

**Revenue Management approach to car rental business -
Revenue Management guide for Helkama Rent Ltd**

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Bachelor Thesis
DP Tourism Management
December 2013



DP Tourism Management

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| Author or authors Aimo Rantanen | Group or year of entry MATKA2010 |
| Title of report Revenue Management approach to car rental business - Revenue Management guide for Helkama Rent Ltd | Number of pages and appendices 73+4 |
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| <p>The purpose of this product-oriented thesis is to study revenue management as a business practise and and create a Revenue Management guide for the assigning company Helkama Rent Ltd car rental. The guide is supposed to give ideas and a structure for Revenue Management in Helkama Rent Ltd. Helkama Rent Ltd has been struggling with the profitability issues recently. Revenue Management guide will help Helkama Rent to obtain Revenue Management philosophy, and give ideas and tools for more efficient and effective revenue generation. The guide will demonstrate how to execute simple Revenue Management at the downtown location.</p> <p>The guide will consist of Revenue Management process cycle and the detailed descriptions of each process steps. Process steps are demonstrated from the Downtown location point of view yet they provide insight for other locations as well. This thesis project started in late August 2013, and the theoretical framework was written first during September-October 2013. The planning of the actual outcome (Revenue Management guide) started at the same time but the sharpened outcome was finalized in late October. After thorough theory part and data processing, the actual writing of Revenue Management guide began.</p> <p>For the starting situation, Helkama Rent employees responsible for Revenue Management related operations were consulted by interviewing the Budget Brand Champion and the Downtown location's Station Manager. Numerous raw reports from the reservation system (Wizard) were processed and analyzed in order to build the Revenue Management guide.</p> <p>According to the feedback received from Helkama Rent Ltd, the Revenue Management guide was perceived valuable since it provides comprehensive background and valuable ideas for Revenue Management. The guide can be seen more as the first step towards comprehensive Revenue Management than a thorough Revenue Management strategy for Helkama Rent Ltd.</p> | |
| Keywords Revenue Management, Yield Management, Car rental, Guide, Product-orientation | |

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1 Introduction

For a company operating in the tourism industry, segmentation of markets, forecasting demand, setting prices, and managing inventory can be the decisive factor whether one is operating profitably or losing money. These functions together are often described as Revenue Management which was created some 30 years ago by the airline industry giant American Airlines. The first Revenue Management system was invented and proven successful by the American Airlines. After seen successful practice for managing revenues and profitability, it spread rapidly to other industries such as to the hotel and car rental industry. This thesis will concentrate on Revenue Management approach to the car rental business. The scope will be on the company that assigned the author to study this topic and develop a Revenue Management guide for Helkama Rent Ltd which is Finland based car rental. The target of the guide was set to be that it would give ideas for Revenue Management and a basic structure how to get started with it at certain location (Downtown).

Helkama Rent Ltd is a middle-sized car rental company representing well-known global brands; Avis and Budget. Tough competition and the recent economic crisis have eroded the profits of Helkama Rent Ltd. Helkama Rent Ltd has relied too much on contracted car assistance customers and corporate clients. In order to fully maximize revenues, every customer segment has to be exploit. Helkama Rent Ltd is seeking solutions to improve its profitability. One solution for gaining better results is to better manage the functions related to the business practice of Revenue Management. So far these functions have been done in rather arbitrary way without a clear strategy behind. The purpose of this thesis is to investigate Revenue Management related functions and find out if these functions could be improved in Helkama Rent by creating baseline Revenue Management structure and apply methods and techniques from advanced Revenue Management industries for Helkama Rent Ltd.

The primary goal is to create a guide for Revenue Management at Helkama Rent Ltd by using Helsinki downtown location as an example location. Revenue Management guide was requested by Helkama Rent Ltd management level (Budget Brand Champion). Helkama Rent Ltd Brand Champion and Operations Manager were asking me to work as a consultant and provide ideas and tools for Revenue Management in Helkama Rent Ltd. Revenue Management guide's intention is to provide a simple structure of how different functions of Helkama Rent Ltd. are supposed to work together in order to improve the revenue generation. The guide will consist of overall Revenue Management structure and the detailed process steps. The process steps are exposed in details in the attachment part of the guide. The guide is made for the management level employees including the station managers. The requisite tools and information are collected from various books and internal sources and then analyzed for the Revenue Management purpose in order to plan and produce the guide successfully.

This thesis will start with a theoretical framework of Revenue Management. Theoretical framework will introduce history and fundamentals of Revenue Management. Also, the most important functions of a Revenue Management will be presented and discussed. The outcome of this thesis is not a computerized and sophisticated Revenue Management system for Helkama Rent Ltd. However, the foundation pillars of Revenue Management are included to the theoretical framework part even though they would not necessarily be suitable for Helkama Rent Ltd. The problem in studying the Revenue Management was the huge size of available theories and versions. As I was working as a consultant for Helkama Rent Ltd, I needed to consider carefully what parts to include in the report and what parts should be ignored. The most valuable concepts, methods and theories were selected for the theoretical framework that it would later on support the discussions in chapter five and in the Revenue Management guide.

Consequently, chapter three will present how Revenue Management approach has been implemented in various industries and what special features each industry has.

This chapter will include the forerunners of Revenue Management (airlines and hotels) and also an example from car rental industry. Airlines and hotels were chosen to be the benchmarked industries because they are the most advanced industries in terms of Revenue Management, and they are also close to car rental business in characteristics and nature of Revenue Management. Certain differences between airline-/hotel industry and car rental industry exist and they will be discussed deeper in chapter three and four.

Chapter four will introduce the car rental business thoroughly and also the market overview of the industry in order to give a clear vision of what kind of environment car rental companies are operating in. Also, a short introduction to the car rental business will be included in the chapter number four which will later on concentrate on how Revenue Management can be conducted in car rental industry. This chapter will show some evidence that car rental business is somewhat lagging behind with some Revenue Management functions compared to airlines and hotels.

After a comprehensive theory part, the reader will be introduced to the productive part of the thesis. Before jumping into the writing process of the Revenue Management guide, a thorough analysis of the starting situation in Helkama Rent Ltd is provided. The detailed analysis will lay background for the guide and future projects related to the Revenue Management field. Starting level was found out by consulting the persons responsible for Revenue Management functions in Helkama Rent Ltd. (Brand Champion, Station Manager). Interviewing was conducted by using both email and face to face interviews.

The linkage between the theoretical framework and the Revenue Management guide is discussed in this chapter. The problem identification will include constant dialogue between theoretical framework and Helkama Rent Ltd situation related to the Revenue Management. This dialogue will continue by considering the best practices of Revenue Management for Helkama Rent Ltd case that could be included in the guide.

Finally, deeper speculations and conclusions of the guide will be performed in the conclusive chapter. This chapter will open up with the discussion and evaluation of the Revenue Management guide produced for Helkama Rent Ltd by revealing the feedback from Helkama Rent Ltd and the self-evaluation of the author. It will uncover aspects that could have done better and those that were done correctly. Also, the reliability and validity of the guide will be evaluated.

The Revenue Management guide will contain sensitive information of Helkama Rent Ltd which is why the Revenue Management guide will not be published with the thesis. The used attachments and the reference list will be found in the last pages of the thesis. There are two attachments for the thesis: interview questions for the management and the Revenue Management guide itself. The Revenue Management guide can be opened by double-clicking the front page picture of the guide.

2 Theoretical Framework of Revenue Management

In order to fully understand how Revenue Management works and how it can be applied to the car rental business, a proper introduction to the history and background of Revenue Management is in place. This chapter will introduce Revenue Management (may be abbreviated as RM) history, principles and most important definitions needed to understand the problems discussed in this paper and also faced by numerous hospitality industry players, such as the assignor of this paper. Chapter will start with the history of Revenue Management including a short story of the first computerized tool created for Revenue Management. Then discussions will move to the very elementary parts of Revenue Management and finally vital components and characteristics of Revenue Management will be introduced. Discussions will be supported by references from various books, industry journals and other sources.

2.1 Introduction and History

When an organisation is operating in a tough competitive environment, and especially in hospitality industry, companies cannot afford to neglect dynamic pricing and proactive inventory management in order to fully maximise profits. These functions are often very close related to the business practise of Revenue Management. Probably most of the people have been exposed to the business practise of Revenue Management because it is widely applied in various industries such as in airlines, hotels, car rentals and ferry lines. (Talluri & Van Ryzin 2004, 16.)

The principles and theory of RM are derived from the basic economic theories such as demand and supply theory, market equilibrium and Adam Smith's invisible hand which indicates to the self-regulating behaviour of the marketplace. On the next level one may attach these theories to the "customer's willingness to pay"- theory. Customer's willingness to pay refers to the level of how price sensitive they are. In other words this is concerned with how the demand of particular customer segment will change if the price is changed. At first sight Revenue Management may seem somewhat confusing

branch of science but actually it is a business practise that is very self-explanatory and based on common sense. (Talluri & Van Ryzin 2004, 4.)

Few definitions are in place in order to understand and clarify the topic being discussed in this paper's theory part. The most simplified definition for Revenue Management is provided by Ingold, McMahon-Beattie & Yeoman (2000, 3) who suggests that Revenue Management is: "a method which can help a firm to sell the right inventory unit to the right type of customer, at the right time and for the right price". Also, a compact definition is provided by Legoh  rel, Poutier & Fyall (2013, 4) that declares Revenue Management as follows:" Yield/Revenue Management is a sophisticated type of supply and demand management which acts simultaneously on prices and available capacity". For marketing-minded people, a good definition is provided by Robert Cross (1997, 51-52) who suggests Revenue Management to be: "the application of disciplined tactics that predicts consumer behaviour at micro-market level and optimizes availability and price to maximize revenue growth".

Moreover, Revenue Management helps to decide how to allocate capacities to the available demand while maximising profits (Ingold et al. 2000, 3). The thing what makes the difference from ancient way of conducting Revenue Management is the sophisticated and technological way of decision making that requires extensive amount of data, information and understanding of economic conditions (Talluri & Van Ryzin 2004, 4-5).

As a science and on technological aspect, Revenue Management is rather new as discussed earlier. Demand models and optimization tools are as old as 50 years old, but the computer software solutions that are performing these calculations are updated constantly. Revenue Management technological (computerized) functions can be divided into two parts nowadays; the demand forecast models and the optimization algorithms. Together these two can provide a very effective tool for decision making. The sheer scale and vast number of variables are often too difficult to handle manually,

which emphasizes the importance of technology. However, Revenue Management is not only about utilizing technology but also about the overall way of thinking and attaining Revenue Management culture and insight. (Talluri & Van Ryzin 2004, 5-6.)

On the other hand, RM is not an entirely new idea. It has been applied to industries for a long time. People have been selling goods to each other for thousands of years. When selling goods and services, one must always decide what to offer, who is the possible customer and what price the customer is willing to pay. (Talluri & Van Ryzin 2004, 4.)

Earliest examples of exploiting customer's willingness to pay can be found from times of barter economy when a bakery was selling old bread to the poor people at a discounted price and a dressmaker saved the best quality fabrics for high-paying upper end customers. A good example of one of the first Revenue Management implications in travel industry is the maiden voyage of The Titanic. The Titanic was constructed to carry different passenger segments such as luxury travellers and ordinary people having a berth in a shared room. This made it possible to ask largely varying prices from passenger tickets. (Tranter, Stuart-Hill & Parker 2009, 14.)

