A Technique for Enhancing Customer Relationships in the Service Industry

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Abstract. The importance of databases has been increasing in the hospitality industry. Data mining, as one of effective computational tools, is introduced to facilitate what its industry's needs due to its benefit for managing large and complex buyer behavior in customer databases. Nowadays, hospitality industry is encouraged to adopt Customer relationship management (CRM) to maintain relationship with their targeted customers. This study aimed to understand and explore the application of data mining in CRM in the Taiwanese hospitality industry because this business sector is highly competitive market in recent years. A semi-structured and face-to-face interview method was employed in order to explore the perceptions of marketing director or service director. The findings showed that the data mining technology was essential for the development of long-term relationships with customers in the hospitality industry. It also suggested a proposed data mining process for small and medium sized hotels.

Keywords: data mining, customer relationship management, hospitality industry.

1. Introduction

In recent years, computational technology has brought dramatic changes to consumers, organizations, and industries worldwide. The world has turned from the era of labor to the era of computers, Internet, and wireless. Productivity growths will no longer rely on human labor but on computational technology for the integration of data mining, energy management, and knowledge-based systems design. Computational technology not only refers to equipment or engineering applications, but also represents the use of organizational systems. Rapid and recent changes in this technology have entered into the hospitality industry as well, with more interactive information sharing, customer relationship management, and productivity software. Hospitality organizations are likely to improve their organizational performance and strategic competitiveness with computational technology [1, 2]. The top five primary reasons for implementing technology in the hospitality industry are productivity improvement, enhanced guest services, revenue generation opportunities, cost reduction and savings, and competitive pressures [3].

Therefore, hotels should give importance regarding the application of computational technology into their organizations because these systems can develop a hotel's competitive advantage, and thus contributing to the success of organization. Among an array of computational technology, data mining is outstanding as it offers several advantages for hotels of all sizes, for instance, increased effectiveness due to cost reduction and revenue growth, and the expansion of higher quality customer relationships [3].

The objective of this research is to examine the application of data mining in CRM in Taiwan's hospitality industry. Hotels in Taiwan are under pressure due to competition not only in the industry but also with other types of accommodation providers. Thus, hotels have recognized the need to develop successful customer relationships with guests. The literature review outlines the nature of the data mining concept and its use as part of CRM. The study involved semi-structured interviews with the marketing director or service

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director of thirty-three hotels in Taiwan to examine the extent to which data mining has been applied to CRM in the hospitality industry in Taiwan.

2. Data Mining

The effective use of databases requires a method for collecting, storing, and analyzing large amounts of data [4]. Data mining is defined as a process of searching formerly unknown but meaningful information by filtering large data sets and using a combination of pattern-recognition, model building, and validation techniques [5]. It is an interactive computer-based method employing statistics to gather and filter data into a format that is suitable for analysis [6-8]. The process involves organizing data, checking errors, and eliminating irrelevant data. Afterward, the data are extracted into a specific pattern or trend; then data are verified to determine how well they match. At this stage, the data are ready to be used.

Data mining is an effective and efficient technology for a service firm to transform customer information into customized and dynamic marketing decisions to improve long-term profit [9]. A data mining technique was employed to anticipate influential factors affecting the hotel occupancy rate in Hong Kong during the global financial crisis and the H1N1 epidemic from 1996 to 2009 [10]. As a result, data mining demonstrated reliable forecasting outcomes.

Data mining has also shown a significant impact on businesses by revealing new patterns of buyer behavior [11], client attributes and purchasing patterns [12]. It has helped managers better understand the customer information that has been gathered. Data mining made it possible to identify patterns of on-line customer enquiries [13]. Harrah's Hotels and Casinos in Las Vegas introduced a trademarked loyalty-card program, "Total Rewards", which tracks customer's purchasing activities and provides rewards that encourage spending at Harrah's properties. Harrah's used an information system called WINet to link all its properties, allowing the firm to collect and share customer information among them. The process effectively changed the corporate culture from an every-property-for-itself mentality to a collaborative, customer-focused enterprise. The WINet system connects and consolidates customer information from all of the company's transaction, slot-machine, hotel-management, and reservation systems. Based on this information, Harrah's properties designed marketing strategies to retain their customers by offering different sales promotions for different customers. Customers who lived outside the local area received complimentary hotel rooms or transportation, while drive-in customers received food, entertainment, or cash incentives [14].

3. Customer Relationship Management

Many businesses conduct marketing campaigns based on customer relationship management (CRM) [15-17] in the belief that improved relationships with customers will lead to greater loyalty, customer retention, and, ultimately, profitability. Customer relationship management (CRM) is a widely accepted and successful strategy universally employed by most organizations for managing interactions with customers; it uses technological applications to assist organizations in achieving their overall business objectives. These objectives are to stay competitive, to attract new customers and retain regular clients, to optimize profits, to reduce the cost structure, and to effectively synchronize customer information [18].

