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IMPLEMENTATION AND REGIONAL DEPLOYMENT OF HOTEL MANAGEMENT SYSTEMS BY ACCOMMODATION FACILITIES IN THE CZECH REPUBLIC

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Abstract

Among the key prerequisites for a successful implementation of management practices in the hospitality industry belong, without any question, hotel information systems that provide relevant data for the control and both strategic as well as tactical decisions. Modern information systems have become a regular feature of the most accommodation facilities. The basic functions of the hotel management systems include collection, preservation and processing of data, data analysis and subsequent implementation of specific procedures. Czech market offers a range of hotel systems, which vary in terms of cost, royalties, services, functions, available modules, available interfaces and other characteristics. The aim of the submitted paper is to evaluate the current status of the implementation of hotel management and supporting systems used in practice by Czech accommodation facilities. The emphasis will be put on the analysis of regional representation of hotel management systems as well as the application of information systems in the context of the management of cost and capacity in advance. The methodological approach to solution-seeking is based on the results of a survey of more than a hundred of hotel facilities in the Czech Republic.

Introduction

Growing competition in the environment of a globalized economy boosts the demand for efficient functioning of businesses in the area of the tourism and hotel industry. Modern hotel management systems are becoming common part and a necessary equipment of the quality accommodation facilities in the Czech Republic. Many products are mainly promoted via easy handling of its modules focused on the activities connected with reception and reservations and they contain only a limited number of outputs. The options of more detailed customer segmentation analysis, prices, booking in advance, forecasts, work with high-quality databases and so on lead to a better utilization of the available capacity with the highest average price of accommodation achieved.

Accommodation facilities are increasingly using more sophisticated products of the companies that offer both hotel systems (PMS), but also other important systems that support and streamline decision-making processes of the management and increase the possibility of

the control. These systems allow a person responsible for managing revenues (revenue manager) more accurate and faster decision making in tactical and strategic issues. They provide him, in particular, with information necessary for daily yielding.

The aim of the paper is to evaluate the current status of the implementation of hotel management and supporting systems used in practice by Czech accommodation facilities. The emphasis will be put on the analysis of regional representation of hotel management systems as well as the application of information systems in the context of the management of cost and capacity in advance. The methodological approach to a solution-seeking is based on the results of a survey of more than a hundred of hotel facilities in the Czech Republic. A pilot survey based on questionnaire method of data gathering can be seen as the primary research.

Hospitality industry technologies of use for revenue management needs

Tourism business is characterized by specific conditions. Among them, most authors add a fixed capacity, transience of services and sale in advance, variability of forces of demand and its possible prognosis, high proportion of fixed costs, possibility of market segmentation and product differentiation (Indrová 1997, Morrison, 1995). From this definition we can deduce certain methods and tools for optimizing revenue. These mainly concern optimal price setting in line with the principles of revenue management. Application of revenue management is not possible without quality statistical inputs and outputs. The processing of such data significantly promotes the use of hotel management systems.

Technology and information systems and their application in hospitality become normal part and the necessary equipment of the most accommodations in the Czech Republic. Many products are mainly promoted via easy handling of their modules focused on the activities connected with reception and reservations, and contain only a limited number of outputs. They also allow a more detailed analysis of customer segmentation, pricing, booking in advance, forecasts, and work with high-quality databases that lead to better utilization of the available capacity together with the highest average price of accommodation achieved. The essential features of modern information technologies also include the integration of data or even the integration of the entire information systems. In the field of hospitality there are implemented complex systems that incorporate reservation system, accounting, restaurant management system, warehouse management, etc. Information systems are designed for the collection, maintenance, processing and provision of both information and data (Beranek, 2013). The rapid development of information technology has opened a space for a quick reaction to market changes for service industries (Krizek and Neufus, 2011).

In the Czech Republic there are around twenty hotel systems on offer, both of Czech and foreign origin and the new constantly arrive. There are big differences in terms of cost, royalties, services, functions, available modules, interfaces, etc. possible. When choosing a hotel system it is necessary to take into account the size of the accommodation, category and class, the annual utilization, cost and especially the requirements of the management on the quantity, quality and fast availability of information in an understandable form. The use of modern information systems and technologies in revenue management is absolutely an indispensable phenomenon that is developing rapidly. Revenue management is a method used to optimize corporate income, while using optimal capacity and maximum prices and that method requires a large amount of input information.

Revenue management in the hotel industry in the Czech Republic has been perceived as emerging since the late 1990s mainly due to the incorporated know-how of international chains of hotels and airlines. Pricing policy based on principles of revenue management is faced by clients for a long time. This pricing policy broke through also in the accommodation

sector. At the turn of the millennium a gradual establishment of revenue management took place largely in four-star and five-star hotels. A more significant development has been taking place only in recent years along with the growing experience of management.

The importance of revenue management to optimize the functioning of accommodation facilities is confirmed by both Czech and foreign professional publications. However, a universal definition of revenue management for hospitality does not exist. Hayes and Miller define revenue management as a set of activities which ensure that the pricing policy correlates with a willingness of target customers to pay. With the help of detailed customer behaviour tracking and analysis of data the ideal product for a variety of distribution channels can be built. The main cause of convincing results of the revenue management is considered the transition from cost pricing to demand-creation rate. They emphasize the power of demand versus the perception of the value of the customer (Hayes Miller, 2011). Indrová, Voříšek simplify the concept of revenue management as selling the right spots to the right customers at the right price (Indrová, 1997). Based on current experience it would be appropriate to add yet another characteristic, namely the right distribution channel with the lowest commission efficiency.

Revenue management in the hospitality industry represents a more complex managerial approach to revenue management than yield management. Revenue management extends into the broader field of the actions taken by a revenue manager. These are primarily in marketing area, however the costs associated with rooms selling (commissions, costs of technology) and additional revenue are taken into account. Yielding is part of revenue management, a kind of a tactical tool that is aimed at optimizing sales. Revenue management on the other hand is a strategic tool of corporate governance. Basic revenue management techniques include: market segmentation, forecasts of demand (forecasting), a flexible pricing policy (dynamic pricing), targeted overbooking (smart overbooking), allocation and capacity management (yielding) and the analytical work with technologies and systems.

The main task of the RM enables, on the basis of historical data for demand, occupancy, income and other factors, their analyses and namely on predictions of their future development, to make the right pricing and other business decisions that will achieve revenue maximization and optimal utilization of the capacity. Revenue managers build their activities mainly around the outputs from the property management system, and ideally also a revenue management system. *Property Management System* (PMS) represents a basic hotel management system that allows revenue managers to take tactical and strategic decisions. Mainly it provides the necessary information for subsequent decisions on pricing optimization, etc. The most famous PMS used in the Czech Republic include Micros Fidelio, Micros Opera, Hores, HotelTime, Previo, Mefisto, Protel, etc.

A kind of connecting property management system is becoming more and more common on the Czech market and a revenue management system is no longer the domain of international hotel chains only. Increasingly, it is implemented by independent accommodation operators of medium size (average size in the Czech Republic is reflected rather than an international comparison). It seems like an effective solution to implement the system in premises of about 70 rooms and more. The reason for that is relatively high cost, demand for sophisticated staff and involvement of a specialized revenue manager. Revenue management system makes available the data extracted from two or three sources, it acquires data about online prices of competing hotels, and as a novelty on the market there appeared a combination of data obtained from an online reputation systems, which have a direct impact on price making and the price itself. Among the most famous online reputation portals used in the Czech Republic belong TripAdvisor, Trivago, Czechadvisor, etc.

This information mix of data extracted into revenue management system in real time, allows to generate the necessary information to help the revenue manager, reservation staff,

reception staff, banquets personnel and trade staff, to take efficiently and quickly managerial decisions on how and when is best to sell, what will be the size of demand, including pricing recommendations combined with a segment of customers, on distribution paths, a group-ceiling room category, length of stay, percentage of targeted overbooking and more. Given data inputs lead to the optimization of occupancy in maximizing the average price of accommodation, which ultimately has a positive effect on RevPAR ("revenue per available room" recalculated net revenues from accomodation per a room available).

At least two technological solutions - channel manager and rate checker contribute to faster and more accurate application of revenue management. Channel manager can be defined as the management of online distribution channels. Nowadays hotels use many distribution channels. Usually it is the management of between 5 and 15 Online Travel Agencies plus its own booking system on the web pages of a given hotel. This is a time-consuming and somewhat routine work where quite a large space for human error exists. This tool will ensure the elimination of a human error and therefore price parity on all sales channels at all times, as well as a significant time-saving. Rate checker is a strategic optimizer of prices, which effectively monitors the price competition in the online channels. This tool helps the revenue manager to track online the prices of their selected competitors for any time period on any page of Online Travel Agencies.

Use of hotel management systems in the Czech Republic

The following part will evaluate the current state of implementation of hotel management and supporting systems used in practice by Czech accommodation facilities. The emphasis will be put on the analysis of regional representation of hotel management systems as well as the application of information systems in the context of the management of cost and capacity in advance. As the data base is used a questionnaire survey that took place from November 2014 to February 2015.

Chart 1: Distribution of respondents and hotel systems at a regional level
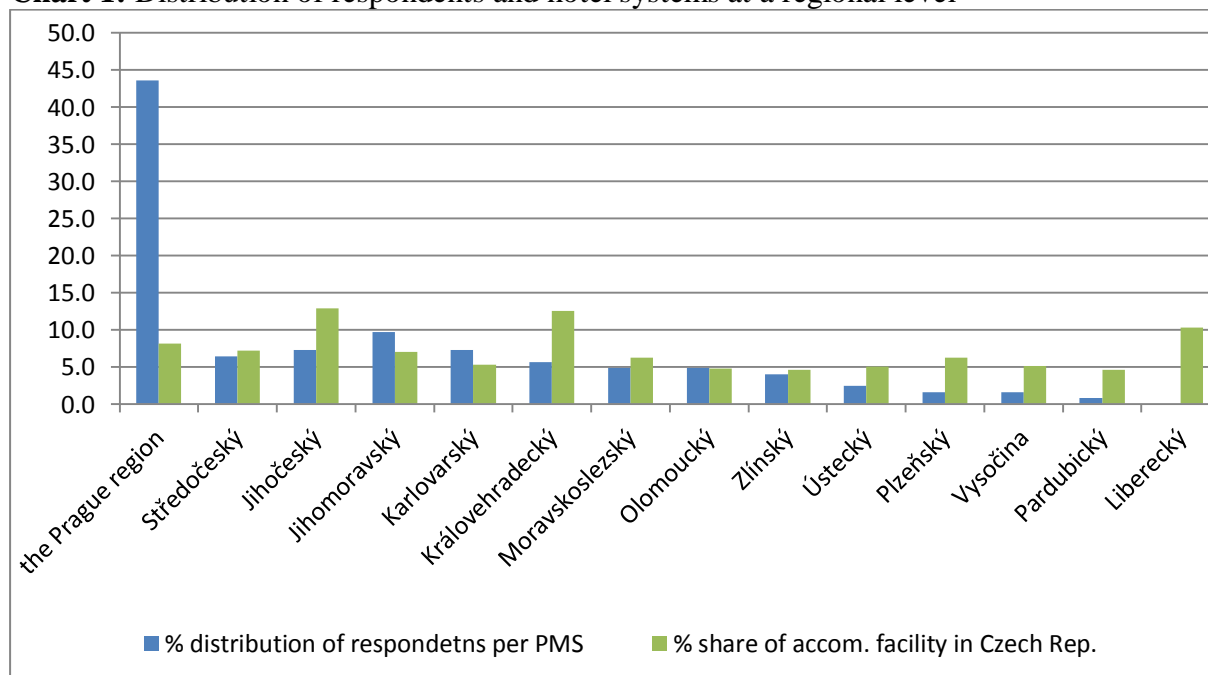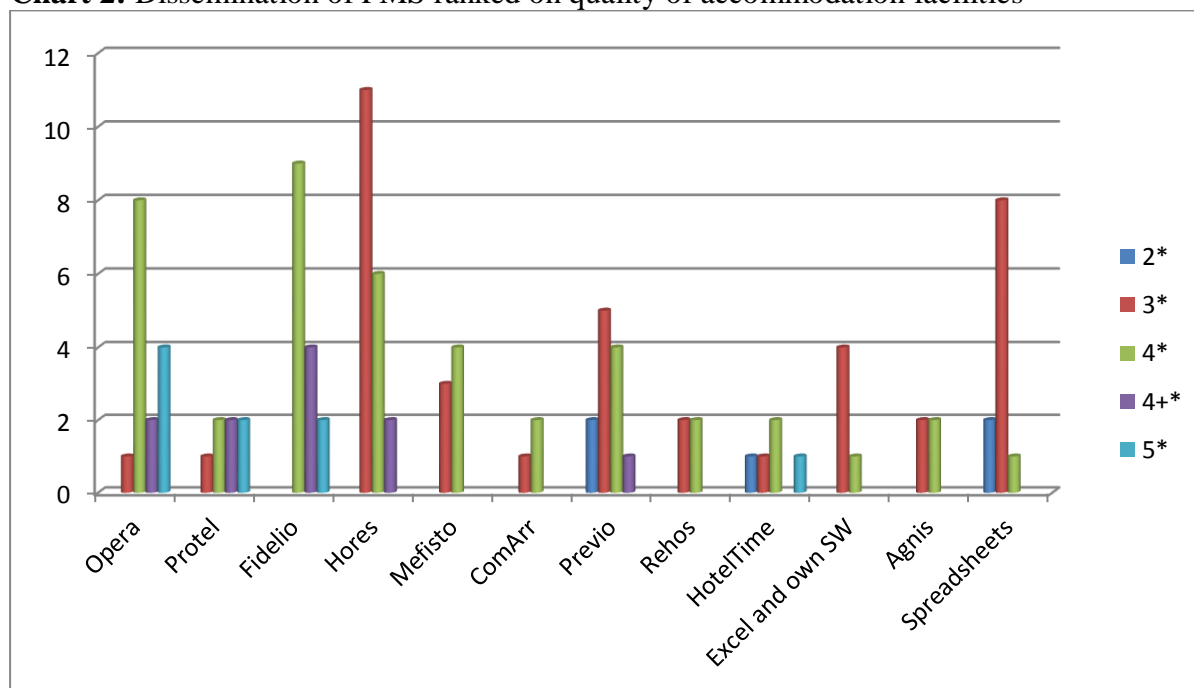

Source: Own questionnaire survey

Over 500 accommodation facilities were interviewed, mostly three- and four-star hotels of the size of at least 20 rooms and 40 beds, respectively. In total 147 completed questionnaires were used. A pilot survey verified the structure of the questionnaire and confirmed problems with the willingness of the entrepreneurs to communicate information from their business activities. At the same time the need for continuous training of entrepreneurs in that area was confirmed as many of them encountered the concept of revenue management for the first time. The analysed sample contains from 87% the data from hotels and 13% the data from B&Bs, of which about one third were part of the hotel chains. A relatively high share can be explained by the fact that a significant part of the questionnaires came from hotels located in Prague and that there were expansions and mergers of hotel systems into the regions (e.g. CPI Hotels – representation of Clarion hotels).

The bulk of the accommodation facilities analysed is based in the capital city of Prague. The survey shows that the use of the hotel management system is very widespread. More than 90% of the analysed facilities use a form of a hotel management system. Less than 10 per cent share of facilities still applies typical hotel sheets. An interesting finding is that 37% of the accommodation facilities use also further hotel supporting systems that make management decisions faster and more accurate. Most often these are Channel Manager (a system for everyday yielding) and Rate Checker (a system for monitoring the prices of competitors).

When looking at the regional distribution of accommodation facilities, we find out that 50% of the responses involved facilities located in the areas of Prague and Central Bohemia. The reason for that dominance of these regions was a type of hotel facilities on which the survey focused. Accommodation facilities ranked as three and four-star hotels prevail here. In the regions outside Prague there is evident, on the contrary, a higher proportion of different types of accommodation facilities (boarding houses, hostels, motels, campgrounds, etc.). The highest representation in the use of Property Management Systems shows the region of Prague, which is to be expected given the number of multinational chains and big accommodation facilities.

Chart 2: Dissemination of PMS ranked on quality of accommodation facilities
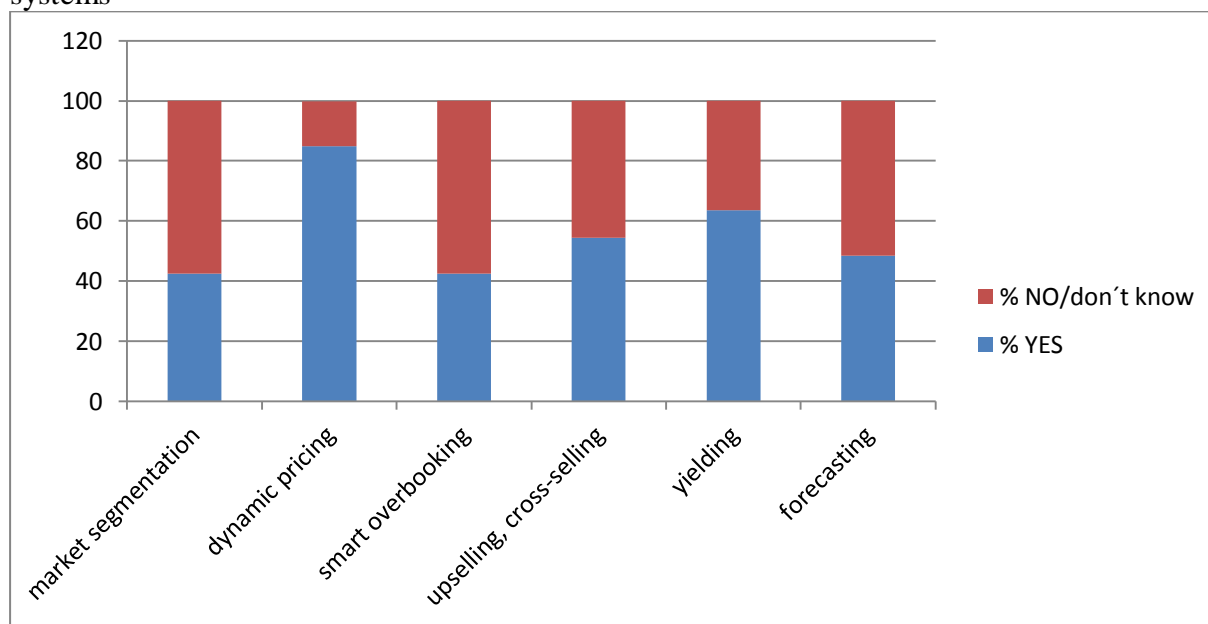

Source: Own questionnaire survey

Another area examined by the survey is the dissemination of the Property Management System according to the quality of accommodation facilities. In Chart 2 we can observe the distribution of individual PMS and their representation in terms of quality of accommodation facilities. The chart shows that only the Opera, Fidelio and Protel systems are used in the five-star and the vast majority of four-star or four-star superior hotels. As for the Opera, this system can also found in a three-star hotel, but it is a facility of the size of average of 101+ rooms belonging to a Czech chain of hotels. Also the Hores Plus system is not doing bad as it has an overwhelming representation among three-star hotels. Very similarly are doing Mephisto and Previo systems, where Previo has also a representation among two-star accommodation facilities. Regarding the ComArr system, that is mainly used by the Euroagentur managing its hotels in the country. One unexpected trait can be observed with the PMS called HotelTime, however having taken a closer look it was found out that the given five-star hotel was a one-room hotel. Less surprising were the results of the distribution of PMS made in Excel and customised software. Here we see a significant excess of three- and even two-star hotels.

As far as the satisfaction with the Property management system is concerned, 80% of the existing users are satisfied, 9% of the asked did not comment, and the remaining 11% provided short comments or a kind of direct reservations. The most common shortcomings noted in the survey were the following: system obsolence, insufficient support in the form of management reports for the needs of revenue management, inability to link to some other external systems, technical deficiencies, inadequate customer support, etc.

Chart 3: Use of revenue management techniques supported by hotel property management systems
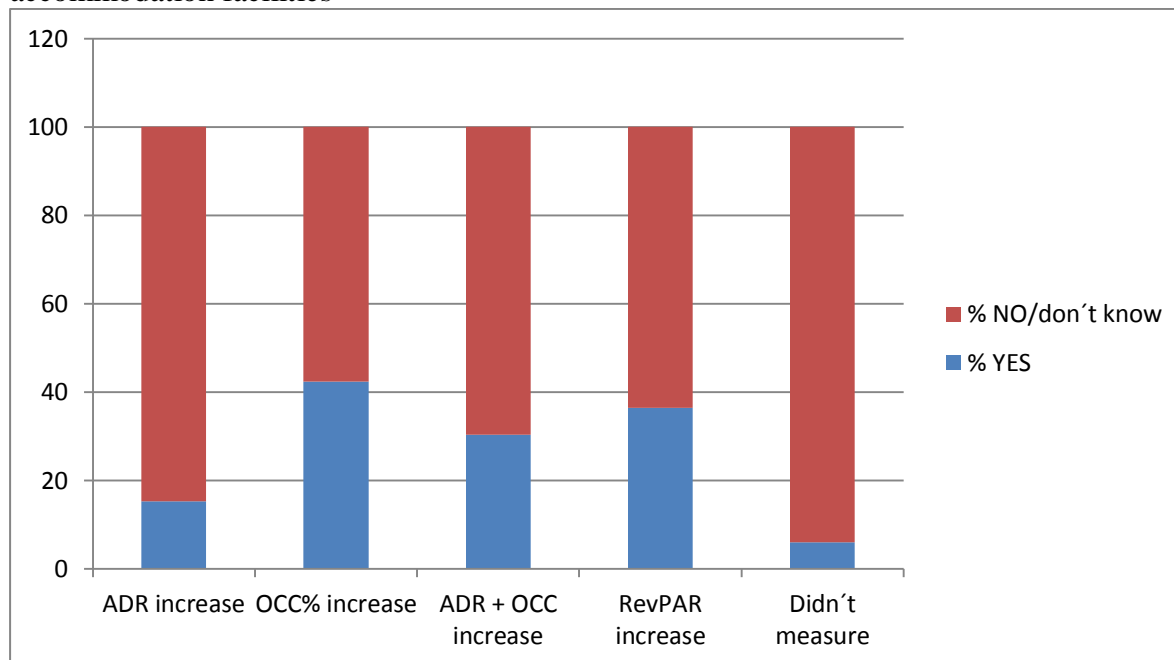

Source: Own questionnaire survey

In order to clear up the use of hotel property management systems, it is essential not only to specify the extent, to which the systems are implemented but also whether they positively impact the area of management revenue. In this respect, just a smaller part of the respondents provided their view in the survey (48 respondents in total). The reasoning of a tiny participation in the survey was that they were unable to answer certain questions in a relevant manner. In a number of the questionnaires there were answers such as *I do not know*; *I am not*

able to quantify, etc. Chart 3 illustrates the fact that revenue management techniques within the hotel management systems are most often used to implement an active pricing policy and to work actively with the capacity available in relation to the time ahead.

Chart 4: Consequent effects of the application of the revenue management principles in accommodation facilities

Source: Own questionnaire survey

Less than half of the respondents use the property management systems to set customer/market segmentation, targeted/smart overbooking and demand projections/forecasting. Quite surprising was the low utilization of segmentation, which is considered an absolutely crucial step in revenue management. Conversely a pretty predictable is a dismissive approach to smart overbooking as this technique is among the most demanding ones in terms of feasibility.

Chart 4 shows that the vast majority of responding accommodation facilities cannot exactly quantify the effects of application of revenue management techniques in the context of the use of hotel management systems. More than 90% of the respondents stated that they did not know the effects or did not notice any differences. A possible explanation may be that the survey was carried out in the period of the fading economic recession on the Czech market. For this reason, the demand for services amounted lower values, which had a negative impact on the availability, the price and the average RevPAR. However, these conclusions cannot be considered as a relevant argument against using revenue management techniques. In Chart 4 one can also see that respondents who work with key indicators, monitor them and are able to quantify the economic effects indicate that there has been an increase both in the average occupancy rates as well as in the RevPAR, specifically between 30 to 42%.

Conclusions

Currently, there is no need to argue about the need to use Property management systems in the hospitality practice. Hotel systems will facilitate and improve the work and above all reduce the time required for recording, storing and subsequent use of hotel data and feedback

control. Property management systems are becoming one of the key techniques for optimizing profit within the revenue management.

The necessity of the use of property management systems in the hospitality practice also demonstrated the undertaken research. The vast majority of respondents of the questionnaire survey assessed positively the use of property management systems, although there are some reservations about the quality of systems in terms of lack of customer support, the impossibility of links to other external systems and product obsolescence. Quite a surprising finding is the fact that less than ten percent of the interviewed Czech accommodation facilities do not work with any hotel management systems.

On the basis of a questionnaire survey we can say that the most sophisticated property management systems are mostly used by large accommodation facilities and the hotel chains in the Czech Republic. In these collective accommodation facilities there is generally higher demand for follow-up of the statistics and outcomes on the side of the management. Conversely, small and medium-sized collective accommodation facilities utilize systems that in terms of the content focus primarily on the smooth running of the reception and operation of the facility. Some small collective accommodation facilities use manual records or a simple monitoring of its vacancy via a spreadsheet editor. The size of accommodation is not directly related to the expensiveness and complexity of the acquired property management system. The results of the research can be explained by the fact that larger hotels are usually operated by more demanding executives who prefer more sophisticated systems.

When analysing the effects of property management systems on the application of the principles of revenue management, it was found out that a high percentage of responding collective accommodation facilities were unable to quantify the benefits for key economic indicators (such as average price of accommodation, vacancy, additional increases in revenues, RevPAR, GOPPAR, etc.). Revenue management practices are within the property management systems used for active and dynamic pricing policy, work with the available capacity overbooking, including the relation to real time and customer segmentation. The existing systems together with user competence so far have not contributed to the widespread use of hotel management systems in terms of demand forecasting.

Acknowledgements

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