Let us return back to the term Revenue Management and how it became a systematic tool and business practise for managing revenues and profitability. Originally, the name of this business practice was Yield Management. The term Yield was referring to the return for investment made by airline in order to be able run its business. More specifically it refers to the management practice that allows the maximization of proceeds per passenger kilometre. In practise the term Yield Management does not differ from the term Revenue Management. (Legohérel et al. 2013, 4.) That is the reason why the term Revenue Management is used in upcoming chapters. The history of Revenue Management is written same way in every book which is why it was chosen to use only one source for explaining the history how it all began.

Before the 1978 deregulation act, airlines were not allowed to decide their fares or networks. The reformation of the aviation industry quickly led to many innovations. The first developments were the computerized reservation systems (CRS) and the global distribution systems (GDS). In order to successfully compete in a difficult environment, the first computerized Revenue Management System (RMS) was created by American Airlines in the aftermath of the Airline Deregulation act 1978 which released pricing and scheduling to be decided by airlines it selves. When speaking of computerized Revenue Management system people often refer to the software that is designed especially for inventory control, pricing, forecasting and optimization. (Forgacs 2010, 5; Talluri & Van Ryzin 2004, 6-7.)

Soon, a new business model arrived to the passenger airline industry. The emergence of low-cost carriers, such as People's Express, caused major problems for large network carriers (American Airlines, Continental). American Airlines wanted to respond to the price war started by People's Express in 1981 that was offering low-priced tickets with no-frills. People's Express created a whole new market of discretionary travel that included for example students visiting home and couples taking a quick holiday nearby. The transportation of this discretionary travel would have made by car unless the flight was low-priced. By creating this new market of discretionary travellers, low-cost carriers proved air travelling to be quite price elastic opposed to previous assumptions and studies. (Talluri & Van Ryzin 2004, 7.)

American Airlines wanted to gain back the lost market share without cutting prices so low that its cost structure would not match the pricing. Since more frequent schedule, service and city pairs were important for business travellers major airlines were not threatened to lose that segment to low-cost carriers. To operate profitably, also the leisure segment needed to be captured. People's Express recorded high profits for few years before Robert Crandall, American Airline's vice president, came up with solution to this problem. It would have been insane to compete head to head against low-cost

carriers that had significantly lower cost structures than network carriers. (Talluri & Van Ryzin 2004, 7-8.)

In order to prevent their price sensitive customers to book from People's Express, major airlines started to offer few lower-priced tickets with restrictions and by doing this they could maintain their high-yield customers. These actions were proved to be successful. American Airline's offered a small amount of low fare tickets with purchase restrictions. These restrictions were for example 30 days advance purchase, non-refundable and minimum stay of seven days. Restrictions, also called rate fencing, are a vital part of a Revenue Management. (Talluri & Van Ryzin 2004, 8-9.)

Later on American Airlines noticed that each flight had its own characteristics, hence they needed to be observed and managed separately in order to fully maximise revenues. Additionally to existent central reservation system (CRS) and global distribution system (GDS), Dynamic Inventory Allocation and Maintenance Optimizer (DINAMO) was introduced. DINAMO is considered to be the first holistic and computerized Revenue Management system for this industry. By applying the first automated RM system, especially American Airlines caused lots of troubles for People's Express. Year after American Airlines introduced DINAMO, People's Express recorded over \$160 million losses and soon it went bankrupt due the significant losses. (Ingold et al. 2000, 3.) One may conclude that it was the successful Revenue Management approach that saved major network airlines and forced People's Express go bankruptcy.

What naturally happened next was that other industries wanted to achieve the same results as airline industry did with the help of a computerized Revenue Management system. The pioneer in Revenue Management in the hotel industry was Bill Marriot. Marriot Hotels gained \$100 million incremental revenue thanks to their computerized Revenue Management system which featured forecasting, capacity control and pricing functions. It did not take long that restaurants and car rentals were after managing their profitability by utilising Revenue Management. (Tranter et al. 2009, 24.) In the car

rental industry the first to implement a computerized Revenue Management system was National that achieved \$56 million dollars improvement in revenues after the first year using the computerized Revenue Management system. (Geraghty & Johnson 1997, 107.)

However, not every company is able to implement a computerized Revenue Management system. Without proper resources a company may implement a Revenue Management system without computerized software that is linked to the capacity control. Computer software is often a vital part of the overall business process, but in the end Revenue Management is a business practise that integrates various processes and people together in order to get good market awareness, knowledge on customer behaviour and to have the ability to exploit market opportunities. (Cross 1997, 52.)

At the time of writing this paper, it has been applied in various other industries like cinemas, sport events and amusement parks. Any industry wishing to make use of Revenue Management should revise the basic principles and necessary conditions of Revenue Management. (Legohérel et al. 2013, 7.) The basic principles and necessary conditions of Revenue Management will be discussed in more details in upcoming subchapter.

2.2 Necessary conditions for Revenue Management

This chapter will take a closer look on what kind of characteristics are needed when an organization wishes to take Revenue Management approach. As discussed in the previous chapter, it was the airline industry that implemented first a computerized Revenue Management system. However, there are plenty of other industries that share similarities with the airline and hotel industry, which enable those industries to apply Revenue Management techniques. (Ingold et al. 2000, 3-4.)

Revenue Management system is often applied in computerized way by the bigger companies that are dealing with larger quantities of reservation and inventory data. It is also

possible to apply Revenue Management principles in smaller businesses such as hotels with room capacity of 50-100 even if they do not have resources to apply computerized Revenue Management system. (Legohérel et al. 2013, 7.)

There are certain conditions that are prerequisites for putting Revenue Management in practice. According to Ingold et al. (2000, 4-5) there are five characteristics that are required to apply Revenue Management: relatively fixed capacity, predictable demand, perishable inventory, appropriate cost and pricing structure and time-variable demand. Another viewpoint from Arthur Andersen (1997, in Yeoman & McMahon-Beattie 2004, 20) of what is required for Revenue Management suggests that there are only four preconditions for Revenue Management: perishable inventory or seasonal demand, high fixed costs or sunk costs, fixed capacity (at least in short term) and advance purchase of service/product. For this thesis the five characteristics presented by Ingold et al. (2000, 4-5) are the most suitable which is why they will be discussed more in detail next. The other sources provide good insight but are not as suitable for Helkama Rent case as these five are here below.

Many hospitality industry companies have to deal with capacity that is fixed at least for short term (relatively fixed capacity). Fixed capacity may also be called as constrained supply. The supply can be constrained because of limited space or seats. The other constraint is the length of usage. This may be the nights at the hotel, hours in an aircraft or the days a vehicle is on rent. (Hayes & Miller 2011, 432.) In many fields the capacity can be adjusted rather quickly but not in a major scale. For example a large airline company may possibly assign a bigger aircraft to a particular flight when it faces unpredictable large demand. Also, a car rental company can increase its capacity relatively easily by purchasing/leasing vehicles due to the increased demand or shift fleet capacity from one location to another. Anyhow, the bottom line is that in most cases the capacity cannot be increased or decreased in short term. (Ingold et al. 2000, 4.)

The clientele of a capacity constraint company consists of two types of customers; those who reserve in advance and those who are so called walk-in customers. In order to be able to select the most precious customer mix, company managers must have structured information concerning booking and arrival patterns (predictable demand). In addition to this the company must be able to understand how and in what way the customers reserve or book the service (Albanese 2004, 25). The gathering of needed information is usually done by a computerized or manual reservation system. Information need to be evaluated carefully and exploited for the future demand forecasts. (Ingold et al. 2000, 4.)

For Revenue Management purpose, a company require a cost structure that has high fixed costs and relatively low variable costs (Hayes & Miller 2011, 432-433). When observing the airline industry, selling an additional seat does not cost much (roughly catering costs plus additional weight increasing fuel costs) since crew will have to be paid, costs from operating the flight, maintenance and so on. Also, putting a vehicle on rent costs pretty much only the depreciation of the car caused by driven mileage and the time elapsed. This cost structure feature allows capacity-constrained firms to have rather flexible pricing especially during weak demand. Basically the only requirement for price is that it should cover at least the variable costs and also a part of the fixed costs. (Ingold et al. 2000, 5.)

The demand for services/products of a Revenue Management suitable company should be varying depending on time of the year, day of the week and even by time of the day (time-variable demand). This is why it is extremely important to forecast the demand as accurately as possible in order to capture maximal revenue during high demand and stimulate the demand during low demand. (Ingold et al. 2000, 5.)

Variable and predictable demand fluctuations may be utilized for targeting the right customers during the right time of the year (Hayes & Miller 2011, 433). For example during the prime holiday season tickets should not be sold at too low price or let the

business passengers book a promotion rate during business days (Monday- Friday). (Ingold et al. 2000, 5.)

Not all of these conditions has to be fulfilled completely. That is why applying Revenue Management is always an individual case and should be thought thoroughly before putting into practise. A tailor-made approach is recommended. Previously mentioned characteristics are mainly things that cannot be influenced by a company. Additionally to these prerequisites, some functions and components are extremely important when a company is implementing Revenue Management system. (Ingold et al. 2000, 9.)

2.3 Components of Revenue Management

As said, not only external conditions should be favourable, but also the company's ability and resources should be sufficient for Revenue Management. There is a wide selection of tools and methods out there for Revenue Management, but the following ones are the core elements of a Revenue Management system. These methods and techniques consider **market segmentation, booking patterns, pricing knowledge, overbooking policy and information systems for historical demand.** (Ingold et al. 2000, 9.) These components are sometimes called as the tactical Revenue Management as presented by Gabor Forgacs (2010, 35). Gabor Forgacs' chapter about Tactical Revenue Management offers a good insight for Hotel's tactical Revenue Management however, it is not the most suitable for our case when applying Revenue Management theories for car rental industry.

Let us start from the **market segmentation.** According to Legohérel et al. (2013, 21) market segmentation is all about those elements indicating the consumer's expectations of the service products and those variables showing consumer's patterns for consumption. Segmentation can be based on observable and unobservable classifications. Observable segmentations are for example customer's geographical location, demographics, purchase behaviour and sales channel. To the unobservable classifications

can be included values, life-style, income, preferences and price elasticity. (Talluri & Van Ryzin 2004, 582.)

For example, traditional network airlines are offering three physical classes on long-haul routes. By doing this, airlines are able to segment customers by their preferences and by their price elasticity. Price elasticity refers how the demand will react if the price is increased or decreased. Also, the time of booking and the time of consuming the service are vital. Business travellers for example tend to travel and book on weekdays as opposite to the leisure segment that is often book (Internet retailing) and travel during weekends. Due to this segmentation, an airline can restrict a fare from business travellers by applying “must stay over Saturday” night- rule. (Ingold et al. 2000, 9.)

An example that displays the constant change of customer’s expectations, is provided by the aviation industry. Airlines reacted to the weakened demand and weakened purchasing power by replacing First Class with Premium Economy class on many intra-European routes. This was proven to be successful move. This is a good illustration of the adaptation to the continuously changing customer expectations. (Legohérel et al. 2013, 22.)

Not only the information of the sales is important, but also the time of preliminary reservation is a major concern. Effectively monitoring reservations allow companies to develop a descriptive **booking pattern** that indicates how the number of reservations increases over time. Time scale how well in advance customers are booking vary from product/service to another. For example a rental car company in a popular holiday destination probably gets major share of its reservations well in advance as oppose to a major business city that mainly serves business customers who traditionally reserve rental car only few days in advance. (Ingold et al. 2000, 9-10.)

It may seem that companies applying Revenue Management are constantly changing their prices just to confuse the customer. However, the reality is that they are closing

or opening existing rates according to the number of reservations and demand forecasts. **Dynamic pricing** is a common practise in the hospitality field where prices are being changed according to the inventory control reservation reports. By monitoring competitors' pricing from various sales channels and with the help of an Information Technology (IT) - based Revenue Management system, company's Revenue Management team is able to respond quickly to the movements of competitors and adjust prices accordingly. (Ingold et al. 2000, 10.)

Dynamic pricing could also be called as demand-based pricing because pricing is based on the demand reports from reservation system. Demand-based pricing focuses on exploiting the customer's willingness to pay and ignores very much the cost of producing the product or service. (Rouse, Maguire & Harrison 2011, 55.) The most important elements of pricing policy are demand analysis, competitive environment and cost structure. It is essential for a company to acknowledge the acceptable price and price sensitivity of different segments. Also, the main reasons for observing competitors pricing are to optimize your own prices according to the current demand and availability in the market. The Revenue Management department should also bear in mind that during downturn one should instead of dropping list prices, release some promotional rates. (Legohérel et al. 2013, 22.)

Techniques for monitoring competitor's pricing varies from third party service providers to Revenue Manager's own attempts to mystery shop competitors or observe information that is available at competitor's website or in other catalogues. There are some very well-working tracking tools available for price-tracking such as QL2 that can be configured to observe daily and weekly internet prices of competitor. (Legohérel et al. 2013, 22.)

Collecting historical data of no-shows is an important function of Revenue Management system. As discussed earlier, any unsold seat in an aircraft or an unsold rental day

will result in lost revenue forever. That is the reason why a proper and accurate **overbooking** policy is in place to protect companies from no-shows and cancellations.

These aspects are especially problematic in the car rental industry because due the high competition. Basically, an overbooking system consists of anticipation of cancellations and no-shows that will lead to an accurate estimate for overbooking. (Legohérel et al. 2013, 30.) Overbooking is not only concerned of lost revenue, but also the cost of not being able to serve to guest. This cost includes may be the financial reimbursement for the customer that a hotel could not provide an accommodation or/and the loss of reputation of the service quality. (Rouse et al. 2011, 69.)

There are methods that should help with the issue of cancellations and no-shows. These methods include for example guarantees, penalties and non-refundable rates. Many service providers are unwilling to apply these methods since large share of customers demand high flexibility. Also, the tight competition prevents companies to introduce new restrictions and penalties. (Legohérel et al. 2013, 31.) When implementing an overbooking policy, company's staff need to be well educated for handling displaced customers and the compensation policy should ensure that the displaced customer is not lost forever due to the displacement. Poorly designed overbooking policy will result in dissatisfaction both from employee and customer end. (Ingold et al. 2000, 10.)

The human resources of a company are often the back bone of an organization, especially among the service organizations. In addition to human resources the **information systems** (IT) behind the overall Revenue Management system are often a significant part of the Revenue Management strategy. (Rouse et al. 2011, 9.) Company's reservation system should be integrated to the Revenue Management system in order to fully maximise the benefits. It is well known, that the lack of integration is the major obstacle to be tackled when implementing a Revenue Management system. Without a proper integration, Revenue Management system may be operating with incomplete information that can lead in incorrect decision making. Airlines have performed well in

this area since they are the pioneers in Revenue Management practise, but other industries are somewhat lagging behind technologically. (Ingold et al. 2000, 10-11.)

2.4 Revenue Management system as a management tool

The primary goal of the Revenue Management system is to improve company's performance in terms of productivity and improved margin. An effective Revenue Management system provides manager valid information regarding customer booking behaviour and price sensitivity. The ultimate outcome should be frame for the strategic, information-based decision making. Revenue Management system can vary widely depending on the size and characteristics of the company. Revenue Management system may either be a very simple system based on the data from CRS and manual interactions or on a highly sophisticated tailor-made system with a computer software. (Legohérel et al. 2013, 74-75.)

A descriptive figure is illustrated below that explains the different interactions between functions of Revenue Management system (Figure 1).

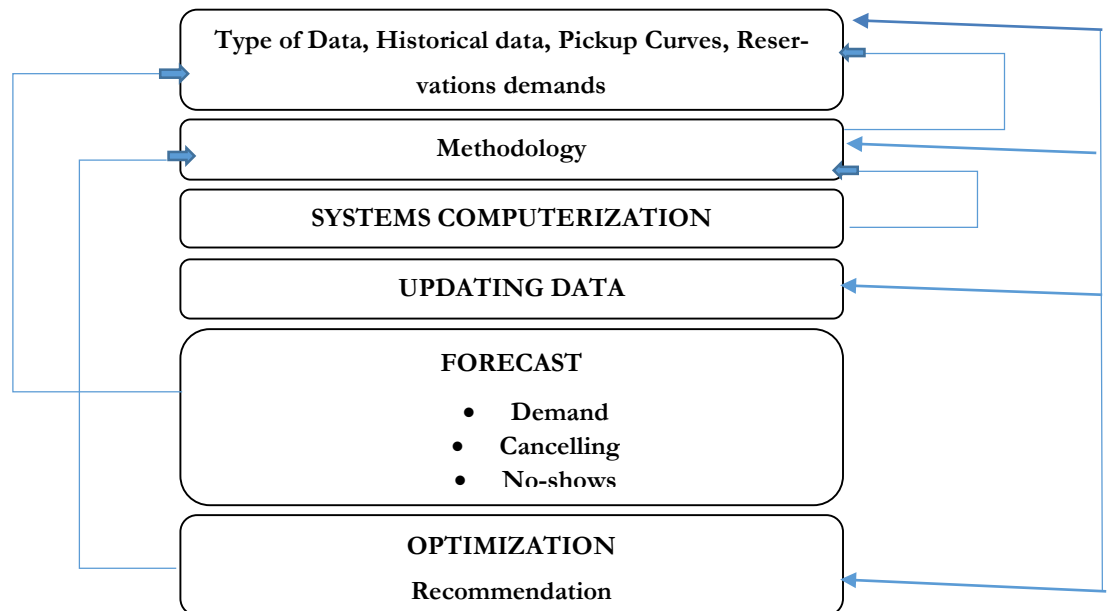


Figure 1. Architecture of the Revenue Management System (According to Legohérel et al. 2013, 76)

Revenue Management system gathers historical data and then chosen method will be applied for stemming a forecast for demand, cancellations and no-shows. From the figure (Figure 1) the reader can notice that a Revenue Management system may work with or without computerization. (Legohérel et al. 2013, 76.) An older viewpoint to Revenue Management systems is provided by Sheryl Kimes (1989, 17) suggesting that there are multiple variations of Revenue Management system but they often require the same information. Kimes lists the requisite information for Revenue Management system to be booking patterns, defined overbooking policy and awareness of how price changes will affect to the demand (Kimes 1989, 17).

Computerization makes system far more effective and faster for decision making process. The development of Revenue Management system is process that is characterized by discipline and clear objectives. The key elements in the process are functionalities of the system and the accountability. (Cross 1997, 174.) A computerized Revenue Management system may also provide integrated optimization/minimization tools. The level of how sophisticated a Revenue Management system is, will determine the method of how the optimization and forecasting will be performed. It may be a holistic system “all in one” solution or a dialogue between reservation system and an office automation tool (Excel). Anyhow, all organs from the figure above (Figure 1) are closely interrelated and co-operating in order to provide as accurate data as possible and the recommendations for decision making. (Legohérel et al. 2013, 76.)

As mentioned earlier, a Revenue Management system may be an integrated software solution working automatically that is either bought or leased. The other solution is the in-house company specific software that is based on the Microsoft Excel spread sheet. The Excel- spread sheet allows revenue managers to solve various problems concerning capacity allocation, demand forecasting and optimization. For example Corsairfly, a French passenger airline, is not using a revenue management information system (Inte-

grated Software Solution). Corsairfly's Revenue Management system functions between their inventory management system Amadeus (Altea), the data warehouse collected from various sources and the Excel spreadsheets. (Legohérel et al. 2013, 79-80.)

A company wishing to use a computerized Revenue Management system software has many alternatives to choose from. Biggest service providers in the airline sector are Sabre, AirVision, PROS, Lufthansa Systems and Navitaire. PROS is one of the few service provider that has a car rental Revenue Management system. The big question regarding an overall Revenue Management system is always, whether to buy it or lease it. Today's trend seems to be leasing hosted software (Software as a service). This is mainly due to the high implementation costs of purchasing the software compared to the option of having hosted software as a service. (Legohérel et al. 2013, 80-81.)

Third solution is to implement a mixed solution; the Excel and an overall Revenue Management system working together. The co-operation of these two may turn out to be very effective, since Excel is mainly used for complementing overall Revenue Management system's weak spots. When using the mixed-solution, revenue managers must pay attention to that both systems are updated in real time. Otherwise it may lead to a poor decision making that is based on false information. (Legohérel et al. 2013, 83-84.)

A person responsible for company's Revenue Management system, and also other functions of Revenue Management within an organization, is called Revenue Manager. The function of Revenue Manager is rather new compared to the conventional departments such finance, accounting, human resource management and marketing. At first the tasks of a revenue manager were carried out by other functions such marketing and operations. Revenue manager's position is closely linked to the heart of the organisation. Often revenue management function has given the same hierarchical place as the other bigger functions, and revenue manager reports directly to the senior management. In other variations, revenue manager reports to the assistant management. (Legohérel et al. 2013, 37-38.) Other perspective to the revenue manager's role is provided

by Hayes & Miller (2011, 442) which proposes revenue manager to have often multi-unit responsibilities. The duties includes often a lot of data analysing, forecasting and implementing the overall pricing strategies. Revenue managers often have the responsibility to arrange trainings, co-ordinate and advice other staff in Revenue Management related functions. (Haeys & Miller 2011, 442.)

As every sales related function in an organization, also revenue management unit needs to be able to work well together with other departments. Revenue management team interacts on daily basis with the marketing and sales function, human resource management, fleet management, IT etc. Especially the mutual understanding between sales team is essential. Sales team often concentrates on volumes and number of the reservations whereas revenue manager stresses out the importance of what price has been used for selling products and services and the total average price. It is essential to convince other units to share their expertise and convictions. Also, the importance of getting other functions to understand the basics of revenue management cannot be highlighted enough. (Legohérel et al. 2013, 40-41.)

Management should not forget that it is the operational staff (reception clerks, rental agents) who are close to the customers and making decisions regarding walk-in customers and such. In order to prevent the operational staff to endanger the revenue management strategy, a constant training for staff is needed. Staff should be empowered and appropriate incentive systems introduced in order to achieve a motivated and skilful front desk employees. Weekly, or at least monthly, revenue meetings are needed to ensure and monitor the success of a revenue management strategy. (Legohérel et al. 2013, 41-42.)

2.5 Quantitative- vs. Price based pricing

The art of pricing start from the laws of supply and demand that was introduced by Alfred Marshall in the end of 19th century. He wanted to find the point where supply and demand would intersect and what would be the optimal price (equilibrium price). The

intention at that time was mostly concerned of how price affect to the demand and supply. (Hayes & Miller 2011, 49-50.) This works as the basis for other pricing theories that are introduced below. Another view to the law of supply and demand is proposed by Rouse et al. (2011, 50) that suggests that the customer's willingness to pay to be the maximum amount of money customer is willing to pay for the product/service. He describes the deviations from price equilibrium to be consumer surplus if the price is too low, and if the price is too high he suggests that it will create unsatisfied customer demand (Rouse et al. 2011, 50).

A company wishing to adapt Revenue Management approach may choose to have Revenue Management strategy that is based on the price or based on the quantity. In some cases, more suitable option is to implement the mixture of these two. Traditionally airlines and similar industries with extremely fixed capacity have chosen quantity-based approach. However, recently the low-cost carriers have applied methods that are closer to price-based approach than quantity-based approach. The price-based approach is very much linked to the term of dynamic pricing which refers to a pricing strategy where prices are managed according demand levels that evolve towards the date of departure or consuming the service. The answer for which approach to choose is often derived from the costs occurring from changes either on quantity or on price. (Talluri & Van Ryzin 2004, 176.)

Often hospitality companies are forced to choose the quantity-based approach since they are committed on certain prices due the advertising campaigns. It would be too costly to have a separate advertising campaign for each flight or for each night that are for sale in a hotel. That is why it is easier to manage quantities rather prices. However, this aspect has loosened dramatically due the revolution of online distribution channels and e-marketing. Also, the booking classes in a particular flight or at an individual hotel are rather flexible since the service is the same in the end. For example the economy class service during the flight is always the same regardless the booking class and the

same applies to hotels. Of course a company can apply “price changes” by managing booking classes according to the reservation levels. The flexibility in supply and the tight commitments to the pricing makes quantity-based Revenue Management a tempting approach in the field of hospitality industry. (Talluri & Van Ryzin 2004, 176.)

Price-based approach possesses certain advantages over quantity-based Revenue Management. While quantity-based approach may reduce sales by limiting supply during the high demand. A company with price flexibility may instead raise prices and limit the demand by increasing price that will lead to increased revenues. The price-based approach is most certainly better option for limiting demand if company faces excess demand. The reality is however, that companies do not often have the privilege of choosing both. Every single business has its constraints that have to be considered when selecting appropriate approach. (Talluri & Van Ryzin 2004, 177.)

3 Revenue Management Approach in various industries

The purpose of this chapter is to introduce basic guidelines how to start-up Revenue Management in various industries. Guidelines will introduce the basic characteristics of the particular industry, what should be given extra attention, and what are the first steps. First two examples are from airline industry and hotel industry. The final case study is the target of this thesis's interest; car rental business. The implementation process will be presented with the help of case studies. I chose these particular examples because they were the most recent and purposeful ones for this case. All of the three examples are found from different sources.

3.1 Airlines

The airline industry has been the number one in Revenue Management and the first to introduce a sophisticated software for Revenue Management purpose. The product of airline seat is very much perishable since one cannot postpone a flight and wait for an additional customer to arrive. The airline industry has also been extremely developed in the field of technology and with the statistical tools, which results in magnificent situation to get started with Revenue Management. (Ingold et al. 2000, 179-180.) The source for this example in this sub-chapter was chosen to be the book from Legohérel et al. because it is one of the most recent book about Revenue Management.

A recent example of large scale implementation of a Revenue Management system is provided by Legohérel et al. (2013, 81-82) which explains the path of Aeroflot Russian Airlines towards better financial performance. Aeroflot was already operating with a competitive fleet of 54 Airbus aircrafts and the management wanted to make most out of the heavy investments. Building the Revenue Management system is not just purchasing software and installing it claims Legohérel et al. (2013, 81.). Aeroflot first identified important aspects to be considered to be work processes, organisation, people, reporting and measurement.

Aeroflot chose to operate with a Revenue Management solution provided by Sabre. This AirVision Revenue Manager is a tailor-made software for airlines and used by 70 airlines, and operates both on traditional product based and price sensitive revenue management base. The key success factor for Revenue Management system in airline business is that system can measure the performance of each individual flight and also measure the global overall performance. Legoh  rel et al. (2013, 81.) suggests that with the help of AirVision, Aeroflot deployed following functionalities; forecasting and optimization module, business rules engine to support commercial and marketing policy of Aeroflot, exception based management interface, real time connectivity with the inventory and sales channels, capability to capture competitor's fares and data and reporting.

AirVision assists Aeroflot's analyst by executing 80% of the decisions automatically and for the rest 20% it flagged and alarmed the analyst and left the decision for the analyst. The data that is provided to the analyst comprised of:

- Historical data: How the flight had behaved previously and if the overbooking rate would materialize or not?
- Competitor's fares: How the competitors were behaving in terms of pricing and capacity?
- Financial data: Financial data is far more important for analyst than sole load factor.
- Group data: The analyst may query the group data in order to decide with basis of group materialization rate.

After decision making, the sales channels and inventory levels will be updated in real-time. (Legoh  rel et al. 2013, 82.) In the latter part of this process the analyst can take advantage of the reports provided by the system. The reports supporting analyst both in tactical decisions and help with setting up a strategy for upcoming operations are for example the capacity to be offered, booking curves, competitor's fare activity, revenue target and the deviation between forecast and actual. With the full implementation of

this Revenue Management strategy and Revenue Management system AirVision, Aero-flot reported \$145 million increase in net revenue in 2008. (Legohérel et al. 2013, 82.)

3.2 Hotels

Hotels are very close to airlines when it comes to Revenue Management. The product is again highly perishable since one cannot store a hotel room if it remains unsold for particular night. The basic concepts of Revenue Management in hotel industry are not new; maximise revenue by setting high prices during peak season and offer discounts during low season in order to attract more demand. The major difference compared to airlines is the multiplier effect occurring when guests decide to stay more than one night. Also, the incremental sales have to be accounted when calculating total revenue of hotel guest. (Ingold et al. 2000, 256.)

To demonstrate how hotels may set up a comprehensive Revenue Management approach this subchapter will introduce the case study of Hilton Warwick (Ingold et al. 2000, 256). Prior to the holistic Revenue Management system, Hilton Warwick was relying on CHAMPS management information system (MIS) which provided valuable reports of occupancy and statistics. The weakness of CHAMPS was the limited forecasting ability. Demand forecasting being the elementary part of Revenue Management needed to be improved in order to have the confidence to hang on and wait for better paying customer. (Ingold et al. 2000, 266-267.)

The top management of Hilton Warwick identified three expansions needed for effective Revenue Management system: a computerized decision support system (Fidelio was chosen), communications (internal between staff and external to the customers) and active forecasting. (Ingold et al. 2000, 267.)

Before the Fidelio Revenue Management system in operation, Hilton Warwick relied on naïve approach by comparing current revenues to the historical data. This method

was the base for decisions whether to reject a particular inquiry for room. The demand calculations reached up to six months before the actual day. The management had to have the expertise and knowledge to perform this and be confident that there will be another customer with higher willingness to pay. (Ingold et al. 2000, 267.)

A hotel wishing to manage revenues effectively must familiarize itself with the competitive environment and know the market mix (customers). Market mix can be identified by measuring each segment's average expenditure and volume. In Hilton Warwick's case the market mix is formed by 50% conference, 12% rack rate, 25% leisure and 13% of corporate guests. (Ingold et al. 2000, 267-268.)

Any seasonal change in market mix share requires action from Revenue Management team. Let us say that conference guests are not present at hotel in January at all. In this case the hotel would have to consider how to sell the rooms to other segments and how to make good use of the restaurant facilities without conference guests dining together at the restaurant. The demand forecasting team of Hilton Warwick is formed from room manager, general manager, food & beverage manager and financial controller. Interesting fact is that the sales department is not included in the forecasting team, however they communicate with forecasting team about the sales targets and market analysis. Revenue Management team of Hilton Warwick receives information also from the front office manager and reservations manager. The demand forecasting team has meetings every month and they discuss about the weekly forecasts which are done by the room manager. (Ingold et al. 2000, 268.)

The new system has helped Hilton Warwick to monitor how to achieve target sales and forecasts. It gives immediate information whether the markets are upward or downward and if the selling strategies work or not. The benefits according to Hilton Warwick are the easier forecasting and the fact that front office team is more updated

about the business that is on the books. The implementation of Fidelio Revenue Management system included seven-day training for reservation staff how to sell and manage customer profiles. (Ingold et al. 2000, 268.)

Since Hilton Warwick is part of the global hotel chain Hilton, it has global reservation system working behind. This adds one additional tool for Revenue Management purpose; Northern Demand Pricing tool. This tool is aligned with Hilton's global reservation system HRW (Hilton Reservation Worldwide). Together with pricing tool, Fidelio gives the room manager great flexibility in setting allotments and prices. For example, it allows the room manager to block certain number of rooms to be sold only special rate. (Ingold et al. 2000, 268-269.)

The cultural change in Hilton Warwick was very important factor. Sales staff needed to be educated to concentrate also on the revenue maximization apart from the traditional volume-based selling. Also, to educate reservation staff to say "no" even if there was occupancy was a hard task. When familiarizing staff to the "hold out" tactics they showed some resistance at first. To get the Revenue Management system work, Hilton Warwick noticed that one needs more professional staff and well-educated reservation and front desk staff. Hilton Warwick wanted to encourage its staff for learning new policies by using incentive plan based on rack-rate sales and upsells. (Ingold et al. 2000, 269.)

As a summary, Hilton Warwick realised that the long- and short-term benefits of the Revenue Management system were the faster booking process and manipulation of the rack rate. Also, Fidelio is able to proactively forecast up to eight months which gives very valuable information for the sales team how to maximise revenues and attract demand while low-season. Fidelio showed also improved customer satisfaction because of the better guest information storage. New system in overall seemed to provide high performance in revenues, increased flexibility and to the competitiveness. However,

constant training and desire to improve is the only key to maintain high revenues and profitability. (Ingold et al. 2000, 270.)

3.3 Car rental

Car Rental is very close to airlines and hotels in the nature of Revenue Management. The product is perishable, it can be booked in advance, segmentation can be done and the product can be differentiated. The major difference to the two previously presented Revenue Management giants (airlines and hotels) is the relatively flexible capacity since car-fleet may be increased or decreased in relatively short period. Anyhow, an example how revenues can be managed successfully with the help of computerized Revenue Management system is out there. It was extremely difficult to find any theories or case studies related to Revenue Management in car rental business. However there was one case study available and it will be referred below.

“In July 1994 National implemented a state-of-the-art revenue management system, improving revenues by \$56 million in the first year.” (Geraghty & Johnson 1997, 107.) The first successful, comprehensive and also computerized Revenue Management system for the car rental industry had been introduced. Of course, some elements from Revenue Management approach had been applied long time before this, but National’s system was first that was based on analytic models for managing capacity, pricing and reservations. Before the new Revenue Management system, National’s business relied almost purely on corporate clients and National did very few to attract leisure customers. They hardly had any advertising campaign and the fleet planning was done only once a year based on expert’s suggestions. (Geraghty & Johnson 1997, 108.)

National’s operations were relying on three existing systems; Vehicle Information System (VIS), Reservation System (RES) and rapid rent-and-return system Expressway System (NEX). Pricing was done manually which was extremely time-consuming at this scale of business. Pricing decisions were done in a group including city managers,

senior management and the marketing department. Decision making was slow and unstructured. Inventories were controlled by local managers and without any real decision making tools. Neither did demand forecasts at city or location level exist. (Geraghty & Johnson 1997, 109.)

The executives of National realized that they had two major issues to be tackled. The first issue was to better manage the large number of turndowns during high demand and the second was the fact that competitors were raising prices when date of rental was approaching as oppose to National's pricing that still kept cheapest rates open until the very last minute. National committed a pilot test for pricing during high demand. The pilot test was done solely with manual human work and it showed that National could raise its prices when approaching the date of rental without destroying customer satisfaction. Due the positive results from the pilot test, National decided to invest for a comprehensive revenue management system costing \$10 million and formed a 30 person revenue management team consisting of Revenue Management specialists. (Geraghty & Johnson 1997, 109-110.)

The actual system and software were created in co-operation with Aeronomics Incorporated, a revenue management company, EDS (Electronic Data Systems) and National with its information services provider. EDS created the linkage between the existing information systems and made the real-time data exchange possible. Transactions included bookings, cancellations, turndowns and shoppers. National was initially unsure whether a centralized or decentralized RMS would work. They were afraid that the local managers would be unhappy if they were taken away the power of deciding the pricing. In the end they decided to go for the centralized system since it should be easier to create and maintaining high level of professionalism would be easier. Following figure (Figure 2) will demonstrate the information flow between National's Revenue Management System. (Geraghty & Johnson 1997, 110-111.)

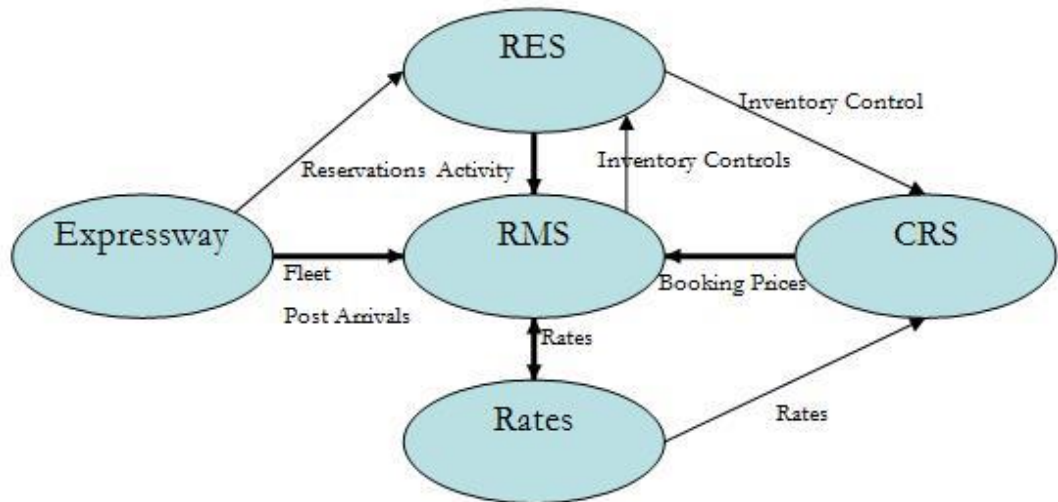


Figure 2. Revenue Management System synthesizes information from four principal information systems (According to Geraghty & Johnson 1997, 111)

The system described in a figure above (Figure 2) was working in a following way:

- The Expressway function was giving information of the current fleet levels in order support capacity management and post-arrival data (no-shows and walk-ups) for the forecasts of the arrival date.
- Reservations (RES) produce information of the booking activities.
- RMS availability will be passed back to the reservations (RES) after review and action of a revenue manager.
- RMS has constant dialogue with rates and is updated according to the current situation.
- RES updates the availability to the CRS (central reservation system) of airlines and rates are also updated on regular basis according the RMS function.

The Revenue Management system of National supports three primary business functions for car rental operations: capacity control, pricing and reservations control. Capacity management organ's task is to maximise utilization, pricing function deliverable is the enhanced revenue and reservations control is supporting pricing function by

making yes or no decisions based on length of rental control. (Geraghty & Johnson 1997, 112.)

National's Revenue Management system's analytic models are derived from two level forecasts: length-of-rental and on-rent. These forecasts are delivering unconstrained forecasts which mean that no capacity restrictions are considered. National's policy was to observe length-of-rental forecast continuously from 60 days before day of rental. On-rent number is the number of vehicles is on rent on particular day and it also includes the reservations of that day. On-rent forecast is the key tool for the capacity management and pricing. (Geraghty & Johnson 1997, 113.)

Forecasting can be seen the key element in any Revenue Management system. In National's system, long-term forecasts are done based on the historical data and processed with the help of forecasting tool such as time-series models and simple-exponential smoothing. For short-term forecasts, National's system measures the deviation of actual bookings from a booking curve. The offset provides valuable information of the booking pace. In nutshell, short-term forecast can be seen as the expected deviation in the number of bookings to the original long-term forecast. (Geraghty & Johnson 1997, 114.)

The final forecast is mixture of short- and long-term forecast. In practise, the short-term forecast dominates the final forecast since the case is often that car rental firm has unconstrained demand. In case of National's Revenue Management system, forecasting includes also the day-zero activities such as walk-ups, no-shows and cancellations. Day-zero activities are vital part of Revenue Management in car rental. Walk-Ups show significant revenue potential, especially during high demand when premium price may be asked. If low-demand is the case, manager may introduce promotion price to stimulate the demand. (Geraghty & Johnson 1997, 114-115.)

The ultimate purpose of the Revenue Management system in National was to convert available fleet to revenues. Actions to perform this include fleet planning, planned upgrades and overbooking. Fleet planning may be divided in three categories; long-term (up to 18 months), medium-term (60 days) and short-term (5 days). Short-term planning includes lots of operational co-operation between locations while medium-term and long-term fleet planning can be done by the management level without bigger rush. (Geraghty & Johnson 1997, 116.)

Revenue Management is supposed to exploit the interrelation of market segmentation and generating revenue. Companies achieve differential pricing by setting rate fences and restrictions that will expose the customer's willingness to pay. Fencing works in a way where fences prevent higher-valued (high-willingness to pay) customers to be able to purchase products meant for lower-valued (low-willingness to pay) customers. In car rental business this is for example restriction for a rate where customer is forced to keep the car over Saturday. Also, business customers often prefer bigger, high quality car as oppose to the leisure segment that prefer the cheapest (smallest) option. With different cars, car rentals face problems because due market segmentation based fleet, one cannot replace car directly with other type of car. This when planned upgrades steps in the picture. (Geraghty & Johnson 1997, 117-118.)

Planned upgrades refer to the defined hierarchy that is managed in case of low availability of that car group which has demand. This model fits demand to the hierarchy by minimizing dilution and maximizing the utilization rate by allocating inventory to different booking classes. This is done by using nesting approach. In car rental business the case is simple nesting approach because higher class customers do not wish to book prestige class car and then find out that they have economy car waiting. But if company would restrict reservations to economy cars only (according to inventory), it would lose revenue opportunity. Typically car rentals have excess fleet of mid-sized and large vehicles since the cost is not much bigger than for the economy cars, but the revenue potential is far greater since it may be used for economy rentals additionally to

normal rentals. (Geraghty & Johnson 1997, 118-119.) The practise of planned upgrades benefits may be discovered from simplistic table on the next page (Table 1).

Table 1. Planned Upgrades in National Car Rental (Geraghty & Johnson 1997, 119)

| Class | Fleet | Forecast on Rent Demand | Available Pool | Excess Demand | Available to Sell |
|-----------------|-------|-------------------------------|-------------------|------------------|----------------------|
| Fullsize 4 door | 230 | 165 | 65 | | 165 |
| Fullsize 2 door | 50 | 60 | | 10 | 60 |
| Midsize | 400 | 370 | 30 | | 370 |
| Economy | 100 | 40 | 60 | | 40 |
| Subcompact | 20 | 165 | | 145 | 165 |

It is easy to spot how the logic behind planned upgrades works. The extra fleet in higher car-groups can be used to meet the excess demand in lower booking classes. National's actual planned-upgrades model takes also account of forecasted availability and expected marginal revenues for each class. The problem with planned-upgrades model is the change in availability in reservation system because cars are out as different car group that they actually are which needs to be considered in inventory control. (Geraghty & Johnson 1997, 119.)

Overbooking is a difficult component to manage in car rental since one cannot copy methods from the airlines where people can be gathered together and offer compensation for those who need to wait extra time to get to the destination. In car rental, overbooking should compensate the number of cancellations and no-shows very accurately since there is no room for errors. There are overbooking methods available but those are designed originally for airlines. Optimal overbooking level is determined by comparing the expected cost of spillage (over sale) and the expected cost of spoilage (lost revenue). (Geraghty & Johnson 1997, 120.)

Pricing is the key element in Revenue Management system of a car rental company. National's initial analysis of rate behaviour showed that the determining factor is competitive factor. This makes sense since car models do not vary much from company to

another. Especially during the low-demand competitive factor is crucial in pricing. On the other side, during high-demand a firm may lose significant revenues if one applies competition based pricing. National developed a tool to take care of this problem. The pricing tool gives recommendations for increasing or decreasing rates depending on the on-rent demand for each arrival date. Thus, if remaining demand plus current already actualized on-rent demand will be greater than the capacity, the system will increase rates in order capture high-value customers and reject bargain hunters. In opposite case, the system will reduce rates in order to stimulate demand. The elasticity model will provide support for this function. All prices are based on one base-rate which is derived from price tolerance of the market environment. By making systematic rate changes that reflect the market fluctuations, a company is able to capture maximum revenue potential from each segment. (Geraghty & Johnson 1997, 121-122.)

Traditionally revenue management models have exploited customers' price sensitivity in later days in reservation process by applying restrictions on advance bookings. This procedure is somewhat impractical for the car rental industry. However, the similar results may be achieved by having rate premium for last minute bookings. Price can be increased towards the date of pick-up. The rate should be managed according to the on-rent demand in following way as presented in the figure below (Figure 3).

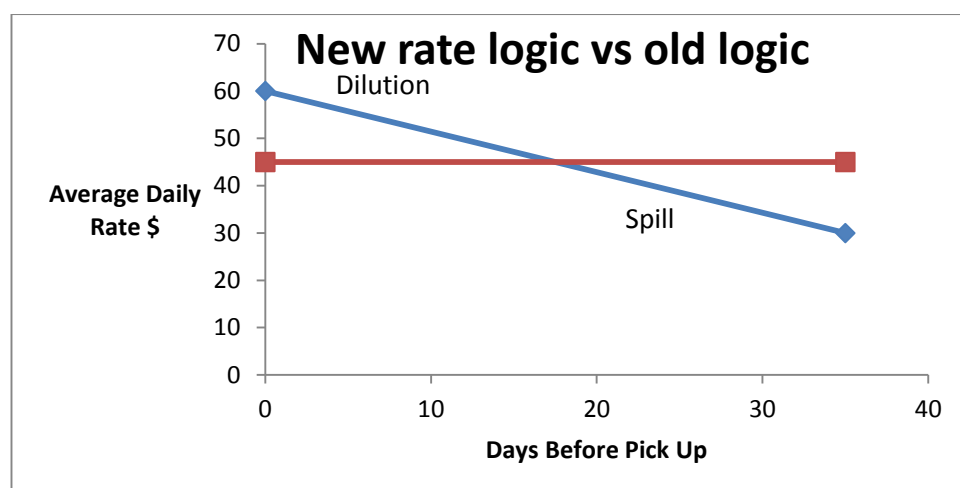


Figure 3. Comparison of rate logic before and after Revenue Management system (According to Geraghty & Johnson 1997, 122)

4 Car rental business

After having a clear understanding and a vision of revenue management and its implications in traditional Revenue Management industries, it is natural to continue with a proper overview and history of the car rental industry. A descriptive story of how it all began will start this chapter. Furthermore car rental industry will be presented in a global scale, and more specifically in Finland. After that, special characteristics and nature of car rental business will be discussed. Discussions are limited in the global and Finland scale. Last chapter will discuss about the Revenue Management's special nature in car rental business. The common denominator with all information presented in this chapter, is the linkage to the requisite background information for performing Revenue Management at Helkama Rent Ltd.

4.1 Introduction and history

Car rental business is a significant part of the transportation cluster both in the business segment and leisure segment. Car rental businesses offer large variety of vehicles ranging from a tiny 2-seat car to a coach for an entire football team. Usually larger companies have 10-20 different kinds of vehicles available with different purchases restrictions and length of rental restrictions. The revenue is generated via the actual rental fees plus additional sales. Additional sales can be renting a navigator, selling a collision damage waivers (CDW), other fees such as one-way or delivery fees and refuelling fees.

Nowadays car rental locations are spread everywhere in the world where other transportation modes end, or if there is sufficient demand for such services. Reasons for renting a car can be almost anything; moving to another city, visiting friends and relatives, wedding, holiday trip or a business man visiting business partners. Companies from other industries are often big clients for the car rental companies because of the business travel. These corporate customers usually negotiate special fixed rate with specific terms and conditions. (Talluri & Van Ryzin 2004, 531.)

It is not a major surprise that the US is the leader in car rental industry because it all started from Nebraska of United States in 1916 when automobile industry started to grow bigger and a certain famous car model (Ford T- Model) had been introduced some ten years ago. A clever entrepreneur, Joe Saunders, started to borrow his Ford Model T to the business men visiting the town. Saunders charged a fixed 10 cents per mile driven in order to cover costs for fixing the car and to purchase spare parts. Mr Saunders quickly realized that he had found a profitable business field and by 1925 his company existed in 21 states. By 1925 Saunders's fleet had been diversified and the total worth of his fleet was approaching one million dollars. (Carrentalexpress 2013a.)

The success of Saunders attracted other people to start similar businesses. Walter L. Jacobs entered to the market with roughly 12 Ford Model T. Jacobs company grew rapidly reaching \$1 million annual gross sales in 1923. In the end it was Mr Jacobs who played the cards right by approaching John Hertz, The Yellow Cab Manufacturing Company in Chicago. Mr Hertz soon bought Jacobs's business and made it the biggest car rental company in the nation. The industry grew rapidly thanks to the extensions in the railway system in the US during Second World War. New railway stations offered perfect locations for the car rental businesses. Simultaneously, the telegraph service provided the first remote reservation system for rental businesses. (Carrentalexpress 2013a.)

It was soon after the Second World War when the business really started to boom. The focus of rental locations shifted rapidly from the railway stations to the airports. Car rental industry has followed very much the growth phase of airline industry since the airline passenger became prime targets for car rentals. The first company to serve customers at the airport was Hertz with a franchisee location at Chicago Midway airport in 1932. Regardless of Hertz being the first in this area, it was Mr Warren Avis who really focused on airport car rentals instead of the traditional downtown locations. Avis Airlines a Rent Car System opened its business to Detroit Willow Run airport in 1946.

Avis started with only three vehicles but it did its utmost gain customers with strong co-operation with airlines and grew rapidly from that on. At the same time multiple individual car rental entrepreneurs were in challenging situation with the large industry players. This led to 24 independent companies to merge in St. Louis, Missouri. The merger was called National Car Rental System that would later become one of the giants in car rental business. (Carrentalexpress 2013a.)

The upcoming decades were filled with ups and downs and enriched by many innovations and fierce price wars. In 1980- century, many of the smaller car rental companies went bankrupt. Simultaneously, giant automotive companies (Ford and Chrysler) bought themselves into the car rental business and those are still in control among the largest car rental enterprises. The 9/11 incident struck heavily on the car rental industry but it recovered well and saw steady growth during the last decade. The future forecasts are predicting slow but steady growth alongside with the aviation industry. (Carrentalexpress 2013a.)

4.2 Market summary

As discussed before, the car rental industry shares similarities with the hotel industry. Some companies own their vehicles, and some of them operates just on a franchisee licence and nowadays due the internet revolution some are there just to take bookings and sell products while actual car rentals are done by a local company. First let's take a look to the three largest players that are Enterprise Holdings (Alamo, Enterprise and National), Hertz (Hertz, Dollar, Thrifty and Firefly) and Avis Budget Group (Avis, Budget, Zipcar and PayLess). (Avis Budget Group 2013; Hertz 2013; Enterprise Holdings 2013.) These huge enterprises are representing roughly 10 brands which give them a perfect tool for segmentation and a great advantage compared to smaller car rentals. (Autorentalnews 2013; Maxfield 2012.)

In early 21st century in the US market, which is the biggest market in the world, 95% of the market share was held by the six largest car rental companies; Hertz, Avis, National, Budget, Alamo and Dollar (Talluri & Van Ryzin 2004, 531). During the early years of 21st century, almost all of the major car rental companies were owned and ran by huge motor companies such as Ford. The huge size of these car rental enterprises makes them easily the biggest car buyers in the US. (Carrentalexpress 2013b.) Nowadays, many of these big players are merged. For example Alamo and Europcar have formed huge global car rental alliances and are constantly seeking for growth. Last year (2012) Car rental industry in the US recorded all time highest revenue of over \$23 billion with the total fleet size of 1.86 million vehicles (Autorentalnews 2013). To summarize, car rental business is massive business in the US but the magnitude is varying largely when travelling to the other parts of the world. For example in Asia and Africa car rental is still considerably smaller compared to US or Europe.

There are not that precise facts, but derived from annual reports of these three giants these companies typically hold vehicles between 4-22 months. The average holding period is 13 months. Based on these figures these companies buy nearly 2 million vehicles annually solely in the US market. Car rental companies do not only buy cars, but also sell them. Usually the purchased cars are under so called repurchase or depreciation programs. These agreements include either precise time or price for repurchase, and often both of them. Of course some of the cars are also sold traditionally either directly to consumers but more often via car retailers. (Maxfeld 2012.)

An interesting trend is also highlighted by Carrentalexpress (2013b) that suggests that small, individual players are returning to the industry. This can be explained mainly because of the price comparison tools has made it very convenient for the travellers to shop deals and so called third party sellers (Intermediaries) are posing huge power in internet retailing. Today's large car rental intermediaries in Europe are TravelJigsaw, Autoeurope, Sunnycars and EconomyCarrentals. The intermediaries enable the smaller

service providers attain an effective sales channel without belonging to a multinational corporation. (Jääsola 14.11.2013.)

Since the goal of this paper is to focus on Revenue Management techniques for a Finland based car rental, there is a need to explain the environment where the example company Helkama Rent ltd operates. Even though car rental business is not as big as passenger airlines or hotel sector in terms of turnover, it had \$75 million sales in Finland 2012 with 1% growth rate. Also the number of transactions grew by 2%, but on the other hand the average length of rental declined in all segments.

The competition among Finland's car rental companies is tough. Ever increasing price competition is impacting all companies in negative way by declining the average revenue per rental day. The market leader in Finland is Interrent Ltd. Interrent Ltd is operating via globally strong brands Europcar, Alamo and National. Interrent held 34% market share in previous year 2012. A long term forecast expects car rental to grow CAGR (Compound Annual Growth Rate) of 2% reaching €85 million by the year 2017. However, the forecast anticipates the number of transactions to grow even faster with 3% CAGR mainly due to the extremely tough price war that is expected to boost the number of transactions. (Euromonitor 2013; Jääsola 14.11.2013.)

4.3 Special characteristics

The internationally well-known global brands are dominating the car rental business. However, often these brands are represented in each country by a local company like here in Finland with Avis & Budget (Helkama Rent Ltd), Europcar (Interrent Ltd) and Hertz (First Rent a Car Finland Ltd). Sometimes strategically more important locations such as airport and downtown locations are managed by the franchisor itself and remote areas are on franchisees responsibility. Operating under franchisee license creates certain constraints for a car rental's revenue management. Franchisor set rules for pricing according to global corporate contracts and campaigns which reduces the flexibility of a franchisee. Often this lead to the unfavorable transactions with very low or even

zero contribution for the franchisee. In order work out this problem, franchisee may develop its own sales channels for example by setting up and promoting its own web-site generating direct sales without the franchisor. (Legohérel et al. 2013, 190.)

Other issue from franchisee's perspective is the linkage to the central reservation system (CRS) of a franchisor since these systems allow very few, if any, pricing functionalities. The adjustment on prices may take more than dozen intervene to the CRS. It is the role of a revenue manager to anticipate the demand and other functions in order to update prices on time. Most often each transactions and booking is made through a CRS that performs car tracking and billing. These systems are somewhat outdated and configured 20-30 years ago. Thus, these systems are very complex and do offer very low flexibility for the franchisee. Some franchisees have decided to operate with local provider's individual system with gateway communication to the CRS. These smaller systems offer higher flexibility in pricing but one must not forget that it should be communicating in real time with the CRS in order to prevent misleading information. The local franchisee's system should be able to perform both one way and two ways communication; provide reservations from CRS and in exchange update pricing and availability information to the franchisor's CRS. (Legohérel et al. 2013, 191.)

Being a franchisee for a large franchisor may cause additional challenges but there are some remarkable advantages to work with a franchisee license. Arguably the biggest advantage is the web and partnership marketing tools provided by the franchisor. Usually local franchisees do not have sufficient resources to develop proper marketing operations. Local franchisees pay royalties from every sales transaction to the franchisor to pay back the effective and widespread marketing help as well as the web tool that usually attracts fair number of customers to the franchisee. (Legohérel et al. 2013, 191)

The disadvantage of having a franchisor's web tool is the reduced margins due the reservation fees paid by the franchisee. Also, a franchisee cannot optimize pricing with

this channel that easily because large proportion of reservations generated via franchisor's web tool are negotiated fixed rates. The major partnerships with the airlines requires a decent evaluation whether it is beneficial for the franchisee to be part of the program because the negotiated prices may be really low and the high commissions to be paid to the airlines erode margins easily. (Legohérel et al. 2013, 192.)

The large car rental companies such as Avis & Budget and Hertz may negotiate fleet acquisitions directly with the manufacturers whereas franchisees are usually not under this deal. Local franchisees negotiate with the local car dealers since this often provides higher flexibility. Car rentals are also applying similar methods to the airlines' code-sharing. If talking about the same organization's common fleet pool it is just the question of how to allocate fleet accordingly to the demand. But how to deal with the revenue when for example number of franchisees under the same brand are occasionally sharing cars to the others? This method can improve franchisees utilization significantly but it needs to be negotiated how the revenue generated by non-pool vehicle is shared between the renter and the owner of the vehicle. Also the return of foreign vehicle should be done as quickly as possible and according to the agreement between the franchisees. (Legohérel et al. 2013, 192.)

4.4 Revenue Management nature in car rental business

Revenue Management adaption cannot be done straight from the traditional Revenue Management industries such as airlines or hotels because of its different characteristics. Now this subchapter will take a closer look to the literature written after the successful adaption done by National in early 90s. Since it has not been studied very widely, it was rather difficult to find large number of valid writings from this topic. However, there are few revenue management books that explain car rental revenue management briefly in specific chapters. These books analyse car rental industry special features and characteristics affecting to Revenue Management and how Revenue Management may be applied in theory or in practice.

The optimisation techniques from traditional RM industries have begun to spread to the car rental industry via the large companies Europcar, Avis and Hertz. Despite of some successful stories of Revenue Management in the car rental industry, some significant differences in demand and supply nature exists in the car rental industry compared to the traditional industries, airlines and hotels. These characteristics will make it very complex to integrate Revenue Management to the car rental industry. Some other reasons are making car rental companies Revenue Management application more difficult such as franchisee levels and different regulatory environments depending on country. (Legohérel et al. 2013, 182.)

Let us consider a walk-up customer at the airport, the regular hotel guest or airline passenger. As hotel guest or airline passenger show up at the last minute, hotels and airlines are in situation with limited capacity and customer is often forced, and also willing, to pay near full price for the service. When searching a place to stay over the night, people are usually not willing to walk around the city or call different places. Same applies to the airline customers. Airline customer is in need for the transportation to the particular destination often offered by only one airline. Since at the airport, all the car rental agencies are located next to each other, it is very easy for customers to shop down the lowest price especially because products of a car rental rarely vary from each other. During the low demand the walk-up price is often even cheaper than the price for those who booked in advance. The high season situation can be dealt in better way. By anticipating walk-ups, company may achieve extra revenue by saving few vehicles for walk-up customers if company can be sure that competitors will run out of inventory as well. (Talluri & Van Ryzin 2000, 531.)

Car rental industry's market segments can be split into three separate groups: direct, indirect and business segments. A classical term of business to consumer (B2C) is referring to the direct segment. In car rental business, it refers to the customer booking directly without the intermediaries or without any special conditions or partnerships. This segment is highly valued by car rental companies since it provides usually the best

margins and thus, it is often the first priority for car rental company revenue manager. (Legohérel et al. 2013, 183.)

The second, indirect, segment may also be called business to business to consumers (B2B2C) segment. This refers to the use of an intermediary for transactions. The logic behind is to utilise intermediaries and tour operators to reach more customers because they possess a very effective marketing and sales tools. The major problem with intermediaries is that they provide very low margins for the “land lord” rental company. Traditionally intermediaries have been negotiating very low rates and then retail the products. However, these days’ intermediaries are not dealing with net rates. The case is more often now that landlord car rentals have to pay high commissions to the intermediaries and online travel agencies. (Legohérel et al. 2013, 183.)

The last, but often the most important, segment is business market segment. These clients require a negotiated rate, with special conditions and high flexibility. Price is negotiated based on the number of rental days, total customer worth, rental periods and the coverage of contract. Usually the client company is obligated to book solely from the contractual car rental partner. Three main categories exist in the business segment: the traditional short duration rentals (1-4 days), long term rentals (30 days or more) and the road assistance clients who need substitute car for their own customers (Insurance companies et cetera.). One of the main tasks of the revenue manager is to adjust the perfect proportion of each segment in order to maximise profits. As seen in the figure below (Figure 4), the business segment is bringing more revenue despite the lower volume created compared to the leisure segment. (Legohérel et al. 2013, 184.)

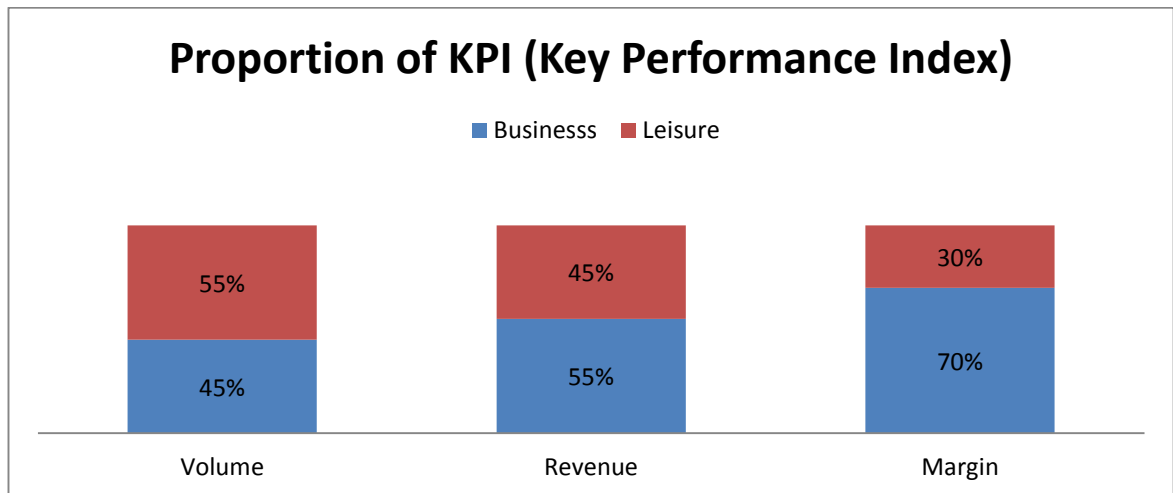


Figure 4. Proportion of Key Performance Index (KPI) per types of clients (n=100%). (According to Legoh  rel et al. 2013, 184)

The results of this indicator can be easily explained by the consumer behavior concerning the length of rental and location of rental. The leisure segment is generally more price-sensitive and rent the car for multiple days which explains the high volume, but lower revenue compared to the business segment. Also, the internet has opened doors for consolidators/intermediaries to negotiate cheap prices for leisure segment against the guaranteed rental days. The landlord rental companies may accuse themselves of letting the intermediaries capture the power in the internet because car rental companies were not interested in the internet sales decade ago. At the time writing, car rental companies are simultaneously selling their products via intermediaries and desperately searching tools for beating them with their own distribution channels (Internet and phone). (Legoh  rel et al. 2013, 184-185.)

As opposed to the other traditional Revenue Management industries, a car rental company may adjust its capacity in relatively short time and with moderate effort. Car rental businesses purchase and sell vehicles throughout the year and the size of the fleet can easily vary from single to double within one year. Usually large purchases are made just before the high season and disposals are done before the low season starts. This allows companies to achieve maximum utilization. (Legoh  rel et al. 2013, 185.)

Often, especially during the holiday season, the demand for small cars is extremely large. Naturally the car manufacturers want to sell as much cars as possible. However, the manufacturers are not accepting all orders for small cars and this leads to a suboptimal fleet to match the unconstrained demand. The reason why manufacturers are reluctant to accept all orders is that usually cars ordered by the car rental companies are under “buy back” policy. The car manufacturers want to avoid the situation of having too large amount of small, lower value vehicles that are difficult to resell with an acceptable price again to the consumers. This is why the car manufacturers push car rental companies to order bigger cars. (Legohérel et al. 2013, 187-188.)

In shorter time frame, the efficient and well planned logistical operations are extremely important when a company is operating with multiple locations. For example, the transfer costs needs to be analyzed and vehicles transported to the locations on time to meet the demand. Traditionally, from Monday to Thursday are the busiest days at the airport location whereas the demand in downtown location sees the peak of demand on Friday. After Thursday vehicles are shifted to downtown location and again on Monday back to the airport. It may be time-consuming and expensive to carry out these transfers if they are not done in right way. These operations are done together with short term capacity control because it is not a good idea to waste resources for transferring just for fun. The actual stock left is calculated and assessed daily starting from seven days before the date of rental. This daily operation is called fleet point that clarifies the current capacity situation. In addition to this, a longer range stock assessment needs to be done, usually between 14-30 days prior the date of departure. (Legohérel et al. 2013, 189.)

A computerized car rental Revenue Management system is in a way different to other types of Revenue Management systems from different industries. Computerized Revenue Management systems are extremely complex to understand how they work. The illustration (Figure 5) show how it bases its calculations for marginal values and utilizes

bid price control to perform accept/reject decisions for reservations. The big difference to the Revenue Management system in airline industry is that capacity planning is very closely involved in order to provide information how many vehicles to obtain and what sort of products to offer. (Talluri & VanRyzin 2000, 533.)

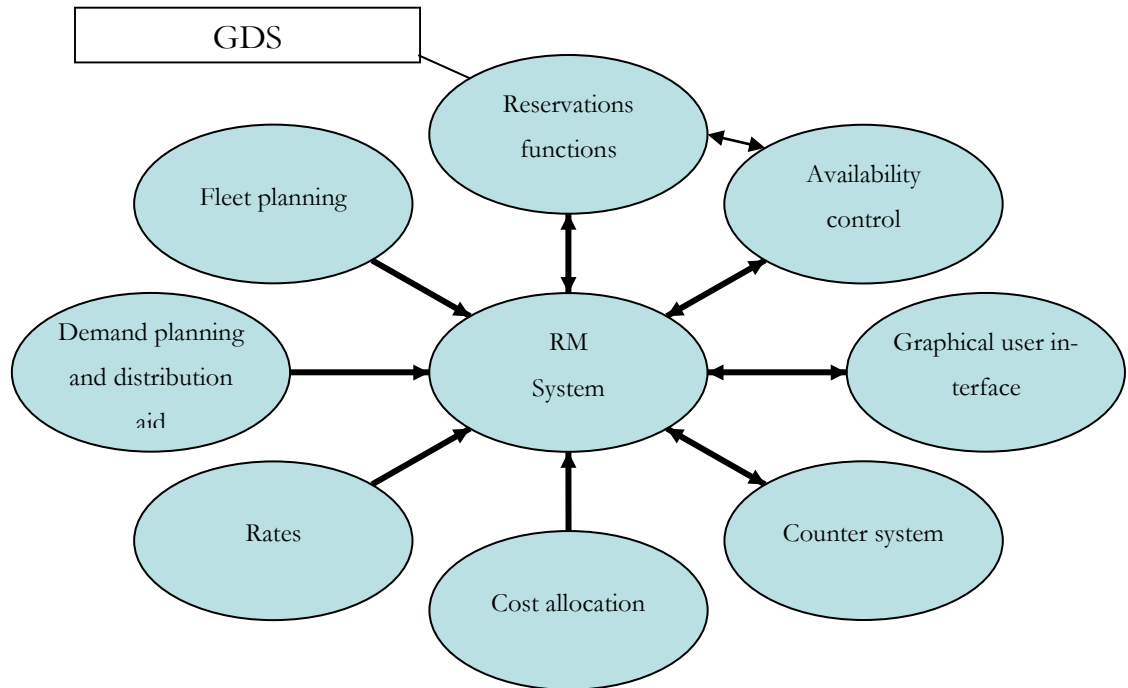


Figure 5. A rental car RM system implementation at Hertz (According to Talluri & Van Ryzin 2000, 533)

The figure above (Figure 5) features how different functions are working together with the Revenue Management system at Hertz. As we can notice from the arrows, some are working only one-way and some are two-sided in terms of information flow.

Despite the inevitable benefits of computerized Revenue Management system in car rental business environment, the guide created for Helkama Rent will exclude the Revenue Management specific software solutions. The purpose of the previous discussions of the holistic Revenue Management approach (including integrated RM software) are there just to highlight the possibilities of how far company may take its Revenue Management approach.

5 Revenue Management guide

The suitability of Revenue Management approach to car rental business will be conducted by analysing and documenting ideas and structure for Revenue Management at Helkama Rent Ltd. This chapter includes the presentation of starting level of Revenue Management in Helkama Rent Ltd. After thorough analysis of the starting level, the paper proceeds to the problem identification and the plan for the Revenue Management guide. Consequently, the process will show how it was planned and produced. Also, selected theories and methods will be justified. Finally, the process will be described and explained in detail.

5.1 Helkama Rent in Revenue Management context

Helkama Rent Ltd is a daughter company of Helkama Auto Ltd, which is a family-owned company and part of the larger Helkama Group that is over 100 years old. Helkama Auto has been exporting Skoda cars to Finland over 60 years and the corporation expanded its business to car rental in 1986 by the franchisee license for Avis Rent a Car. Later on, their car rental operations were expanded by adding the Budget Car Rental brand to its operations in 2009. Helkama Rent Ltd was founded by Helkama Auto Ltd in order to have separate business unit for car rental operations. Helkama Rent Ltd was signed to the trade register in 5th August 2010 with field of business being rental and leasing of light passenger vehicles. In the fiscal year 2012 it had nearly €11 million turnover (decrease of 5.80% from year 2011) with 59 employees. Helkama Rent Ltd operations are spread around the greater Helsinki area and Tampere area. With both brands included, Helkama Rent has 20 locations from which 5 are Budget Rent Car Rentals and rest 15 locations are Avis locations. (Taloussanomat 2013; Helkama-auto 2013.)

Of the 59 employees, majority is front desk workers (rental agents) and so called hikers. Hikers are employees that are responsible for carrying out transportation tasks, light maintenance and cleaning of the cars and performing deliveries for customers.

The head office of Helkama Rent employ roughly 10-15 persons who carry out all the administrative tasks. The overall fleet-size varies somewhere between 600-1200 vehicles. Vehicle types vary from small two-door economy cars to the minibuses and vans. The clientele differs from one to another among the two brands represented by Helkama Rent. Avis has high concentration on corporate clients whereas Budget is mainly serving the needs of private customers (Retail Sales).

Helkama Rent does not have an employee responsible for Revenue Management. The tasks relating to the Revenue Management are carried out separately for each brand (Avis and Budget). Revenue Management related operations are done in co-operation with sales department, operations management and station managers. Budget Brand Champion (Petri Jääsola) highlights the importance of dialogue between front office workers and pricing operations. He suggests that the dialogue is an excellent tool for providing invisible market information that can be utilized in Revenue management process. However, these procedures are not done in systematic way at the moment and Budget Brand Champion admits Ad Hoc way of decision making without any statistical information behind. Regardless, these decisions are not made by just one person, but discussed and analyzed with having multiple viewpoints. (Jääsola 25.10.2013; Jääsola 30.10.2013.)

Forecasting future demand is based on historical data from reservation system Wizard (global reservation system for Avis car rentals). Also Budget brand has been integrated into the Wizard which allows easier fleet management between two brands. Forecasting is not done in very detailed level. Only the peak seasons are being monitored carefully and compared to the previous years. Budget Brand Champion reminds that these short peaks in demand (Christmas, Midsummer and Eastern) are just small part of the overall picture. Forecasting is done on two levels; long term forecast and short term. Long term forecasts are done only for couple of the most important periods and short term forecasts limits to two-week forecasts. Both employees participating to the starting point interview highlighted the fact that during couple of years the time of how

well in advance bookings are made, has shortened significantly. (Francelino 21.10.2013; Jääsola 25.10.2013.)

In overall it is important to monitor competitors' movements, but often the pricing has been done by looking at previous years pricing. Brand champions (Avis and Budget) receive rate-shopping reports from QL2 rate shopping tool and also intermediaries and competitors are being observed manually by the brand champion. Using QL2 reports is extremely important and efficient compared to the manual observation. Also, not all car groups and type of rentals are being monitored. Only the most important (in terms of volume and revenue) will be concentrated on. (Jääsola 25.10.2013; Jääsola 30.10.2013.)

Fleet planning is done predominantly once a year hand in hand with budgeting process. This is done by evaluating each vehicle segment demand for the upcoming fiscal year. Once fleet planning is done simultaneously with budgeting, it may be reconsidered during the upcoming year and adjusted if needed. Short term fleet planning is done by the operations management (Operations manager, fleet coordinator and station managers). Station Manager for Downtown location suggests that some promotional prices should be restricted from Downtown location especially during high-season weekend rentals. Downtown Station Manager clarifies also that some car groups should not be sold with promotional weekend prices since the demand for those is already high and there is higher revenue potential for some other customer. (Francelino 21.10.2013; Jääsola 25.10.2013.)

Pricing function in Helkama Rent Ltd is based on available capacity and competitors' price movements. The price is formed individually for each car group and length of rental. Pricing analyst gathers relevant information in order to set prices that supported by valid information. There is strong rate-parity within Helkama Rent's own channels and the intermediaries. Rate-parity refers that Helkama Rent is offering same rates through its own sales-channels and through the intermediaries. Intermediaries are also

providing data how consumers are reacting to the pricing. Budget Brand Champion declares that using mathematical equations for pricing is not purposeful for this kind of business. Instead Budget Brand Champion highlights again the importance of observing competitors' movements in pricing field and capacity. By observing the competitor's situation at the airport one may get very useful information for Revenue Management purpose. If the competitors cannot provide cars for walk-in customers they are probably sold-out totally in Helsinki region. (Jääsola 30.10.2013)

Budget Brand Champion explains that pricing is at the moment too inflexible. It is derived from shoulder season type of thinking. Shoulder season means that there is one head season and other periods surrounding are shoulder seasons. Budget Brand Champion reminds that the most effective way for monitoring and controlling prices and inventory would be decentralized way where length-of-rental control and availability should be done at location level. Tools for inventory and pricing control are reservation system Wizard, QL2 rate shopping reports and on-rent forecasting tool. The on-rent forecasting tool can be armed with alarming systems for particular car-group in particular location for example. (Jääsola 30.10.2013.)

The lack of strategy behind performing Revenue Management tactics is a problem at Helkama Rent according to the Budget Brand Champion. He explains that without a proper strategy and fields or responsibilities the ball is just bouncing from one to another and no one is going to catch it in the end. One factor which makes it more important to have a good strategy is that Helkama Rent is operating via two internationally strong brands; Avis and Budget. At the moment the strategy for two brands is very much non-existent. For Budget the positioning in competitive field is rather easy due its name and history. It will be offering a good value for money without extra services. Avis is somewhat more difficult to handle. Avis has strong alignment towards corporate contracts and replacement cars (insurance and leasing companies). (Jääsola 30.10.2013.)

Coming back to the company level situation in bigger picture, Helkama Rent was not making profit in 2012 and also year 2013 is looking very difficult financially. The organization is at the moment in the process of changing organization structure, CEO and the overall strategy. However, Helkama Rent believes that it has sufficient support from franchisor (Avis & Budget group) and from mother company Helkama holdings. Also, the car rental market in Finland (Helsinki) is favorable since some of the competitors are making decent profit. The new CEO is the leader of the change process and has a clear vision for 2014. This thesis's product part is supposed to provide ideas and baseline for Revenue Management as a strategic tool.

5.2 Revenue Management problem identification

The main problem has been mentioned already in the previous sub-chapter. Helkama Rent is losing money. The problem in Helkama Rent is that it cannot operate in a way it has been operating for decades; relying very much on car assistance (insurance companies) and corporate accounts. Helkama Rent need a new strategy and operational tactics in order be able to capture the best possible revenue and turn the ship back to the route of being a profitable company. Even though Helsinki Downtown location is not that big part in terms of volume or revenue, it suits well for this thesis's purpose to implement Revenue Management theories and tools in a restricted area of business. As discussed in the theoretical framework, the necessary conditions for a firm wishing to make use of Revenue Management approach are fixed capacity (at least relatively fixed), predictable demand, perishable inventory, appropriate cost and pricing structure and time-variable demand. (Ingold et al. 2000, 4-5.)

To start with the relatively fixed capacity, car rental business may be somewhat problematic industry for Revenue Management. As presented earlier, Helkama Rent operates in Helsinki region and in Tampere region. Within Helsinki region shifting capacity to a particular location is relatively easy. Only locations that are possibly facing excess demand are Helsinki-Vantaa airport location and Helsinki (Kamppi Malminkatu 24) Downtown location. Driving time between these two locations is about 30 minutes. It

is also possible to assign a truck capable for transferring 6 vehicles with one load between these locations. As a conclusion, within Helsinki region capacity can be increased rather easily if demand can be forecasted at least few days in advance.

Also, a car rental company may increase its capacity by acquiring new vehicles in relatively short period. New fleet acquisitions may be done easily one week before the demand increase. Of course the problem of acquiring vehicles according to the peak demand is what to do with the enlarged fleet after demand peak. It is not that easy to just dispose vehicles (profitably) right away after peak season.

Anyhow, there are also location specific restrictions in capacity even though theoretically Helkama Rent may increase its capacity quickly to meet increased demand levels. For example Helkama Rent downtown location operates in a narrow street in Kamppi district. Cars are washed and parked in a very expensive parking hall and Helkama Rent has only 30-35 parking permits. Also, washing and maintaining vehicles in this location is very slow and inefficient due the poor premises and equipment. The ultimate limitation for Downtown location is set to 60 (often the maximum is 50) cars per day which in other words means that 6 vehicles need to be taken care of (washed, fuelled up etc.) every opening hour (usually during high demand from 8am until 6pm). So in this location even with unlimited supply of vehicles from other locations, it is impossible to handle more than 60 rentals in one day with the present workforce and premises

The next necessary prerequisite for Revenue Management is the predictable demand (Ingold et al. 2000, 5). In Helkama Rent-case this is fulfilled by the booking behaviour of clientele. Majority of the clientele reserves the rental vehicle in advance (at least for few days), and especially the leisure segment at the airport and downtown locations. Leisure typically reserves some weeks in advance but some of them may book up to 10 months in advance especially if the case is special vehicle rentals such as minibuses. Helkama Rent does not have automated systems to provide reports from booking patterns or future forecasts. However, the brand champions of Avis and Budget receives

raw data reports from every rentals but the data needs to be filtered and put into the right form in order to produce future forecasts or booking curves.

Third prerequisite to be fulfilled is the condition that inventory needs to be perishable. Inventory shall not be considered as physical only, but also as a time (rental day per vehicle). In car rental business this condition is met easily since a car left unsold means lost revenue forever. This condition allows car rentals to attract demand with promotional rates during weak demand as long as the rate covers variable costs. In Helkama Rent case variable costs sum up from car ownership costs, administrative cost, staff wages and such. That is why a smart way to evaluate performance in car rental is to calculate average daily rental revenue (ADR or RPD=Revenue per Day) instead of calculating revenue per customer.

The major issues to be tackled in the car rental industry are the appropriate cost and pricing structure. This is fulfilled due the fact that purchasing or leasing a vehicle causes significant costs for car rental and renting it does not cost that much for the car rental. In other words, Helkama Rent has high fixed costs and low variable costs. Putting a car on rent does not cost too much for Helkama Rent but owning the car and letting it sit on the parking lot does cost a lot of money for Helkama Rent since running costs are high.

Revenue Management approach suit for business that faces time-variable demand (Ingold et al. 2000, 5). The demand should be varying depending on time of the year (month or week level) or even within one day. This is the baseline why predicting demand is extremely important. During high demand Helkama Rent should be able to adjust its prices high enough in order restrict excess demand and capture the highest possible revenue. As opposite during the low demand Helkama Rent has to be able to release promotional rates to attract more demand and beat competitors. