Information Technology Strategic Planning for Portfolio Application in Hospitality Industry

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Abstrak/Abstract— **Information technology is now used to allow users to manage information more quickly and effectively. Advances in technology in the hospitality industry have evolved over the years.**

Strategic planning is implemented by companies/organizations to increase competitive advantage, minimize competitive disadvantage, and improve business process. This paper aims at producing IT strategic planning in the hospitality industry to support the business process in a hotel. The method used in this research was adopted from a framework of IT Strategic Planning by Ward (2002). This study also used several measures such as SWOT and Porter's 5 Forces to analyze the internal and external business environment of the hotel subject in this study. The results were a portfolio of new applications such as Mobile Web Application, CRM and Knowledge Management System which are proposed for the IT strategic planning in the hospitality industry.

Keywords — **IT Strategic Planning, Tourism, Application Portfolio.**

I. INTRODUCTION

Information technology can support company in achieving its vision and mission. In addition, it is also necessary to have appropriate planning since otherwise it could be fatal due to the difficulties in applying the IT Strategic Planning in a company/organization. Its implementation should also be viewed from various aspects that support good drafting for IT.

Tourism is an endeavor that uses multidimensional economic activities. Tourism itself is a temporary journey to the destination [1] outside the residence, the activities undertaken during the stay and the facilities available to serve the needs of travelers.

Hotel is a type of industry that provides products and services. Hotel not only sells products but also provide services such as entertainment services, atmosphere or environment comfortable, clean, and beautiful [2].

Technology advances in the tourism industry, especially in the areas of hospitality, have grown over the years. The development of information and communication technologies (ICT) has transformed the business for the better, between practices and strategies and industry structure [3]. Some hotels on the existing tourism industry have been utilizing ICT to automate business processes. ICT driven business processes gradually changes the industry in order to produce a new paradigm. It may change the structure of existing industries, in order to develop a range of opportunities and threats that may occur. ICT not only empower customers to identify, customize, and purchase of tourism products, but also supports globalization of the industry by providing effective tools for suppliers to develop, manage, and distribute products offerings to the whole world. The purpose of the use of ICT is to improve quality of care and contribute to customer satisfaction, so it can present information that is more accurate, effective, and relevant.

There are three aspects of dimensions related to the usage of ICT in the tourism industry: the consumer and the dimensions of demand, technological innovation, and the function of the industry. Significant increase in consumer makes the tourism industry seeks better service and recognition. Customer satisfaction highly depends on the accuracy and completeness of information and the ability of the tourism industry to directly respond to consumer demand.

The IT Strategic Planning Research on the hospitality industry has several goals:
- Knowing the planning strategies to improve the hospitality industry today.
- Analyze business processes supported by ICT towards IT Strategic Planning in the hospitality field.
- Formulate the strategic steps to align with the vision and mission of the organization/company that can contribute to the field of hospitality.
- Create a pattern of IT Strategic Planning on the hospitality industry.

II. LITERATURE REVIEW

A. Tourism

Tourism is an endeavor that uses multidimensional economic activities. Based on Leiper's model, there are three basic elements of tourism:
1) Travellers. These are the actors on the tourism system. At the end of the day, tourism is an experience that human can enjoy, anticipate, and remember as well as considered important aspect in their lives.
2) Geographical elements. Leiper proposed the following three geographical elements in the model:
   a) Regional tourist origin
      This element represents the tourism source markets, and provides stimulating and motivating impulse to travel. This is the place where tourists began to search for information, made the necessary reservations, and started their journey.
   b) Regional tourist destination

This element is the objective of the traveler and the center of tourism activities. There are attractions to visit this area because tourist destination is "the place where real and dramatic consequences of the system arise" (Leiper, 1990, p.23).

c) Regional transit

Transit routes are only a short time of the journey to reach the destination, but also a place where it is possible for intermediate layover.

3) The tourism industry which is a series of businesses and organizations that provides tourism products. This model is also able to help identify the location of the various related fields.

