

# Key process to use Information System in Bangladesh Hospitality Industry

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A thesis submitted to the Department of Computer Science and Engineering  
in partial fulfillment of the requirements for the degree of  
B.Sc. in Computer Science

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# Declaration

It is hereby declared that

1. The thesis submitted is our own original work while completing degree at Brac University.
2. The thesis does not contain material previously published or written by a third party, except where this is appropriately cited through full and accurate referencing.
3. The thesis does not contain material which has been accepted, or submitted, for any other degree or diploma at a university or other institution.
4. We have acknowledged all main sources of help.

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## Abstract

Technology has helped humankind replace expensive human labor with technological labor. This helps reduce labor costs but also helps avoid customer service issues. It's currently utilized to help people handle data more efficiently and effectively. The hotel business has progressed in terms of technology throughout time. Improving corporate processes, reducing competitive disadvantages, and leveraging the benefits of strategic planning in the IT industry have all been popular options in recent years. However, the focus of this article is on developing a practical IT strategic plan for the hotel sector in order to make the business process run more smoothly and to make the environment more user-friendly for consumers. The method employed in this research article is based on Ward's framework for IT strategic planning (2002). The thesis has also used several measures to analyze every aspect of the Hotel business environment. The paper has focused not only on the external business procedure but also the internal business atmosphere of the Hospitality Environment. The consequences are the Implementation of a Mobile Web-based application, CRM (Customer Relationship Management and a Knowledge Management System For a strategic planning Hotel Industry. Customer relationship management (CRM) systems, mainstream CRM features and capabilities, CRM KPIs, and vendor selection are all covered in this white paper. It also entails deciding on corporate application software and resolving issues with vendor solutions and client requirements. This paper provides a survey of CRM features and metrics based on small and medium-sized manufacturers. A comparison table has been created to help the company choose the right provider.

**Keywords:** Hospitality Industry; IT Strategic Planning; CRM; External; Metrics; Features; Comparison

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# Nomenclature

The next list describes several symbols & abbreviation that will be later used within the body of the document

*ACSI* American Customer Satisfaction Index

*ADR* Average Daily Rate

*BI* Business Intelligence

*CRM* Customer Relationship Management

*ERP* Enterprise Resource Planning

*GDS* Global Distribution System

*GL* General Ledger

*IT* Information Technology

*KM* Knowledge Management

*NPD* New Product Development

*RevPAR* Revenue Per Available Room

*SEM* Structural Equation Modeling

# Chapter 1

## Introduction

The world is getting developed day by day and every country wants their country to be developed and keep pace with the world. If we talk about the hospitality areas, we all know people are traveling to many countries every day to enjoy the beauty of that country, But sometimes we see that the tourists and the management face some difficulties from reservations to checkout. IT improves Hospitality Tourism Organizations' capacity to manage their resources, promote efficiency, convey policy and advertise their products, and form relationships with all of their stakeholders, including consumers, suppliers, the public sector, and others. Information technology is significantly used in the hotel and tourism businesses. Customers and businesses may profit from advancements in communication, booking, and guest service technologies. Technology allows for ongoing touch and streamlines the tourist experience from reservation to checkout.

In Bangladesh, this problem is one of the major problems. As we are not developed like other countries, tourists sometimes face difficulties. They have to research a lot before visiting new places. They have to search for hotels and other facilities on their own which is very difficult for a person who is new to that place. This is the reason we are proposing an IT-based management system in the hospitality areas. The hospitality industry is one of the major contributors to the economy of developed and developing countries and with the introduction of IT in this sector we can overcome this kind of problem. We want to use CRM for the hospitality industries of Bangladesh as it is not introduced properly to our country.

CRM is more crucial than ever in service sectors like hotel, which provides lodging (and related auxiliary services) to tourists while they are away from home. Hotels in Bangladesh must spend a significant amount of money to construct rooms and facilities before they can serve guests. If a room isn't booked or sold out for one night, it can't be kept as inventory and sold the next day like other items. As a result, the lodging industry's rivalry focuses on retaining consumers as much as possible. Hotels are frequently on the lookout for cost-effective and efficient ways to discover, select, recruit, grow, and maintain a steady stream of loyal and lucrative clients. Information technology, on the other hand, provide businesses with new ways to improve consumer connections. CRM applications comprise all of the processes, software, and, in most cases, Internet capabilities that assist hotels manage customer interactions in an orderly manner.

## 1.1 Research Problem

Over the last decade, information technology has played a significant role in the hospitality and tourism industries. Technology has aided in the reduction of expenses, the improvement of operational efficiency, and the enhancement of services and customer experience. Improved communication, bookings, and guest service systems may benefit both customers and companies. But in Bangladesh, this system has not been introduced yet. That is why the earnings from this sector can play a good role in our economy. Lack of technical support, less Management system user capabilities are the main reasons behind these problems. We are mainly focusing on CRM systems that are not introduced in our hospitality industries yet. Though it is highly used in developed countries, Bangladesh, being a great spot for the tourist, is not introduced with this properly.

## 1.2 Aims and Objectives

This research aims to develop the hospitality sector by using KM, CRM and mobile web applications. In the course of technological progress, IT becomes increasingly important and more visible in innovations such as new features in hotel management software or applications that make it easy for guests to check in or check out. A company's vision and goal can be aided by information technology. Furthermore, effective planning is required since failure to do so might be catastrophic owing to the difficulty in implementing IT Strategic Planning in a company/organization.

1. Making reservations and bookings faster and easier than the current traditional process.
2. Enabling the management to provide superior service to the customers.
3. Improving Communication between the management and customers to make them convenient.
4. Implementing easy access to the customers for information and making requests.
5. Using a CRM system to help hotel management to match the expectations of the Clients.

# Chapter 2

## Related Work

R. Bose and V. Sugumaran (2003) presented a combined structure based upon knowledge enabled CRM method [2] for a better and consistent communication with each consumer. They proposed a customer centric system which combines classic knowledge management (KM) ability and necessary CRM affair. The architecture is divided into four units: (a) international and external data sources, (b) knowledge acquisition, (c) knowledge repositories and (d) knowledge utilization. This system uses XML design to reduce information trade between different applications. Customer information stored in XML databases encourages different organizations to view datas from distinct parts or individuals. However there are few limitations regarding the system. Developed DTD's needs to be done in order to record useful information for detailed analysis, synchronization between business operations and knowledge databases and the prototype doesn't allow third party interface. This paper gave a simple structure to blend traditional CRM features in a marketing environment.

This paper [6] utilizes Apriori algorithm for mining customer knowledge for tourism new product development. This model is used by Phoenix Tours International in Taiwan for mining consumer knowledge. Extracted results from data mining are categorized into knowledge patterns, rules and knowledge maps for better understanding. These results help to identify the attributes customers are looking for. From the extracted customer knowledge various schemes and plans can be implemented. Corresponding to each customer's data that case firm can sell and promote products and services. This study applied database marketing for improving association and using Iot for building data mining skills for better research and sustainability for NPD and CRM.

Fingerhut Inc., was the second largest mail order company in the US (1999) which closed down after great loss but again re-established (2002) under a new team. This case study [7] concludes the triumph and the impacts of CRM and BI systems. Fundamental benefit from analyzing success and failure inside a company helps to associate a variable in the three mentioned scenarios : (a) success or failure after application (b) success or failure after eliminating and (c)removal or restoration of any variable after being applied or removed. Datas were collected through interviewing prior executives or employees. The success, failure and rebirth of Fingerhut verifies the need for business intelligence for CRM foundation. It is now an independent company that achieved tremendous success over time using the same business model. This case study showed the opportunities for Fingerhut using business intelligence

and CRM.

