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IMPLEMENTATION OF YIELD MANAGEMENT AS A REVENUE-INCREASING TOOL: CASE STUDY

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Abstract

The purpose of this paper is to implement the usage of ‘yield management’ in a small hotel structure in order to maximize revenues. Currently, most researches in yield management proposes formulas or general formulation of the problem and thus managers face difficulties in its practical application. This study addresses the problem from a different perspective and offers practical calculations and guide for hotel managers which can be easily adopted in practice. Partial goal is by usage of this practical implementation to persuade hotel and financial managers to apply yield management based on the formula that is constructed in the article. The results showed that implementation of yield management is beneficial even for small hotels and can increase annual revenues. This case study should increase awareness in the hotel management and offer an impulse for considering the changes in pricing for increasing better future economic sustainability in small-sized hotels.

Keywords

Czech Republic, Implementation, Pricing, Revenue management, Small sized-hotel, Yield management

Introduction

Over the years, growth of technology has caused several changes that have an impact on innovation in the sense of management running and its organisation as well as re-engineering of the hospitality product (Sfodera, 2006). One of these innovations include application of revenue (RM) or yield management (YM). Nowadays, maybe more than ever, in times of Internet boom, the online purchases in tourism services rule the demand and companies are trying to adapt to changes in demand by pricing that fits directly to the products and services of a demand group with the aim of increasing revenue. Dynamic pricing is thus inevitable in tourism industry as clients have direct access to rates and prices and can choose the best option.

Historically, it started a few years after the deregulation of the US airline industry in 1978 (Vinod, 2016) and today yield management is a part of various services such as airlines, restaurants, accommodation services, rental cars or even casinos of golf services (Anderson and Xie, 2010). Yield management is typically used in the hotel and airline booking policy (Badinelli, 1998) “to sell a fixed amount of commodities with discriminatory pricing to maximize revenues” (Koide and Ishii, 2005, p. 417). As tourism is a congregate of various economic activities (Jurigová, 2016), yield management in this paper will be implemented in hotel services only. Hotel sector was chosen also because, as Ivanov and Zhechev (2012) point out, there is a lack of research on revenue or yield management in hospitality sector compared to much better developed practice. Kimes and Wirtz (2003) add that in hospitality industry, revenue management techniques are used extensively.

All previously mentioned tourism services including accommodation have few things in common that makes them optimal for yield management implementation. Firstly, it has relatively fixed capacity of a perishable product which means that it is difficult and expensive to increase capacity and therefore the capacity should be used at its maximum. If the hotel does not sell the room one night, it is lost forever. This is connected with the services characteristics that the product can not be stored for later consumption because production and consumption take place simultaneously, especially in hotel services. In other words, each room, that has not been sold now, can not be sold later and the revenue is lost in that particular moment (Ivanov, 2014). Last but not least characteristic of hotel services may include low marginal sales costs (if hotel sells certain number of rooms, the costs for selling another one are not so high) and high marginal production costs (it is difficult to enlarge capacity, if a hotel facility is full and customer wants a room) (Kimes, 1989). According to Kimes (1989), if any industry has these characteristics, it can apply yield (or revenue) management.

Why hoteliers use this tool in hotel services? First of all, it is a way of how to maximize profits. Hotels face a lot of difficulties on a daily basis and those managers, who use yield management believe, that price changing would increase revenues and make hotel more competitive. And secondly, YM helps to limit the negative aspects of hotel management such as seasonality, limited availability of rooms, changing demand or perishability.

According to some researchers, the real implementation and adopting of YM in hotel industry has been slow in past due to slow and stagnating adoptions to new systems and technologies (Donaghy et al., 1997). Not surprisingly, though, some small and medium-sized hotels still do not implement this pricing policy mainly because of investments it requires (Sfodera, 2006). One of the reasons may be also a fact that it is a challenging task that requires willingness and cooperation of hotel managers and all employees and continuous training (Jenčková & Ahrhám, 2015).

However, a vast majority of international hotel chains and bigger hotels in the Czech Republic nowadays use the principles of yield/revenue management, at least at the minimum level. Accommodation managers understood that it is an effective solution in the facilities with 70 rooms and more (Jenčková & Ahrhám, 2015). It works because they are able to interconnect sophisticated information software with employees work at the same time. The usage of dynamic pricing in large-sized or more star hotels are underpinned by Vives and Jacob (2019) who estimate the dynamic prices within the revenue maximization in seven 4-star hotels in Spain. But what if, there are still some small hotels from 10 to 50 rooms where managers believe price changing is only a waste of time? Can it bring positive results also in small hotels? Can management see what are the benefits of implementing yield management in his/her accommodation facility by simple calculations that can persuade them to implement it? Jenčková and Ahrhám (2015) justify that the problem may be in not understanding the benefits of yield/revenue management for key economic indicators in collective accommodation facilities. These are the questions that are to be answered in this case study. The uniqueness of this research resides in a new concrete application of yield management for small hotels to implement this model in their own conditions.