In the hospitality industry, customer information is remarkably valuable. Hotel marketing managers use that information in order to customize promotional offers for targeted customers. For example, Howard Hotels & Resorts in collaboration with Fubon Bank offered a joint promotional campaign for their customers in Taiwan through authorized customer loyalty cards, which enabled customers to collect points, qualify for discounts, or redeem the rewards at Howard's properties. By analyzing data collected from loyalty cards, Howard Hotels & Resorts can track customers' purchasing activities. This helps the hotel customize an array of marketing deals and offers for various customer preferences. As a result, the hotel is able to prevent their valued customers from defecting to competitors.

4. Results and Discussion

In this study, a qualitative approach was chosen because the study aimed to conduct a preliminary exploration of the application of data mining in CRM in Taiwan's hotel industry. Of the fifty hotels invited to be part of the study, thirty-three agreed to participate, yielding a response rate of 65 percent.

All thirty-three participating directors confirmed that computerized database systems were used in their businesses to store guest records, and they indicated that they were aware of data mining. Based on the information given, all participants agreed that data mining was essential for the development of long-term relationships with customers and that it was used to target promotions to frequent customers and to schedule hotel amenities that consumers felt were most important. All the interviewees showed a preference for data mining as a hotel information source in improving customer service and reducing costs. In addition, they all considered data mining important to maintain strong relationships with the channel members. The wholesale and retail tourist agents were viewed as an extension of the sales team. A key role for channel members was to bring new business to the hotels. In terms of their hotels' relationships with customers, all directors agreed with the notion that customer retention is their priority.

According to the interview results, it was clear that hotels have already attempted to make use of the data mining technique. All directors agreed that the improvement brought about by data mining was beneficial in retaining customers for hotels. The directors interviewed also shared the opinion that data mining could serve as a tool to establish, maintain and enhance long-term relationships with customers. Nevertheless, the majority of directors claimed that many small and medium-sized hotels in Taiwan still have not employed data mining to compile and analyze information about their customers. Therefore, the present research is deemed to propose a process of data mining that sounds practical for small and medium-sized hotels to optimize their competitiveness. The following four steps are described below.

Step 1: Gather customer data from accommodation bookings and the membership registration process. In room division, catering division or boutique, it is possible for hotels to retrieve other valuable information from hotel records such as special requests, frequency of stay, and spending behavior.

Step 2: Use data mining to compile information from collected data related to each customer's purchases or demands. By using classification techniques, customers are arranged into pre-defined segments that allow the size and structure of groups to be monitored. In the end, a marketing analyst could use the demographic information to allocate customers to segments.

Step 3: Identify the targeted segment(s). Data mining is utilized to identify groups of customers with similar behaviors and track as well as measure customers' reactions to different offers. CRM strategies can be devised after this step and used to establish good lasting relationships with customers.

Step 4: Improve services according to the responses collected from the targeted campaign. High-profitability customers can be retained by employing data mining to customize the services according to their preferences.

5. Conclusion

This research makes unique contributions to explore a different angle on how and why data mining is used as computational tool for a particular industry, hospitality, and whether the data mining is aligned with hospitality organizations' CRM policies. CRM has made clear the importance of strategic management for hospitality organizations. CRM requires a comprehensive analysis of consumer behavior [19, 20] but hotels struggle with difficulties to analyze and segment customers without a suitable technique. This study demonstrates that in order to succeed in CRM, the hospitality industry must apply data mining to obtain information that makes it possible to develop better and closer interactions with customers. Data mining is an effective technique for tracking hotel customers' patterns of behavior and for discovering information within a database that can be used to inform management decisions [11]. It is an analytic process designed to explore data, normally large amounts of data, in search of consistent patterns or systematic relationships between variables.

Data mining enables the hospitality industry to make more customized allocations and prompts the firm to make proactive decisions that prevent customers from leaving. As a result, hotels can improve customer retention and profit. Hotel management practitioners may gain benefits in employing a reliable

computational technique such data mining for their organizations to improve their operations and customize marketing strategies over competitors. This research also strongly recommends that small and medium-sized hotels should implement the proposed data mining process as a roadmap in establishing their CRM strategies. Small and medium-sized hotels should not overlook the warning of being left behind if large hotels continue to develop data mining capabilities and customer relationship management programs. By means of this proposed data mining method, small and medium-sized hotels can identify heterogeneous customer preferences, balances short-term service costs, retain long-term regular customers, and optimally maximize long-term profit for hospitality organizations. Future research could investigate how the application of data mining for CRM affects customer satisfaction. Such findings will contribute to the body of knowledge about the capabilities and implications of data mining.

6. References

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