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Booking Curves as an Instrument of Increasing of Independent Hotel Enterprise Efficiency. Case of Russia

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Abstract:

The article deals with the use of such a method of revenue management as the use of booking curves. Based on the results of a study conducted by LLC Hotel Business Consulting jointly with hotel companies in Moscow, a great number of three-star hotels and those with more number of stars do not fully use existing methods of revenue management which affects the effectiveness of their activities. It was concluded that the three-star hotels in Moscow do not have a Revenue Manager as a position in the company's staff. Partial functionality in the sphere of Revenue Management is performed by employees from other departments such as Front Office, Sales and others. In this article, we give an example of the calculation of typical booking curves for three-star hotels, taking into account seasonality and typical segments. With the help of these typical booking curves, hotel companies will be able to function more efficiently.

Keywords: hospitality; revenue management; booking curve; hotel

JEL Classification: H12; Z32

Introduction

Until quite recently, the market of hospitality and tourism industry in the Russian Federation was developing dynamically, but recently a number of negative events have occurred. Since 2014 the market of hospitality and tourism industry in the Russian Federation has been falling. This is brought on by the complex of problems: political, economic or social. A significant decline in world oil prices has negatively affected the stability of the national currency. As a result, the real incomes of the population are falling as well as their purchasing power. One can state the fact that all the decisions related to yield management are based on economic principles of supply and demand.

An effective guest service policy, well-thought-out additional offers and even the optimal location of the hotel cannot ensure the profitability of operations if the price of the services does not cover costs or frightens off the potential customers. Neither luxury hotel rooms, nor fashionable restaurants and modern conference halls will be of any interest if they cannot generate a rate of return deserving attention of owners and investors. The latter are driven by a perfectly understandable desire to profitably place their free financial resources. On the other hand, owners of hospitality industry companies also have countless ways to use their funds. If these companies do not provide their investors with an adequate level of income, they will use available funds in other areas of business activity. Thus, nowadays hotels need to more accurately determine what is worth spending money on.

Hotel yield management is a fairly new technique which has been adopted by Russian hotels recently. Hotels pay much attention to such issues as segmentation and pricing. Forecasting remains without close attention.

1. Literature review

The application of hotel yield management has been investigated by various Russian and foreign researchers.

Yield Management has been successfully adopted by the airline industry following deregulation in the late 1970's. In a hotel context, yield management - a profit maximization strategy - is concerned with the market sensitive pricing of fixed room capacity relative to specific market characteristics. (Donaghy, K., McMahon, U., McDowell, D. 1995, 139-150).

The paper (Ivanov, S. 2014) notes that field of hotel revenue management consists of revenue management system, process, metrics, analysis, forecasting, segmentation and profiling, and ethical issues.

Hotel revenue management model based on dynamic pricing to provide hotel managers with a flexible and efficient decision support tool for room revenue maximization. (Aziz, H.A., Saleh, M., Rasmy, M.H., Elshishiny, H. 2011, 177-183).

The article (Bitran, G.R., Gilbert, S.M. 1996, 35-49) deals with a realistic model of the hotel reservation problem. Unlike traditional models, this does not assume that all the customers arrive simultaneously on the targeted booking date. Based on observations of how the problem is solved in practice as well as the insights gained from this analysis, it was developed simple heuristic procedures for accepting reservations. Computational results demonstrate that these heuristics perform well relative to an upper bound that is based on perfect information about reservations requests and customer arrivals.

The paper (Guo, X., Ling, L., Yang, C., Li, Z., Liang, L. 2013, 274-281) studies the optimal dynamic pricing strategy based on market segmentation for service products in the online distribution channel taking hotel rooms as an example. As an effective policy which brings the service providers high occupancy rate and generates more profit than fixed pricing, the dynamic pricing strategy is extensively used in the online distribution channel.

We find that the large majority of hotels use some form of dynamic pricing. The composition of the clientele is a main driver of the dynamic pricing strategy. High star ratings are a quality signal supporting a dynamic premium price. Prices increase when fewer hotels with a similar star rating have availability. (Abrate, G., Fraquelli, G., Viglia, G 2012, 160-168)

The results of taking researches are the following: in Russia hotel yield management methods are used more and more actively by hoteliers every year; the application of existing yield management methods requires qualified personnel; taking into account the specificity indicated, three-star hotels and lower ones cannot effectively apply complex yield management methods, or use them ineffectively.