The aim of this paper is to implement the usage of the yield management in a chosen small-sized hotel in the Czech Republic and particularly to find out whether yield management is a good tool for revenue-increasing in small-sized hotels in general and to offer a guide for other small-size accommodation facilities. Small hotels are different in their managerial operations and “focus primarily on the smooth running of the reception and operation of the facility” with simple manual recording or monitoring through spreadsheet (Jenčková & Ahrhám, 2015, p.21). The aim will be reached by the analysis of current status of the hotel occupancy and subsequent calculation of anticipated revenue increase after using yield management by a new simplified method.

Theoretical Background

Yield management, or Revenue and Yield Management, according to Palatková and Zichová (2011, p.77), is one of the special methods of how to dynamically create a price, not only for different segments but also for the changing level of demand. It is a process of predicting the level of demand segregated for individual market segments and subsequent pricing in order to influence demand changes and maximize returns at the same time (Palatková & Zichová, 2011). It is the price that represents one of the most effective tool that managers use in yield management in order “to encourage or

discourage demand in short run” (Azis et al., 2011, p.178). Yield management is very often interconnected with the term revenue management “since it is revenue not yield (revenue per revenue passenger mile) that is maximized” (Vinod, 2016). In other words, yield management represents a process of management with the aim of maximizing revenues from the sale of services that cannot be stored through effective price control and overall capacity (Křížek & Neufus, 2014). It is based on “understanding, anticipation, and desire to influence consumer behaviour to maximize the income or profits from a fixed perishable resource.” (Sahut et al., 2016, p.4901) To sum it up, the main aim of yield management is to “make seats that are expected to go unsold available at a lower fare to the passenger who would otherwise not travel, while at the same time ensuring that these lower fares are not purchased by passengers who are willing and able to pay a higher fare” (Pena, 2001, p.9).

In general, components of yield management include (Křížek & Neufus, 2014):

- price policy,
- demand survey – occupancy prognosis,
- sales strategy based on demand,
- capacity management – minimizing unused capacity,
- group policy,
- analysis of historical data,
- overbooking.

This concept is not new. Historically, at the beginning of 1980’s, airlines began to use this pricing method and they started to offer all seats on the airplane at the same rate. This resulted in offering different types of tickets concerning for example midweek and weekend fare differences in order to stimulate new demand or high and low-season differential fares (Pena, 2001). From that time on, the usage of yield management has spread to several industries including other services in tourism industry.

European Commission (1997) reported the yield management applicability in different types of tourism businesses on a scale of low, medium and high based on typical characteristics of yield management as seen in table 1. Of course, because of the specific characteristics of each industry, individual practical aspects in each industry need to be applied and taken into account (Ivanov, 2014). The highest applicability of yield management within tourism businesses is in airlines, cruise ships and hotel services (see table 1).

Yield Management in Hotel Industry and its Implementation

The vast majority of literature sources on the topic of yield management in hotels dates few years back. The examples include the article of Landany (1976) in whose research, the aim was to find a dynamic rules of maximizing daily expected revenues in motels, the research of Williams (1977) who was keen on finding a dynamic reservation policy during peak seasons for individual types of demand, i.e. stay-overs, reservations and walk-ins, or other such as Tritsch (1989), Jauncey et al. (1995), Donaghy et al. (1997), Prasad and Srivastava (2008) and others.

European Commission reported already in 1997, a several practical examples of hotel businesses where yield management caused increase in revenues:

- the Carlton Beach Hotel in The Hague and their own developed yield management system in 1989 caused increase in revenues by 20 %,
- an independent French hotel after implementing yield management reported a 4% increase in annual revenues in 1993 (European Commission, 1997).

However, already some current authors refer to dynamic pricing and revenue management techniques and its positive effects on hotel's revenues (Haddad, 2014; Vives & Jacob 2019; Abrate et al. 2019).

Already in times when small and medium sized hotels collected only little internal and external information and were supported mostly by a poor information system (Luciani, 1999), yield management worked in some places. However, there is not enough literature knowledge on supporting small-sized hotels in application of yield management. One of the facts can be that nowadays, larger hotels are operated “by more demanding executives who prefer more sophisticated systems” (Jenčková & Abrahám, 2015, p.21) and therefore, using revenue/yield management is here more noticeable. Another reason is that small and medium-sized hotels do not prefer revenue management because of investments it requires (Sfodera, 2006). As Scholz et al. (2014) believe, the purpose of small and medium sized hotels is mainly to survive on the market with no possibility to compete with larger international hotel chains. That is the reason why small hotels concentrate mainly on the smooth running of the hotel operations (Jenčková & Abrahám, 2015) rather than sophisticated tools and techniques. Many small hotels may live in the idea that it is a price technique that can be afforded only to accommodation facilities with high budget, higher number of staff or stars, however it should be used by all properties no matter the size (Mahmoud, 2016) and they doubt its implementation operationally and financially (Donkin, 2017). Donkin (2017) sees several limitations of small hotel's ability to use revenue techniques. Firstly, it is in inability to work with overbooking and struggling with its financial effects. This is connected with constant learning and practice which is usually assigned to existing employee in a small-sized hotel as they do not hire a skilled revenue manager (Mahmoud, 2016). Another limitation is placed on customer relationship management when in smaller hotels, there are many repeat customers so the management may struggle whether it is effective to differentiate the rate and offer it to all repeated customers so that it is not perceived as unfair practice (Donkin, 2017). The manager can then feel, the hotel is losing the personal contact with its guest and the guest is not feeling personal welcoming atmosphere that is typical for small hotels (Barros & Mascarenhas, 2005).