L.Y. Cheng, C.C. Yang and H.M. Teng (2012) illustrated a prime study [8] of developing unified CRM execution for service industries. CRM incorporates (a) building customer retention and faithfulness (b) generating potential value of customers (c) tailored products and services and (d) increasing customer related profitability (Jutla, Craig, Bodorik, 2001; Lin Su, 2003; Lin et al., 2006; Stone, Woodcock, Wilson, 1996). A survey of senior employees or managers in Taiwan led to the creation of this research. Three industry managers (two leaders of CRM departments in the banking and insurance industries, and a consultant with extensive experience managing CRM projects) participated in the survey questionnaire to increase dependability and rationale. To investigate the connection between gratification and the covariates the SEM-based ACSI model was used. This research has clarified concepts for adopting a CRM model to assist managers and practitioners in realizing the need of upgrading manufacturing and attaining mission goals by deploying a CRM system.

The relationship between CRM and profitability, according to the author [9], can be viewed from the perspectives of organizational intelligence, customer intelligence, and supplier intelligence, in that CRM assists in the understanding of customers', suppliers', and organizations' perspectives, resulting in the identification of various cost-cutting opportunities. Decreased time spent handling client transactions, reduced time spent creating and aggregating sales forecasts, and increased lead generation capability as a result of customer loyalty are just a few of the cost savings. He went on to argue that the CRM plan would fail if information technology was not leveraged wisely. Effective use of technology in marketing is crucial in the hotel industry for receiving the correct information from the right people at the right time in order to make the best service selections possible.

CRM contributes to higher performance in the hotel business, as per paper [10]. Due to the nature of CRM, which encourages the following fundamental business success elements: the drive for improved service quality and customer satisfaction, the use of technology to raise satisfaction, and complete continuing contact between the two parties, this will be possible. Continuous service quality assessments have become an important part of ensuring service success.

CRM is increasingly seen as a means to operate a hotel, rather than merely a technology to use, according to the author [1]. A tool is implemented on a "need-to-know" basis as a result of this remark. Only during the period that the tool is in place will customer loyalty and profitability be obvious. However, as this study discovered, when CRM is used to operate a hotel, the performance factors will be continuously enjoyed. As a result, rather than viewing CRM as a basic tool that is used "as needed," firms should consider it as a day-to-day strategy that is fully integrated into the business. CRM should be incorporated into both the hotel's internal and external activities.

In the research paper [3], the authors emphasize that firms are becoming more conscious of the significance of bringing their consumers and extended company business divisions closer together. The CRM objectives are to increase business opportunities by improving the process of communicating with the target consumer to provide the right offer for each customer through the appropriate channels at the perfect time, as well as to improve the process of communicating with the right customer to provide the right offer for every customer through the right channel at the right time.

Organizations can benefit from increased customer retention and loyalty, the ability to retain loyal and profitable customers to increase profitability, increased individual customer margins while offering the right product at the right time, constructing value for the customer, and acquiring the right customers based on knowledge or learned characteristics are all benefits that drive productivity and high margins for businesses.

The author [5], proposes that hotels have several departments that come into direct contact with consumers while providing service, known as touchpoints and that these encounters may yield a wealth of information about the customer. CRM has as its goal the utilization of client information gathered via numerous touchpoints to aid in the establishment and maintenance of long-term customer relationships. The study also suggested that a customer's likelihood of staying with a company for a long time is determined by how satisfied they are with the service and overall quality.

Successful CRM implementation, according to the authors [14], allows for improved personalization of offers through effective communication and timely feedback to consumers. CRM aids in the development of a one-to-one relationship with customers, lowering expenses and increasing profitability.



# Chapter 3

## Work Plan

The reason we are using a CRM based server and web project is to remove the current problems and drawbacks of the IT based tourism and hospitality system. So, it becomes much more secure, effective and also trustworthy to both consumers and service providers. Our proposed CRM server makes the tourism sector much easier and consumer friendly. However we are implementing a Customer Relationship Management Server system basically for transparency and also for better outcome for the hotel management. Our detailed workflow procedures are stated below-

1. On the user side, the user must first login to his account or create a new account.
2. For the perfect hotel booking user will search for the area where he wants to book the hotel.
3. Outputs will show only the hotels that are available in real time. User will choose the desired hotel and also the output will show which hotel rooms are available right now to the user.
4. The server will be updated with each minute and will show the real time available rooms
5. From the CRM server it will be managed whether the room is available or not in real time.
6. If the user chooses the room he wants then the estimated cost of the room and the payment procedure will be shown at the interface
7. The payment has to be done online and also by the transaction a signal will go to the CRM server that the room has been officially booked by the user.

