Revenue Management in China's Hotel Industry:

Barriers and Strategies

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Abstract— **China's accession to WTO has exposed the local hotel industry to greater competition from foreign companies. Revenue management is a highly suitable management tool to be used by China's hotel industry to survive in the changing market. This study aims to provide an exploratory study on the difficulties faced and strategies that China's hotel industry can use to implement revenue management. Based on the review of revenue management, the study discusses the key elements of revenue management in the hotel industry. Then, it explores the barriers to revenue management implementation in China. Finally, the study proposes some strategies that China's hotel industry can use to overcome these barriers and to implement revenue management effectively.**

Keywords—revenue managemen; hotel industry; barriers and strategies

I. INTRODUCTION

China's hotel industry has flourished in the last decade and is seen to have a great deal of potential for future development. The World Tourism Organization has predicted that China will be the world's number-one tourist destination by 2020 with annual arrivals of 130 million [1]. In order to meet the growing demand from both international and domestic travelers, China's hotel industry need to expand and develop further. However, China's own hotel companies are relatively small and immature when compared with foreign multinational hotel companies [2]. Besides, China's accession to WTO has exposed the local hotel industry to greater competition from foreign companies. In order to survive in the face of keen competition, China's hotel industry needs to adopt advanced operational management methods. Among these methods, revenue management is a highly suitable management tool to be used for China's hotel industry to survive in the changing market.

Revenue management is concerned with a hotel's effective use of its resources. It aims to maximize business profit by managing pricing, sales volumes, room inventory and operating margins. A modern management technique, revenue management has come into vogue in the hotel industry during the past two decades and been very successful in North America and Europe. However, the main literature on revenue management focuses on its application to large hotels and international chains in western countries,

and there is little research concerning its implementation in China's hotel industry.

This study aims to provide an exploratory study on the difficulties faced and strategies that China's hotel industry can use to implement revenue management. Based on the review of revenue management, the study discusses the key elements of revenue management in the hotel industry. It explores the barriers to revenue management implementation in China, including a lack of understanding of revenue management, lack of historical data accumulation, and limited application of information systems. Finally, the study proposes some strategies that China's hotel industry can use to overcome these barriers and to implement revenue management effectively.

II. DEFINITION OF REVENUE MANAGEMENT

Through out the literature, revenue management has been defined in different ways. One definition was proposed by Shirley Kimes [3], who explained that revenue management is the process of allocating the "right type of capacity to the right kind of customer at the right place at the right time". Donaghy et al. [4] defined revenue management in a hotel context based on its goal: "revenue management is a revenue maximization technique which aims to increase net yield through the predicted allocation of available bedroom capacity to pre-determined market segments at optimum price". Jauncey et al. [5] suggested that "revenue management is concerned with maximization of room revenue through the manipulation of room rates in a structure fashion, so as to take into account forecasted patterns of demand." In a word, revenue management within the context of hotel industry is concerned with maximizing the profitability of a hotel through manipulation of its pricing and booking policies.

Kimes [3] indicated that the application of revenue management would most be effective when it was applied to the operations with the following characteristics: relatively fixed capacity, ability to segment markets, perishable inventory, product sold in advance, fluctuating demand, time-variable demand, low marginal sales costs, and high marginal production costs. As a result, the best revenue management examples are found in airline and hotel industries. The airline industry has been a leader in the application of revenue management and the hotel industry is

one of the key services to have adopted some of its techniques.

Figure 1 shows a typology of revenue management, which categorizes several service industries with different characteristics. Successful revenue management applications are generally found in Quadrant 2 industries, where capacity and price can both be managed [3].

Price

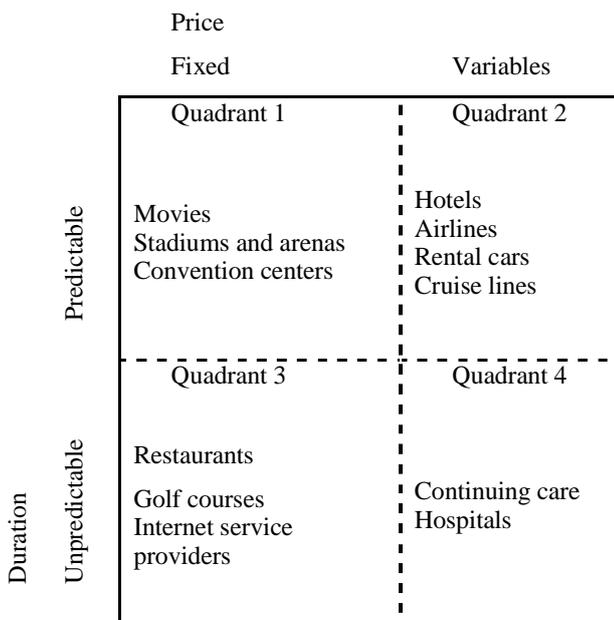|	Fixed	Variables
	Quadrant 1	Quadrant 2
Predictable	Movies Stadiums and arenas Convention centers	Hotels Airlines Rental cars Cruise lines
	Quadrant 3	Quadrant 4
Unpredictable	Restaurants Golf courses Internet service providers	Continuing care Hospitals

