bills, credit limits and expenditures, even local and city information, etc.

3. **E-concierge:** this facility empowers the guest to take a “multi-media graphic and sound assisted tour” of the city, shopping centres, etc. while sitting in his room. This may include making reservations at restaurants, operas, etc.

4. **Other technologies:** these may include the use of voice-over Internet Protocol (VOIP), video conferencing, staff scans, etc. and many other services.

**1/3 Assignment:**
1. What are the benefits of a PMS for the hotel?
2. What are the disadvantages of a PMS for the hotel?
3. Expand and explain:
   a. CRS 
   b. CRO 
   c. GDS 
   d. RFID and its use in hotels 
   e. Desktop pc 
   f. Laptop 
   g. Tablet 
   e. Smart phone 
4. List the main steps that any property should undertake when selecting the right PMS.
5. Explain the importance of a **needs analysis** when selecting a PMS.
6. What do you understand by the term ‘ergonomics’? Give five examples also to support your answer.
7. Give 5 examples of PMS used by hotels today.
8. **Research and state the latest ways in which technology is used by hotels to provide services to Guests and to achieve greater profitability and improved guest satisfaction.**

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