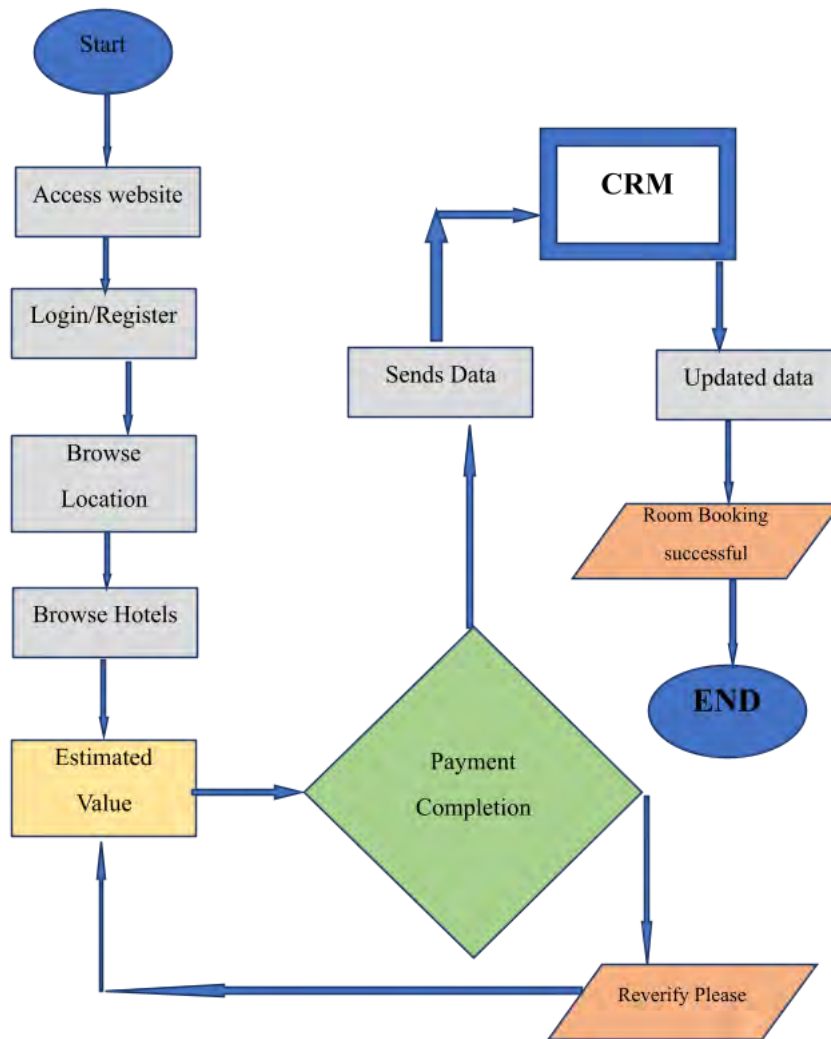


Figure 3.1: CRM Software Simulation

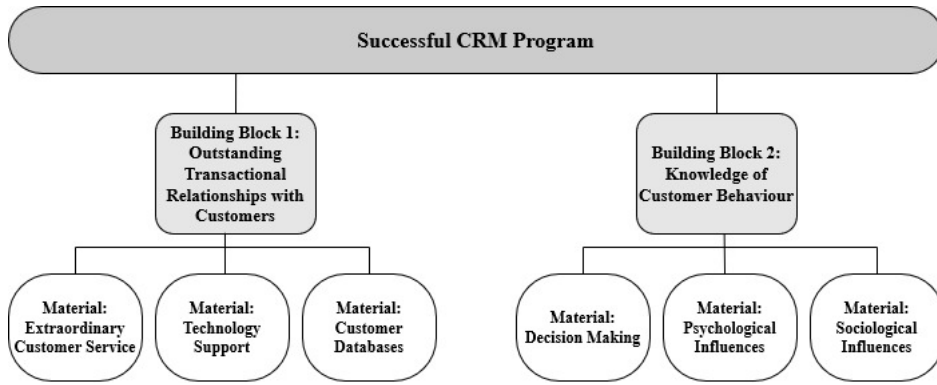


Figure 3.2: Components of CRM

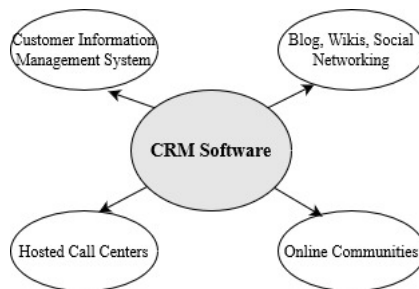


Figure 3.3: CRM Networking Process

# Chapter 4

## Research Methodology

For the research we provided a case study and the method of retrieving and storing Data using CRM

### 4.1 Bangladesh Tourism Industry and Why This Study Matters

The hospitality and tourism business is critical to a country's economic development. The hotel business is one of the most important industries in any country, and it has the potential to assist the country to improve its economy. The concept of tourism and other hospitality enterprises was born with the goal of presenting the country's beauty while also preserving it for the future. Tourism and hospitality are particularly beneficial to develop nations, and people are looking for possibilities, despite the numerous obstacles that come with globalization. Tourism is receiving more attention on both sides of the globe. The continual expansion is what genuinely accounts for the basic assumption that tourism and hospitality sectors play a significant part in guiding the success of an economy. Essentially, the numerous tourist and hospitality activities available in the business provide a considerable boost that might result in increased economic development, disposable money, leisure time, political stability, and aggressive tourism campaigns. As a result, developing nations are redoubling their efforts to address their tourist and hospitality challenges. Bangladesh is a growing country in Asia that attracts visitors due to its tourist potential. Bangladesh has also proven to be a popular tourism destination. However, in terms of the worldwide tourist market, it currently holds no important place. The general goal of this study is to identify the concerns and obstacles that Bangladesh faces in terms of tourist marketing (Nazrul, 2009). The hotel industry is facing some difficult decisions.

The first is the globalization problem, and the second is the economic recession challenge. The majority of developing countries are concentrating on efficient measures to resurrect their economies. The majority of the issues that various countries confront in tourism appear to be related to solid wastes and their management. Organizations must make decisions in terms of the economic, social, environmental, and institutional elements of solid waste management (Visvanathan and Alamgir, 2005). The tourism and hospitality industry's continual growth may properly promote national celebrations and heritages as part of the tourist offering to welcome

international visitors into their culture and leave a lasting impression. This concept has the potential to boost the country's rate of return (Rahman, 2008). The utilization of secondary data is the recommended approach in the study. The suitable strategies that were implemented by various hospitality businesses may be a vital instrument to assist the industry to breathe even amid the quick changes in terms of globalization via the implementation of the method. The approach will allow the research to assess the success of each methodology and, as a result, the study will be able to create its own analysis on the topic of tourist sector growth.

Moreover, the hotel management issues in tourism plays a vital role. The recent activity and occurrence depict us the necessity and the importance of sound and efficient hospitality management. Recently, December 2021, we can notice the inconvenience of tourists in Cox's Bazar, many people were roaming around the beach and roads due to unavailability of hotel rooms in Cox's Bazar. The overcrowded places became unable to attract enough tourists and also drew a bad attention to the tourist to discourage them from visiting the place further.



Figure 4.1



Figure 4.2: After a long pandemic, Cox's Bazar hums with holidaymakers. (Sankar Barua Rumi, Cox's Bazar correspondent, bdnews24.com Published: 17 Dec 2021 07:46 PM)

## 4.2 Creating CRM

A CRM system that has been properly deployed provides for easy interaction with current software and systems, boosts productivity in time-sensitive circumstances,

and promotes corporate operation, reliability, and dependability. A CRM system may assist a firm in discovering critical client behaviors, developing efficient marketing campaigns/strategies, and boosting the rate of business growth by utilizing the built-in software functions.

Mainstream suppliers know that to construct an effective CRM that helps a normal Customer-Life Cycle in everyday business tasks, information technology and business activities such as marketing, sales, customer service, and support must work together. The figure depicts a CRM structure.

