Haaga-Helia
University of Applied Sciences

Guidelines for Implementing Revenue Management in the Restaurant Industry

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Degree program Bachelor's Degree in Hotel, Restaurant and Tourism Management	
Thesis title Guidelines for Implementing Revenue Management in the Restaurant Industry	**Number of pages and appendix pages** 50 + 3

The aim of this thesis is to draw an outline of how to implement revenue management in the restaurant industry. The practice well-known in the hotel and airline industry is proven to be suitable for the food and beverage businesses.

First of all, the key strategic levers, price and duration, are presented and defined. Based on the basic principle that the demand for a product varies according to its price, the application of modern pricing and dynamic pricing is introduced in this thesis. Since many service industries are selling the time during which the product is available, the duration of the service or the usage of the product is taken into account.

Second of all, the thesis names the five P's, Product, Person, Price, Period and Place, the restaurant needs to determine for creating a functioning setup. To maximize the revenue, the restaurant attempts to sell the right product, to the right person, for the right price, in the right period, at the right place.

Third of all, the compulsory characteristics of revenue management, fixed capacity, dynamic cost and pricing structure, perishable inventory, segmented market with predictable demand, time-variable demand and convenience factor, are explained with examples. The characteristics must be clear to the restaurateur to be able to apply the revenue management practice.

Finally, the core revenue management process is divided into strategic, tactical and operational subdivisions. The subdivisions define the time frame for every stage of the process together with concrete procedure examples. The final part of the thesis includes discussion and recommendations for future research.

The product of this thesis is a step by step guideline booklet for establishing a revenue management program in a restaurant, enclosed as the appendix 1. The "Guidelines for establishing a restaurant revenue management system" booklet is a generalized version to guide any type of restaurant or bar to establish and use restaurant revenue management as part of their operations. The product has clear six step strategy for implementing the practice, written with the expectation the reader acquires some basic knowledge on the terms included.

In essence, the timespan of this thesis process reaches from the first semester in 2012 until the last one in 2016, for the reason the author has had a great passion for the revenue management practices since the first marketing and sales lecture in the Haaga-Helia University of Applied Sciences. Self-learning and successfully passing the Hospitality Sales and Marketing Association International, HSMAI, Revenue Management PRO course guided the author on creating this thesis. The PRO course was held in Breda, the Netherlands 2014, during the authors exchange studies.

Keywords restaurant, revenue management, guidelines, hospitality industry, RevPASH

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1 Introduction

The aim of this thesis is to present guidelines for implementing revenue management in the restaurant industry and thereby improve the restaurants revenue generating performance. "Companies using revenue management have reported increases in revenue ranging from 2 to 5 percent" (Kimes & Thompson 2004, 373).

The history of revenue management dates back to mid-1980s when the airline industry instituted yield management as a discipline for pricing. After the deregulation of the U.S. airline industry in the 1978, the low-cost suppliers' growing market share shook the industry and had become a threat for the original airlines. After focusing more on the time factor in the practice, the yield management evolved towards revenue management with the suitability in other hospitality industries, namely, the hotel industry. Furthermore, the practice have reached the restaurant businesses as well.

Revenue management practices have reached a great length since the implementation of the yield management in the 1970s. First of all, mastering the two strategic levers of revenue management, price and duration, is essential for the practice. Second of all, the business must determine the five P's (Product, Person, Price, Period and Place) for creating a functioning setup. (Forgacs 2010; HSMAI 2014). Finally, the industry must be able to define the compulsory characteristics (fixed capacity, dynamic cost and pricing structure, perishable inventory, segmented market with predictable demand, time-variable demand, convenience factor) needed for applying revenue management.

The use of dynamic pricing in revenue management is justified with the modern pricing structure and the logic behind multiple rates, which are explained and argued. Since a restaurant is selling the time during which the product and the service is consumed, the restaurant operator must also manage the duration of the event. The global and mobile generation has created a fast forward life style. Time has become a new currency.

The revenue management process presented in this thesis defines the three different stages of revenue management. Strategic, tactical and operational revenue management practices are defined together with providing guidelines and recommendations for restaurant managers to be able to apply revenue management in various types of bars or restaurants.

The author realizes there are obstacles, such as laws and regulations, in different countries, which can restrict the use of the techniques presented in this thesis. This thesis sets the guidelines for using revenue management, practice widely used in other hospitality industries, to implement it in the restaurant field. Further use of this framework has to be adapted to the location and regulations affecting the restaurant.

Used references in this thesis knowingly includes articles older than 10 years but are elementary for the practice. Reason being the slightly small variety of literature on the topic, mainly written by the fundamental author of restaurant revenue management Sheryl E. Kimes, a Ph.D. professor at the Cornell University School of Hotel Administration. Most of the referenced articles are published in the Cornell Hospitality Quarterly journal.

Future research should focus on improving the table reservation programs to be more similar as the hotel and airline industry are containing, completed with a unique table mix for the restaurant. Acknowledging the shoulder dates, or hours, the customer can be attracted to shift their demand on a lower demand time slot with an incentive (cheaper table reservation, reduced price, free products or other added value). A number of compelling operating challenges including intense competition, rising food and labor costs, and the more educated and demanding customer base, are matters to be studied.

The author personally thinks, that the transparency and communication with the customer can be taken to the level much like a conversation. Today, people respect the honest and straight forward service. Kimes & Wirtz (2002, 32) stated that "The principle of dual entitlement holds that most customers believe that they are entitled to a reasonable price and that firms are entitled to a reasonable profit". The dual entitlement can be seen for example when a host asks people whether it's ok to change their seat because bigger group is coming. The guests really understands it and sees it as a reasonable way to operate.

Due to the fact that the author studied revenue management for a semester in the NHTV University of Applied Sciences Hotel School in Breda, the Netherlands, 2014, the restaurant revenue management theories in this thesis are supported mainly with examples from the hotel industry.

2 Revenue management theory

The history of revenue management dates back to mid-1980s when the airline industry instituted yield management as a discipline for pricing. After the deregulation of the U.S. airline industry in the 1978, the low-cost suppliers' growing market share shook the industry and had become a threat for the original airlines.

2.1 First applications

The airline industry in the U.S. was regulated by the Civil Aeronautics Board (CAB) back in the 1960s. The agency approved flight routes and determined airline fares, which made it difficult for airlines to compete with prices and destinations as Cross points out (1997, in Josephi 13 January, 2014.). At that time, the competition was mainly done by differentiating the on-flight amenities such as a five star dinner over a soup, or comfortable pillows without an extra fee. "William Stadiem said the Pan Am was catered by Maxim's of Paris. You had fois gras and smoked salmon along with caviar. Even in tourist class, it was great" (McManis, 2014). Flying was an adventure, an experience, more than a way of traveling and people would dress up even for a flight from Texas to California.

THE APPLICATION OF **YIELD MANAGEMENT** ENCOMPASSES THE PRICING STRATEGIES AND INFORMATION SYSTEMS WHICH ARE APPLIED TO ALLOCATE THE RIGHT CAPACITY TO THE RIGHT CUSTOMER AT THE RIGHT PLACE AT THE RIGHT TIME. (KIMES 1989, 8; WEATHERFORD & BODILY 1992, 40).

After the deregulation, Robert L. Crandall, the CEO and chairman of American Airlines (AA), started using yield management to control the seat inventories by introducing different fare categories for each flight. Computers were used to analyze massive amounts of information from the constantly changing market demand and competitor set data, such as pricing. This data was then used to allocate discounts to create demand on low seasons or to set premium prices for high seasons. Reservation softwares, such as SABRE (Semi-automated Business Research Environment), were developed to automate the way American Airlines booked reservations. Consequently, overbooking and traffic management became more calculated and facile to execute. Applying yield management and forecasting demand became a vital asset for the airline. The focus shifted from tactical to more strategic way of managing inventory and demand. (Forgacs 2010, 4.)

2.2 Yield management

Implementation of the "yield" and "load factor" as Key Performance Indicators (KPI's) revolutionized the strategic management for the airline industry. Calculating the Total Passenger Seat Revenue (TPSR) per flight enabled to measure the performance, analyze it and store the data for future use in forecasting. The TPSR is calculated by the following formula:

(Yield x Miles Flown) x (Number of Seats x Load Factor)

For example, a flight of 500 Miles with a Yield of 50 cents per Mile results as a 250 euro revenue per seat. With the maximum capacity of 130 seats and a Load Factor of 80%, the number of sold seats is 104. Therefore, the 250 euro revenue per seat multiplied with 104 sold seats creates a Total Passenger Seat Revenue of 26 000 euros. (Hospitality Sales and Marketing Association International, HSMAI, 2014)

TPSR = (0,50 € x 500 Miles) x (130 seats x 80%) = 250€ x 104 seats = 26 000 €.

The TPSR formula enables to evaluate the revenue performance of flights and to simulate the price versus demand pattern. The provided platform was used to manipulate the ticket prices on a daily basis to ensure the maximum profit for every flight. Basic principal being, that by lowering the price, the load factor would increase. By raising the price, the yield factor would increase. The managers of the American Airlines realized that discounting would increase the revenue to a certain extent, but the costs would limit the profits at one point. More needed to be done to achieve even higher profits. The solution was to limit the discounted seats, to create market segments for distribution and to use overbooking tactics (Forgacs 2010, 4).

2.3 Yield management in other industries

After the successful implementation of yield management in the airline industry, other industries realized their business models had similar characteristic what comes to managing inventory and demand. The characteristics being relatively fixed capacity, dynamic cost and pricing structure, perishable inventory, predictable demand and time-variable demand. Cruise lines, car rentals and hotels were first ones to adopt yield management practices to their business strategy. (Forgacs 2010, 4.)

The American Airlines CEO Robert Crandall shared his successful yield management practices with J. W. "Bill" Marriott, Jr., the CEO of the hospitality company Marriott International. For instance, when an airplane departures with untaken seats, those seat units cannot be stored for further use and the revenue is gone permanently. Similarly, when a hotel room is unoccupied for a night, the possible revenue for that room is lost when the sunrises. The fixed capacity with various price categories and the seasonality of demand are, as well, similar with both businesses. Since the term "yield" refers more to the airline industry, Marriot International and other hospitality businesses began calling the practice revenue management (subsequently defined with greater depth) (Josephi 2014).

One reason for the achievements in the revenue management practices has been the grown speed of transforming information throughout the years. In the 1970s, a booking confirmation could take up to three weeks to confirm between New York and Helsinki. When the computers got popular in the 1980s, the reservation could be done three days ahead the arrival. Later on, with the advanced booking softwares, the process took no more than three minutes. Today, booking a room from the other side of the world can be done with a push of a button, in three seconds so to speak. This signifies the importance of the automated revenue management programs with split of a second response time. Time has become a new currency.

Due to the fact that the author studied revenue management for a semester in the NHTV University of Applied Sciences Hotel School in Breda, the Netherlands, 2014, the restaurant revenue management theories in this thesis are supported mainly with examples from the hotel industry.

3 Revenue management in practice

Revenue management practices have reached a great length since the implementation of the yield management in the 1970s. First of all, mastering the two strategic levers of revenue management, price and duration, is essential for the practice. Second of all, the business must determine the five P's (Product, Person, Price, Period and Place) for creating a functioning setup. (Forgacs 2010; HSMAI 2014). Finally, the industry must be able to define the compulsory characteristics (fixed capacity, dynamic cost and pricing structure, perishable inventory, segmented market with predictable demand, time-variable demand, convenience factor) needed for applying revenue management.

> REVENUE MANAGEMENT IS AN ECONOMIC DISCIPLINE SUITABLE TO MANY SERVICE INDUSTRIES IN WHICH DYNAMIC PRICING IS COMBINED WITH STATISTICAL ANALYSIS OF TIME PERISHABLE INVENTORY TO INCREASE THE REVENUE PER AVAILABLE TIME BASED UNIT. (FORGACS, 2010)

This chapter defines the two levers of revenue management and determines the five P's needed for creating a functioning setup for implementing revenue management to the restaurant industry. Due to the level of significance, the characteristics of revenue management are extended to an entirely new chapter (chapter 4).

3.1 Strategic levers

The two strategic levers of revenue management are price and duration. Based on the basic principle that the demand for a product varies according to its price, different price categories, availability of the product with certain price and restrictions attached to the price are applied in the revenue management practices. Since many service industries are selling the time during which the product is available, the duration of the service or the usage of the product is taken into account.

3.1.1 Price

A number of core concepts concerning the price must be addressed to have a consistent pricing structure. Balancing the supply and demand together with reserving sufficient usage for regulars is important. The decisions must be made using knowledge and data rather than suppositions and gut feelings.