2. Methodology

When implementing yield management methods, it is necessary to monitor key indicators on an ongoing basis. Specific data of interest for the hotel should be collected on a daily basis for the further analysis. Among other data, an important stage in pricing is the tracking of booking curves.

The curve called "the booking curve" shows the average number of reservations for each time interval before the actual reservation date. Such a booking curve is based on long-term statistics of the number of reservations. The curve called "actual reservation" indicates the current state of the reservations for a certain date.

Thus, the ratio of these two curves determines the nature of the behavior of the hotel customers making room reservations. In all cases, when these two curves begin to diverge, immediate measures must be taken.

The hotel builds the booking curve for every day of the year. The booking curve can be of interval character *i.e.* it has upper and lower profile boundaries. In this case, the hotel starts to take certain measures when the curve of actual booking exceeds the limits of these boundaries.

The booking curves determine what percentage of the total volume of reservations should already be made by a certain date. In this analysis customer behavior and macroeconomic impact should be taken into account. For three-star hotels in Moscow, there are 3 main segments: tourists, conference participants and business segment.

The time scale of reservations by the days of the week (Figure 1) shows that the number of reservations on working days exceeds the number of reservations at the weekend.

Figure 1. Percentage of reservations during the week
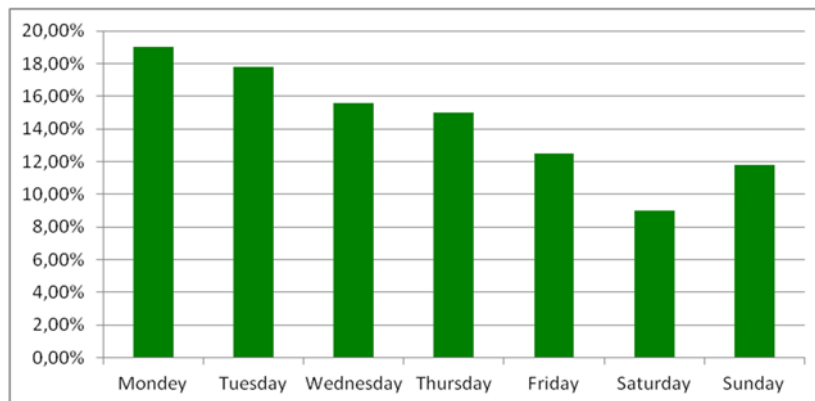
Source: Hotel Business Consulting, LLC

The number of reservations tends to constantly decrease from Monday to Saturday.

The hourly reservation data for the day in three-star hotels in Moscow (Figure 2) displays that most of the reservations fall on working hours with a peak at 10-11 a.m.

Figure 2. Percentage of reservations during the day
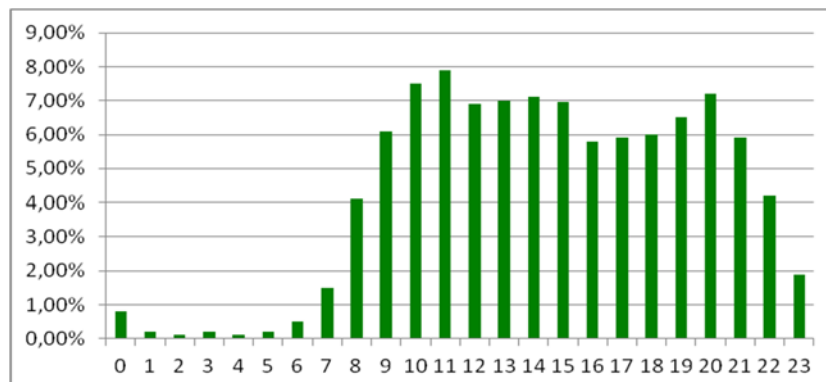
Source: Hotel Business Consulting, LLC

There is a peak of reservations 8 p.m. after people return home.

As for the peculiarities of the three-star hotels in Moscow, the main hotel occupancy falls on working days, and the minimal occupancy can be observed at the weekend (Figure 3).