B. Information Technology Strategic Planning

IT Strategic Planning relates to outline a vision of how the organization's information and systems need to be supported by technology, which is essentially related to the "IT supply". In this case, IT provides the ability and resources (such as hardware, software, and telecommunications) and services such as IT operations, and systems development and can support the user [5].

C. SWOT Analysis

SWOT is a tool used to understand and help make decisions in all situations and business organizations. It gives an overview of the company by identifying internal and external factors that can describe the area to be developed and focused [7]. SWOT analysis has an important role in formulating and selecting strategies. The analysis includes:

- **Strengths:** the resources and capabilities that can be used as a basis for developing a competitive advantage.
- **Weaknesses:** the absence of certain strengths can be viewed as a weakness.
- **Opportunities:** external environmental analysis may reveal certain new opportunities for profit and growth.
- **Threats:** changes in the external environment can also pose a threat to the company.

D. Porter Business Model

Michael Porter stated that the industry is currently affected by 5 factors. These factors are useful for developing a competitive edge over the industry to better understand where the company currently operates. The five factors are:

1. *Rivalry*
   Usually the companies try to achieve a competitive advantage against its competitors.
2. *Threat of subtitutes*
   In the model porter, substitute products refer to products in other industries. This occurs when a product is influenced by changes in the price of the replacement product.
3. *Buyer power*
   The power of buyers is the impact on existing industrial customers. when the strong buyer power, can be drawn where there are many suppliers, but there is only one buyer, then the buyer can set the price.
4. *Supplier power*
   An industry definitely needs raw materials, labor, and other supplies. This resulted in the buyer-supplier relationship between industries.
5. *Threat of new entrants and entry barriers*
   It is influenced by the size of entry barriers, which could pose a threat to firms in an industry. If the

industry increases, there will be many companies are entering the market and taking advantage.
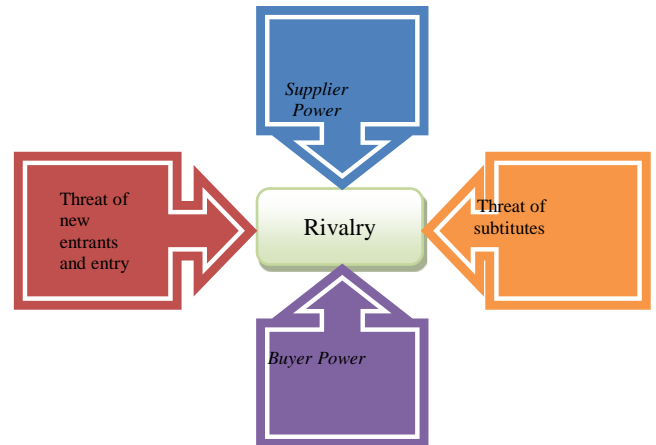
Figure 1 Porter 5 Forces

### E. CRM (Customer Relationship Management)

CRM (customer relationship management) is a business strategy that can increase the transaction. The goal is to increase profitability, revenue, and customer satisfaction. By improving the relationship with the customer, it can increase sales [8].

CRM consists of three main components:

1. Customers: Existing information technology can provide the ability to differentiate and manage customers. CRM can be considered a marketing approach to customer.
2. Relationships: The relationship between companies and customers involves an ongoing relationship.
3. Management: CRM is not an activity within a marketing department. Instead, the company continuously changes. Customer information is collected and transformed into knowledge that will be able has managed so that later can figure out the needs of customers who are required.