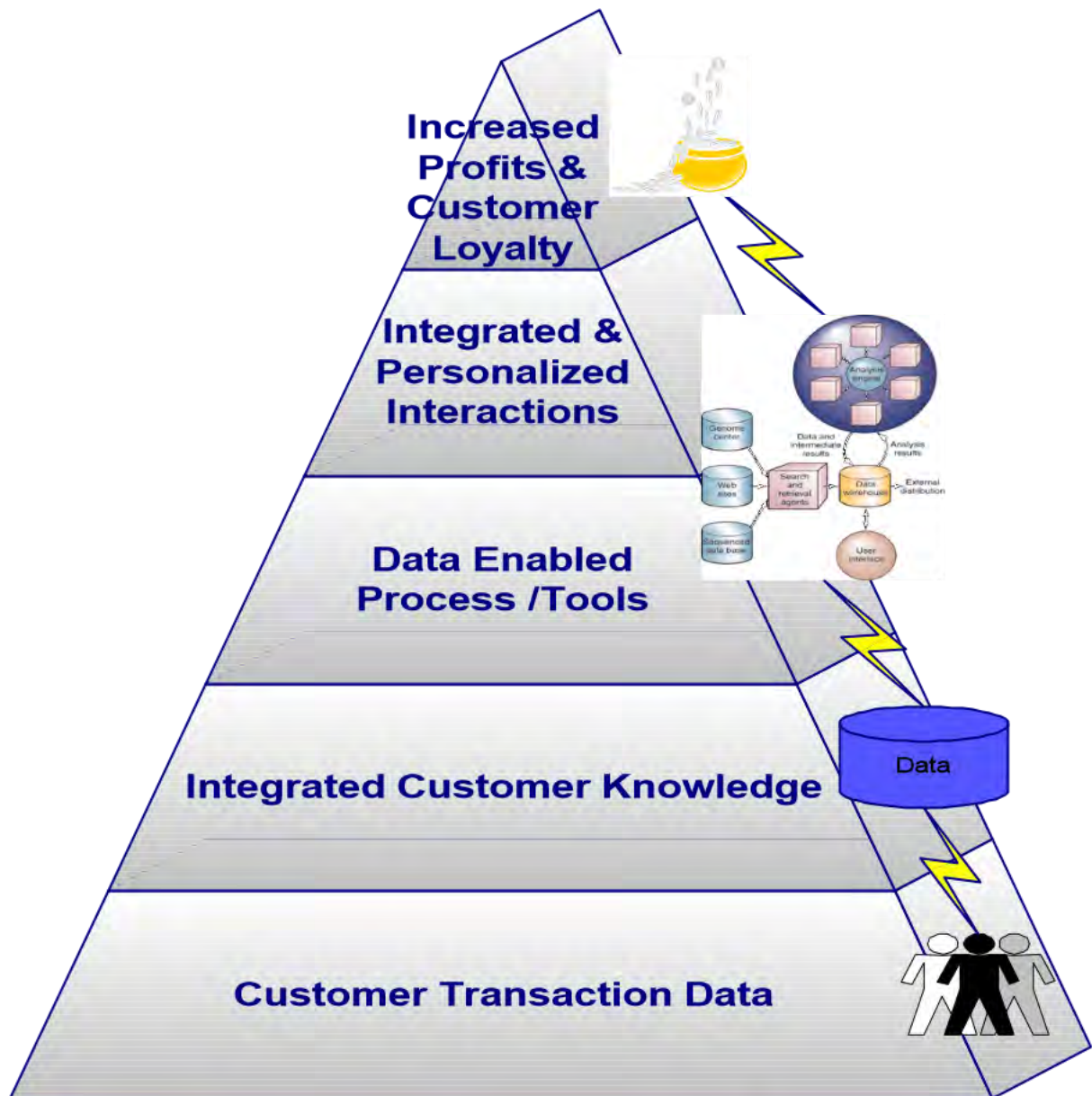


Figure 4.3: Hierarchy of CRM

According to a survey of CRM manufacturers, the following four software modules are available:

### **4.2.1 Module for Sales Automation**

This module is designed to automate sales-related duties such as sales customer interaction, contact scheduling, sales campaign and promotion activities, sales lead tracking, sales trends and forecasts, sales knowledge sharing, inventory management and monitoring, and sales cycle reduction.

### **4.2.2 Marketing Automation Module**

This module automates marketing-related duties such as marketing analysis and planning, marketing campaign activities and locations, product promotion and scheduling, price compatibility and competition, marketing trends and forecasts, marketing knowledge sharing, and so on.

### **4.2.3 Customer Service Support Module**

This module is meant to capture and manage customer information and actions, resulting in the development of strong and long-lasting customer relationships, which include unmet consumers, new customers, existing customers, and valuable customers.

### **4.2.4 Reporting and Analysis Tools**

These tools are a set of software and technology that allow a company's databases to deliver a cross-channel, holistic picture of sales, marketing, and customer service data for analytic reporting and analysis. A CRM automated system evolves and interacts with a number of commonly used business applications, including as an ERP system, a Web server, database systems, and a legacy system, as shown in Figure 2. According to this Enterprise Applications Integration (EAI) architecture, it's beneficial to "think big but act little" while building a new CRM automation system.

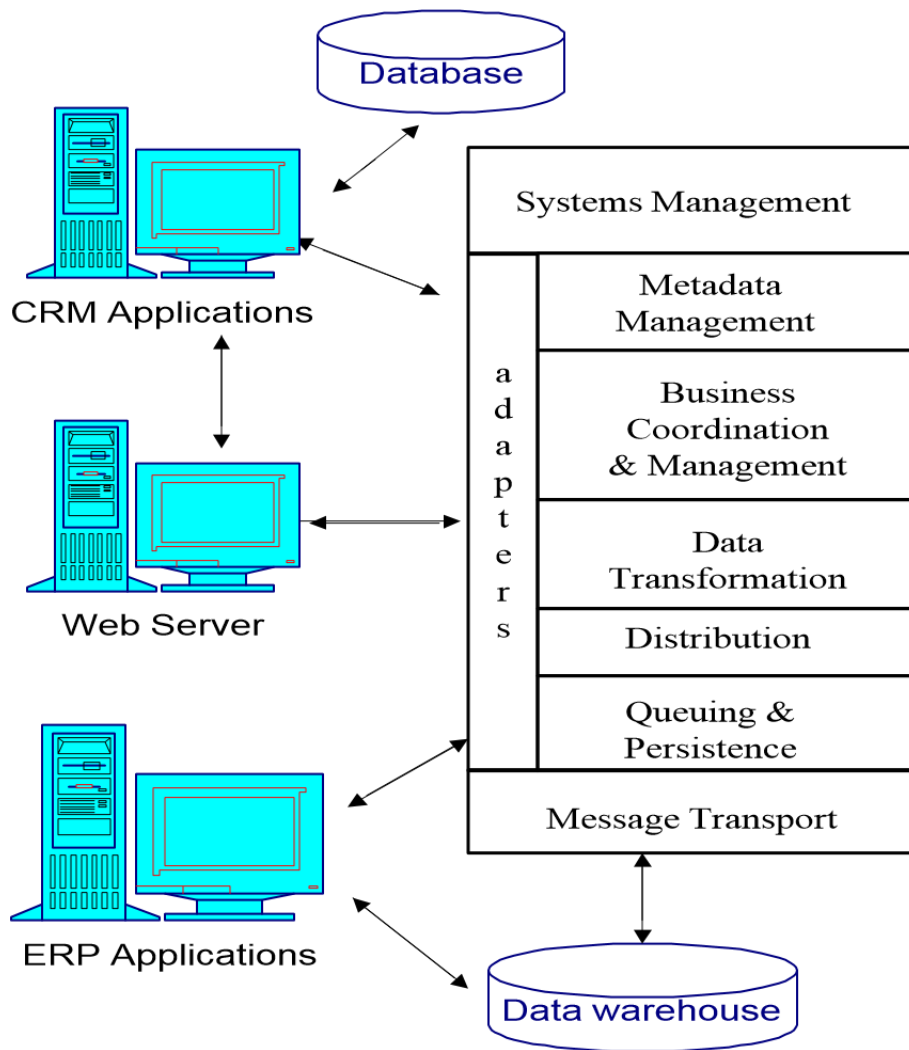


Figure 4.4: Data Storing in CRM

### 4.3 Retrieving and storing Data

CRM technologies are meant to make storing and organizing information secure and simple: all of our customer's information is in one place, giving us a unified perspective of them. Many tools have capabilities like lead generation and conversion, email marketing integration, customer segmentation, and customer spend analysis. Many CRM systems, such as Zoho and Hubspot, are GDPR compliant and provide free basic versions. We must guarantee that we have a regular routine for backing up data to a safe place, with data encrypted during transmission, regardless of how we keep client information.

Creating a data recovery strategy in the event that we lose access to our CRM system. When looking at the critical aspects and problems of CRM activities, it's easy to see how they relate to data governance concepts. The problems are highlighted as being organizational rather than technological; an important issue is change acceptability and communication across entities and executive levels. Finally, it is addressed how vital it is to have clear communication, assign clear stewardship duties, and establish consensus on processes and definitions, particularly when it comes to



data input processes. All of these challenges are linked to data governance.