Figure 3. Percentage of arrivals during the week
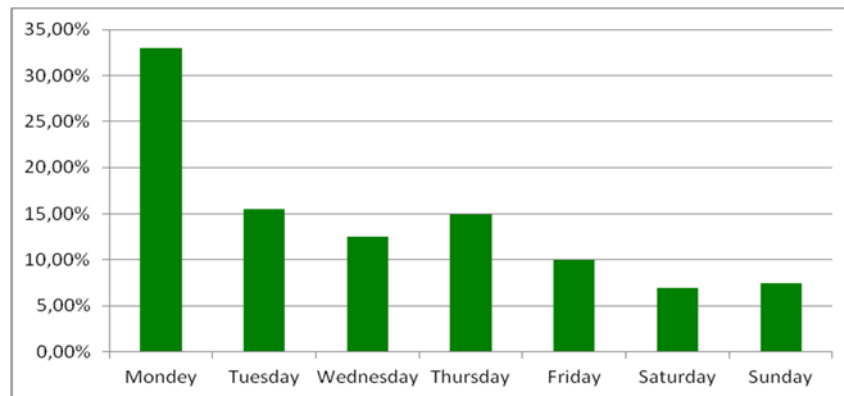
This explains the high prices on weekdays and low at the weekends. If we consider that the average length of stay for the business segment is 2.6 days, it becomes clear that the busiest days will be Monday and Friday. However, the hotel occupancy can also be kept at a sufficient level during the weekends by offering discounts and special prices.

Based on the data obtained from the three-star hotels in Moscow, one can single out the weekly seasonality (Figura 4).

Figure 4. Weekly seasonality for three-star hotels in Moscow
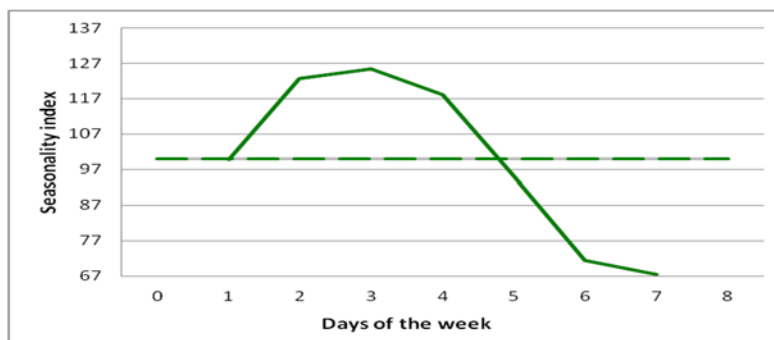
Based on the results of the analysis, we classify seasonality into high, medium and low seasons.

The booking curve enables to identify when the reservation of the hotel rooms begins and how the curve changes over the time.

The analysis of the booking curve helps to decide when it is necessary to establish the reservation limits.

Analyzing the data submitted by three-star hotels in Moscow in the high season, we see the following distribution. It is shown in Figure 5.

Figure 5. Model of the booking curve in the high season for three-star hotels in Moscow
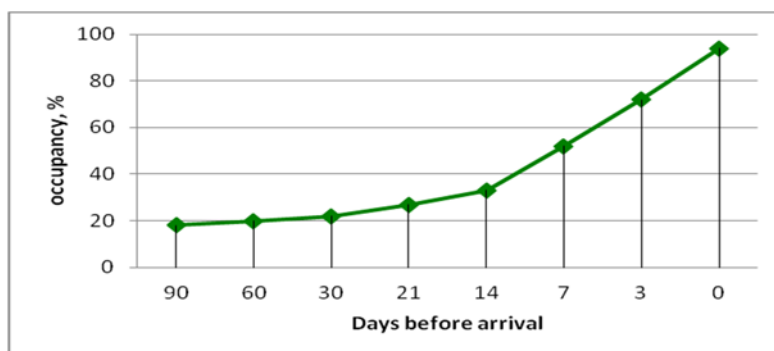
It should be taken into account that the booking curves are different for each segment. Thus, analyzing the distribution of reservations, we will build typical booking curves for each segment.

Figure 6 shows that the reservation of this segment takes place long before the date of arrival and practically does not increase. This segment provides occupancy in the selected season at the level of 16%.

Figure 6. Model of the booking curve with regard to tourists in the high season for three-star hotels in Moscow

Source: Compiled by the authors

Room reservation by conference participants (Figure 7) is minimal one to three months prior to arrival, and then it starts to increase. The greatest number of reservations of this segment is made 21 to 7 days before arrival and is 30% of the total occupancy.

Figure 7. Model of the booking curve with regard to conference participants in the high season for three-star hotels in Moscow
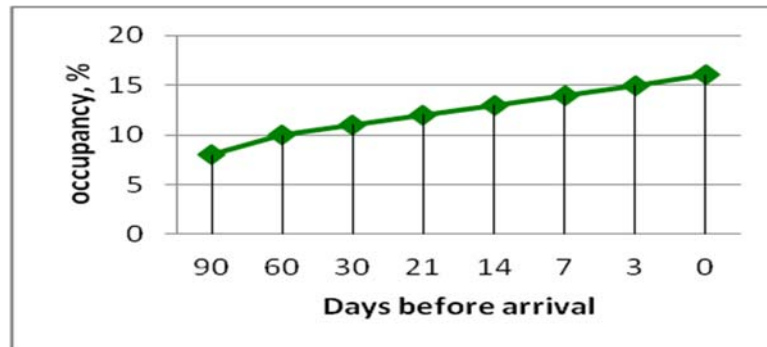

Source: Compiled by the authors

Reservation of the business segment (Figure 8) is virtually zero long before the arrival and starts only 14 days prior to the arrival, subsequently increasing very quickly. The business segment is a key segment of the three-star hotels in Moscow, as it provides almost half of the total hotel occupancy at the level of 48%.

Figure 8. Model of the booking curve with regard to business segment in the high season for three-star hotels in Moscow

Source: Compiled by the authors

Analyzing the data submitted by three-star hotels in Moscow in the medium season, we see the following distribution shown in Figure 9.

Figure 9. Model of the booking curve in the medium season for three-star hotels in Moscow

Source: Compiled by the authors

Similarly, with the previous example, let us build a model of the booking curve in the medium season for each segment.

Figure 10 shows that the reservation of this segment takes place long before the date of arrival and practically does not increase. This segment provides occupancy in the selected season at the level of 16%.
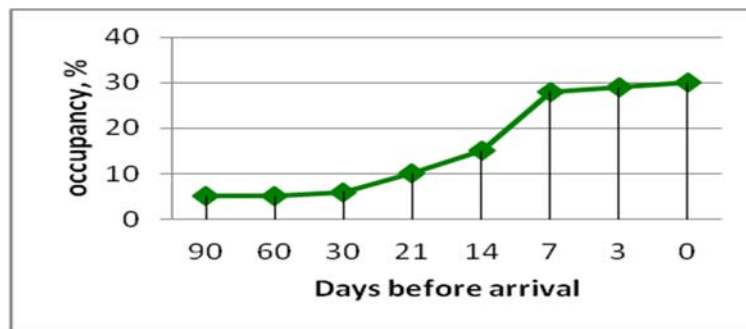
Figure 10. Model of the booking curve with regard to tourists in the medium season for three-star hotels in Moscow

Source: Compiled by the author

Figure 11 presents the model of the booking curve with regard to conference participants. The greatest number of reservations of this segment is made 14 to 7 days before arrival and is 17% of the total occupancy.
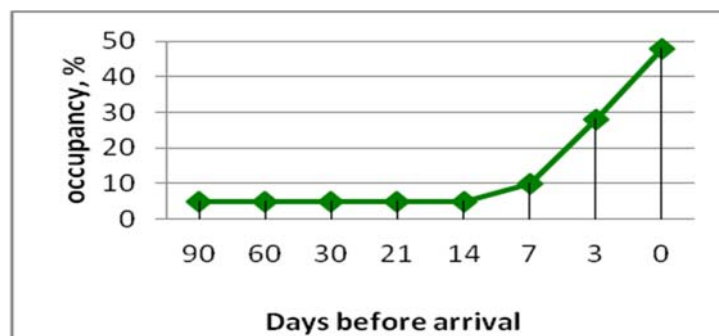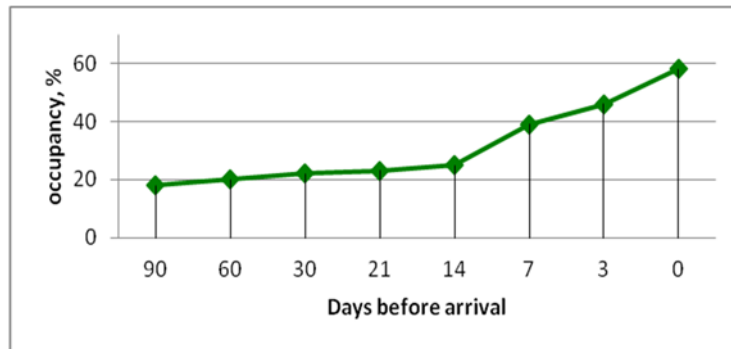
Figure 11. Model of the booking curve with regard to conference participants in the medium season for three-star hotels in Moscow

Source: Compiled by the authors

The analysis of the booking curve with regard to business segment enables to conclude that reservations of this segment commence 7 days prior to the arrival. The business segment is a key segment of the three-star hotels in Moscow and provides the hotel occupancy at the level of 25%.