First, when balancing the supply and demand, the focus must be on price rather than costs. The fixed costs, such as rent and heating, must be paid whether there is customers or not. Moreover, the business must replace the cost-based pricing with market based pricing. For example, if a hotel room costs would consist of a 20 euro variable cost (cleaning) and a 50 euro fixed cost (rent, heating, electricity), what would be the lowest possible selling price for the room? Theoretically, it would be 21 euros. Roughly, anything above the variable cost that occur from the usage of that room, would be considered as a reasonable selling price in the eyes of a revenue manager. Of course in the long run the average of the gained revenues must cover the fixed costs as well. Similarly, a restaurant is paying for the rent and heating whether the venue is open or closed. For that reason, when arranging a private event, it's possible to settle with the organizer a minimum sales limit, which must be exceeded during the event, to cover the variable costs (i.e. labour). To fulfil the limit, the guests, or finally the organizer, will purchase the food and beverages at the event. In this case, the restaurant would not charge a rent (fixed cost) for the premises, only the minimum variable costs consisting of labour and possible missed revenue on a high demand season (minimum sales limit and displacement calculations discussed on the chapter 5.3.1).

Second, the restaurant should reserve a sufficient amount of space for the most valuable guests such as regulars or members. As the Lee Resource Inc. study findings points out "Attracting new customers will cost your company 5 times more than keeping an existing customer" (Lawrence 2012). As the author has noticed, it can be as small thing as reserving the seat at the end of the bar counter for the regulars who are most likely to come on a busy Friday night. For the regulars, that seat right next to the action and with the chance of talking with the bartender is what makes them stay longer and come back. A restaurant can reserve a certain table or cabinet for the most valuable guests to ensure they can be seated at any time.

Finally, it's important to make the decisions based on knowledge and data, not suppositions and feelings. Statistics, data and mathematics should be used to calculate the risks and to analyze the outcome. Of course, exceptions can occur when for example a misunderstanding happens and the sympathy towards the guest is the human solution. For example, keeping record about the occupancy levels on the Christmas holiday time helps on creating the duty roster and managing variable costs. The day of the Christmas Eve also changes every year since sometimes it's on a Saturday and sometimes during the week. At times, the duty manager has to look several years back to get reference for the decisions and not just guess the outcome.

Following figures illustrates the shift in pricing methods and explains which method should be used for revenue management purposes.

Traditional pricing (Figure 1) structures the price by first allocating the fixed costs and variable costs which must be included in the final price. Those two together determines the minimum price for a product or service. After this, the so called "game zone" between the minimum price and the maximum price leaves only a small chance for adjusting the price and gaining more revenue. Weaknesses for traditional pricing are the missing demand orientation and the narrow flexibility of adjusting the price. The formula for traditional pricing is:

Price = Costs + Desired profit
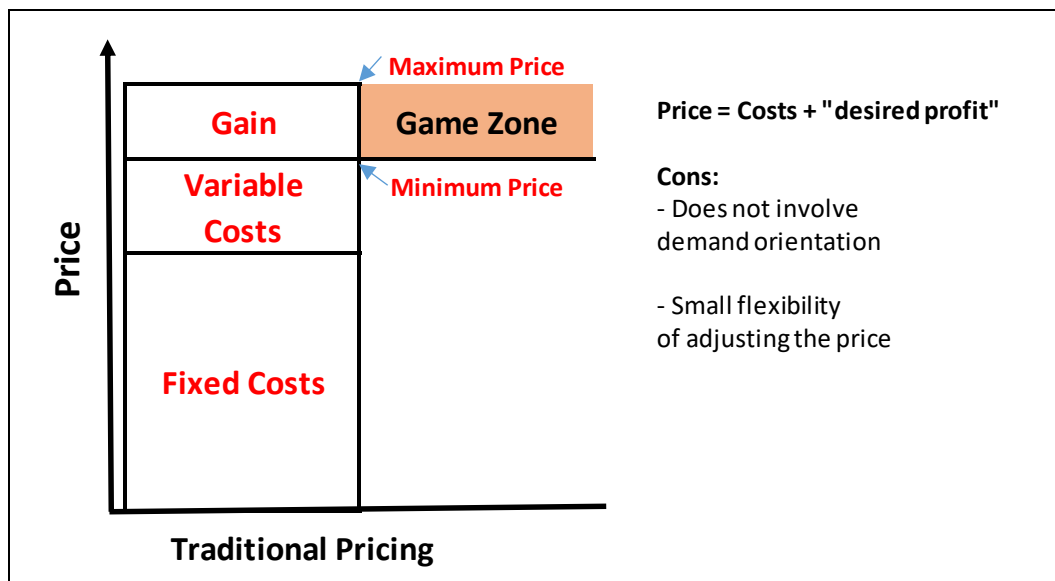
Figure 1. Traditional Pricing (modified from HSMAI, 2014)

Modern pricing (Figure 2) structures the price by first allocating the variable costs which sets the minimum price for a product or service. In modern pricing, the "game zone" incorporates the coverage of the fixed costs and the desired gains. This enables the business to have various price points without a maximum price and with the potential for market segmenting. The formula for modern pricing is:

Minimum Price = Coverage of Variable Costs
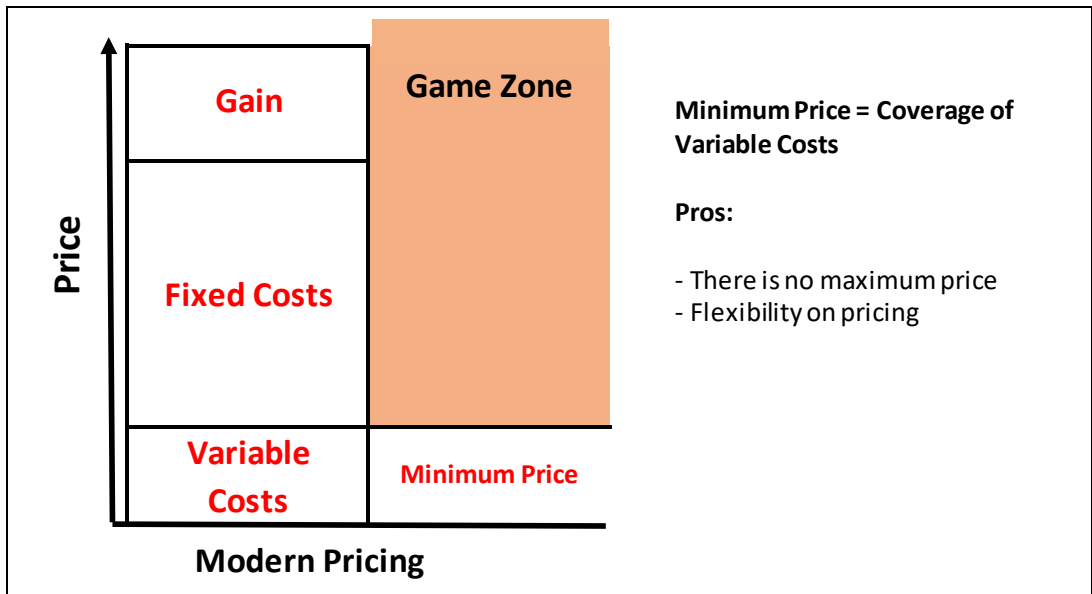
Figure 2. Modern Pricing (modified from HSMAI,

Comparing the traditional pricing with the modern pricing (Figure 3), it's noticeable that the modern pricing enables the business to have more power over pricing and therefore gaining more revenue, with various price points. Because in the traditional pricing the minimum price includes the fixed costs, there is missed revenue opportunities by the amount of the fixed costs. In addition, in the traditional pricing method there is missed revenue opportunities due to the setting of the maximum price.

Figure 3. Comparison – On the Market (modified from HSMAI 2014)

To conclude, the modern pricing method is more amenable for the revenue management purposes. It gives the opportunity for dynamic pricing structure and market segmenting allowing the business to gain more revenue and possibly to be more profitable.

The logic behind modern pricing is, that with multiple rate categories, the business is aiming to sell the right product to the right person with the right price. In high demand season, certain amount of possible customers are willing t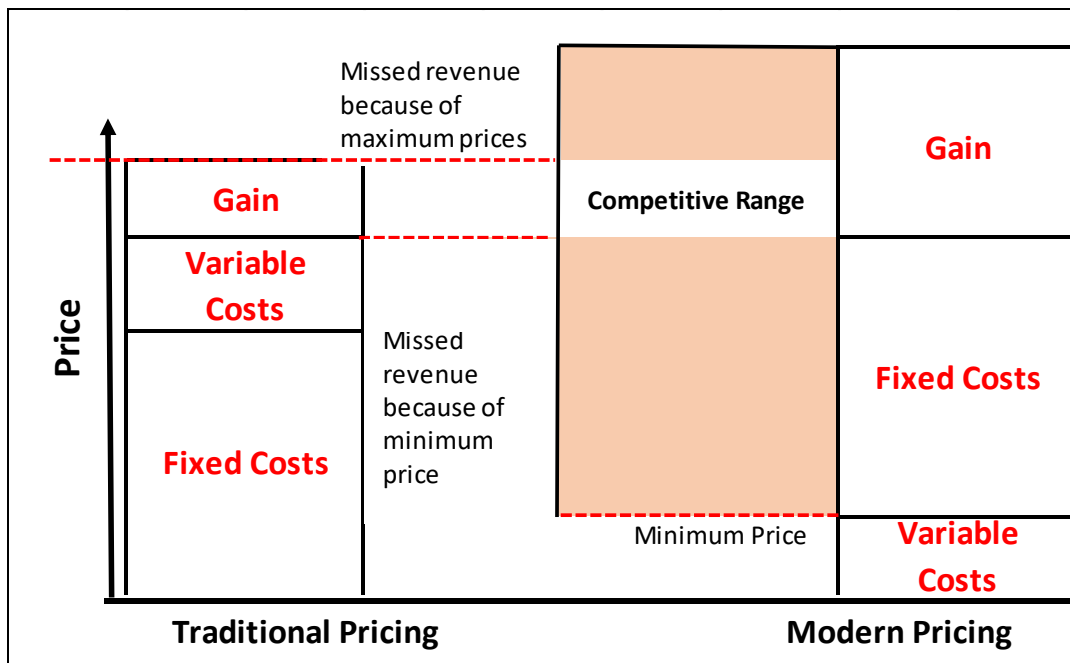o pay more for the product or service than others. Figures 4 and 5 illustrates the logic behind multiple rates using hotel rooms as an example.

The Logic Behind Multiple Rates For Hotel Rooms

☐ Missed revenue

🟩 50 rooms at 150€ = 7500€
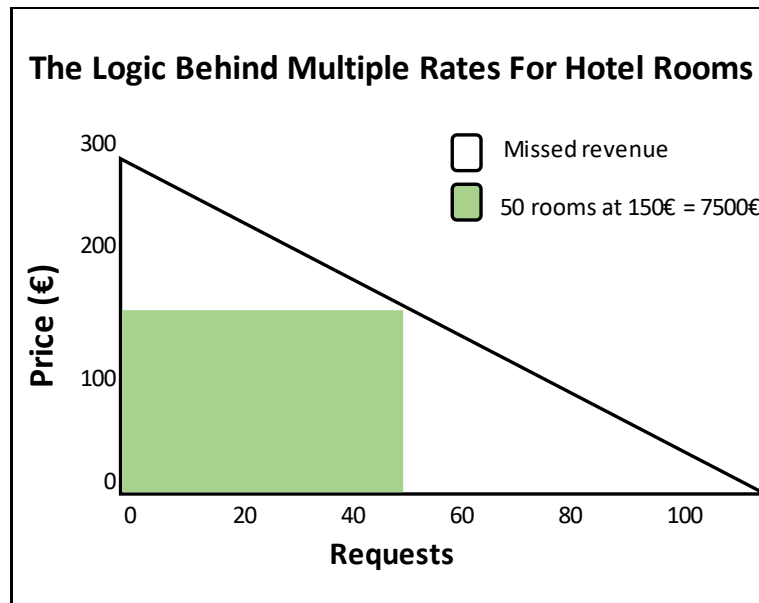
Figure 4. The logic behind multiple rates for hotel rooms (modified from Josephi 2014)

Figure 4 exhibits the revenue gained from selling 50 hotel rooms at a price of 150 euros (=7500e). The graph indicates, that with a hotel with 100 rooms and a possibility to price a room as much as 300 euros, the hotel is missing revenue due to the lack of different price categories between 0 to 150 euros and 150 to 300 euros. Figure 5 exhibits the usage of different price categories of 75 euros, 150 euros, 225 euros and 250 euros. With 20 units sold from each price category, the revenue from the total 80 sold rooms is now 14000 euros. The graphs indicate, that with dynamic pricing tactic it is possible to gain more revenue by selling a hotel room to different customers with different prices. Customer segmentation is used to target the right rooms to the right people. Part of the strategy is to develop price fences for different categories.

The willingness to purchase can be related to the convenience, seasonality or rarity of the opportunity. On a rainy day, the need for an umbrella is higher than on a sunny day, and therefore, theoretically, the price of an umbrella could be set higher than on a sunny day.