F. Knowledge Management

Knowledge management makes a significant contribution to the existing system at the hotel so it can establish a competitive advantage over competitors in the hospitality industry. Knowledge management can be developed for the operating system running on hotels; knowledge management can also improve the effectiveness of existing systems to the hospitality of both formal and informal.
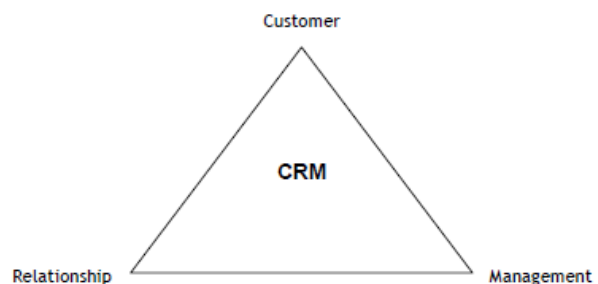
Figure 2 CRM Component

A. Figur dan Tabel

In the tourism industry in the fields of hospitality, it takes a definite step of the analysis of the existing business processes in the areas of hospitality to get IT Strategic Planning in accordance with the state of the business processes that are running. There are some measures that are used in the frame of mind to design the right IT Strategic Planning:

1. **Input phase**

   This phase is useful to understand the key business processes that are currently running. It is useful for collecting information every input is needed in planning IS/IT that exist in the hospitality industry. Another purpose of this phase is to establish a Strategic IT Planning in a period of 3 years (2012-2015).

2. **Assessment phase**

   The assessment phase aims at analyzing the business environment and IS/IT related companies to determine the main business in terms of internal and external. In this phase, several analyses are performed including:

   a. External Business Environment Analysis

   Analysis of external business environment that exist in the tourism industry in the hospitality field includes several external factors affecting the company's business strategy. External factors can be seen from both opportunities and threats for the company. This analysis includes an analysis PORTER.

   b. Internal Business Environment Analysis

   Analysis of internal environment that may affect the current business processes. This analysis is performed in order to maximize the opportunities that may exist in the company's internal whilst at the same time improving any internal weaknesses to avoid becoming a threat later. This analysis includes a SWOT analysis.

   c. External Environment Analysis of IS/IT

   These are external factors that can affect strategic planning such as current technological developments. The development of emerging technologies should be able to support the ongoing business.

   d. Internal Environmental Analysis IS/IT

   This is to use IT optimally at the hotel. As the use of IT in each business function of the company is analysed, applications may be used in preparing applications portfolio as well as further analysis of IT infrastructure in the hotel.

3. **Strategy phase**

   This stage aims to produce the analysis and prioritization of IT portfolio and strategic objectives to be achieved. In this phase of planning, the IS/IT strategy in accordance with the vision, mission, and business value is to be achieved. For the achievement of this strategy, there are several stages of IS/IT strategy:

   a. Future Business

   In the future stages of business after performing internal and external analysis of the hospitality industry, derived from the analysis of the vision, mission, business value, and business trends that are currently running.

   b. Strategic IS

   At this stage of IS strategy, information systems are used to support any business activities related to the company's vision and mission.