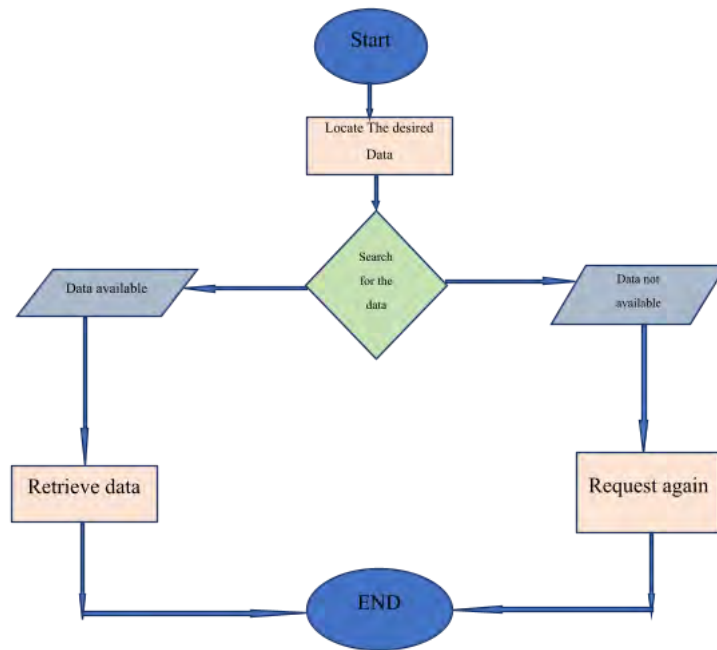


Figure 4.5: CRM Data Fetching

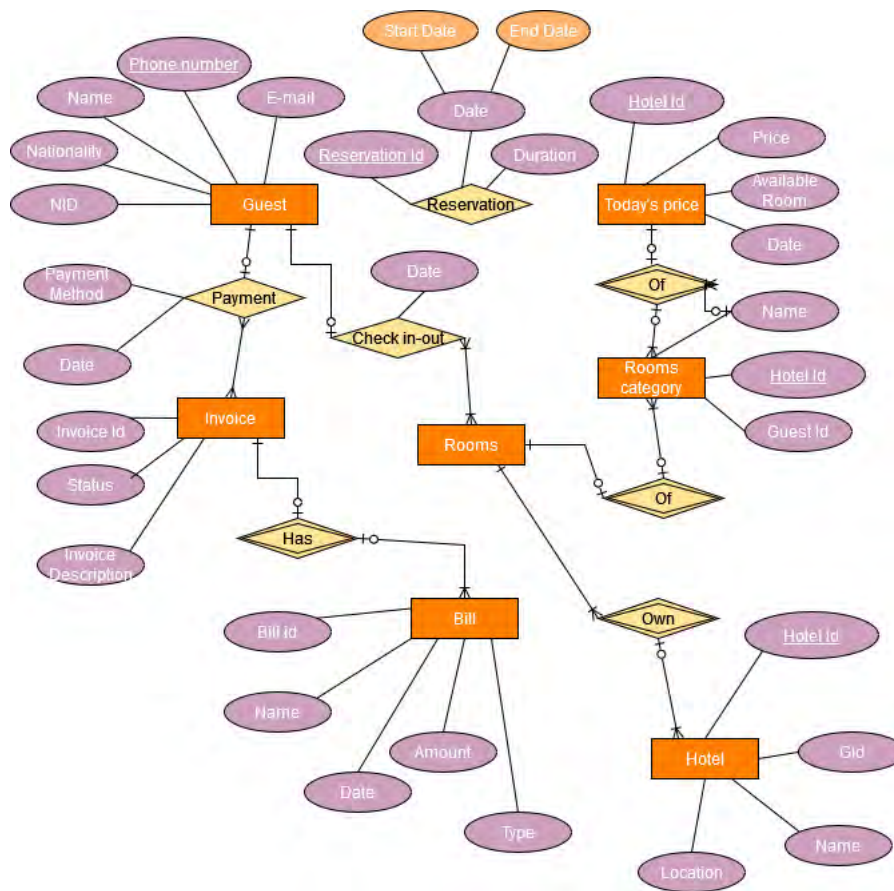


Figure 4.6: CRM Blueprint

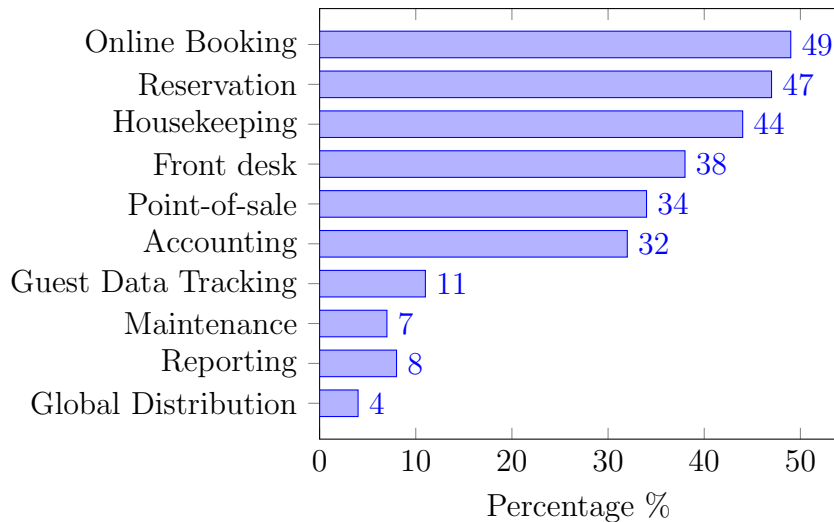
# Chapter 5

## Preliminary Development

ERP (Enterprise Resource Planning) systems are used by the majority of hotel management organizations. CRM helps organizations manage how consumers engage with their enterprises, whereas ERP helps firms operate successful operations by integrating their financial and operational systems to a single database.

### 5.1 What is ERP?

What is ERP: Material requirements planning (MRP), which was a technique for manufacturers to understand and manage all of the resources needed to run a successful business, developed into enterprise resource planning (ERP). ERP acts as a central database for all aspects of a company. Finances, comprising the general ledger (GL), accounts payable, accounts receivable, payroll, and financial reporting, are at the heart of this. ERP handles inventory management, order management, supply chain management, and data for service firms. ERP covers procurement, production, distribution, and fulfillment. Human Resources Management Systems (HRMS), Customer Relationship Management Systems (CRM), and ecommerce are all incorporated in certain ERP systems.[15] While both ERP and CRM systems will eventually be used by the whole company, the key difference between the two is that ERP is largely for financial data and is used by the finance department, whilst CRM is used by the sales and customer service departments. The rear office is known as the back office, whereas the front office is known as the front office. [14]



The given chart shows how ERP is influencing a hotel management company to its business. More than three quarters of buyers are interested in CRMS with 49 online booking capabilities, reservation management if 47. In terms of preferred functionalities housekeeping management and front desk management is ranked third and fourth with 44 and 38. However, compared to the statistics of CRM servers the survey of ERP is quite poor.

## 5.2 Why choose CRM over ERP?

ERP and CRM are relational database-based business applications for storing and analyzing data. Both are accessible as on-premises software or as software as a service (SaaS), which means that the vendor hosts the program in its own data center and consumers access it over the cloud. While the two SaaS ERP and CRM pioneers, NetSuite and Salesforce.com, both emerged around the same time, CRM systems were quicker to go to the cloud because they were easier to construct, and businesses were first apprehensive to put financial data in the cloud. However, for the majority of businesses, both systems are necessary.

ERP and CRM systems employ a variety of methods for enhancing profitability. The goal of ERP is to reduce costs and overheads. ERP reduces the amount of money spent on corporate operations by increasing efficiency. CRM strives to increase sales volume and hence increase profit margins.