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The Logic Behind Multiple Rates For Hotel Rooms

☐ Missed revenue   ▨ 20 rooms at 250€ = 5000€
20 rooms at 225€ = 4500€
20 rooms at 150€ = 3000€
20 rooms at 75€ = 1500€

Total 80 rooms = 14 000€

Price (€) — vertical axis: 0, 100, 200, 300

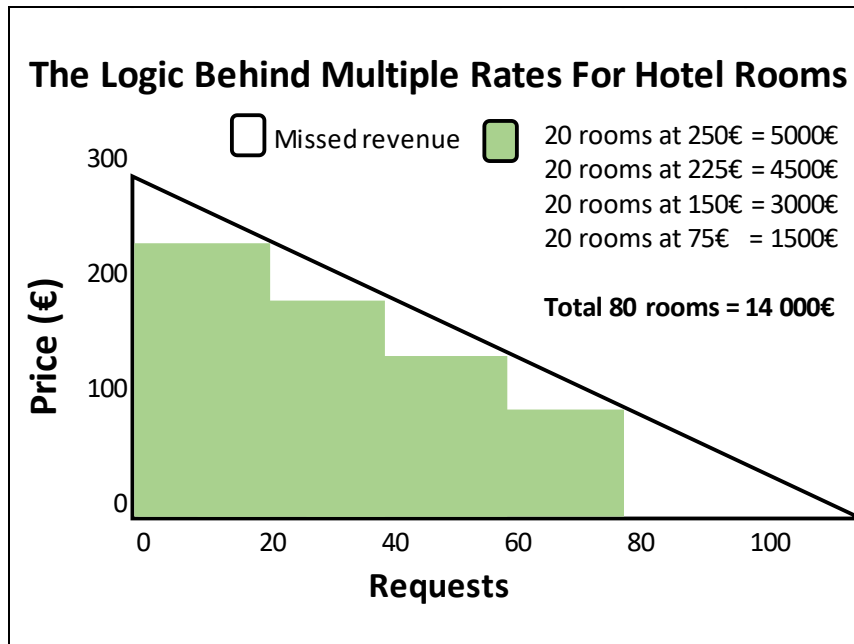Requests — horizontal axis: 0, 20, 40, 60, 80, 100

Figure 5. The logic behind multiple rates for hotel rooms (modified from Josephi 2014)

The previous example would be hard to justify for the customers. For that reason, the consumers have to perceive the demand-based pricing to be in line with company's overall variable-pricing schedule. (Kimes & Wirtz 2002, 32). "If increased prices cannot be justified either by higher associated costs or through certain desirable conditions, customers may view demand based pricing policies as unfair." (Kimes & Wirtz 2002, 32) However, Kimes & Wirtz (2002, 32) stated that "The principle of dual entitlement holds that most customers believe that they are entitled to a reasonable price and that firms are entitled to a reasonable profit".

In the restaurant field, by the principle of dual entitlement, it would not be justified to raise a piccolo bottle of sparkling wine from 10 euros to 15 euros overnight. The author witnessed the mentioned practice at one of his previous work place. A more justified action could be offering the same burger meal with reduced price during the lunch time, compared to a few euro higher normal price during the dinner time. It's important to consider the phrasing when promoting variable prices for the same product. The results from a Likert type research about the perceived fairness of demand-based pricing for restaurants conducted by Kimes & Wirtz (2002, 36) implies, that restaurants can, in general, use different pricing for different day parts. However, the restaurant should be careful to cite the prices as a discounted price for the low demand day part and not as an extra fee on the high demand day part. Right phrasing emphasizes the high demand season price being the full price, whereas the low demand price is the discounted price.

One option to increase the customers' perceived fairness of demand based pricing is to use price fences. Creating different customer segments and justifying why different people are paying different prices are the main reasons for setting up price fences. The fences need to be logical, transparent, upfront and fixed to be perceived as a fair practice. Price fences can be divided into physical and non-physical fences. (Kimes 2002, 33)

Physical price fences are for example the table or seat location, the group size, the menu type and the presence of certain desirable features or the lack of them. Sitting closer to the window in a top floor restaurant of a sky scraper is an example of a physical price fence. Some restaurants have private cabinets which a guest can reserve only if there is enough people in the group. The restaurant can create price fences for example by designing the menu to be compact or deciding whether there is a television in the table or not. Similarly, hotel rooms can come with different views and amenities which are reflected to the price.

Non-physical price fences are for example the memberships, the time of the day or the week, the duration of the visit, the time of the reservation, the type of the reservation (walk-in versus guaranteed reservation). Members and loyal customers are often entitled with some special deals. As mentioned before, the restaurant can apply day part pricing which can affect the duration of the visit as well if for example the Sunday brunch closes at 3pm. Reservation restrictions, rules and cancellations policies can be used to create non-physical price fences and to appeal to different target groups.

3.1.2 Duration

The other strategic lever is duration. Since the restaurant is selling the time during which the product and the service is consumed, the restaurant operator must manage the length of the preparation of the food, service and meal time. Optimizing the durations on the spot together with the forecasted booking behaviour results in potential for higher revenues. The key is to reduce the arrival uncertainty, the duration uncertainty and the time between the customers. Reducing the arrival and the duration uncertainty can be divided into external and internal approaches.

First of all, to reduce the arrival uncertainty, taking reservations will help forecasting the demand and adjusting the staffing levels and the ingredient inventory. However, the guests might come late or too early, in which case the restaurant will end up having unused seat hours. Therefore, taking a reservation deposit or requiring a credit card confirmation is one option to increase the customers honouring towards the reservation.

The reservation policy could state an expiration time for when the reservation must be cancelled in order to receive the deposit back. Otherwise, the restaurant would get the deposit as a compensation for the lost revenue. The reservation fee could be for example 20 euros and when the customer respects the reservation the fee would be reduced from the check or be compensated in payment. Hotels are using similar reservation deposit systems, however, they usually charge the whole hotel room as a compensation since it's already known what the guest is purchasing. In the restaurant case, it's more likely the customers' purchase decision takes place on the spot. The credit card guarantees and the deposit policies are external approaches.

Some restaurants, such as Flippin' Burgers in Sweden, rely only to the walk-in customers and the sufficient flow of the line, while continuously informing the new comers about the length of the queue. As the author witnessed in Sweden, the quality and the brand of the Flippin' Burgers was so strong, that they didn't need a reservation system to reduce the arrival uncertainty. By not taking reservations, the restaurant gives equal opportunity for everyone to visit the place. In my opinion, it requires a strong brand and a tremendous quality of the food and the service to reach that type of customer loyalty.

Overbooking is an internal way to manage uncertain arrivals. Hotels are using the practice successfully, but it can be dangerous for the restaurant. Overbooking has to be well organized internal action. The managers need to have a simple displacement calculation program to measure, how much income other incoming group would generate instead of the displaced guests. Accurate information about the cancellations, no-shows and walk-in statistics has to be recorded for setting the level of overbooking policy together with good customer service. Choosing the right guests to displace is very important. "Many industries base their displacement decision on time of arrival (if customers are late, their reservation is no longer honored), frequency of use (regular customers are never displaced), or perceived importance (important, high-spending customers are never displaced). (Kimes, Chase, Choi, Y Lee & Ngonzi 1998, 35.)

Second of all, to reduce the duration uncertainty, it is possible to create ways to signal the lingering guest, in a polite manner, that it would be time to leave soon. I cannot stress enough the importance of being extremely gentle when doing such thing. Customer experience should not be damaged by rushing the customer. One way is to clean the table after the meal or cocktails and ask if they would like to order anything else. This gives a chance for upselling, but works also as a suggestion towards ending of the service if nothing is being ordered. Bussing and cleaning the table, bringing the check or offering the valet service are options as well. These are external approaches to reduce the duration

uncertainty. When making the reservation, the customer can also be informed how long they may use the table by implying there is another group coming after them.

One interesting manner is mentioned by Kimes (1998, 37), "Some restaurants in the theater district of New York City, for instance, place an hourglass on each party's table. When the sand in the hourglass is gone, patrons have a visual cue to finish dinner and leave so that they will not be late to the theater." Even without an hourglass, a polite inquiry about the possible length of the stay can be addressed right at the arrival. This depends of course about the venue. In a fine dining place the author wouldn't recommend doing so, but in a casual or smart casual restaurant or bar this could be a way to get a little information about the possible duration of the customers visit.

After studying the semester in the NHTV Breda University of Applied Sciences in 2014, the author went travelling around Europe for three weeks. One day at McDonald's in France the waiting line was huge and the author started to think about changing the venue. All of a sudden, a staff member with a tablet started taking orders from people on the line. Quickly enough, the person came to take the order in pursuance to get the order straight away to the kitchen to speed up the process. The kitchen received the information which items are ought to be purchased and after a moment the meal was able to be collected from a special counter next to the normal line. The author was astonished how fast the process was and then realized the importance of the handheld ordering machines. Particularly in this case, the restaurant was able to obtain the author as their customer by taking the order promptly after the arrival.

The tablets and the handheld ordering machines are designed to reduce the order time and to improve the customer service. Speeding up the ordering process allows the servers to spend more time with the guest in person and to present more detailed information about the menu. (Kimes 2008, 304) Having more time to communicate with the guest seeds in potential upselling opportunities.

Thirdly, to reduce the time between the customers, the communication between the staff members is essential. Using a beeper, a waiter could inform the bussers to clean up a certain table and to fix it ready for the next guests. In a small size restaurant or bar a beeper won't be needed and the basic communication between co-workers is enough, as long as the information is changed efficiently. To increase the table turnover it is possible to clean some of the cutlery, glassware and plates while the guest is paying the check. Overall, handing the check promptly after the guest requests for it speeds up the process and can save few crucial minutes in a busy night.

All in all, the author recommends open talk between staff members and the guests. To ensure a group with a reservation is actually coming, emailing the guest close to the arrival or even calling them prior the arrival day are ways to reduce the arrival uncertainty. Simultaneously, by calling the guest, the restaurant has an opportunity to directly talk to the guest and start the hospitality aspect of their service already then by showing that they care. Besides, already during the phone call, the servant might get information about the possible length of the stay. Personally, the author has politely approached guests with a question about how is everything going on at the moment and attempted to inquire what are their plans for the evening. If the group is not placing an order and they seem to be leaving soon, those seats should be available in the near future and it's possible to start planning seating someone there aiming to reduce the time between the customers. Again, politeness and honesty will go far - the guests are humans as well.

3.2 The 5 P's

To maximize the revenue, the restaurant attempts to sell the right product, to the right person, for the right price, in the right period, at the right place. "The determination of 'right' entails achieving both the most revenue possible for the restaurant and also delivering the greatest value or utility to the customer" (Kimes 1999, 17).

The **product** refers not only to the beverages and food items the restaurant is selling, but also to the time for using these products and the service. From the revenue management perspective, the restaurant is selling the time perishable inventory to increase the revenue per available time based unit. Mastering the combination, of the time based unit and the products and service that are offered in the restaurant in question, is the art of revenue management.

The **person** can be a business client, a leisure time diner, a company or even the government. After naming the desired target group, the restaurant can focus on selling the right type of product for that segment - person.

When the restaurant operators have a clear view on their desired customer, they have better tools for determining the right **price** for every segment. This enables the restaurant managers to optimize their product offerings, manage their inventory and set pricing points in order to achieve the highest possible revenue.
Seasonality affects the restaurant business and therefore promoting and setting the right price for the right **periods** is required. Pricing decisions are made after considering the forecasted demand and reflected with the forecasted variable costs.

Finally, the restaurant operators must choose the right **place**, distribution channels, to reach their customers. A Facebook page seems to be a must in today's social media driven world. Having only a website is not enough anymore. On the other hand, if the restaurant is focusing on the senior citizens, the ability to call to the restaurant or have a printed out pamphlet could be the choice of action.

4 Characteristics of revenue management

The characteristics of revenue management must be clear to the operator to be able to apply the practice in the restaurant business. This chapter defines the needed characteristics. The chapter 5 assigns the guidelines for applying revenue management in the restaurant industry.

4.1 Fixed capacity

Relatively fixed capacity is one of the needed characteristics in a business for applying revenue management properly. In the restaurant industry, the restaurants capacity can be measured by the kitchen size, seating, menu items and staffing levels. The rent, electricity and gas are also fixed costs but are rather more background costs than strategic ones and are therefore not discussed more thoroughly.

The kitchen and the dining area capacity is fairly fixed. Therefore, there is a maximum for what the kitchen can produce in an hour or a day. Undeniably, the skills and the amount of the kitchen staff affects the productivity together with the equipment. The kitchen affects collectively to the dining area capacity as well. The maximum productivity of the kitchen sets a limit for the capacity of the dining area. Filling the seats to the maximum and turning tables as quickly as possible reaches a limit when the kitchen setting, the menu design or the skills of the staff are maxed out. Short term capacity fixes can be made by adding an extra chair to a table, whereas long term fixes relates to the seasonality (for example summertime terrace).

Kitchen capacity is generally more expensive to adjust, since the ovens, stoves and cold storages require capital. Adding quickly prepared items to the menu increases the output of the kitchen to a certain extent, but the capacity of the kitchen can still be claimed to be fixed. Increasing the amount of kitchen staff quickly becomes ineffectual due to the limitations of the machinery and the dining room operations.