   c. Strategic IT

   At this stage of the IT strategy, it is important to know how IT can be utilized in achieving the vision and mission, and the key business processes that exist in the company.
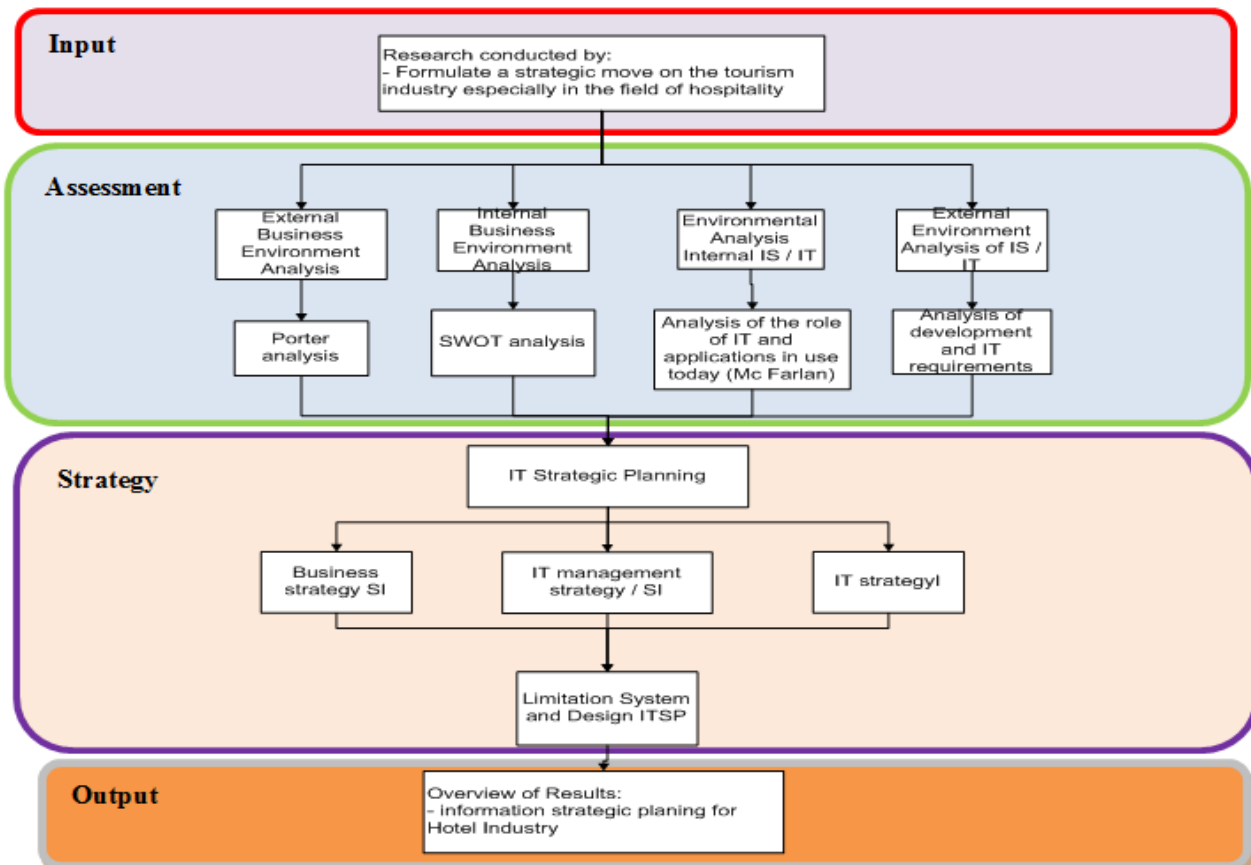

Figure 3 Framewok

d. Strategic Management of IS/IT

Strategic management of IS/IT is useful to establish a policy made by the management which relates to systems and information technology to be implemented in the company.

e. Portfolio application recommendations

Portfolio applications are needed to describe the every need of the application is recommended for companies after analyzing the internal and external environment.

f. Budget & Schedulling

This is performed once the analysis and design strategies as well as the adoption phase for all of the strategies are completed.

Models and Methods of Analysis

The formulation of IT Strategic Planning used several methods of analysis including Porter business model and SWOT analysis.

Data Collection Methods

To implement the study, there are required data and information related to business processes, internal and external conditions. The data and information were obtained through:

1. **Literature studies**

This include theory and matters related to measures the good workmanship in designing IT Strategic Planning; resourcers were acquired through books, journals, papers, and other literature.

2. **Observation**

Observations were carried out to observe the on going business process and keep records of information obtained during the observation process.

3. **Interview**

Interviews were conducted to obtain valid data of the parties concerned with business processes. Materials requested to the management include company planning of future strategies and who are responsible to run it.

IV. RESULTS AND DISCUSSION

The results of this study concluded that the implementation of Information Technology Strategic Planning on the tourism industry in the field of hospitality greatly help improve existing business processes to the hotel to fit with the vision and mission of the hospitality.