CRM	ERP
Organize marketing efforts	Supply chain management
Automates customer service	Services knowledge base
Create data reports	Facilitate better project planning
Priorities leads	Standardize critical business procedures
Manage inventory based on historical sales data	Reduce redundant tasks
Collaborate to sell as a team	Assess business needs
Share customer profiles with co-workers	Manage human resources

Table 5.1: Difference between CRM and ERP

### 5.3 Strategic Analysis

CRM is a platform that enables hotels or groups front-office activities such as room reservations, guest check-in/check-out, room allocation, cost management, and billing are all managed by hotels.. This system allows you to access, update, and track all of the details that need to be functioned throughout all sectors and even numerous property locations from anywhere in the country or even the world. The following is the CRM system’s structure:

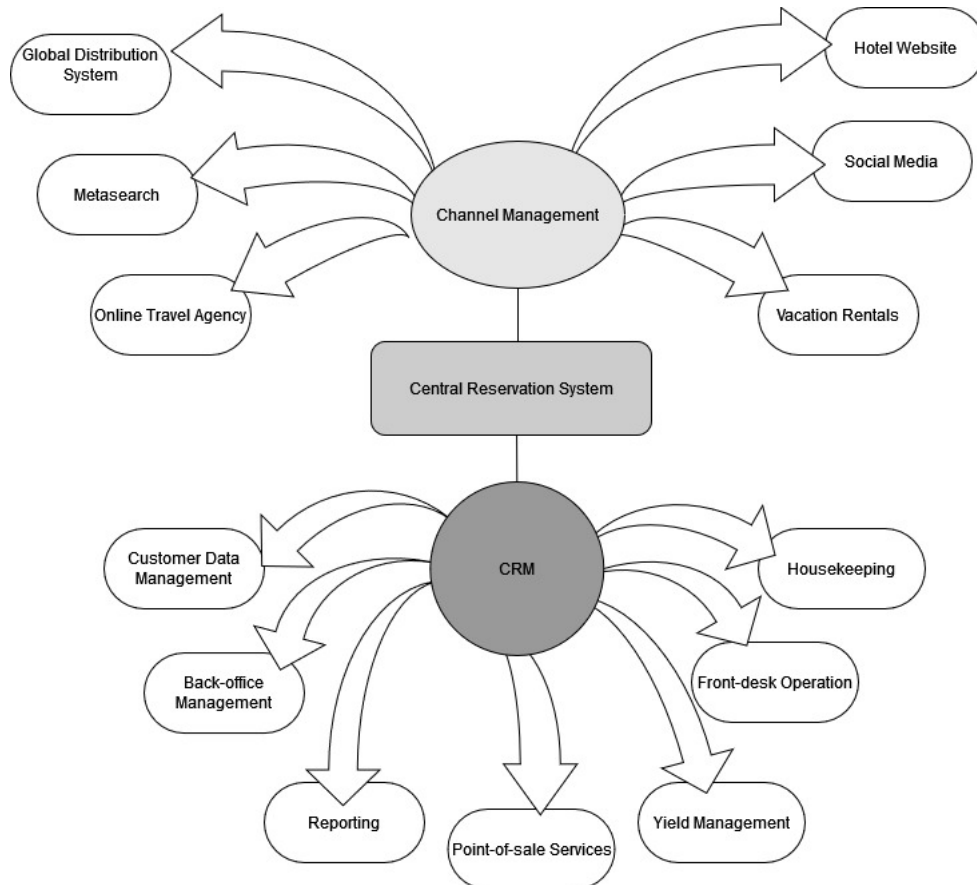
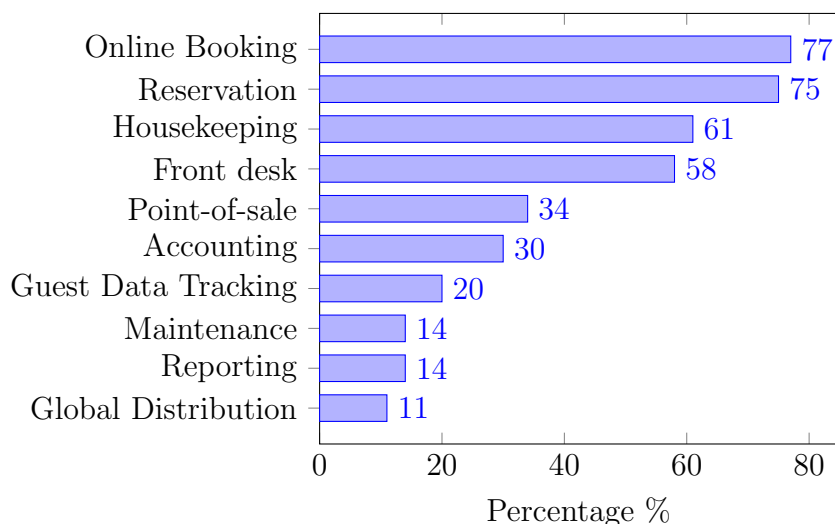


Figure 5.1: Structure of CRMS

### 5.3.1 Functionalities

Because of its advantages, the CRMS model is currently widely used in the hospitality industry. Reservations, housekeeping management, front desk and guest relationship management, point of sale, and reporting are all included in the online booking engine.



According to a study, more than three quarters of buyers are interested in CRMS with 77 online booking capabilities, reservation management if 75. In terms of preferred functionalities housekeeping management and front desk management is ranked third and fourth with 61 and 58. These are the core functions every hotel needs on a daily basis. Hospitality staff must ensure guests receive untroubled reservation, organized and timely housekeeping and that guests are checked in quickly. Let us get into the deep:[13]

#### Reservation

Any hotel property management system will have a booking option. Hotels or travel websites, corporate clients and airlines, travel agents, and other sources are all available nowadays. So, while monitoring hotel bookings, listing, allocation, and collecting online payments, the reservation process should be simple. This feature makes reservations easy for groups or individuals, as shown in the image. We can update the reservation's status, add rooms, provide discounts, leave messages, and so on. Management may quickly get necessary information by lingering over any reservation. This feature makes reservations easy for groups or individuals, as shown in the image. We can update the reservation's status, add rooms, provide discounts, leave messages, and so on. Management may quickly get necessary information by lingering over any reservation. From the picture we can see how this feature is making reservation easy for groups or individuals. We can change the reservation status, add rooms, apply discounts, write notes, and so on. Management can quickly access necessary information by hovering over any reservation.

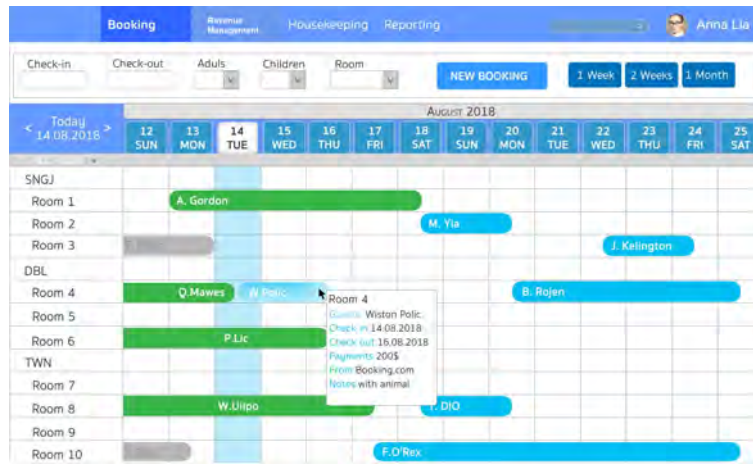


Figure 5.2: An example of reservation feature

From the picture we can see how this feature is making reservation easy for groups or individuals. We can change the status of reservation, add rooms, apply discounts, write notes etc. By hovering over any reservation management can get quick access to necessary information.

### Front desk Management

This feature makes it easier for employees to check in and out. Staff can modify reservations by changing stay dates, allocating rooms, moving rooms on request, or if there is a problem with availability, among other things. In a secure environment, this should be relatively simple to carry out; changes should take effect quickly and should simplify rather than complicate the process.

### Revenue Management

Revenue management allows for pricing adjustments based on room availability or occupancy. Depending on their business situation, management has the ability to raise or lower room charges. They may also be in charge of imposing various limits, as well as developing packages or special offers. This function enables us to automatically minimize rooms in order to speed up the sales process, set different types of restrictions, and create special bundles and offers. The algorithm is implemented, enabling for price to be determined based on market, weather, and local events.



Figure 5.3: An example of revenue management

This feature allows us to automatically reduce rooms for increasing the sales process to get your price, setting up different types of restrictions, and creating special packages and offers. The algorithm is implemented allowing one to determine pricing according to the market, weather, and local events analyzed.