For the purpose of effective YM implementation, different implementation models of YM have been identified by researchers. It must be noted that all such models need to be periodically updated and must be adapted to changes on the market and in demand (Talón-Ballesteros et al., 2014). It is vital to respond to mistakes on a permanent basis as well as devote to constant learning (Haddad, 2014).

The first mentioned model was developed by Jones and Hamilton (1992) who interviewed several managers in hotels. Managers believed they used a yield-management system based on implemented new technologies, price policies etc., however after a careful investigation of the authors, none of them had implemented a complete YM system. The authors identified two problems as follows (a) focussing on detail without fully understanding of the whole YM concept and (b) putting emphasis on information technology and software without putting emphasis on people and employees at the same time. Their model consisted of (1) developing a yield culture, (2) demand analysis, (3) price-value determination, (4), market segmentation, (5) demand-pattern analysis, (6) tracking declines and denials and (7) evaluation.

Another implementation model was proposed by Bitran & Mondschein (1995) whose implementation and subsequent usage of yield management included two kinds of decision levels. The first one is tactical (strategic) which means that the management must decide “the maximum number of reservations for each market segment to accept at a given moment in time for a particular target day” (Bitran & Mondschein, 1995, p.427). At this level, the manager is able to see the total sum of reservations in each market segment. Therefore, market segmentation belongs to the key factors of successful hotel management (Merliss & Lovelock, 1980). The second level is the operational level. Operational decisions are made in a case when a customer requests a room during the target date and the manager needs to subsequently decide whether to rent it or not. Several criteria are taken into account such as the number of reservations made at the tactical level or potential clients who want to book their rooms without previous reservations. However, the manager can not say in advance how many potential customers will appear. What managers do to maximize total expected profit is that they overbook the hotel. This is because of the possibility of no-shows at the operational level and cancellation of reservations at the tactical level (Bitran & Mondschein, 1995) that is caused by perishability of this type of services. If a hotel room is not sold, it has zero value and cannot be stored in inventory for future usage (Stolarz, 1994). These features cause that hotel service providers must adapt to constantly changing situations in order not to face revenue losses (Guo et al., 2016). Nowadays, online booking and e-commerce reduce the risk of no-shows significantly by using credit cards or electronic money as a payment method when booking online (Koide & Ishii, 2005). Overbooking is one of the tools used in yield management. Another tool used in yield management is up-selling where, usually, the aim of the front-office should be to actively offer and sell additional services and products based on the customer need. The last tool according to Beránek (2013) are restrictions. These are rules and procedures that allow customers to rank themselves in the appropriate price-buyer category based on their needs and willingness to pay. Simply said, restrictions aim to offer cheap services to “cheap” customers without the same services being available to “expensive” customers. Restrictions are often linked to the impossibility to cancel a stay for free (Beránek, 2013).

Other authors who devoted their works to YM/RM implementation models include Donaghy & McMahon (1995) who presented key stages in YM system and proposed

five yield marketing practices and yield segmentation process for effective implementation of YM or Jones and Kevin (1997) who developed a system divided into six inter-related subsystems for maximising profit. Emeksiz et al. (2006) used different strategy and they gathered several existing models and developed a new model that was tested and used for full service five-star hotels in Turkey. Findings of this research showed that yield management activities in the analysed hotels were carried out by the managers of various departments who didn't have time to manage all responsibilities properly. The mistake was that they did not hire a yield manager who would take over the overall YM process. More updated researches include e.g. Talón-Ballesteros et al. (2013) who propose a model to assess the implementation of RM or Lee (2018) with a better forecasting model based on stochastic models of booking arrivals.