Based on the conceptual framework that has been made then there are 4 assessment used is:

a. **External Business Environment Analysis**

Analysis of external business environment is the analysis carried out on the external factors affecting the company's business activities in the process, both of which represent an opportunity for the hotel, as well as threats to be faced by the hotel later in the future. This analysis measured using the porter business model. The results are:

a. Industry competition

Competitors in the hospitality industry are now getting tougher. The competitors have to analyze strengths and weaknesses. There are several marketing strategies to do:

- The main marketing strategy by increasing product sales mainly hotel room sales, increase revenue, and offers promo for travel agnet and companies potentially in Indonesia.

- The marketing strategy for the marketing segment by maintaining good relations with all suppliers and buyers.

b. Threats coming from new arrivals

For newcomers competitors need to take into account the likely arrival of a newcomer who had a large and potentially rival the hospitality industry. Many newcomers are former hotel soon developed into a hotel to apply more modern system and possess better system integrity. This is because the modern and emerging IT supported at this time.

c. *Supplier power*

In the hospitality industry, suppliers act as intermediary guests (customers). Intermediary functions among others are:

- *travel agent*
- The airlines.
- And the companies that work with hotel.

The brokers have an important role in determining the hotel used in any trip undertaken.

d. *Customer power*

Customer is hospitality service buyers who have a high bargaining power and influenced by the number of hotels available so the buyer (customer) has many alternatives. Buyers have the power to choose a hotel that offers the amenities and better service. Special pricing is practiced by star so room occupancy remains high. High occupancy rates show that guests have plenty of chances to use the facilities of the outlets provided by the hotel, food and drinks in the restaurant and bar, and the use of business center.

e. Threat of Substitute Products

In the hospitality business, there are substitutes that allow customers to be able to stay long. These are apartments, rental houses, and boarding houses that can be leased to customers/foreign company in Jakarta.

Product replacement is a threat in determining the extent to which other products deliver the same to the customer needs.

b. **Internal Business Environment Analysis**
SWOT Analysis

In analyzing the strengths, weaknesses, opportunities, and challenges in each industry we used SWOT conducted periodically to formulate strategies for the hospitality industry. SWOT is useful to compare the external factors (opportunities and threats) and internal factors (strengths and weaknesses).

SWOT Analysis on the Kartika Chandra Hotel can be described as follows:

❖Internal factor analysis

Analysis of internal factors may be viewed from the strengths and weaknesses of the business and IS / IT are owned by the hospitality industry.

❖Analysis of External Factors

Analysis of external factors can be seen from the business opportunities and threats, and SI / IT held by the hospitality industry.

Strengths

- Support the leadership in the application of technology.
- Having a reliable human resource field.
- Availability of computer networks and information technology.

- Having the close relationship with the customer and competent partner.

Weaknesses
- The system is not used optimally.
- Use of IT for marketing the product is still lacking.
- Lack of ability of users of the system.
- Implementation relatively long.

Opportunities
- People increasingly realize the importance of the use of IT.
- Have opportunities and implementation of these systems are the latest technology.
- The potential to integrate data and information between functions with each other.
- Development of products and services and flexible pricing so that the needs of IS / IT becomes very important.

Threats
- More and more new hotels are more modern (the application of IT systems are better).
- Customer is increasingly critical in the use of IT.
- Virus attacks that can damage the system.
- Changes in the external (government, politics, taxes, etc.).

After the SWOT strategic alternatives are determined, the next step is to determine the competitive position of the company in business today. By knowing the company's position in the business competition, it can be determined what kind of business strategy appropriate and timely to apply. How to determine the company's position in the competitive business can use a SWOT analysis. The company's position can be determined from the coordinates obtained from the calculation of IFAS and EFAS:
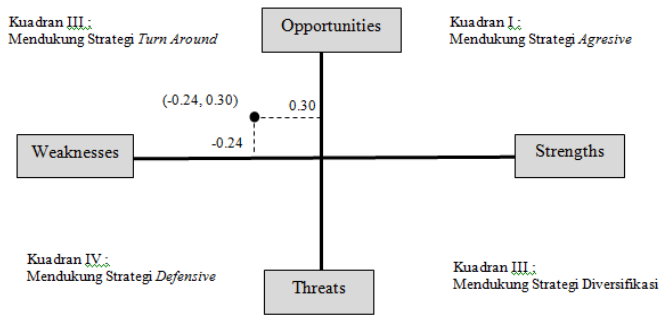
coordinates of the point X (IFAS) :
Total Strength : 1.72
Total Weakness   : - 1.96
Positition of the point X : 1.72 + (-1.96) = -0.24