### Channel Management

In order to better serve customers, CRMS should include this capability. Travelers who book hotels through various OTAs, Global Distribution Systems (GDSs), and direct booking platforms will see your availability because it is updated in real-time because your property management system distributes all of your available rooms through various channels. This feature eliminates manual tasks, increasing booking-related transactions and revenue.

### Housekeeping

Assists with keeping the property running smoothly. It is an automated management duty that assists in notifying whether rooms need to be cleaned or arranged for future guests, as well as assigning personnel to various rooms. This will update the status of each room once the task is completed. Guests will find it easier to check in as a result of this.



Figure 5.4: An example of housekeeping feature

### Customer Data Management

Management should gather customer information, solicit input from customers, and organize the information so that each client has a record. To acquire information,



this is linked to front-desk management and reservations. This tool can help hotels structure their marketing strategies, create more tailored guest-focused interaction, and loyalty programs.

### **Back-office Management**

This includes reorganizing and optimizing your hotel's employees, automating manual tasks, gaining visibility into back-office and authoritative operations, tracking and accurately announcing, increasing efficiency, and decreasing the demand for back-office operations. This includes the following:

- Event Organizer
- Spa and Gym
- Human Resource
- Asset Operation
- Conference Room
- Space Setup

You will be able to streamline all of your back office and administrative processes while lowering costs and reducing human mistakes.[11]

### **Reporting**

Keeping track of sales, bookings, and inventory is difficult and time-consuming. The ability to report is critical to the success of any hospitality company. We do not simply report on time and consistently during the holidays or when we have free time. Daily reports, occupancy rates, ADRs (average daily rates), and RevPARs (revenue per available room) keep us informed about the performance of our hotel. The reporting tool aids in the analysis of field performance, the identification of potential issues such as overbooking, and the enhancement of hotel management.

### **Point-of-sale Service**

Software's which are used for property management can assist hotel businesses in managing day-to-day tasks such as reservation processing, guest check-in and check-out, and housekeeping. As a result, the front desk staff ensures that the reservation is entered into the system, that housekeeping is scheduled on time, and that the guest is checked in immediately

### **Extended Stay**

Two of the most important features of a PMS for extended hotel properties are multi-property management and an online channel management module. The vast majority of apartment and time-share management systems are modified versions of hotel management systems. CRMSs that cater to these types of properties do exist. Consider the CRM software examples below for a more in-depth look at this set of features.

	Open Hotel CRMS	MEWS Commander	Maestro CRMS	Maestro CRMS	Booking Layer
Cloud	✓	✓	✓	✓	✓
Reservation	✓	✓	✓	✓	✓
Revenue Management	✓	✓	✓	✗	✓
Channel Management	✗	✓	✓	✓	✓
Housekeeping	✓	✓	✓	✓	✓
Customer Data Management	✗	✓	✓	✗	✓
Back-office Management	✓	✓	✓	✓	✓
Point-of-sale Service	✓	✓	✓	✗	✓
Reporting	✓	✓	✓	✓	✓

Table 5.2: CRMS Properties

Reservations, front desk, sales, space and club management, and dining POS are just a few of the modules available in Maestro PMS. Maestro aims to make things easier for hotel management by allowing them to control everything from a single dashboard. Hotel management will value the features and excellent support provided, and the solution can be hosted or installed on your premises. Because Mews Commander is cloud-based, hoteliers can manage their operations from anywhere. Its primary goal is to create a modern, user-friendly interface that enhances the user's experience. Mews provides hotels with time-saving services such as online check-in and real-time housekeeping, allowing businesses to save money, sell more, and provide their guests with a modern, personalized experience.

# Chapter 6

## System Model

To describe our work process, we divided the whole piece of work into three sub-sections. Let's explain the sections.

### 6.1 Pre-preparation

Firstly, we finalized the idea that our paper is going to focus on using CRM regionally for hotel management systems. After selecting a topic, we started Reading related Journals, articles, Research papers thoroughly in related fields. From the researched papers we get the idea of which model gives better accuracy in the shortest time.

### 6.2 Selecting Model

As we approach work on CRM. We had to go through various kinds of CRM servers. However, we are working on Hotel Management. So, we found so many CRM servers built for various purposes. Such as, Collaborative CRMS, Operational CRMS, Analytical CRMs. So we have gone for the operational CRM. [12]

#### 6.2.1 Operational CRM

A centralized system that maintains information about customers, leads, and employees through a common interface and supports sales, marketing, and customer service tasks within a company.

Let's take a look at the business operations of a typical company's many departments to see how operational customer relationship management works.

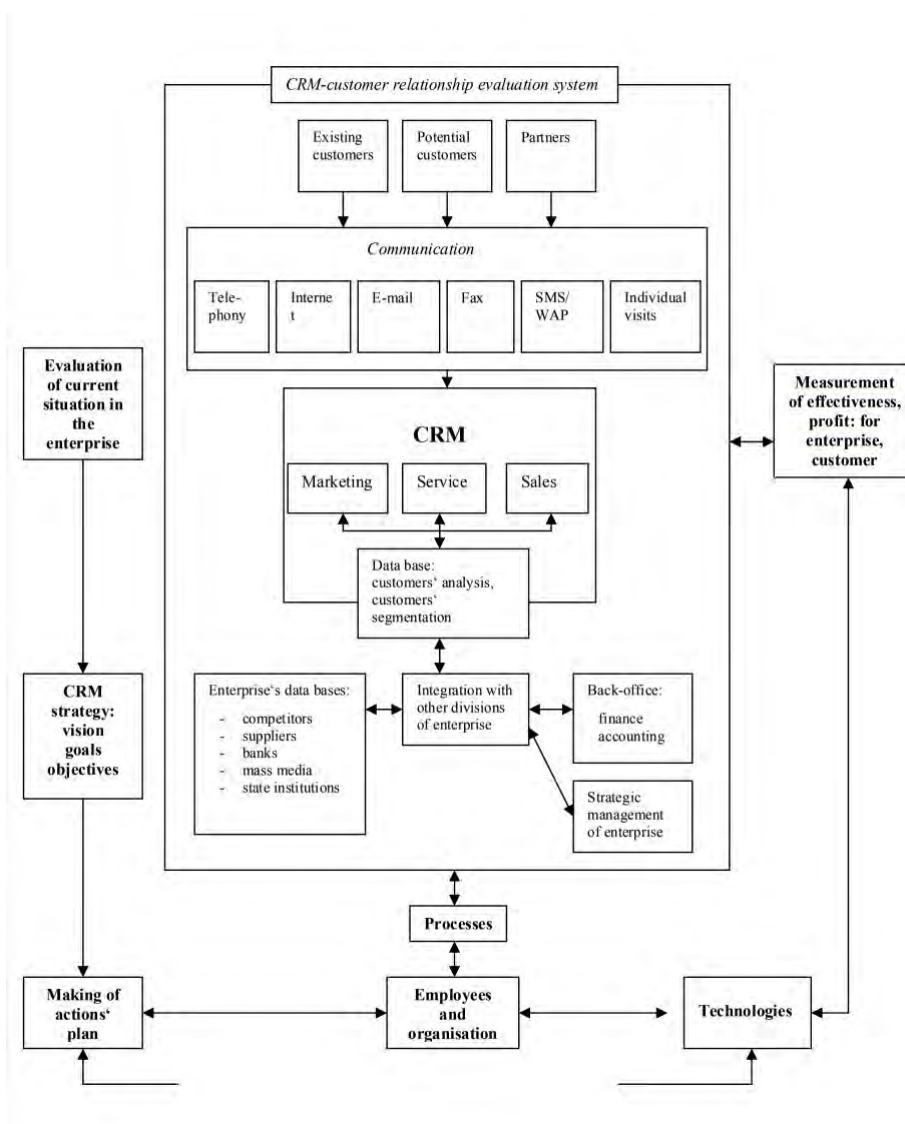


Figure 6.1: Theoretical Model of CRM

## Sales Activity

Sales staff contacts leads via email, phone, and text as they respond to marketing initiatives. People answer quickly in theory, but in fact, the majority of them will need to be followed up on. A top-performing sales representative will keep track of all conversations, important notes, and next steps for each lead. They'd update the CRM's contact record. When a lead converts, they must forward it to their fulfillment department. The final step in the sales process is to inform the service and support teams of a new customer's needs. They achieve this by storing such information in their CRM system. According to HubSpot research, the most common complaint about utilizing a legacy CRM is manual data input (23%). User dissatisfaction is closely followed by the difficulties in tracking the sales funnel (13%).