Based on researches and theoretical applications, several prerequisites must be fulfilled and adopted in order to implement yield management in hotels (European Commission, 1997; Palatková & Zichová, 2011; Křížek & Neufus, 2014; Ivanov, 2014):

- Fixed, i.e. limited capacity – e.g. room in the hotel is fixed but the demand can be managed, so the management “must concentrate on achieving the best possible combination of volume and prices” (European Commission, 1997, p.20);
- Relatively high proportion of fixed costs – fixed costs do not change according to the number of guests in the hotel. A high proportion of fixed costs along with unused capacity increases the average costs thus it enables to reduce overall rentability;
- Low variable costs – variable costs change according to the number of guests in the hotel;
- Segmentation of demand – the hotel may apply different marketing strategy for different target segments and thus it does not use uniform marketing mix. There must always be a possibility of market segmentation and the price demand must be elastic and predictable. As Kostková (2010) adds, demand service (i.e. also tourism) models can be managed only when they can be predicted and, in a case, that customers will respond to incentives to change of the time or place where they are willing to use the service;
- The offered product is non-storable;
- Predictable demand – if demand is chaotic and non-predictable, hotel strategy would need to remain with constant prices;
- Demand is not always the same – it differs in time (lead time);
- Consistency of the product;
- The product is sold in advance of consumption;
- Reservation negotiation – the decision about pricing and availability must be implemented already in reservation and sales process.

Pricing Strategy and its Fairness

Good YM includes effective and right decisions at the right time sold to a right customer. Within the decision making process in any hotel, yield manager must reflect various factors such as for example different room types, individual contractual room rates, different durations of stay or some uncertainties including e.g. uncertainties about visitors' arrival, hotel room demand, its elasticity or the competitor pricing (Tse & Poon, 2011). In this case, YM implementation will benefit the hotel by effective cost management, better sales orientation and information used for marketing campaigns (European Commission, 1997) for different target groups.

Even though, dynamic price changes are beneficial for owners, not always may the game of tourism businesses and their pricing methods seem fair to customers. The study of Choi & Mattila (2004) tested the impact of variable pricing on customer's perception of fairness during the hotel reservation process. The results showed that when hotel customers received higher room rates than the rates of others, they perceived the pricing strategy to be less fair than if they received the same room rate as others. According to Sahut et al. (2016, p.4905), there are two main cases that can happen:

- Tourists generally accept the trend of increasing prices during high season;
- Despite hotels operate with price variations, customers still perceived it fairly and accept it generally during high season but only in a case a customer feels that the price increase is not to generate profit of the management or if these profits benefit the customer;
- On the other hand, tourists do not accept increase in costs because of "a last minute reservation, a last minute cancellation or of a reservation on one day of the week rather than another because the justification is not sufficient".

The relationship of yield management and customer relationship management should be mutually managed because the more customer knows about revenue/yield practices, the better customer perceives its unfairness (Kimes, 2010). To limit and minimise the negative effect of YM/RM, one suggestion, that resulted from the study of Choi and Mattila (2004), can be to train the hotel staff not to mention room rates to customers at the front desk or to give true information on the hotel YM/RM practices to customers during reservations. Another way is "to cautiously evaluate customers' perceptions of fairness" and see "how RM strategies might affect their behavioral intentions" (Haddad, 2014). As confirmed by Abrate et al. (2019, p.229), "the benefits by charging different prices to the same tourism service (intertemporal price discrimination) and by limiting the number of units available before the demand is known (inventory control) outweigh the potential negative effects of any perceived price unfairness".

Methodology

The proof of positive impact of yield management in the hotel industry will be researched by implementing yield management technique by a case study in a chosen hotel. The chosen hotel for this case study is a three-star hotel located in Vyškov, in the Czech Republic. It offers accommodation in 19 rooms divided into four main

categories. i.e. A category, Triple room, A+ and Lux category which are different by the price, area size and by the facilities used. Case study will be divided into two parts, i.e. current state of the hotel before implementing the yield management and the anticipated state after the possible usage of yield management. Processed data were available only for years 2013, 2014 and 2015. For economic calculation and overall process of using yield management, it is necessary to aim at these chosen parameters in the hotel based on the prerequisites by several literature researches (European Commission, 1997; Palatková & Zichová, 2011; Křížek & Neufus, 2014; Ivanov, 2014):

- calculation of fixed and variable costs based on real metrics from the hotel;
- RevPAR (revenue per available room) – Rooms Revenue per month/available rooms in the hotel in 2015;
- ARR (average room rate)– Room Revenue per month/rooms sold per month in 2015;
- occupancy rates in 2013, 2014 and 2015;
- current revenues of the hotel.

So far, chosen hotel does not implement any price changes or dynamic pricing when taking demand and occupation into consideration. All data such as occupancy, revenue and others are available from internal information system of a chosen small-sized hotel for the dates 2013, 2014 and 2015 and are based on consultations with hotel manager. When calculating increasing revenue in individual months, the assumptions resided from the occupation model of the highest occupancy rates in individual months. The model example of calculation is shown on the case from January, the rest of the calculations are seen further in results (see table 2).

Implementation of yield management into practice will be reached, firstly, by the analysis of current status of a chosen hotel and subsequently by calculation of anticipated revenue increase after using yield management. The calculation of anticipated increase in demand after using yield management was done based on the real occupancy data and occupancy analysis. The modelling of revenue change is thus a model case based on previous occupancy rates where we suppose similar development of demand regarding individual months and days of the year.