4.2 Dynamic cost and pricing structure

Appropriate cost and pricing structure enables the restaurants to use dynamic pricing, real-time pricing, for adjusting the prices according to the demand. Even though hotels have relatively high amount of fixed costs and low amount of variable costs compared to

the restaurant industry where the amount of variable costs is greater, the dynamic cost and pricing structure is suitable for implementing revenue management in the restaurants. Although, for example in Finland where the author lives, the labour costs for seasonal workers are relatively high for being a variable cost. The ingredient costs and energy used for preparing food in the kitchen (electricity, water) are variable costs since they are related to the amount of the demand.

Modern pricing structure (explained in the chapter 3.1.1) is suitable for the restaurant industry. After allocating the variable costs the restaurant can set the minimum price for their products and service. The dynamic aspect for setting the price comes from the "game zone", which incorporates the coverage of the fixed costs and the desired gains. This enables the restaurant to have various price points without a maximum price and with the potential for market segmenting.

Flexibility on pricing gives restaurants the option of reducing prices during the low demand times and possibly holding a high price on a high demand season. Still, the price has to cover the variable costs and compensate at least some of the fixed costs. Currently, restaurants use for example happy hour promotions and reduced lunch time prices for shifting the demand towards the low demand period. On high demand period for example, an early bird offer for a special dinner menu could be closed. However, as mentioned in the Perceived demand based pricing article (Kimes & Wirtz 2002, 37), "increasing profitability via demand-based pricing does not have to come at the expense of customer satisfaction and loyalty". Further suggestions for shifting the demand is presented in chapter 5.3.2.

Pricing according to the market segments is fundamental. Every segment needs its own strategy for promotion, policies, distribution and sales to attract the right person with the right price. Segmenting can be based on demographic, psychographic, geographic or probably the most valuable one for restaurant, behavioural manner.

4.3   Perishable inventory

Perishable inventory in the hotel industry means, that the hotel room night cannot be saved for the next day. If a room is not occupied for the night, the revenue opportunity from that room is lost on the next morning. Similarly, the restaurant industry has perishable aspects in it.

To mention first, there are ingredients such as fish, which will get spoiled rather quickly. With a good menu management, a restaurant can avoid food items to get spoiled for example promoting them as a daily special early enough.

What is even more important on the revenue management aspect, is that restaurants inventory is not only the raw food or juices for the cocktails. In fact, the alcohols and some of the food ingredients have a long shelf life and they only become perishable after they are prepared and waiting to be served. Restaurant inventory should be thought of as a time unit during which the seat or table is available. If the monitored time unit is for example an hour, after every unoccupied hour the particular seat or table perishes. Thus, collecting data on customer behaviour and defining the low and high demand day parts is important.

The equivalent of a lost hotel room night in the restaurant industry, would be a customer leaving a queue. Whether it's due to the slow service or unappealing products, the potential revenue opportunity is lost when the person leaves the queue.

Hotel rooms Average Daily Rate, ADR, is equivalent to the Average Sales Per Customer in the restaurant industry. Focusing just on the average sales is missing the occupancy aspect from the calculations. Therefore, the restaurants should evaluate their revenue generation by measuring the Revenue Per Available Seat Hour, RevPASH.

4.4 Segmented market with predictable demand

In the restaurant industry, the demand consists of the customer mix based on the walk in customers and the customers who make a reservation. Collecting data, internal and external, is needed for forecasting the demand and marketing for the right segments.

Every segment requires its own strategy and the restaurant manager should outline the segments, the target groups, which the particular restaurant should focus on. Within both categories, walk-ins and the ones who make a reservation, segmenting can be based on demographic, psychographic, geographic or probably the most valuable one for restaurant, behavioural manner. Different strategies for promotion, policies, distribution and sales should be used to attract the right person for the right price at the right place. Analysing the collected data from the customer and booking behaviour of every segment is used for forecasting demand. By forecasting the demand, staffing levels and purchases are adjusted accordingly. With the help of the data, the restaurant manager should choose

the best mix of reservations, walk-ins, dining times and meal durations to achieve the best possible revenue and profit opportunity.

4.5 Time-variable demand

The customer demand varies in a restaurant according to the year, the season, the month, the week, the day and even by the day part and hour. Varying demand creates peak and non-peak demand periods affecting the productivity. Forecasting these time related periods and optimizing their usage enhances the revenue, and therefore profit if other factors remain the same, through appropriate pricing decisions, table allocations and staffing levels.

For example, dinner demand could be busier during the weekend than on a weekday, or on a tourist season than on the off season. Optimizing the revenue opportunities on a peak demand period is the key for the successful use of the revenue management application. However, managing the shoulder periods around the high demand periods, by forecasting the demand, results on a better decision making on reservation acceptance and informing the waiting times for the walk-in customers.

Collecting data about the arrival times and meal durations gives the restaurant operator the knowledge for forecasting the demand. After creating a forecast, the managers can match the staffing levels according to the demand and base their pricing decisions in line with it. Restaurateurs must also create strategies for shifting the demand from the high demand periods to the low demand periods for maximising the usage. Currently, restaurants use for example happy hour promotions and reduced lunch time prices for shifting the demand towards the low demand period.

4.6 Convenience factor (willingness to pay)

After appealing to the different market segments with the right price at the right place, it all comes down to making the sale. The convenience of purchasing the product or service is the final characteristic.

The product itself is not always the only thing the customer is buying. For example, when deciding between two basically similar burger restaurants which one to visit, the decision could be driven by the accessibility of the restaurant or the reservation qualities. The competitors might have the similar product or service but with different accessibility to get it.

Being on a prime location near to the highway or the public transport routes could determine the decision. On the other hand, having a mobile app or an easily operated booking website can enhance the selection.

Co-operation with several distribution channels is one possible action towards reaching the customer. Likewise, the booking conditions can affect the willingness to pay. While the product stays the same, added flexibilities on the reservation can add value for the customer. For example being able to change the reservation without an extra cost.

Time of utilising the product can also affect the willingness on purchasing the goods. Everyone knows the common vacation period, such as a Christmas vacation, appears on a raising of the price level on the holiday destination travel tickets. Since that specific time is suitable for example for a big family to travel, because of the set holidays from the schools, the parents might accept the higher prices. Similarly, a person entering a night club at the busiest Friday night hours is presumably more willing to pay the entrance fee compared to entering the club at a quiet Monday evening.

5   Applying revenue management in the restaurant industry

The revenue management process contains three different stages: strategic revenue management, tactical revenue management and operational revenue management.

5.1   Strategic revenue management

On the strategic level, the restaurant makes decisions concerning the overall long term operations for longer than one year. The process involves creating pricing decisions and offerings the restaurant is planning to practice. These decisions define the desired positioning on the market compared to the competitors by reviewing the market and creating customer segments. On this level, the restaurant also states its image and identity and determines which distribution partners to use. Strategic level decision making process must include the executive team and the revenue manager.

The following core revenue management process steps (Figure 6.) are adopted from a research article Social media meets hotel revenue management: Opportunities, issues and unanswered questions (Noone, McGuire & Rohlfs 2011, 295) and from the study material of the NHTV Breda University of Applied Sciences revenue management lectures (Josephi 2014).
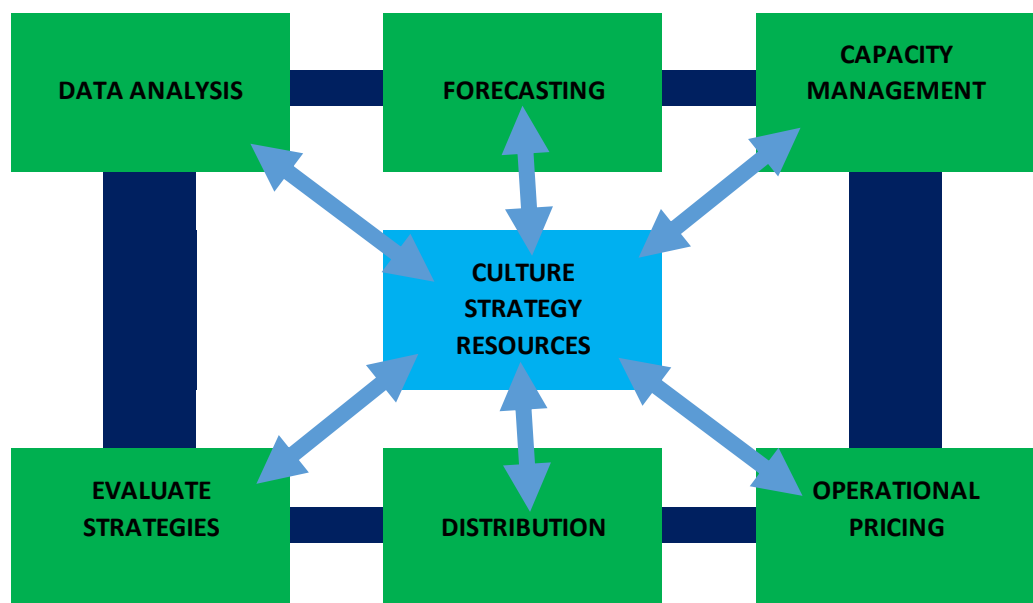

Figure 6. Core revenue management process (modified from Josephi 2014)

The core revenue management process consists of six steps: data analysis, forecasting, capacity management, operational pricing, distribution and evaluating the strategies.

The culture surrounding the company, the business strategy and the available resources can be though as the seventh step, the surroundings of the restaurant, which will have an impact on every step of the core process. Similarly, the customer relationship focus should be part of the progress. The laws and the cultural norms affecting the restaurant must be respected throughout the whole process.

5.1.1 Data analysis

To start with, the restaurant must procure the necessary data for analyzing the restaurants performance. This requires appointing the Key Performance Indicators (KPI's) for measuring the revenue management achievements. The KPI measurements are related to the basis of exploring the Revenue Per Available Time Based Unit. Evolvement from the yield management to the restaurant management lead to the progress from measuring only the internal data of the capacity to the extension of using it together with the external data related to the price optimization.

The KPI data the restaurant must collect consists of:

- Seat occupancy percentage, OCC, %
- Average Sales Per Customer, €
- Revenue Per Available Seat Hour, RevPASH
- Table turnover efficiency
- Gross Operational Profit Per Available Seat Hour, GOPPASH
- Total Revenue Per Available Seat Hour

Restaurant managers are typically evaluating the performance by measuring the check averages and the food and labor cost percentages but those measures won't capture the restaurant's revenue generating performance. Similarly, if a hotel manager drives only a high average room rate, it lacks the information of the occupancy. Having only a one customer spending 120 euros in an hour compared to four guests spending each 30 euros in the same time limit, describes the difference in the style of generating revenues. On the other hand, a full restaurant achieving all the seat hours to be occupied can still make losses if the menu items are sold at too low prices and the average check ends up being too low. Furthermore, if a restaurant manager focuses only on maintaining high contribution margins, measuring the margins will not indicate how well the restaurant uses its capacity. (Kimes 2004, 7.) Table 1 illustrates the diversity of the restaurant revenue generating performance.

Table 1. RevPASH examples

RevPASH examples			
Restaurant	Seat Occupancy	Average Sales Per Customer	RevPASH
A	40 %	18 €	7,2 €
B	60 %	12 €	7,2 €
C	80 %	9 €	7,2 €
D	90 %	8 €	7,2 €

The occupancy percentage is calculated by dividing the number of occupied seats per hour with the total number of available seat hours. The average sales per customer is calculated by dividing the total seat hour revenue with the number of occupied seat hours. RevPASH is calculated by multiplying the seat occupancy with the average sales per customer. RevPASH can also be calculated by dividing the total seat hour revenue with the number of available seat hours. As seen on the table 1, all four restaurants are generating the same amount of revenue despite the differences in the occupancy and average sales levels.

RevPASH illustrates the rate at which the restaurant is generating its revenue and capturing the trade-off between average check and the used seats. Assuming that a 100 seat restaurant makes 4000 euros on Saturdays between 6pm and 8 PM. The restaurants RevPASH for those hours would be 20 euros (4000€/100 seats/2 hours). After establishing a baseline for the desired RevPASH for the peak period of 6pm to 8pm on a Saturday, a restaurant can analyze its revenue generating performance. Referencing on the light of the historical data implies if the restaurant is performing better or worse than before. Referencing against the competitive set is also important for having a contrast on the industry averages.

The table turnover efficiency is related to the average sales per customer and the seat occupancy percentage together with the concept of the restaurant. In the self-service oriented and fast food restaurants, maximizing the table turnover is more important than the average use of money. On the other hand, in a fine-dining restaurant the number of customers is lower and related to the set seating's, and therefore the average sales per customer is more important than the table turnover. In a fine-dining restaurant it's possibly better to create up-selling tactics to maximize the revenue, compared to a quickly table turnover dedicated restaurants where the up-selling might create unwanted increase in the waiting times.

The GOPPASH is calculated by first reducing the total operating costs from the total restaurant revenue and then dividing the given gross operational profit with the number of available seat hours. Even though the terminology in the revenue management studies refers only to the revenue aspects, the actual profitability of a restaurant is more important than merely pursuing high revenue streams. For that reason, this thesis focuses on explaining the theory by using the revenue as the measurement unit, while the author knows the gross operational profit can vary depending on the revenue generating process.

Total Revenue Per Available Seat Hour combines the ancillary revenue streams together with the seat hour revenues. If a restaurant sells for example t-shirts or souvenirs, the ancillary revenue is added to the seat hour revenues and the divided with the number of available seat hours.

The RevPASH calculations should not include tips, service charges, or any kind taxes, because the RevPASH should focus on the restaurant profits offsetting the costs of the operations (Thompson & Sohn 2009, 521). Tips and taxes are not contributing on the costs of a restaurant. "For similar reasons, takeout and curbside service should be excluded from the RevPASH calculation. Since RevPASH is capturing revenue on the basis of capacity measured in seats, including the revenue from takeout or curbside would reduce the utility of using RevPASH as a performance metric" (Thompson & Sohn, 2009, 521).

According to a simulation study (Thompson & Sohn 2009, 538) calculating RevPASH should be based on allocating the revenues over the entire time the check is open, receiving an average inaccuracy of 2,63 percent on the Thompsons & Sohn the simulation study. Moreover, the author recommends using the entire meal duration from seating the guest to cleaning the table afterwards, ready for the next party to be seated, as the time frame of a seat occupancy. Reason being the fact that after closing the check the table won't be available for the next guest before the party leaves and the table is tidy. Since capturing the data between the closing of the check and the table being ready is problematic, the use of a POS data provides sufficient enough approximation of the time frame. Yet is to discover, whether a handheld ordering machine could include a possibility to reform the time stamp according to the observations of a servant.

Other data can be collected from all the everyday actions starting from the guest making the reservation until leaving the restaurant - and even post visit actions such as customer feedback. For example, online reputation statistics and benchmarking against the competitive set can be useful data to analyze. Collecting the big data enables the managers to make decisions based on evidence rather than feeling or intuition.

5.1.2 Forecasting

With the collected big data, the restaurant can create a forecast of the demand. The forecasting ingredients are the historical data, the budget, the upcoming events and the business on the books (B.O.B). To be clear, the difference of a budget and a forecast is that the budget is something the restaurant must achieve whereas the forecast is something the restaurant can achieve. Creating the forecast assists on forming the staffing levels, closing of the special deals and managing the inventory. Forecasting the demand goes hand in hand with the capacity and price optimization data.

Analyzing the historical data includes answering the following questions:

- How long before the arrival customers are making the table reservation?
- Which dates or days of the week are most popular to dine or drink?
- Which dayparts are most popular to each customer segment?
- How long the table is going to be occupied, on average, by each segment?
- How much certain customer segments spend on average?

When forecasting the demand, it's important to operate with the limits of the budget. Booking an expensive artist for a quiet Monday night, historically proven, will probably be a risk considering the budget. Ingredient and staff costs might be covered, but a significant effort would have to be done to make profit on that day. This doesn't mean the restaurant could not have special events in attempt to create more demand, but the decision making process and risks must be acknowledged and justified, not validated by suppositions.

The Christmas Eve or the last weekend of the summer vacation are exceptional events which can affect the demand. Similarly, a rock concert can be a special event affecting the amount of walk-in customers as the author has witnessed. A restaurant with a terrace where the author started his career as a bartender, was located on the byway of the main street of Helsinki, between the railway station and the Olympic Stadium. From the 40 000 concert visitors, if even a percentage would come to the terrace on their way to the railway station, the restaurant would be full. Therefore in these occasions, the staffing and inventory levels has to be managed properly in advance. Once, the restaurant manager sold bottle beers with a round number of 5 euros to the customers on the line to relieve the queue and to capture the perishable inventory before people would leave the line.

The confirmed reservations, the business on the books, assists on forecasting the demand creation for the day. If a big group has reserved a table late on the evening, a boost

on the staffing level can be set to compensate that. Matching the demand is not a new practice, whereas creating a booking pick up, by analyzing the current B.O.B. together with the historical booking data, is more common in the hotel field than in the restaurant industry.

By combining the historical and the advanced booking data, it is possible to create a booking pick up curve. The curve represents for example, how many of todays' reservations were made 14 days before the arrival or how many reservations are most likely to come on the last week before the arrival. In other words, the figure represents the number of bookings made on the previous years combined together with the bookings made this year. When the New Years' Eve special dinner is announced, someone books the table a month before the date, someone makes the decision two weeks before the evening and someone might even want to reserve a table the night before for the New Years' Eve party. Realizing, that different customer segments book the table on different schedule prior the arrival is the key for understanding the booking pick up method which then can be used for forecasting the demand. The author's experience is for example, group reservations are made several weeks before the evening, whereas the decision for going on a business lunch can be made the day before or even on the same day as the arrival. (Booking pick-up explored in the chapter 5.2.3)

5.1.3 Capacity management

After creating the forecast, the restaurant is better equipped for managing the capacity of the venue. Planning the table mix, the number of tables and chairs and where to allocate big groups are objectives to consider. The capabilities of the kitchen has to be taken into consideration together with the dining room capacity management. Capacity management results in constant balancing with the supply and demand factors. "The rationale for focusing on the mix of tables is simple: by better matching capacity to demand, a restaurant increases its effective capacity" (Thompson 2010, 310). The focus on the capacity management in this chapter is on the table mix, since it's the easier and more affordable action to consider, compared to increasing the kitchen capacity (which is usually more tide up with the size of the venue).

To optimize matching the capacity to the demand the restaurant has to pinpoint the peak periods weekly and even daily. To accomplish this, the restaurant must use the point of sale (POS) data to classify the dining or drinking durations by different party size. In this manner, the customer demand can be matched with the perfect capacity by the table size. Variable size and combinable tables will assist on creating the best table mix.

Needless to say, evaluating the different combinations is essential and the order can even change according the event. As in every stage of the revenue management processes, evaluating the practices and adjusting the methods according to the staff, or customer, feedback is vital.

As demonstrated on a case study by Kimes and Thompson (2004, 387), the potential of an excellent table mix was found out to create up to 30% increase in the customer volume without harming the waiting times beyond the normal levels of the restaurant. The Chevy's restaurant, part of a large Mexican restaurant chain, was estimated to increase its RevPASH by 30% during the accustomed 11 peak hours per week they were experiencing, which would result as an increase of the weekly sales by 3780 dollars or over 200 000 dollars per year.

5.1.4 Operational pricing

When the capacity capabilities of the restaurant are clear, the restaurant can decide on the pricing and the overbooking policies together with allocating the product and the customer segments for the optimal mix. Price sensitivity is a key lever in the revenue management practices. Based on the basic principle that the demand for a product varies according to its price, a price elasticity tool can be used to assist on creating the different price categories, availability of the product and restrictions attached to the price. Price elasticity of the demand works in a limited way. Therefore, positioning against the competitors and differentiating the product are essential.

Price elasticity ratio measures how demand is affected by the changes in price. When small changes are made to the price and it results in big changes in the demand, the demand is elastic. Correspondingly, when big changes are made to the price and it results in small changes in the demand, the demand is inelastic. In all cases the assumption is that an increase in the price results as a decrease in the demand. Price elasticity ratio is the change in demand divided by the change in price. (NHTV study materials 2014)

Price Elasticity of Demand = % change in quantity demanded / % change in price

When price elasticity ratio is >1, the demand is elastic and even the small change in price results as a large change in the demand. Thus, when the price elasticity ratio is <1 but >0 the demand is inelastic and the changes in price has low effect on the demand. (Figure 7.)
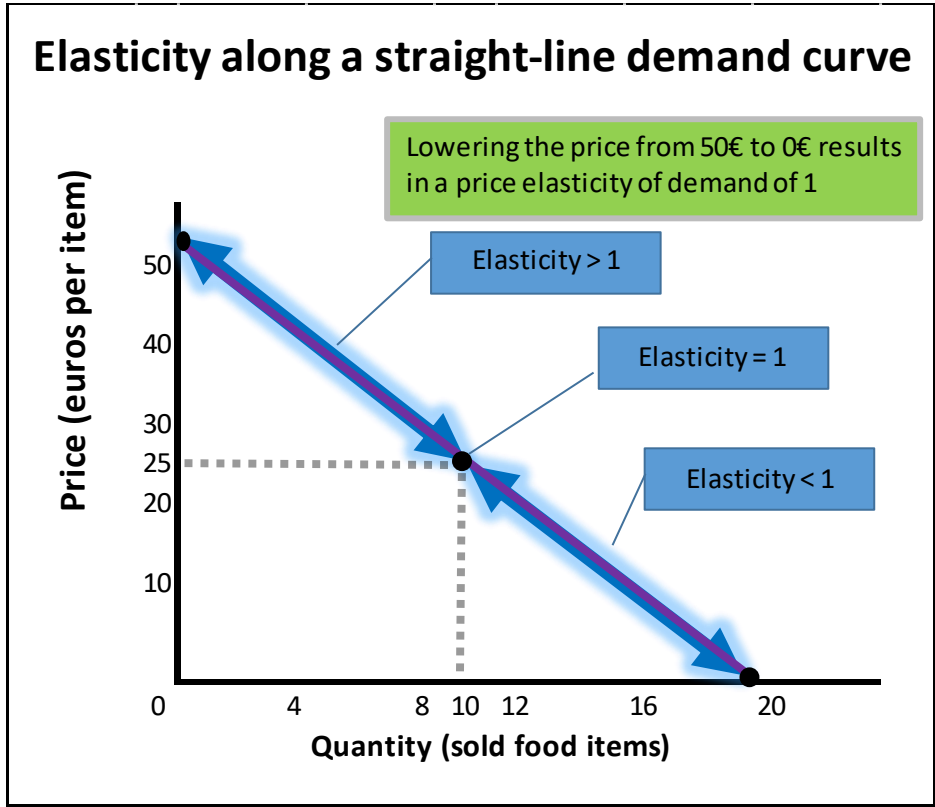
Figure 7. Price elasticity (modified from Josephi 2014)

The price elasticity ratio can be calculated by using the midpoint method, where the quantity in the beginning added with the quantity after the change is divided by the midpoint of these two, and then divided by the price in the beginning added with the price after the change divided by the midpoint of these two. For example, if the price for a cocktail was 7 euros and on a Saturday night the bar sold 500 of the cocktails. After raising the price to 9 euros, the bar sold 300 of the cocktails. Using the midpoint method we can calculate the price elasticity ratio of demand for the cocktail.

The change in quantity = [(500 – 300) : ((300+500) : 2)] = [200 : (800:2)] = 200:400 = 0,5
The change in price = [(9-7) : ((7+9) : 2)] = [2 : (16:2)] = 2 : 8 = 0,25
The elasticity ratio between the change in quantity in contrast to the price = 0,5 : 0,25 = **2**

Since the price elasticity ratio is greater than 1 (2>1), the percentually small change in price the bar made resulted as a larger change in the demand. In this case, the restaurant should reconsider the made decision, since the impact on volume was upfront and with the current pricing the revenue dropped from previous 3500 euros to 2700 euros.

Price elasticity is not the only factor affecting the demand. Price wise, the restaurant should come up with varying price categories which match the demand level of a given time and attract the desired segments. The restaurant must also evaluate their positioning in the market considering the competitive set, the need for the product, the brand loyalty, the market segmenting and the target groups. Finally, the servers' personal service and selling skills can reflect on the demand, together with happy hour deals, advertisements inside the restaurant and the possible mobile payment options offered for example by food ordering and delivering company Wolt (https://wolt.com/) or applications using Near-Field Communication (NFC) contactless payment system.

The strategic customer segmentation cycle consists of diving the market by the customer need, determining the potential profit, target segmenting according to the capability to serve, investing resources to develop and distribute the product and measuring the performance and making adjustments for the future. (NHTV study materials, Josephi 2014) Analyzing the customer buying behavior includes answering the following questions:

- Why did the customer choose this restaurant?
- What influenced the choice?
- Which distribution route the customer followed?
- How far did the customer arrive to the restaurant?
- How long is the average length of consuming a meal/drink?
- Which menu items do they prefer?
- How is this information tracked and used for future benefits?

Segmenting can be based on demographic or psychographic manners, which would require more in-depth personal information, or on the geographic and, probably the most valuable one for restaurant, behavioural manner, which are easier to identify and measure. The desired image and identity the restaurant seeks to represent should be combined to the segmenting decision making process.

The demographic measuring is based on the age, gender, income, occupation and education, whereas psychographic is based on the lifestyle, personality and social class of the customer. The geographic measuring is based on the city, state, country and religion backgrounds of the customer. On a hospitality environment such as a restaurant or a bar, the primary focus is on the behavioural segmenting which is based on the occasions, benefits desired, usage patterns and the loyalty and frequency of the purchase.

In behavioural segmentation the occasion aspect refers to the purpose of the visit. Why the need for the occasion? Is the purpose business, family or leisure related? The desired benefits could be quality, price, atmosphere and service, variety or flexibility of the product and location. The time and date, daypart, week, month and season are part of usage patterns to consider. Analysing the loyalty and the frequency of the purchase can be weighted by the lightness or heaviness of the usage.

Analysing the market segments creates an opportunity to optimize the market mix by grouping customers with similar preferences. The information must be consistent and every segment must have a clear customer definition. After identifying the different segments, a precise strategy for pricing, promotion, policies, distribution and sales is required. As mentioned in A decision framework for restaurant revenue management article (Noone & Maier 2015, 238), the restaurant operators must strategically consider their optimal business mix to create long-term developments. Identifying the restaurants most attractive customer segments will lead to the managers' focus on accepting reservations from those segments and targeting on them.

Ultimately, by studying the past customer buying behaviour the restaurant can create more accurate and improved forecasting which will improve sales and marketing together with refined data analysis. (HSMAI, 2014)

The menu mix of a restaurant or a bar should include some variety in preparation times, serving possibilities and cleaning efficiency. If every meal requires a long process to perform, it creates a challenge on achieving efficient table turnover. "Strategic menu mix, pricing and design decisions are fundamental to driving long-term revenue growth and profitability" (Noone & Maier 2015, 237).

As an example, the annual crayfish parties held in the Nordic Countries at the end of the summer require long preparation and mise en place before the actual event. At the event, the serving and the dining is somewhat challenging and a long procedure together with

the heavy duty cleaning up afterwards. Since the time and effort is profound in these occasions, the menu pricing must reflect the efforts. On the other hand, the restaurant can choose to include in the menu mix rather quickly produced, served and consumed meals to enable fast table turnover.

According to the The Hospitality Sales and Marketing Association International (HSMAI, 2014), the basic strategies in market positioning are skimming, penetration, surrounding, hidden, matching and undercutting.

In the skimming strategy, the restaurant raises the certain products' price to the top end of the competitive set. The action is based on the product quality and the received outstandingly positive reviews. The volume might suffer, but the average check would be higher for example due to a novelty food ingredient or an extraordinary champagne on the list.

In the penetration strategy, the restaurant lowers the prices below the competitive set to increase the volume and gain more market share. The reason for this can be low online reviews and the lack of customers. For example big restaurant chains in Helsinki have offered a ridiculously low priced sparkling wine bottles to attract more customers and to increase the volume, with the consequence of possible low average check but in the hope of upselling on the spot.

In the surrounding strategy, the restaurant sets the price of an ordinary product lower than the competitors but the premium products to be higher priced than on average on the competitive set. For example a bar could sell the basic sparkling wine bottles for a cheap price but charge a premium price of a rare quality champagne.

In the hidden strategy, the restaurant basically does not have a clear view on what to do and to whom to target. In other words, the restaurant follows the neighbor businesses price levels and strategy, and stays in the middle grounds. On the customer point of view this is unfortunate, since the restaurant doesn't really offer anything special compared to the next venue.

In the matching strategy, the restaurant focuses directly to its closest competitor and endeavors to beat the competitor and to gain more market share. Especially in Finland, where there is not enough people for every niche bar, the novelty cocktail bars are competing with similar products from the slim customer segment. Although, the current situation in Helsinki is quite fascinating and the cocktail bars are introducing clever ways to stand out from the others.

In the undercutting strategy, the restaurant sets the prices slightly lower than the competitors, yet having more or less same quality than the others. This strategy is not entirely tied up with the product but more of the positioning the restaurant desires to represent. Decision for choosing undercutting strategy is based on top reviews, already achieved great revenue generation status and the faith on the solid brand.

5.1.5 Distribution

After setting the framework for the dynamic pricing, the product has to be brought to the customer. The four basic ways the restaurant can distribute their inventory are the common telephone method, the call centers, the online or mobile reservation through the restaurants own website or booking application, or the online or mobile booking through the general third party reservation sites or applications (Kimes 2011, 182). The decision of the preferred distribution channel must be based on the customer preference, the possible added value for the business and the other additional services the restaurant might benefit of. Benefits being the electronic trace left to the online booking, customer history and table management systems which can then be used to analyze the purchasing and booking behavior.

On a study about the role of the multi-restaurant reservation websites in the restaurant distribution management in the U.S. (Kimes & Kies 2012, 12) the research findings indicate the importance of including multi-restaurant websites as a part of the restaurants' distribution strategy, despite the potential intermediate costs. The research indicates, that one-third of the survey respondents had used a multi-restaurant website to place a table reservation order. Those website users were also found out to dine out more frequently than an average diner. Moreover, they found out that over 50% of the respondents had called the restaurant or used the restaurant's own website after seeing the establishment on a multi-restaurant website. The customers seem to be loyal to the restaurant, not to the reservation site. To conclude, multi-restaurant website strategy obtains potential exposure and additional business opportunities, despite the occurred costs.

5.1.6 Evaluating the strategies

Finally, after completing the procedures it is important to evaluate the outcomes. Setting goals and forecasting revenues becomes insignificant if the results are not analyzed and then developed further. Therefore, the results must be referenced to the KPI's and other data collected on the earlier stages of the restaurants revenue management process.

The three standard performance measurement levels are looking into the comparison of the historical data, the budget and the industry averages (Forgacs 2010, 13). As important as studying the numerical statistics, it is to act on the internal feedback received from the staff members and to response to the external customer feedback.

Historical data from comparable earlier periods is a crucial starting point for an authentic reference. If a restaurant has had a seat occupancy of 70% in the previous three Novembers and this year the November's occupancy is 60%, the result indicates a poor performance. On the other hand, if the previous Novembers were 30%, 40% and 50%, this year's figure seems as an improvement. The historical data will not always work as straight forward as the previous example. The referenced month might have been unusual in many ways such as weather conditions or global economic setbacks. Similarly, the day of the week affects the results, since the demand can vary depending if the Christmas Eve lands on a Wednesday or a Saturday. Therefore, the referenced data must be properly evaluated.

Comparing the achieved scores with the budgeted ones in question will illustrate, whether the restaurant met the endeavored results or not. If the budget is exceeded, the managers should investigate the reasons and report it to the investors and the general manager. On the other hand, if the restaurant makes a record breaking result, the managers could consider a suitable bonus or incentives for the employees in every level.

When comparing the industry averages against one's restaurant, it's important to include only the competitors with comparable features such as product, size, service, market position, age and location. Comparing to the overall industry averages will give a limited view of the particular segment one's restaurant is operating on and provide only little or none benefits.

Receiving feedback from the staff members and the customers is essential. Even more vital is to genuinely evaluate and act on the feedback. No one is perfect, and down the line, it's only reasonable to modify the operations and service if needed. In the case of a failure in the service, product offerings or double bookings, the restaurant should create a protocol on how to operate in certain occasions (apologies, gift card, free dessert etc.)

Empowering the employees is important. At his first workplace, the author faced few unsatisfied customers and felt like his hands were tied what came to the recompensing the customer, since all the refunds had to go through the manager. Understandably, the manager cannot always be available but making the customer wait seems unreasonable on

the author's opinion. When a misdeed occurs, the customer expects a compensation right away. On an article about guest service management and processes in restaurants (Susskind 2010, 481) the author mentions that the YUM! Brands and Ritz-Carlton employees have in some instances a 1000 dollars' worth of credit on their disposal per service episode for resolving customer complaints or service failures. Empowering the ground level employees is a practice the author recommends for the managers. However, it still doesn't diminish the managers' responsibilities towards the customer service practices.

Engaging with customers through social media is also important. On a "Advertising on the internet" workshop held by the Country Manager of Finch Finland Advertising Agency Antti Merilehto (Helsinki, 21 March 2016.), the author learned that encouraging customers to interact through the restaurants Facebook page, particularly in the form of customer reviews, is the key for building a positive social media reputation and driving the customer demand in today's viral world. Luca (2011, 4) found, that a one star increase in Yelp rating leads to an increase in revenue between 5 and 9 percentages.

What is important to treasure, is that the revenue management remains a constantly ongoing process in the restaurant. Evaluating, analyzing and responding to feedback is essential to complete on every stage.

5.2 Tactical revenue management

On the tactical level, the restaurant makes decisions concerning the current year. The process involves agreeing on the set rules (e.g. pricing, segmenting), doing market analysis and structuring the demand calendar. Tactical level decision making process must include the general manager, the revenue manager, the sales and marketing division and the operations division.

5.2.1 Implementing the set rules

Instead of desperately trying to achieve quick return on investments, the managers must operate according to the set rules for the current year. Inconclusive actions harm the image of the restaurant and can make the business seem sketchy or unreliable.

During the revenue management studies in the NHTV Breda University of Applied Sciences in the spring 2014, the author attended a guest lecture held by Lennert de Jong, Chief Commercial Officer of citizenM Hotels. During his speech about forecasting hotel

occupancy, Mr. De Jong mentioned the day 30th of April 2013, the day when Willem-Alexander became the King of the Netherlands. As expected, the hotel room prices sky rocketed in the Amsterdam region on the day because of the nationwide celebration. However, the citizenM hotel stick with their brand and image, and didn't raise the hotel room prices at all and kept the normal rates. As controversial as it sounds, reflecting to the revenue management norms of finding the right price to the right customer at the right time (in this case the sudden tremendous need for a hotel room in Amsterdam), the approach the citizenM implemented was, in a way, an impeccable adoption of revenue management.

5.2.2 Market analysis

Dynamic, global and local market situations require continuous monitoring and evaluation. As mentioned before, the restaurant should keep the line they have set but should still stay alert for trends, themes and certain seasonal diversities. For example, if the winter comes earlier, the warm beverages such as Irish Coffee are better to bring to the menu earlier than forecasted.

When the Finnish Kyrö Distillery Company won the title of being the best gin and tonic in the world, according to the International Wine and Spirit Competition (IWSC) at the summer of 2015, the product gained a worldwide recognition. The bar the author was working at the time was one of the first ones to have the Napue gin on the menu despite the limitations on the distribution. The demand for the product was on the rise and it was a great advantage for the business to have the gin for sale right at the beginning of the trend compared to the competitors. The observant tactic paid off, since the product made its way to the selections of most of the restaurants and bars in Helsinki and is still this date very popular in the gin and tonic scene.

Other tactical adjustments can include following themes on the industry. During the studies in the Haaga Helia University of Applied Sciences for the Bachelor Degree of Restaurant Management, the author has noticed the rising theme of Nordic and Finnish flavors on the restaurant field. Sure enough, on April 2016 opened a restaurant called Finnjävel (literal translation Finnish Devil, a Swedish term of abuse for the Finns who moved to Sweden in the 50's and 60's) in Helsinki, with the passion for saluting for the roots of the Finnish cuisine. Surprisingly, or on the other hand smartly if the trend fades away, the restaurant is said to be open only two years all together. The restaurant has a counter on their website (http://www.finnjavel.fi/) which shows the days, hours and minutes when the restaurant closes its doors.

5.2.3 Demand pattern

Structuring the demand calendar for the current year consists of appointing the seasons, adjusting staffing levels, and establishing the tactical alignments such as booking pick-up.

Dividing the year in to the four seasons (winter, spring, summer, autumn) and to the financial quarters (Q1 = Jan, Feb, Mar, Q2 = Apr, May Jun, Q3 = Jul, Aug, Sep, Q4 = Oct, Nov, Dec) (Investopedia, 2016), will help outlining the diversity of the year. A restaurant in a ski resort will experience high and low demand periods according to the seasons. Hiring seasonal workers is needed and the hiring process can take place already in the low demand period. Thus, the restaurant must be alert to launch the job advertisements on time.

For structuring the demand calendar, a restaurant can use advanced booking methods of additive or multiplicative pick-up methods. According to the revenue management themed website of Mateusz Konopelski (2016), the principle of the methods is to identify the increase on booking behavior in different time periods and accumulating the results together with the total demand that is expected in the near future. By combining all the available booking information, the forecast is more receptive on the changes in demand which enables the restaurant to track the increase in bookings easier. For example, if the restaurant has not received any reservations for their New Year's Eve party by the mid of December, compared to the previous year when the party was sold out by the first of December, the restaurant realizes to explore the reasons for the poor level of bookings.

The additive pick-up method forecasts the future bookings by calculating the averages from the increased demand from the same period in the past, presenting the result as an integer. The multiplicative pick-up method forecasts the future bookings by averaging the rate of the increased demand from the same period in the past, presenting the result as a percentage rate. Using the rate it's possible to create a forecast graph for a given day in the future. In order to create a booking pick-up, the business on the books data has to be collected. The following table (Table 2.) exhibits the B.O.B. data of a 100 seat Restaurant X and shows the number of days before the arrival the booking was recorded.