coordinates of the point Y (EFAS) :
Total Opportunities : 2.04
Total Threats   : -1.74
Position of point Y : 2.04 + (-1.74) = 0.30
Position of hotel industry: (-0.24,0.30).

IFAS / EFAS	Strengths (S) S1 Support leadership in the application of technology. S2 has a human resources skilled in their fields. S3 availability of computer networks and information technology. S4 has a close relationship with the customer and competent partner.	Weaknesses (W) W1 Sistem that is not used to its full potential W2 Utilization of IT for marketing products lacking W3 lack of ability of system users W4 relatively long implementation
Opportunities (O) O1 People increasingly realize the importance of the use of IT. O2 has opportunities and implementation of these systems are the latest technology. O3 The potential to integrate data and information between functions with each other. O4 development of products and services and flexible pricing so that the needs of IS / IT becomes very important.	**SO Strategy** • Developing information technology in order to meet the needs of data and information quality, and use of resources. • Improve technology in improving the quality of service. • Developing products with the latest technology and features that simplify customer (CRM implementation to meet customer needs).	**WO Strategy** • Maximize the use of IT by using training (Knowledge Management) • Increasing use of IT by using other marketing media (web aplication mobile)
Threats (T) T1 The more new hotels are more modern (the application of IT systems are better at the hotel). T2 Customer increasingly critical in the use of IT. T3 virus attacks that can damage the system. T4 external changes (government, politics, taxes, etc.).	**SO Strategy** • Maintain customer loyalty by satisfying customers with the services and facilities of interest (CRM). • Improve service (service) that already exist in order to compete with other competitors.	**WT Strategy** • Conduct training of IT to marketing, to utilize IT as a promotion. • Improve security of existing systems. • Maximizing the use of existing systems. • Adjust external changes to the current situation.

Figure 4 SWOT Analysis Diagram Positioning

Based on the analysis of the competitive position of the business in the hospitality industry, it can be seen that the position is in third quadrant. This position indicates that a company is weak, but with a great opportunity. In other words, it does have a great chance in the competitive market, despite some internal weaknesses.

The recommended strategy is the turn around strategy, meaning that the hospitality industry is advisable to change the old strategy. Therefore, a strategy long feared would have difficulty in grasping the opportunities that exist at the same time improve the performance of the company (to minimize internal problems) so it can better seize opportunities.

c. External Environment Analysis of IS / IT
Currently, IT trends that dominate is Gartner's analysis (The Top 10 Technology Trends for 2012). There are 10 technology trends that have the potential to affect individuals, businesses, and IT organizations. In 2012 this trend is influenced by the technology of mobile computing.

Figure 5 2012 IT Trend – Media Tablets and Beyond

4. Environmental Analysis Internal IS / IT
Business processes that exist in the hospitality industry are usually supported by key business processes that exist in each hotel. Typically these applications have been integrated with other parts such as Sales & Marketing, Reservations, Front Office, Housekeeping, Maintenance, IT, back office, and the executive.

With the integration available on the application, it can facilitate managerial section to monitor and assist the decision-making system based on the information processed by the system.

5. IS Strategic Planning

In achieving the vision and mission of hospitality industry must be prepared to plan a strategy for the future of the business by business needs. Current business needs to focus on improving services that increase customer loyalty and inventory management (supply chain), which is the main ingredient supplied to customer.

Based on the analysis that was done, it was concluded that some issues will be key to success in the hospitality industry to support and maximize service. This is to maximize the use of existing systems by using CRM and Mobile Web, so as to improve service to customers.
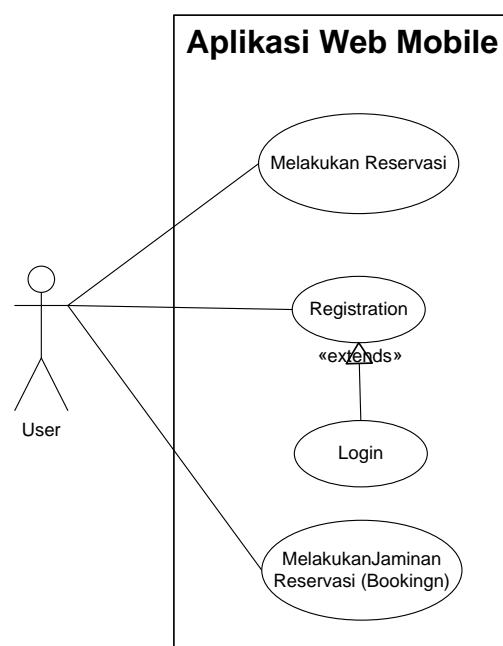
➢ **Mobile Web Application**
In the existing technology according to Gartner (The Top 10 Technology Trends for 2012) it has been shown that the emerging technology trends today are mobile devices such as smartphones, tablets, and other mobile devices that connect to the Internet via Wi-Fi or GPS. With the mobile web app, customers can easily access.

With the proposed mobile web applications, it is expected to facilitate the customer in obtaining information (promo is any), and make reservations with ease. Of the proposed mobile web will produce benefits from the use of the mobile web:
1. Accelerate time to get information and make reservations. Because the customer using a mobile device can easily access the mobile web via GPRS or Wi-Fi without being bound to a time and place.
2. Facilitate customers in making a reservation. Customer can immediately fill in the fields on the mobile web.
3. Reducing employee performance reservation. With the mobile web app, the data existing reservations will be directly entered into the reservation system on a central server, so employees do not need to input data is done online customer.

Here is the use case diagram for mobile web apps:

Figure 6 User Case Diagram application Web Mobile

> *CRM (*Customer Relationship Management*)*
>
> CRM can determine customer profiles, buying patterns and needs of the customer will be accurately recorded and updated so as to assist the sales and marketing to develop programs that improve customer loyalty. This CRM system integrated form of making history system that has been integrated with the existing customer database, so that when it finds difficulty in targeted customer. Example: hotel room reservation by an agency / company with a 10% discount promotion. Then the system will record the history of the problem and inform the customer (agency / company) through customer service and connect to the restitution system influence customer payment later.

> **Knowledge Management**
>
> Knowledge management is one of the success factors that are used to the hospitality industry today. The main goal of knowledge management is to improve the user aware of any information found on the company / organization.
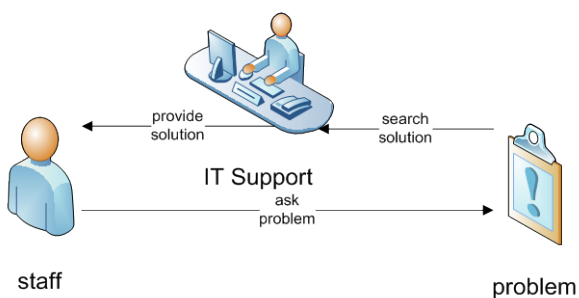
Figure 7 Supporters of the current Business Process
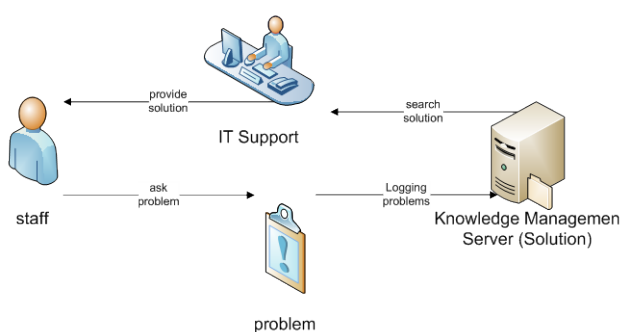
Figure 8 Business Process Support with Knowledge Management