Figure 12. Model of the booking curve with regard to business segment in the medium season for three-star hotels in Moscow

Source: Compiled by the authors

Analyzing the data submitted by three-star hotels in Moscow in the low season, we see the following distribution shown in Figure 13.

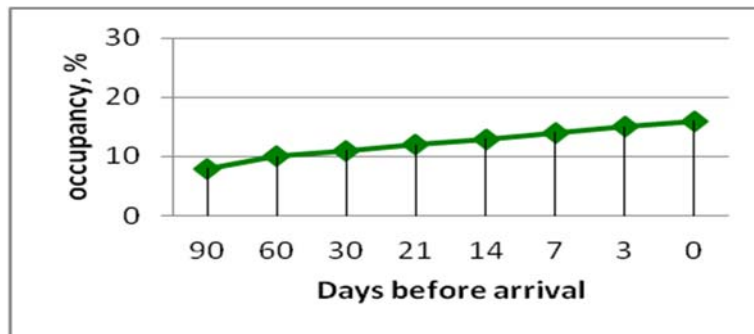Figure 13. Model of the booking curve in the low season for three-star hotels in Moscow*

Source: Compiled by the authors

Similarly, with the previous seasons, let us build the booking curves for each segment.

Figure 14 indicates that the reservation of this segment takes place long before arrival and practically does not increase. In the low season, it is a key segment. The segment provides the occupancy in the selected season at the level of 16%.
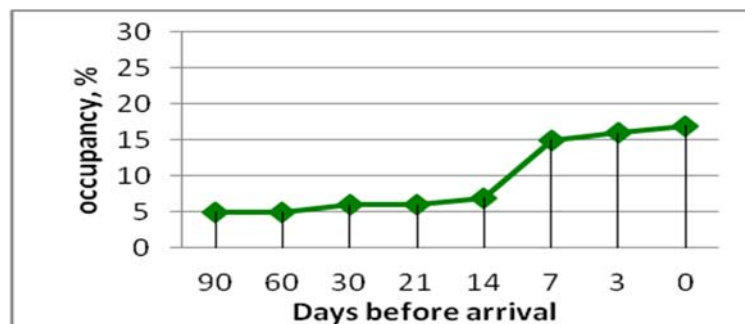
Figure 14. Model of the booking curve with regard to tourists in the low season for three-star hotels in Moscow
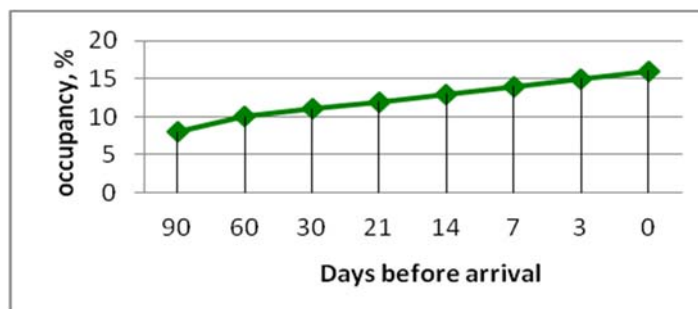
Source: Compiled by the authors

Figure 15 presents the booking curve with regard to conference participants. Most of the reservations are made 21 to 7 days prior to arrival and is 8% of the total occupancy.
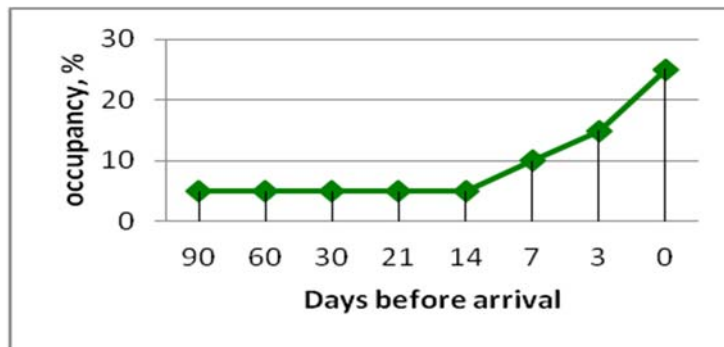
Figure 15. Model of the booking curve with regard to conference participants in the low season for three-star hotels in Moscow
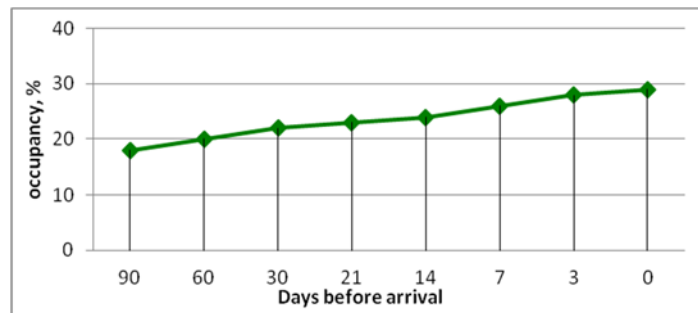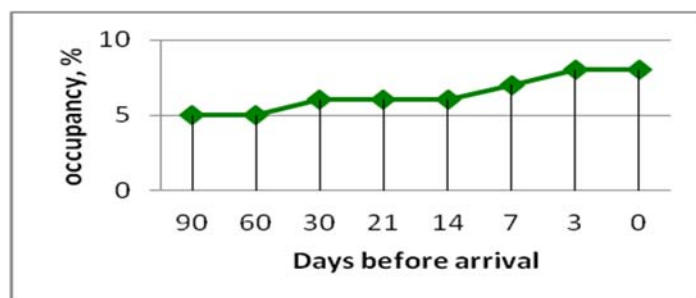

Source: Compiled by the authors

Figure 16. Model of the booking curve with regard to business segment in the low season for three-star hotels in Moscow
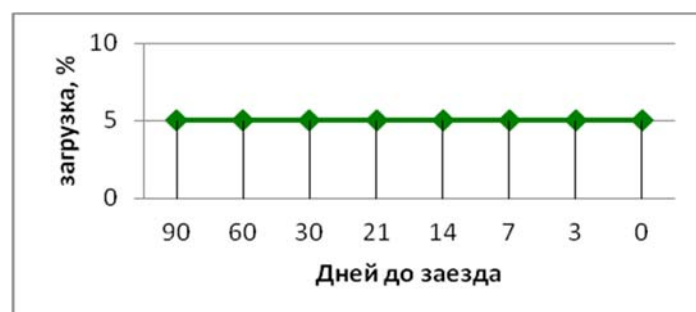
Source: Compiled by the authors

The analysis of the booking curves of the business segment makes to conclude that the reservations start 7 days before arrival. The business segment is not significant in the low season for three-star hotels in Moscow and provides 5% of the total occupancy.

As a result, we obtain typical booking curves for three-star hotels in Moscow shown in Figure 17-19.

Figure 17. Typical booking curves for three-star hotels in Moscow by season
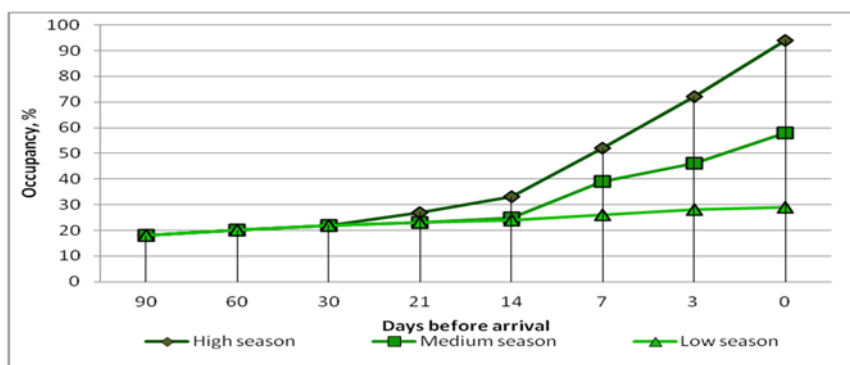
Source: Compiled by the authors

Figure 18. Typical booking curves with regard to conference participants for three-star hotels in Moscow by season

Source: Compiled by the authors

Comparison with the actual level of reservation enables the management of three-star hotel companies to make the following adjustments: to adjust rates (increase or decrease) and change quotes for reservations for segments. The same analysis is carried out for the cancellation indicators. Tracking the average and actual level of cancellation enables to identify the non-standard behavior of the customers and adjust the process of reservations.

Figure 19. Typical booking curves with regard to business segment for three-star hotels in Moscow by season
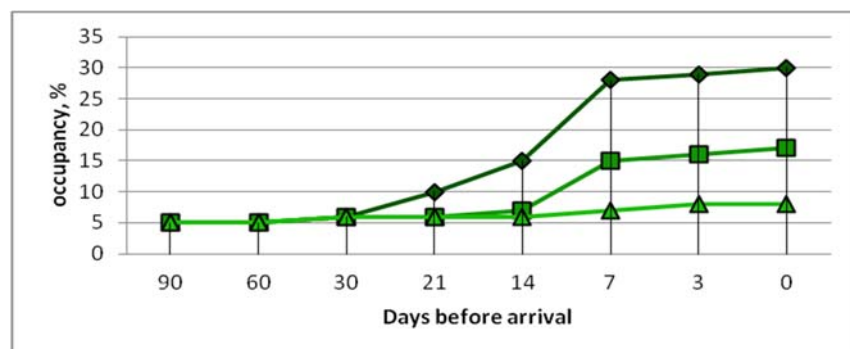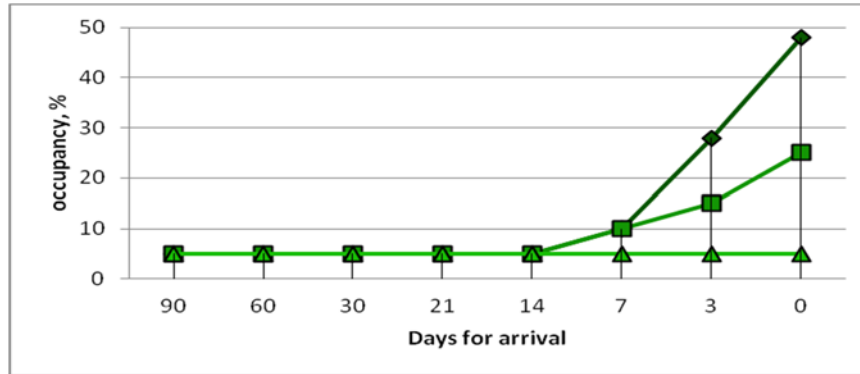

Source: Compiled by the authors

3. Application functionality

The occurrence of any excursions (increase or decrease) can be identified according to the booking curve. However, one should also take into account sales strategies that significantly affect the forecast. When changing the rates, it is essential to find out how it will affect the forecast.

In order to use effectively this method, the hotel facility needs to keep a record of the following aspects on a daily basis:
- cancellation of reservations;
- guests who have not arrived;
- sales refusals;
- reservations with regard to segments;
- basic data of the hotel facility (RevPAR, ADR, occupancy);
- events which affect demand.

Based on the data obtained, it is analyzed how price changes affect the booking curve to find out current hotel trends and compare with the trends of hotel facilities in the cluster. You should also compare the current booking curve with the curve over the past years.

As a result, the hotel company sets quotas for all the segments of the guests.

An important element of quoting is a segment called "Last Minute Booking". Such reservations appear at the last moment and are difficult to predict. But this segment is highly profitable, so the quota for it should be calculated separately. As in the case of "Last Minute Booking", the category of guests "Customers from the Rack" should be taken into consideration. This category can refer to different price segments; it includes those who are willing to pay the rack rate (RR). Before allocating quotas to the main segments, it is necessary to allocate quotas for this category.

For each segment, strategic constraints are set, allowing the rate to be targeted to a certain segment of the guests. Such limits apply to the rates based on a specific date of arrival. Developing the limits, it is necessary to further monitor their impact on demand. It is significant to check all the sales channels for the application of the established limits. For special events expected in a hotel or nearby, the limits should be set beforehand. The ratio of the reservation profile and the actual reservation determines the behavior of the hotel guests. When these two curves begin to diverge, the correction measures should be taken (see Figure 20).

Figure 20. The ratio of the reservation profile and the actual reservation
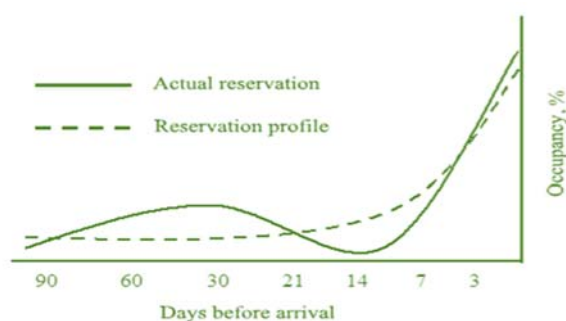
Source: Kozlov, D.A. 2014

When the level of reservations with respect to the reservation profile decreases, hotels should accept reservations with increased discounts or apply marketing strategies if there is still a considerable amount of time left before the arrival date. If the level of actual reservation exceeds the reservation profile, you should accept reservations not only with a discount, but also for the full price.
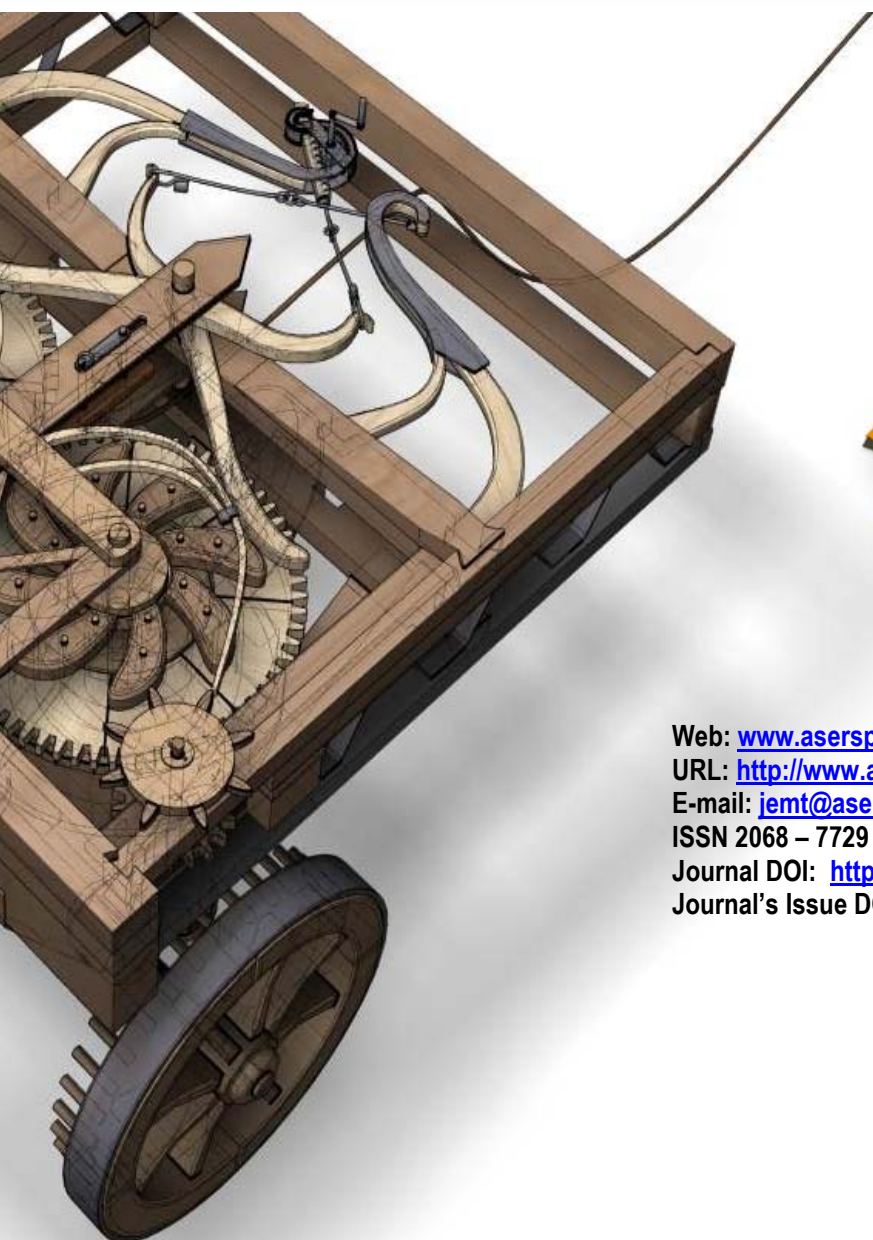
Conclusion

This approach was applied to a three-star hotel in Moscow. Using the mechanism of setting limits (quotas) with calculated booking curves for various segments, it was indicated that the revenue grew by 2.54% compared to the traditional revenue management system. This approach, however, led to a slight decrease in the occupancy. Authors can recommend this instrument t to be applied by independent hotels in Russia.

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