Duration

Figure 1—A Typology of Revenue Management

As shown in Figure 1, both airline and hotel industries have the following characteristics: fixed capacity, predictable demand, perishable inventory, appropriate cost and pricing structures, and demand that is variable and uncertain. As a result, the best revenue management examples are found in airline and hotel industries.

III. KEY ELEMENTS OF REVENUE MANAGEMENT IN THE HOTEL INDUSTRY

With the objective of profit maximization, the key to revenue management implementation in hotel industry is selling every room at the highest possible rate, while at the same time, not allowing any room to remain unoccupied. In order to achieve this goal, the basic and key elements of revenue management include overbooking, pricing, room inventory control, and duration control.

A. Pricing

Revenue management is a kind of price discrimination [6]. The hotel needs to classify customers and charge them different rates based on their different needs and behavior.

This kind of pricing strategy adopts some rational rules and restrictions to differentiate between guests who are willing and able to pay higher prices from those who are willing to change their behavior in exchange for a lower price [7]. For example, price-sensitive customers can enjoy a lower price, but with some restrictions including booking a certain period of time ahead, being subject to a no deposit refund, or having limited room options. Customers who are willing to pay full price, on the other hand, can book at anytime and select any kind of room. The advantage to this kind of segmentation is that the hotel can sell the discounted rooms to one customer segment without losing any income from the other segments. Meanwhile, it is easy to explain the pricing system to customers since each kind of price is set up according to reasonable rules.

Price discrimination is a trend. Charging customers differently based on their needs not only yields more revenue, but also results in much more satisfied customers. The key is to build a rational price structure while controlling room inventory in case customers from the high-price segment need to be able to purchase a low-price room.

B. Overbooking

Though customers have made a room reservation in advance, they may cancel the reservation or not to show up due to various reasons. This will lead to the room being vacant and the hotel losing the chance to make a profit. In order to protect the hotel against the possibility of no-shows, overbooking is common practice of hotel industry. However, overbooking also carries a risk: if all of the customers arrive at the reserved time, the hotel may not have enough rooms for them all. Therefore, in order to make a trade-off, it is important to assess the optimal overbooking rate. Generally, this can be calculated according to the following equation:

Amount of rooms overbooked = Number of predicted rooms canceled + number of predicted no-shows + number of rooms predicted to check out in advance – number of rooms predicted to extend to check out.

C. Inventory control

Inventory control is concerned with allocating current room resources reasonably. In general, some hotels are willing to accept as many reservations as possible even though some reservations are made far in advance. This may guarantee occupancy; however, the hotel may lose the opportunity to capture more potential income in the future. The earlier the customers make their reservation, the greater the discount they ask for. If all rooms were sold at a low price, the price-insensitive segment customer who would pay full price will not be able to reserve a room near the date that they will come. Therefore, to maximize revenues, hotels should try to sell the room near the arrival date at the highest possible price. Hence, the hotel must decide how many rooms will be sold in advance and how many should be kept for walk-in guests, based on demand forecasting. Moreover, a reasonable price structure should be determined, including the number of available rooms in terms of corresponding discount policy.

The objective of room inventory control is to limit the number of discounted rooms. Hotels should keep the rooms for customers who are willing to pay a higher price so as to capture more profit as well as satisfy various customers' needs. However, there is a risk involved in giving up current assured yet lower profit in exchange for future uncertain yet higher profit. To lower the risk, accurate demand forecasting is necessary.

D. Duration control

One particular problem hotels have is that the customers may stay for more than one night. This is quite different from the situation faced by the airline industry, whose seats are used only once during one flight. Though customers who stay for more than one night will bring more revenue than those who only stay for one night, the question of whether a hotel accepts a reservation or not depends not only on the entire length of the customers' stay, but also on the customers' demand level as well as the rooms available at that time.

To enforce optimal duration control, the hotels need to forecast the demand level at different time periods. For example, a hotel with lower demand on Wednesday and higher demand for Tuesday and Thursday could require a customer who arrives on Tuesday to stay for at least two days and deny those are willing to stay for one night only. Moreover, the hotels need to consider the rooms available in the future when controlling the customers' duration. The computer system may suggest declining a reservation for one day or four days on a certain day's arrival and accepting those for two days, three days and five days based on a complicated calculation combing the number of customers with stays of various duration with the corresponding number of available rooms. The objective is to take full advantage of limited capacity while shortening the time for which a room is vacant from when one customer leaves and another arrives. Though it is a complicated and advanced way of setting duration control when compared with other revenue management techniques, it contributes considerably more to overall revenue.

IV. BARRIERS FOR REVENUE MANAGEMENT IMPLEMENTATION IN CHINA'S HOTELS

Most of China's luxury hotels are owned by foreign companies and managed by famous international hotel chains. They generally adopt identical revenue management systems developed by the chains. Such systems are applied internally and exclusively, sharing information and customer resources among all the members of the chain. In general, they are effectively applied and are highly advanced. Moreover, most of China's state-owned hotels are relatively small and medium sized hotels. Their older management ideas and low-level information systems result in the following barriers against China's hotels implementing revenue management systems.

A. Limited knowledge of revenue management

Many hotel managers do not know much about revenue management, or their knowledge on this subject is incomplete. They consider it to consist of discount policies or price wars, rather than a price strategy to adjust the balance between supply and demand by allocating limited capacity to the right customer at the right place at the right time.

B. Limited information systems

Information systems applied in state-owned hotels are not used to their full effect. Each of the systems with various functions is implemented in its own way rather than being operated in an integrated fashion. Moreover, state-owned hotels lack information gathering techniques and skills. Therefore, the information they gather is not sufficient and fluid as that required by a revenue management system.

C. Neglect of historical data

Effective revenue management is based on accurate demand forecasts, which in turn are based on accumulated historical data. However, the state-owned hotels in China rely on the experience of their management too much and do not record, collect and analyze their customer data. Insufficient data and information leads to unsuccessful revenue management.

D. Absence of reliable revenue management systems

A revenue management system needs forecasting, optimization and computer techniques. Revenue management use is highly advanced in the western hotel industry. However, the idea is just starting to be accepted by China's state-owned hotels. Reliable and appropriate revenue management systems are still largely absent from Chinese hotels or are under development.

V. STRATEGIES FOR REVENUE MANAGEMENT IMPLEMENTATION IN CHINA'S HOTELS

A. To popularize revenue management concepts and principles

To establish a supportive environment, it is very important to popularize revenue management concepts and principles among the hotel managers and staff. The revenue management system operation involves various departments including sales, the front desk, room service department, etc. Revenue management cannot be operated successfully without the support and cooperation from all these departments. Furthermore, no matter how complex or sophisticated an automated revenue management system is, it includes a manual and mental decision process that cannot be substituted for by computers. When an automated system is used, people are trained not only on "how" to operate the system, but also on "why".

B. To integrate revenue management system with current information systems

Most hotels have already adopted some information management systems, such as room reservation systems and

allocation systems. A new revenue management system should be integrated with the current systems so that different systems can work well together. Moreover, the business process of various departments should be redesigned and reengineered to support the new information structure, under which a smooth information exchange among various functions will be guaranteed and the final objective of profit maximization will be realized.

C. To establish a complete revenue management data base

Successful revenue management is based on necessary demand and sales information. Therefore, hotels need to develop a complete database to record as much detailed relevant customer reservation information as possible, including who is booking, when the customer books, when they will arrive, which kind of room is preferred, what their preferred price is, how long they will stay and finally whether or not they show up. Moreover, to guarantee accurate and complete information, the quality of data should be measured periodically and enhanced continuously.

D. To develop appropriate revenue management systems

Each element of revenue management – including overbooking, pricing, inventory control and duration control – is based on accurate forecasting on customer demand. Since this requires a lot of data processing work, the hotels need to adopt a revenue management system. China's state-owned hotels and other small and medium-sized hotels differ from foreign-invested hotels in terms of market positioning, management systems and marketing strategies, and so they need to develop their own revenue management systems. Since revenue management systems are developed based on complicated mathematic models and arithmetic design, China's state-owned hotels should employ professional consulting companies to develop their own appropriate revenue management systems.

Moreover, hotels need to pay more attention to their competitors by collecting their rivals' price information and making a competitive price structure accordingly. This is particularly significant for hotels which suffer from disadvantages in location and star levels.

In general, revenue management is a new concept of management. When implementing it, China's hotels need to resolve technical problems as well as managerial problems. Moreover, the hotels' managers should pay more attention to the development of revenue management techniques.

VI. LIMITATIONS OF THE RESEARCH

The limitation of this paper can be viewed in terms of methodology. This paper is a qualitative research. The analysis is based on the interview of various hotels in Shenzhen, China covering 3 to 5 stars hotels. At this stage, the purpose is to identify the issues of the hotels and suggest a RM approach. As the future research potential, quantitative survey should be carried out to obtain data.

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