## Service and Support

All of this information is stored in a CRM from the beginning. Businesses have traditionally relied on support desk software or a common email system. The goal is to merge many CRMs into one by 2020. The consumer is seen from a single point of view. If your firm offers insurance, for example, you may not have an implementation function. However, it's likely that you work in a service capacity. It doesn't matter if it's for replacement components, repairs, or technical assistance. Operational CRMs enable improved customer experiences by allowing everyone to access the same customer information. Business owners should assess their five top-level CRM application categories, according to market research company Gartner: sales, marketing, customer server, digital commerce, and field service.[4]

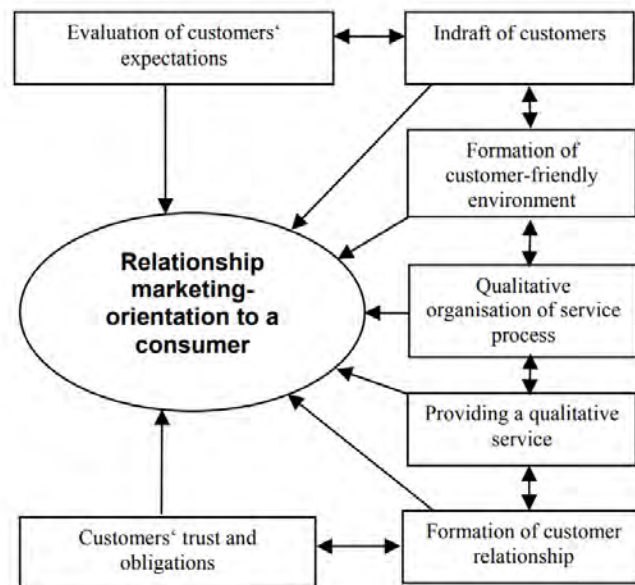


Figure 6.2: Consumer Interface Experience

## Sales Automation

Leads, prospects, and sales are all tracked by any good CRM system. An excellent system, on the other hand, will automate first contacts and schedule sales appoint-

ments. Cold-calling potential customers by going through the phone book is a thing of the past. A well-equipped team generates sales by utilizing a CRM system that provides targeted lead data. However, the transaction does not end there. A CRM can automate upsell and cross-sell communications, track sales success, and manage follow-up schedules. According to Aberdeen Research Group, sales automation has a significant impact. In terms of ROI, "best-in-class" companies that use sales automation outperform laggards by up to 217 percent. More investment, according to the firm's research.

# Chapter 7

## Results and Findings

A realistic sample strategy was used to collect data, which required respondents to complete the questionnaire in person. The surveys were distributed using an easy sampling approach to customers who had booked a stay at the hotel and consented to fill out the questionnaire, which was a challenging process because it is very tough to collect all the answers for lack of time. At three Residences locations in Khulna, Dhaka, and Coxs Bazar, the questionnaire was delivered on a case-by-case basis. The response rate for questionnaires is 78.9%. The data collection took around two weeks, including weekends.

It should be noted that 48% of the participants were females and 52% were males. 10.7% of respondents were under the age of 20, 52% were between the ages of 20 and 30, 17.3% were between the ages of 30 and 40, 12.7 percent were between the ages of 40 and 50, and 7.3 percent were 50 and older.

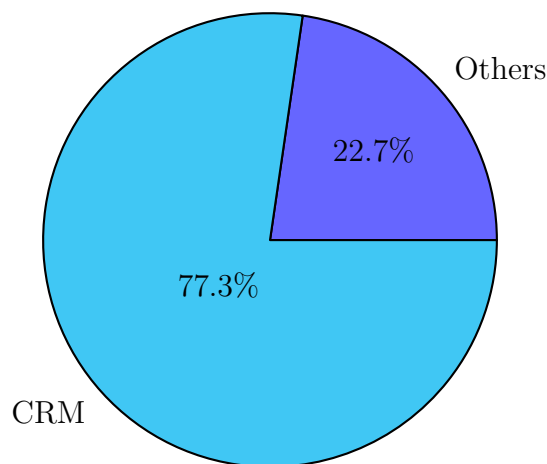


Figure 7.1: Comparison between CRM and other systems

The findings revealed a significant and positive relationship between CRM dimensions on customer satisfaction, specifically customer orientation, managing knowledge, and CRM organization. Though the results show that CRM-based technology has a significant positive effect on customer satisfaction, the magnitude of this effect is very small. This implies that hotel organizations only use technology as a tool to store customer information. As a result, hotels should use CRM-based technology to analyze customer data and, as a result, design customized products. This will allow the technology to reach its full potential and improve customer satisfaction.

When it first came out, customer management software was quite expensive. To keep them updated, infrastructure, software licenses, and competent staff were necessary. That is why they were only made available to the eminent and renowned companies. However, the internet's emergence democratized numerous services, including CRM. Online CRMs are substantially less expensive than traditional CRMs because all of the infrastructure, software, and support staff are centralized in one company servicing many others. To make matters worse, outsourcing all of these areas eliminates the need to care about security, which is typically another high-cost component. Online CRMs are far more profitable for all of these reasons. Moreover, online CRMs provide a lot more flexibility and dynamic than traditional CRMs. To add new features or users to a typical CRM, you must engage specialists to adapt the product and even purchase additional equipment such as servers. With online services, we may solve it with a few clicks and a change in our payment method and other stuff. Furthermore, when an enhancement or update is made to an online CRM, it is immediately deployed for all users, but with traditional CRMs, you must wait for the new version to be released, purchase it, and update all of the problems.

Last but not least, following a thorough examination of the literature, we can conclude that the majority of existing studies have adequately described the benefits of CRM 35 implementation on business performance. Nonetheless, a unified strategy to the aforementioned, exploitation-exploration duality of present and future CRM benefits is still lacking. Initially using these two as an advantage the current study will propose a research approach for establishing whether CRM is a technology solution for sustainability and sustainable business models.



# Chapter 8

## Conclusion

The study's research objectives were to identify the importance and challenges for hospitality companies, as well as to evaluate the theoretical content of empirical contributions against a static versus dynamic perspective on knowledge. The investigation, evaluation, and discussion of KM, CRM, and mobile web apps in the hospitality industry have revealed some clear indicators of opportunities and challenges for the hospitality industry as well as businesses. This is especially important for hotel businesses in terms of gaining new customers. A competitive advantage Because of the widespread application of technology and the nature of the industry is becoming more knowledge-intensive due to the service offering, which is dependent on interactions between hospitality professionals and guests/customers. As a result, the ability of hospitality professionals to meet client demands influences guests'/customers' perceptions of service quality. As a result, hotels are likely to benefit from knowledge-sharing events, which can improve employees' understanding of unique and client demands. Hotel chains, in particular, benefit from CRM because they require consistency in the quality standards of their geographically dispersed establishments. Furthermore, KM activities and systems may help hospitality organizations establish knowledge networks among tourist clusters.

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