V. CONCLUSIONS AND SUGGESTIONS

Conclusions

Based on the research, it is concluded that the proposed portfolio of applications that can help business processes that exist in the hospitality industry are as follows:

- **Mobile web application**

This is to facilitate customers to obtain information about the promo that will last and help the customer to make a reservation without being tied to time and place.

- ***Knowledge Management System.*** This aims to improve the performance of hotels by means of working more efficiently, rapid response to problems, and product knowledge shown by the employees.

- **CRM (*Customer Relationship Management*)**

CRM has a function to support the hospitality industry to determine customer profiles, buying patterns and needs of customers easily recorded accurately to help the sales and marketing department to develop programs to increase occupancy rates.

Suggestions

Several advice can be given to the hospitality industry, including:

After implementation, required evaluation of the performance of IS / IT in the hospitality industry on a regular basis, in order to determine the achievement of the set targets.

The rapid development of technology, requires a review and development continuously. Progress being made necessary adjustments to the needs that support business processes in the hospitality industry.

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Area Fungsional	Fungsi Bisnis	Proses Bisnis
Sales & Marketing	- Marketing	marketing strategy
		price fixing
		Point of Sale
		Looking Consumers
		Company profile
	- Customer Needs Analysis	The collection of data and information
		Seeing IT strategy competition
Reservation	- Booking hotel rooms rooms	*reservation*
		checking orders
Front Office	- Checking the capacity / condition of hotel rooms	Checking the capacity of rooms
		Entering booking
		checking booking
Housekeeping	- Management of rooms	Maintenance hotel room
		Make room status report
Maintenance	- Maintenance of existing systems	Examine the existing system
		Repair the damage done
Accounting	- Financial planning	Determine a budget for each division
		Checking reports NA
	- Manage Cash	Making invoice
		Set financial cashflow hotel
		Creating financial statements
	- Management of POS (outlet)	Creating bills of every transaction that occurs in hotel
		Create reports of POS transactions
Material Management (Inventory)	- Management of distribution	*Supply chain management*
		Sorting items when distributed
	- Management of demand for goods (Inventory)	Checking stock inventory items required by hotel
		Meets stock inventory items required by hotel
EDP	Management Network	Planning costs and prices for new goods (demand IT)
		Menjaga jaringan pada Hotel Kartika Chandra agar tetap berfungsi dengan baik
	- Management of Hardware	Replacing the damaged hardware (inadequate)
		Adding hardware in accordance with the needs of the hotel
		Keeping the server to continue to function properly
	- Business Process Improvement	Analyzing IT requirements
		Implementing IT in the hotel in accordance with the needs analysis
HRD	- Payroll	Compute salaries, allowances, and discounts
		managing absenteeism
		Set the salary increase based on KPI
	- Recruitment of employees	Test for candidates
		advertise a job
	- Management Office	Assist other departments for things that are common
		Procurement needs of companies that are internal
		maintenance company

Table 1 Utilization Analysis Function Binis in Hospitality Business Processes

Problems	Description	Solution
IT support services in the Sales Marketing	Aiming marketing system marketing systems become more optimal	*CRM*
Management system user capabilities	Provide regular training to any user of the system, in order to improve the ability of users of the system.	*Knowledge Management*
Increasing use of IT is growing.	The development of information technology available today it is necessary to develop mobile web apps that support customers in accessing the online system without time-bound and place.	Aplikasi Web Mobile

Table 2 *Proposed Solution Problems With Use of IS / IT*