Table 2. Business on the books per pax data of the Restaurant X

Business on the books (B.O.B.) per pax	Arrival date Nov	The end of the dinner -1	The day of the dinner 0	Number of Days Before Arrival (DBA)							
				1	2	3	4	7	14	21
	1st	80	81	72	60	49	40	22	14	6
	2nd	82	84	73	60	51	41	23	17	6
	3rd	90	84	71	62	52	44	25	16	8
	4th	91	85	75	64	52	42	27	22	6
	5th		86	76	66	54	42	27	21	9
	6th			77	63	53	45	21	16	9
	7th				64	56	47	28	22	15
	8th					52	43	23	14	5
	9th						41	20	10	4
	10th							21	11	2

Only completed seatings   **All data (incomplete and complete seatings)**

Table 2 shows the completed seatings inside the green frame and all data including the incomplete seatings inside the red frame. The -1 arrival day describes the actual demand for the analyzed day and shows the fact that no-shows, cancellations and walk-ins can occur.

By listing the number of taken seats (pax) on the reservation book, a restaurant can turn the B.O.B. data into a booking curve graph. Lead time refers to how close to the arrival date the booking was made. A short lead time means the booking decision was made close to the arrival day. Figure 8 exhibits the booking of the Restaurant X on the arrival date 1st of November 2015.
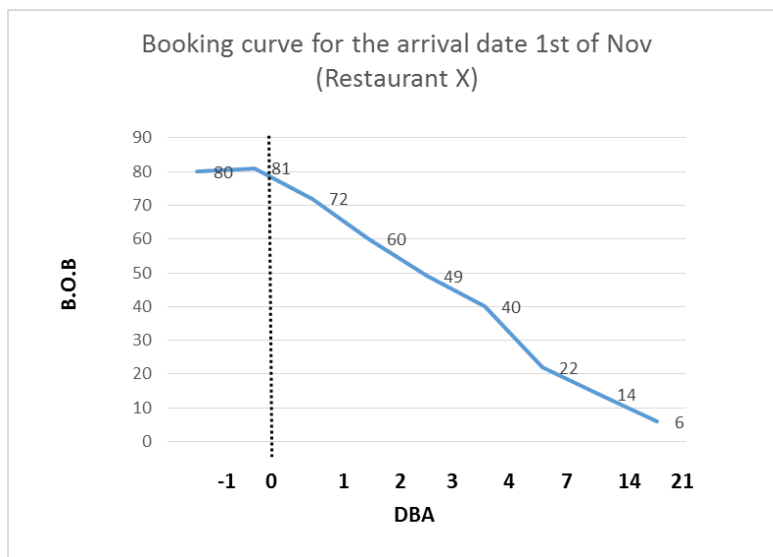

Figure 8. Booking curve for the arrival date 1st of Nov 2015 (Restaurant X)

To turn the data into a booking pick-up information, the restaurant has to list the 1st of November data from previous years and calculate the average booking demand. (Table 3.)

Table 3. November 1st B.O.B. (2013 – 2015)

Arrival date	Days Before Arrival (DBA)			
	-1	7	14	21
1st of Nov 2015	80	22	14	6
1st of Nov 2014	82	23	17	6
1st of Nov 2013	90	25	16	8
Average	84	23	16	7
Pick-Up		61	**68**	77

With the listed pick-up data, the restaurant can create a forecast for the 1st of November 2016. For forecasting the number of seats 14 days prior the 1st of November 2016, we have to combine the current B.O.B and the calculated pick-up integer 68. If now, two weeks before the arrival, the B.O.B. for the date 1st of November is 15 pax and the previous years' suggests a pick-up integer of 68, we can forecast 83 persons to come on the examined day.

Multiple forecasting methods are available on the business literature, including the previous one. The forecasting errors were knowingly left out, since this thesis focuses on showcasing the revenue management process guidelines as a whole practice.

5.3   Operational revenue management

On the operational level, the restaurant makes decisions concerning the upcoming months. The process involves analyzing the booking curve which has an impact on the opening and closing of the special deals (e.g. Father's day dinner) and turning down possible group reservations. Monitoring and adjusting the operations are also done on daily basis. Operational level decision making process must include the general manager, the revenue manager and the sales and marketing division, as well as including the ground level workers if necessary.

5.3.1   Rate management

By analyzing the booking curve, the restaurant can get a gasp on what is probably going to unfold during the following weeks. Practicing overbooking when it's suitable and fine tuning the prices occur in this level, together with arranging possible extra workers if the forecasting indicates high demand of table reservations. Opening and closing of the rates of the current promotions are adjusted on a weekly basis. When a customer requests for a

private event a proper displacement calculation must be done to ensure profits from the event.

To establish the minimum sales limit and displacement calculations, it's justified to explore the main driver of the revenue, the price. Table 4 illustrates a 1% percentage improvement in the three areas of the fixed costs, variable costs and price. As shown on the table, raising the price with 1% results as an 11% improvement in the return of the sales, whereas the progress on variable costs improvement is 7% and fixed costs improvement 3%.

The results indicate, that a private event decision should be based on the price, rather than fixed costs that the restaurant would face nonetheless or the variable costs.

Table 4. The impact on Return of Sales (ROS) displayed by the category

The impact on Return of Sales (ROS) displayed by the category				
	1% Improvement on			
	Status quo	Variable costs	Fixed Costs	Price
Restaurant x				
Sales Price	100	100	100	101
./. Fixed Costs	24,5	24,5	24,255	24,5
./. Variable Costs	66,4	65,736	66,4	66,4
= ROS	9,1	9,764	9,345	10,1
Impact on ROS		7 %	3 %	**11 %**

Setting a minimum sales limit for the event secures a certain amount of revenue for the day. The displacement calculations pursues to find the best possible scenario considering the requested amenities and services.

5.3.2 Monitoring and adjusting

Monitoring and adjusting the daily operations are the ground level functions in the revenue management process, being directly related to the end consumers of the products and service. Managing the duration of the stay and the time between customers comes down to the daily operations. The hospitable service manners should not be forgotten.

Monitoring the inventory levels is useful to combine with the daily deals and specialties. If some ingredient is running low, the servers and bartenders should be informed not to recommend the portion or cocktail including it. On the other hand, in the risk of spoiling ingredients, certain meals or beverages can be promoted as the daily specialties which the serves can promote.

As Noone & Maier (2015, 240) stated, "Promotions can play an instrumental role in driving short-term demand, revenue and capacity utilization. Four key issues arise in this domain: when to offer promotions, who to target with promotions, what promotions to offer and where to offer the promotions".

The timing of the promotions can be adjusted by using the RevPASH figures to identify the revenue gaining opportunities or by simply according to the occupancy figures and day to day data information. Looking into the booking lead time combined with the releasement of the previous promotions will also assist on timing the launching of the promotions. Promotions such as reduced lunch time price and happy hours (after work in Finland) are ways to shift the demand from the peak hours to the low demand hours.

The restaurants strategic customer segmentation defines the desired target groups and the products suitable to offer for them. Customer loyalty programs such as S Groups member card, S-Etukortti, or Happy Hour Restaurants loyalty card, are a way to collect customer behavior data which can then be used as a leverage for advertisement.

According to Kimes (2004, 22) coupon deals (such as two for the price of one) are perceived by the customers as a fair form of a demand based pricing. Considering the amount of using such deals, an interesting recent study about the use of coupon deals was conducted by Dholakia in 2010. As mentioned in the Future of distribution management in the restaurant industry article (Kimes 2011, 9), Dholakia found that, from the 42% of his sample of 150 restaurant businesses which used Groupon two for one deals, the promotions were unprofitable. Moreover, the customers using these coupons spent less money and had a lower return rate than the other customers.

For making the pricing decisions, a simple calculation of the price vs. volume can be useful, conducted by the following formula presented on Figure 9.
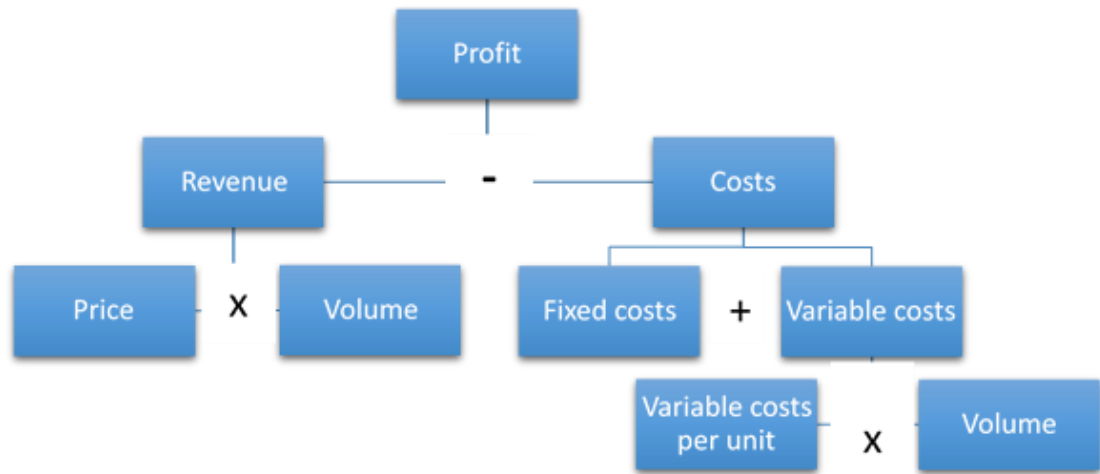
Figure 9. Calculating the price vs. volume tradeoff

Adjusting the duration of the stay can be managed by prompt food and beverage preparation and smooth table service. Maximum duration on the table can be adjusted by having set seatings. A restaurant can inform the customer upon the booking that the table is reserved for them for example for maximum on 2 hours. This way, the restaurant can divide the seatings into time spots. As mentioned by Noone & Maier (2015, 237), "when customers perceive the pace of a restaurant experience as being too fast, their satisfaction is negatively impacted. Therefore, any efforts to reduce dining duration should not result in customers feeling rushed".

Using a scenario based survey where respondents were asked to reflect the answers to their recent dining experiences (Noone, Kimes, Mattila & Wirtz 2007, 236), the researcher found that the too slow or too fast service affected the customer satisfaction. The study found, that the satisfaction could be increased by reducing the dining duration involving the procedures before and after the meal, but the attempts to rush the meal itself tended to reduce customer satisfaction.

Thompsons (Mythical) Revenue Benefits of Reducing Dining Duration in Restaurants article (2009, 96-112) presents contrasting results. A simulation based study of over 1200 restaurant scenarios found that, on average, the increased revenue peak experienced by reducing the dining duration was less than one quarter of the amount predicted by the common belief. Therefore, while reducing dining duration may result in a marginal increase in revenues, the managers should not rely on gaining a significant revenue increase. On the author's opinion this signs, that the restaurant should focus more on reducing the time used for the internal operations (preparation time) and increasing providing an outstanding customer service. Today, the educated customers seek for an experience when visiting a restaurant more than dissolving the basic need for eating and drinking.

Table turnover and group allocations are the key elements to manipulate during the service hours. Of course, the quality and safeness standards must be achieved at all times. Hospitable manners throughout the service process are the leading drivers of customer satisfaction, which potentially results as an increase in the average spend and loyalty. By defining the strengths of every server, it's possible to assign the most suitable server for each group. It can be anything from assigning a server with the language skills matching the group of foreigners or designating a high performing waiter to potentially high revenue VIP parties.

To reduce the arrival uncertainty, the restaurant could have an open voluntary booking calendar which shows the customers an opportunity to switch to a low demand hour or day part if suitable. An incentive, such as discounted meal or free aperitif, can work similarly as the booking calendars with price deals in the hotel and airline industry. The restaurant can also make reconfirmation calls or emails to the customers to ask if they are honoring the reservation and whether there is a delay. Some customers are ashamed or find it insurmountable to cancel a reservation. Therefore, by calling them the customer can cancel the reservation on the spot and the restaurant makes the cancellation process a bit easier for the customer. Of course this requires some man labor but the actual phone call will most likely last only a minute overall.

Open and proper communication between the restaurant staff and customers is essential. In the occasion of overbooking, the restaurant can operate much like hotels, offering an upgrade (champagne aperitif, table with better view) to the compensate the inconvenience. Networking with surrounding restaurants can be a one sort of solution for offering a substitute for the customer for that night, similarly as the hotels offer a suite or upgraded room from the nearby hotel.

In order to increase the comprehensive efficiency and to pin point the opportunities to streamline the service process, the restaurant managers need to collect data of the timing of different steps in the service process to illustrate the customer experience. After collecting the time data, actions to reduce the average and variability in the times between the steps in the process should be conducted. For example menu design, reducing the length and preparations times of menu items, and service rules, no upselling of low profitable items during a high demand period, are actions to consider. If the server knows there is a tight schedule and a high valuable group coming in, it might be more profitable to not push the current table to have desserts and coffee.

Working in a high volume cocktail bar the author has learned the importance of the equip-
ment being in their assigned place at all times to reduce the time used for making the
drink and serving it to the customer. As little of 10 seconds reduction, on average, in the
preparation time becomes significant when making 500 cocktails a night. 500 cocktails
multiplied with 10 seconds, results as 83 minutes of wasted time which could be used for
selling more products. Moreover, the reduction means the customer has potentially more
time to purchase in the bar before the last call.

6   Discussion

The final part of this thesis presents the conclusions and suggestions for future research on the topic. The author also critically evaluates the thesis process and the making of the product.

6.1   Conclusions and suggestions for future research

The aim of this thesis was to present guidelines for implementing revenue management in the restaurant industry and thereby improve the restaurants revenue generating performance. As quoted in this thesis, "Companies using revenue management have reported increases in revenue ranging from 2 to 5 percent" (Kimes & Thompson 2004, 373).

By first defining the history of the revenue management, the author prepares the reader for the needed knowledge concerning the subject. Since the practice have been studied to be suitable for many service industry businesses, the development towards the restaurant industry, and the need for the practice, is justified.

Required backgrounds and precise arguments are presented in the thesis starting from the strategic levers of the revenue management, price and duration, which sets the framework for the entire practice. Restaurants must acknowledge the relation between the average use of money, seat occupancy and table turnover on a given time frame. The Revenue Per Available Seat Hour, RevPASH, ratio is the key performance indicator the restaurant must monitor.

The required characteristics for implementing revenue management in the restaurant industry are introduced and explained, clarifying the reason, why revenue management is suitable to the restaurant businesses. The reasoning behind the methods are demonstrated by restaurant related examples. By using the zipper model, the thesis illustrates the process starting from a wide framework and narrowing it down to the everyday actions the restaurants can use.

The thesis presents the needed knowledge and background for implementing the practice, but on the other hand, does not offer hard data from an actual sample study displaying the improvements of an actual restaurants revenue generating performance. However, the aim of this thesis was in fact to create the "Guidelines for establishing a restaurant revenue management system" product suitable to any restaurant, not to research the improvements achieved by using the restaurant revenue management practice in a business.

The level of the revenue management practice in the hotel industry indicates the importance and necessity for the restaurant revenue management product. This thesis works as the first step on establishing a revenue management program in the restaurant field

Future research should be done to explore the importance of the best possible table mix for a restaurant and the actions to be done to shift the customer demand towards the low demand day parts. Research questions should explore, whether the restaurant customers would accept the dynamic day part pricing, table reservation fees or a reservation calendar with demand based pricing, similar to hotel and airline industry booking calendar.

On the more and more viral 21st century, it would be interesting to explore the benefits of using the electronic technology associated with the restaurant processes, such as automated purchasing procedures, electronic data collection systems and ordering applications. Even though, according to a survey (Kimes & Laque 2011, 8), the possible disadvantages of online, mobile, and text ordering procedures in the restaurant field include increased cost, overburdened facilities and potential commoditisation. As an example, some spas use an electronic wrist band to identify the customer and to enable purchasing alcohol from the pool bar by having a sort of a tab open assigned to the user. Some countries might face difficulties on implementing such practice because of the legal aspects concerning purchasing alcohol on credit.

6.2   Evaluating the thesis product process

Since the first marketing and sales lecture in the autumn 2012, the author has been interested in studying the restaurant revenue management topic. On one lecture, the author asked from the teacher why the revenue management practices are studied in terms related to hotel industry, even though the course was about restaurant management. The teacher replied "Unfortunately there is not much literature on hand at the moment, why wouldn't you write about it?"

After the lecture, the author self-studied the book Revenue Management: Maximizing Revenue in Hospitality Operations (Gabor Forgacs, 2010), which was also translated to Finnish by the Programme Director of Haaga-Helia University of Applied Sciences, Ari Björkqvist.

Because of the passion to open a restaurant in the future, the author has wrote down examples of revenue management along the four year journey in the restaurant industry.

Observing and questioning the procedures during work placements gave the author even more spark to study the subject. Fortunately, the author was accepted to NHTV University of Applied Sciences Hotel School in Breda, the Netherlands, for the spring semester of 2014, where the whole semester focused on the revenue management practice. The author was also accepted as the only exchange student to the Hospitality Sales and Marketing Association International, HSMAI, Revenue management PRO course held during the semester. After successfully passing the PRO course, the author was confident on writing the thesis about restaurant revenue management.

Finally by studying articles, mainly collected from the Cornell Hospitality Quarterly journal, and narrowing down the subject, the thesis process began in the spring 2016. The decision on not including a commissioning company gave the author freedom to create the product to be universal and suitable for any kind of restaurant or bar. In retrospect, including a commissioning partner would have given an access on actual data from a restaurant and guidance the thesis topic to be more narrow and specific than it now is.

The product "Guidelines for establishing a restaurant revenue management system" is a generalized version to guide any type of restaurant or bar to establish and use restaurant revenue management as part of their operations. The product has clear six step strategy for implementing the practice, written with the expectation the reader acquires some basic knowledge on the terms included.

Hopefully, this thesis and the product could work as the first stepping stone on the tool kit for a restaurant revenue management course in the future.

References

Cross, R. 1997. Revenue Management: Hard-Core Tactics for Market Domination. Broadway Books. New York.

Finnjävel restaurant front page. Website. Helsinki. 2016. URL: http://www.finnjavel.fi/. Accessed: 6 December 2016.

Forgacs, G. 2010. Revenue management: Maximizing revenue in hospitality operations. American Hotel & Lodging Educational Institute. Michigan.

Hospitality Sales and Marketing Association International, HSMAI, 2014. Revenue management PRO course material. Breda.

International Wine and Spirit Competition 2015. IWSC 2015 Trophy Winners. Mixer categories. United Kingdom. URL: https://www.iwsc.net/result/trophy_winners/2015/13. Accessed: 19 November 2016.

Investopedia. World's leading source of financial content on the web. Quarter Q1, Q2, Q3, Q4. Website. 2016. URL: http://www.investopedia.com/terms/q/quarter.asp. Accessed: 6 December 2016

De Jong, L. 2014. CitizenM, forecasting hotel occupancy. Guest lecture. NHTV University of Applied Sciences Hotel School. Breda.

Josephi, S. 2014. Introduction to revenue management. Revenue management course material. NHTV University of Applied Sciences Hotel School. Breda.

Kimes, S. 1989. Yield management: A Tool for capacity constrained service firms. Cornell Hospitality Quarterly, 8, 4, pp. 348 –363.

Kimes, S., Chase, R., Choi, S., Lee, P & Ngonzi, E. 1998. Restaurant revenue management: applying yield management to the restaurant Industry. Cornell Hospitality Quarterly, 39, 3, pp. 32–39.

Kimes, S. 1999. Implementing restaurant revenue management: A Five-step approach. Cornell Hospitality Quarterly, 40, 3, pp. 16–21.

Kimes, S. & Wirtz, J. 2002. Perceived fairness of demand-based pricing for restaurants. Cornell Hospitality Quarterly, 43, 1, pp.31-37.

Kimes, S. 2004. Restaurant revenue management. Cornell Hospitality Quarterly, 4, 2, pp. 5-34.

Kimes, S. & Thompson, G. 2004. Restaurant revenue management at Chevys: Determining the best table mix. Cornell Hospitality Quarterly, 35, 3, pp. 371–392.

Kimes, S. 2008. The role of technology in restaurant revenue management. Cornell Hospitality Quarterly, 49, 3, pp. 297–309.

Kimes, S. 2011. The future of distribution management in the restaurant industry. Cornell Hospitality Quarterly, 10, 2, pp. 189–194.

Kimes S., & Laque, P. 2011. Online, mobile, and text food ordering in the U.S. restaurant industry. Cornell Hospitality Quarterly, 11, 7, pp. 6-15.

Kimes, S. & Kies, K. 2012. The role of multi-restaurant reservation sites in restaurant distribution management. Cornell Hospitality Quarterly, 12, 3, pp. 6-13.

Konopelski, M. 2016. Demand forecasting methods. Pick-up. Web article. Revenue management themed website. URL: http://revenuemanagement.cc/demand-forecasting-methods/pick-up/. Accessed: 6 December 2016.

Lawrence, A. 2012. Five Customer Retention Tips for Entrepreneurs. Web article. Forbes business and financial news. URL: http://www.forbes.com/sites/alexlawrence/2012/11/01/five-customer-retention-tips-for-entrepreneurs/#654c8c7817b0. Accessed: 19 October 2016.

Luca, M. 2011. Reviews, Reputation, and Revenue: The Case of Yelp.com. Harvard Business School, 12, 16, working paper.

McManis S. 2014. When luxury ruled the skies: Flying in the 1950s and '60s. News article. Sacramento Bee website. URL: http://www.sacbee.com/entertainment/living/travel/article2608655.html. Accessed 10 October 2016.

Merilehto, A. 21 March 2016. Country Manager at Finch Finland Advertising Agency. Advertising on the internet. Workshop. Helsinki.

NHTV University of Applied Sciences 2014. Revenue management lectures, study materials. Breda.

Noone B., Kimes, S., Mattila, A. & Wirtz, J. 2007. The Effect of meal pace on customer satisfaction. Cornell Hospitality Quarterly, 48, 3, pp. 231-244.

Noone, B., McGuire, K. & Rohlfs, K. 2011. Social media meets hotel revenue management: Opportunities, issues and unanswered questions. Journal of Revenue and Pricing Management, 10, 4, pp. 293–305.

Noone, B. & Maier, T. 2015. A decision framework for restaurant revenue management. Journal of Revenue and Pricing Management, 14, 4, pp. 231–244.

Susskind, A. 2010. Guest service management and processes in restaurants: What we have learned in fifty years. Cornell Hospitality Quarterly, 51, 4, pp. 479-482.

Thompson, G. & Sohn, H. 2009. Time- and capacity-based measurement of restaurant revenue. Cornell Hospitality Quarterly, 50, 4, pp. 520–539.

Thompson, G. 2009. (Mythical) Revenue benefits of reducing dining duration in restaurants. Cornell Hospitality Quarterly, 50, 1, pp. 96-112.

Thompson, G. 2010. Restaurant profitability management: The Evolution of restaurant revenue management. Cornell Hospitality Quarterly, 51, 3, pp. 308–322.

Weatherford, L. & Bodily, S. A Taxonomy and research overview of perishable-asset revenue management: yield management, overbooking, and pricing. 40, 5, pp. 831– 844.

Wolt, food ordering and delivering company front page. Website. Helsinki. 2016. URL: https://wolt.com/. Accessed: 6 December 2016.

Appendices

Appendix 1. Guidelines for establishing a restaurant revenue management system

Guidelines for establishing
a restaurant revenue
management system

Mika Ammunét
Bachelor's Thesis Product
Degree Program in Hotel, Restaurant and Tourism Management
06.12.2016

REVENUE MANAGEMENT *IS AN ECONOMIC*
DISCIPLINE SUITABLE TO MANY SERVICE
INDUSTRIES IN WHICH DYNAMIC PRICING IS
COMBINED WITH STATISTICAL ANALYSIS OF
TIME PERISHABLE INVENTORY TO
INCREASE THE REVENUE PER AVAILABLE
TIME BASED UNIT

1 Hire a Revenue Manager

Create Revenue Management department or Revenue Manager position on the same level in the company hierarchy as Sales and Marketing department/manager

2 Establish the Baseline for KPI's

- Seat Occupancy percentage per hour, OCC %
- Average Sales Per Customer, ADR €
- **Revenue Per Available Seat Hour, RevPASH**
- Gross Profit Per Available Seat Hour, GOPPASH
- Total Revenue Per Available Seat Hour, TrevPASH
- Table turnover efficiency

Collect detailed information on arrival, seat occupancy, and RevPASH patterns for analyzing party size mix, dining and drinking duration, and customer preferences. Reflect the results on the overall costs.

Define the high and low demand day parts, by hour, by collecting data from POS systems (MICROS Systems, Restolution) and by simply observing the customer flow and noting exceptional events nearby.

3 Understand the Strengths

Analyze the factors affecting dining or drinking durations and RevPASH performance. Use service process analysis to define the reasons for overlong visits and identify the problems in controlling the durations.

RevPASH examples			
Restaurant	Seat Occupancy	Average Sales Per Customer	RevPASH
A	40 %	18 €	7,2 €
B	60 %	12 €	7,2 €
C	80 %	9 €	7,2 €
D	90 %	8 €	7,2 €

4 Develop a Strategy

Develop recommendations on how to correct the most urgent problems. Typical improvement points include reducing arrival and duration uncertainty and the time between customers. Focus on reducing the before and after dining, or drinking, service step durations.

Find the optimal table mix suitable for the restaurant size and target group. Analyze the potential ROI for each recommendation to ensure the best possible outcome for increasing the revenue, and profits.

5   Implement the Changes

To ensure successful revenue management process, the revenue manager must secure that everyone in the company understands the revenue management procedures and works together towards the set goals. Empowering the employees creates trust and commitment. Incentive programs matching the revenue management objectives can be used to increase the engagement. Specialized training helps employees to understand their role in the big picture and to recognize the benefits of the revenue management.

6   Evaluate the Outcomes

Finally, after completing the procedures, it is important to evaluate the outcomes. The results must be measured, analyzed and then developed further. Reference the results on the baseline KPI's (e.g. RevPASH, durations, customer satisfaction) and other data collected on the process.

Develop a system to measure financial, operational, and customer satisfaction performance.