At the end of the whole case study, manager of the hotel has been contacted for a short interview aimed at presentation of the results of the overall case study. Its purpose was to see whether management will react positively or negatively on results of this study and whether implementation of yield management will be seen as a crucial future step in his small hotel.

Results

Introduction of Economic Side of the Hotel

The case study was conducted in the hotel situated in the Czech Republic. The chosen hotel includes various services such as accommodation, spa, whirlpool, bowling and conference rooms. In some hotels, additional revenues from restaurants, spa, casino

or others may generate marginal revenues (Ivanov, 2014), however, so far, this hotel is not the case. Therefore, the case study counts only with the accommodation service when introducing yield management policy. Hotel situated in Vyškov offers accommodation in four different types of rooms that differ by prices as seen in table 3.

Economically, based on these prices, the overall revenue in 2015 from accommodation service was 4 721 743 CZK. In order to calculate whether yield management strategy is successful, two important indicators of yield management, i.e. average room rate and revenue per available room, were calculated:

⇒ ARR (average room rate) = Room Revenue per month/rooms sold per month = 4 721 743/3 937 = 1 199 CZK/per person

⇒ RevPAR (revenue per available room) = Rooms Revenue per month/available rooms = 4 721 743/6 931 = 681 CZK/per room

In the following table (table 4), average fixed and variable cost calculation was done due to getting the number of fixed and variable costs for setting the price for the room. Individual amounts were divided by 30 day in the calendar month and afterwards it was divided by the capacity of the hotel (19 rooms).

Prerequisites for Possible Yield Management Usage in the Hotel

In order to implement yield management, there must be fulfilled these prerequisites:

1. At first, it is necessary to know the types of customers and their preferred booking methods, i.e. to do the **segmentation of customers**. Guests can make a reservation in the first place through the hotel's website. In average, every fifth customer books a stay through a hotel's website. Other group of clients are those who book their stay through various portals. The most used is booking.com followed by Previo. The key customers are business clients due to various companies that are located nearby hotel. Therefore, the key customers are mostly business clients who accommodate in the hotel in the week from Monday to Friday. Weekends are usually covered by different kinds of events such as weddings, celebrations or by the sales of weekend packages though various internet portals. Crucial are also various annual events organised by town and its nearby surrounding that attracts customers.
 2. **Relatively high share of fixed costs and low variable costs** was fulfilled.
 3. **Occupancy rate in the period 2013-2015** was analysed in order to find out in which months, management can work with price changes. Graph 1 displays occupancy rates of the hotel in years 2013-2015.
- I. In order to set up a yield management plan, it is crucial to **sort occupancy by months** so that the team responsible for yield management is able to respond quickly to the occupancy and changes. Thus, in the following table, occupancy is rated and grouped by colour after every three months with almost the same occupancy (see table 5).
 - II. Management should also know other details of occupancy such as **occupancy during individual days or occupancy of rooms/beds** (see table 6).

Based on the analysis of the occupancy in hotel, it was proved that in winter months, i.e. January, February and December, the prices should be rather lower to attract more guests. On the contrary, in June, August and September, the management can afford to increase the prices, as the demand is over 60% in each of the researched years. The most occupied month is August (75,83%) followed by September (70,67%), June (68,20%), July (65,30%) and October (63,50%). Management should also know other details of occupancy such as **occupancy during individual days** or **occupancy of rooms/beds**. Surprisingly, hotel has the best occupancy on Tuesdays (over 80% in total average for 12 months) and thus the prices should be higher on Tuesdays, Wednesdays and Mondays because its occupancy is higher than during weekends. Due to the fact that hotel is mostly business hotel, months excluding July, August or October show that the rooms are occupied mostly by one person whereas during summer months such as July and August, hotel is used mostly by families with children. This is evident in hotel statistics in the number of occupied rooms that represents half the number of occupied beds.

Possible Future Implementation of Yield Management in the Hotel

Previously mentioned analyses proved that in the chosen hotel, these changes need to be implemented when starting with yield management implementation:

1. Price increase on Tuesdays and Wednesdays for single-person rooms.
2. Reduction of weekend prices for the rooms occupied by one or two people or the creation of restrictions – minimal stay discounts on at least 2 days (Friday-Sunday and Saturday-Monday).
3. Overall decrease of prices in December, January and February and increase in prices in June, July, August and September.
4. In the last 3 unoccupied rooms always raise the price by 10%.
5. It is necessary to search event in Vyškov and its surroundings – to create so called demand calendar.

For the purposes of this case study, simplified calculation that is based on revenues in 2015, was done. The revenues are present in table 7.

While calculating anticipated revenues after implementation of yield management, each calculation was based on the earnings for relevant month in order to solve non-stable occupancy. The research also takes into account the occupancy in individual days and assigns either positive increase in % or negative decrease. The decrease is compensated by the assumption of increasing the occupancy according to the occupancy of the given months.

In other months, the system of calculation was similar with exception of different days that were evaluated as the most and less occupied in every month. The following table 8 shows the procedure of calculation of increasing occupancy from January to December and the most and less occupied days.

Each month behaves differently according to anticipated increase or decrease in occupancy as stated in table 5 and 6. By looking at the table, several trends are evident.

For example, occupancy in June is according to table 6 higher than 80% also in Thursdays so therefore, June calculates with the increase in calculations in this day. Looking at July, real occupancy was over 70% on Saturdays so the price stayed the same. In August, it is evident that the occupancy was good on Friday and Saturday with no significant fluctuations, so the prices stayed the same and were not decreased or increased. In December, the prices increased on Tuesday and Wednesday but decreased in other days of the month because the occupancy was very low.

It must be noted that this is optimistic evaluation of occupancy in individual months because increasing occupancy was equivalent to lowering the prices, however this is not always the case. Thus, the final increase after future implementation of yield management can be a little bit lower even when we take into account restrictions. This can be seen also as the limitation of this research as well as methodological approach in a choice of single case study which results in a limited generalization of the results.

In Conclusion

Revenue and yield management are modern management techniques that increase efficiency and maximizes revenues in many tourism businesses, especially in hotel businesses. Relatively high fixed costs, its fixed capacity, predictable demand and market segmentation enables to use yield management in hotels and play with price elasticity. For some customers, however, dynamic pricing may seem as used unfair management practice when the customer's knowledge about pricing strategy is higher and the management is not able to deal with it. Its implementation thus requires constant learning of the management and employees in order to respond to mistakes and monitor its overall progress. As a result, lots of studies aim at customer behaviour within dynamic pricing strategies and its unfair policy in hotels but do not address specific yield management techniques in small-sized hotels. There are some hotels in the Czech Republic, especially the small-sized hotels, that underestimate the implementation of dynamic pricing in some way. First problem why hotels reject to implement this management strategy is a lack of knowledge and practical information about its incorporation into management strategy. Thus, for small and medium hotels, the old system of price policy is more convenient also with regard to trainings of staff. Secondly, the problem resides in a lack of information to managers about its benefits and a lack of investments. Real case studies are missing in order to show high potential of revenue and yield management to overall hotel financial policy. This study is related to currently existing similar studies to some parts such as underlining the importance of dynamic pricing for increasing revenues, manager's perceptions and underpinning recommendations for improving the current status. Mostly researchers, however, deal with revenue management and its effect on increasing revenues in large hotels and customers' behaviour rather than on addressing small-sized hotels and yield management.

As a result, this paper presented a case study of evaluation of the usage of yield management in a chosen hotel in the Czech Republic and proved how revenue

management can be applicable even in small-sized hotel in the Czech Republic by using the benefits of dynamic pricing resulting in annual revenue increase. Based on historic demand data from the hotel, the future estimation of revenues proved increasing revenues by 209 693 CZK during one year when implementing simple form of yield management. Firstly, prerequisites needed to be analysed in order to evaluate appropriateness of the conditions for yield management usage. These included relatively high share of fixed costs and low variable costs, segmentation of customers based on their needs and analysis of occupancy rates in the surveyed period 2013-2015. When thinking about application of pricing policy within yield management in our concrete hotel, the prices should be rather lower to attract more guests in winter months, i.e. January, February and December. On the contrary, in June, August and September, the management can afford to increase the prices, as the demand analysis showed demand over 60% in each of the researched years. Surprisingly, hotel has the best occupancy in regular days of the week and thus the prices should be higher on Tuesdays, Wednesdays and Mondays because its occupancy is higher than during weekends. This is caused mainly by the target segment of the customers who are business clients and create most of the demand throughout the year. Secondly, occupancy analysis served for prediction of occupancy and the calculation of revenues while applying yield management. However, not always historical demand data may serve as a good estimation of future demand rates (Badinelli, 2000) what can be seen as the limitation of this research. To conclude, hotel has a good potential for application of yield management. The case study showed its optimistic variety of results when increasing occupancy was equivalent to lowering the prices and thus the final increase in revenue after implementation of yield management was 209 693 CZK in 2015.

This is a real case of the hotel management who perceived yield management could help to improve their economic side, however the current implementation of it has been stagnant for last few years. After consultations of this case study and presenting results to the management, hotel management uses the principles of revenue management mainly during highly visited events in the nearby such as International Engineering Fair or Grand Prix of the Czech Republic in Brno. However, not even this successful case study results have persuaded management of widespread deployment and incorporation of yield management in the hotel strategy. One of the advantages of this partial yield management application is that the hotel does not need any yield manager and the operations may be done by regular employees with training, in this case by receptionists. Yield pricing mirrors dynamic reaction of management to changing market conditions, however when yield management is forecasted wrong, is not flexible or used systematically the whole year as in this case study, it can negatively affect revenues. Therefore, it is advised to do the process regularly and complexly in order to avoid any mistakes that may occur. The management of the hotel should remember that the financial efficiency in those months, when yield management is not used as in the case study of this Czech company, is lost forever. Most small and medium hotels may think that estimation of demand and dynamic pricing is not for them. This case study showed that dynamic pricing changes even in small hotels may lead to higher financial

efficiency. The uniqueness of this research resides in filling a literature research gap as there has not been found any current study presenting the implementation or usage of yield management in small-sized hotels in the Czech Republic nor abroad. Most studies are concerned about application and description of revenue management importance within bigger hotels and hotel chains. Moreover, it offers a concrete new and simplified design method for hotels which are thinking about implementation of yield management into practice. It fills in the research gap that lacks the concrete and practical information and calculations that can persuade financial managers of small hotels to apply this strategy within their facilities. In order to reach positive results, hotel managers should regularly monitor demand curve and its fluctuations, need to fight with unwillingness of employees to adapt to new system, check accuracy of entered data and invest in necessary information technology – these are the starting points of every successful yield management implementation that can improve competitive advantage.

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Table 1
The applicability of yield management in chosen tourism businesses

	Perishable inventory	High, fixed, low variable costs	Fixed capacity	Advance purchase	YM applicability
Airlines	•	•	•	•	High
Cruise ships	•	•	•	•	High
Railways	•	•	*	*	Medium-high
Rental cars	•	•	*	•	High
Ferries	•	•	*	*	Medium-high
Tour operators	•	*	*	•	Medium-high
Travel agents	○	•	○	○	Low
Hotels	•	•	•	•	High
Conference/convention/centres	•	•	•	•	Medium-high
Ski lifts	•	•	•	*	Medium
Golf courses	•	•	•	*	Medium
Theatres/cinemas/opera houses	•	•	•	*	Medium
Museums	•	•	*	*	Medium
Amusement parks	•	•	*	*	Medium
Historical attractions	•	•	*	*	Medium
Casinos	•	•	•	•	Medium-high

Source: European Commission (1997)

- Yes
- No
- * Sometimes

Table 2
Model example of increasing revenues in January

JANUARY	Revenues= 248 531 CZK	} Assumption of increased occupancy
4 x Tuesday	4 * 0,5%	
4 x Wednesday	4 * 0,3%	
5 x Friday	5 * (-0,2%)	
5 x Saturday	5 * (-0,3)%	
4 x Sunday	4 * (-0,5)%	
Σ Total %	+ 2,90%	
Σ Total in CZK	+ 7 207 CZK	

Table 3

Current pricelist of the rooms in 2015 (source: internal data of the company)

Room category	1 person/room	2 people/room	3 people/room
A category	920 CZK	1 240 CZK	
Triple room	1 360 CZK	1 580 CZK	1 730 CZK
A+ category	960 CZK	1 360 CZK	
LUX category	1060 CZK	1 560 CZK	

Table 4
Fixed and variable costs calculation (own processing)

Name of fixed costs	Per month in CZK	Per day in CZK	Per room in CZK
Insurance	15 000	500	26,32
60% energies	12 000	400	21,05
80% of gross margin – room service	33 300	1 110	58,42
90% of gross margin - receptionists	39 960	1 332	70,11
Gross margin - operational	12 000	400	21,05
50% - cleansers	4 000	133,33	7,02
Liabilities to the social and health insurance company	25 500	850 44,74	
30% - maintenance	3 000	100	5,26
10% - breakfast	500	16,67	0,88
Payment of the loan (one half)	40 000	1 333,33	70,18
Overall	185 260	6 175,33	325,02
5% fee for deterioration of non-current assets	*0,05	*0,05	*0,05
Overall	194 523	6 484.10	341
Name of variable costs	Per month	Per day	Per room
40% energies	8 000	266,67	14,04
20% of gross margin – room service	6 600	220	11,58
10% of gross margin - receptionists	3 300	110	5,79
30% - cleansers	4 000	133,33	7,02
Sanitary equipment	5 000	166,67	8,77
70% - maintenance	7 000	233,33	12,28
Σ Total	33 900	1 130	59

Graph 1
Occupancy rates of the hotel in chosen years (own processing)

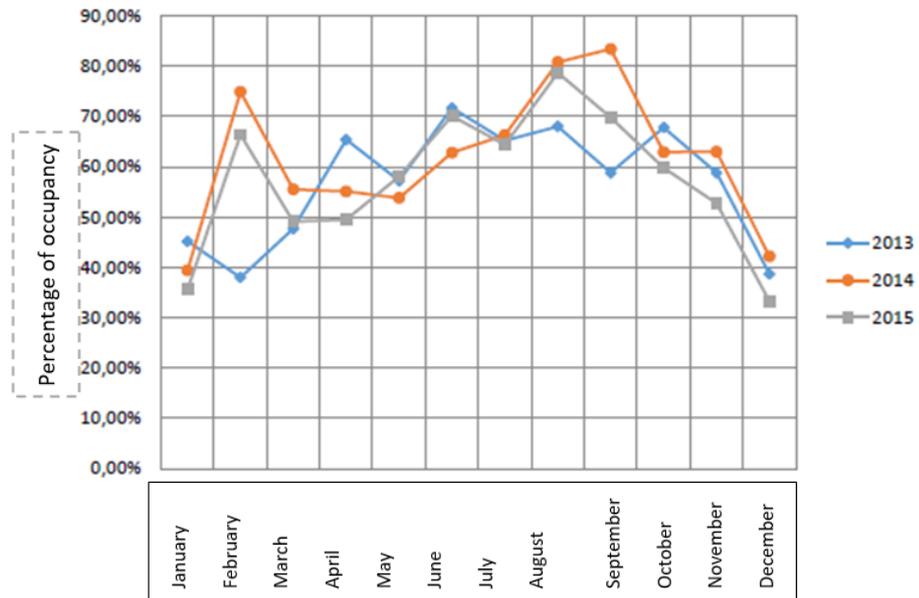


Table 5
Occupancy rating by every three months (own processing)

	2013	2014	2015
1.	June	September	August
2.	August	August	June
3.	October	February	September
4.	April	July	February
5.	July	November	July
6.	November	October	October
7.	September	June	May
8.	May	March	November
9.	March	April	April
10.	January	May	March
11.	December	December	January
12.	February	January	December

Table 6

Occupancy in % divided according to individual days (own processing)

	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
January	59,83%	75%	59,48%	42,26%	25,1%	15,13%	18,42%
February	65,75%	87,46%	69,1%	56,24%	40,3%	45,18%	31,25%
March	62,9%	80,04%	72,36%	56,56%	43,26%	37,9%	18,51%
April	46,7%	88,94%	83,59%	59,86%	50,85%	49,59%	33,56%
May	77,63%	83,55%	62,58%	61,97%	35,48%	42,39%	36,84%
June	74,83%	73,46%	81,56%	91,92%	53,3%	61,83%	41,13%
July	70,77%	78,27%	78,58%	61,87%	57,45%	72,26%	35,53%
August	76,3%	80,25%	83,51%	79,52%	74,31%	83,57%	43,91%
September	85,64%	83,61%	81,56%	77,63%	60,54%	63,49%	42,66%
October	67,35%	84,43%	87,36%	70%	50,29%	59,86%	35,66%
November	69,75%	86,16%	88,15%	84,86%	32,76%	10,54%	35,68%
December	40,97%	63,98%	51,8%	44,98%	38,82%	20,4%	18,1%
Σ Total - average	66,54%	80,43%	70,01%	65,64%	46,87%	46,84%	32,60%
Rating	3.	1.	2.	4.	5.	6.	7.

Table 7
Revenues by months in 2015 (own processing)

Month (2015)	Revenue (in CZK)
January	248 531
February	398 706
March	340 654
April	288 509
May	395 563
June	475 163
July	483 968
August	598 069
September	521 022
October	355 668
November	357 889
December	257 398
Σ Total	4 721 743

Table 8

Possible future implementation of yield management and changes in revenues (own processing)

Month	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday	Total %	Total CZK
January		4* 0,5%	4 * 0,3%		5 * (-0,2%)	5 * (-0,3)	4 * (-0,5%)	+ 2,9%	+ 7 207
February		4 * 0,5%	4 * 0,3%		4 * (-0,2%)	4 * (-0,3)	4 * (-0,5%)	+ 4,2%	+ 16 746
March		5 * 0,5%	4 * 0,3%		4 * (-0,2%)	4 * (-0,3)	5 * (-0,5%)	+ 3,7%	+ 12 604
April		4 * 0,5%	5 * 0,3%		4 * (-0,2%)	4 * (-0,3)	4 * (-0,5%)	+ 3%	+ 8 655
May		4 * 0,5%	4 * 0,3%		5 * (-0,2%)	5 * (-0,3)	5 * (-0,5%)	+ 4,2%	+ 16 613
June		5 * 0,5%	4 * 0,3%	4 * 0,5%	4 * (-0,2%)	4 * (-0,3)	4 * (-0,5%)	+ 7,2%	+ 34 212
July		4 * 0,5%	5 * 0,3%		5 * (-0,2%)		4 * (-0,5%)	+ 5%	+ 24 198
August		4 * 0,5%	4 * 0,3%				5 * (-0,5%)	+ 4%	+ 23 923
September	4 * 0,3%	4 * 0,5%	5 * 0,3%				4 * (-0,5%)	+ 4,7%	+ 24 488
October		4 * 0,5%	4 * 0,3%				4 * (-0,5%)	+ 2,7%	+ 9 603
November		4 * 0,5%	4 * 0,3%	4 * 0,5%	4 * (-0,2%)	4 * (-0,3)	5 * (-0,5%)	+ 6,7%	+23 979
December	4 * (-0,2%)	4 * 0,5%	5 * 0,3%	5 * (-0,2%)	5 * (-0,2%)	5 * (-0,3)	4 * (-0,5%)	+ 2,9%	+ 7 465
Total									+209.693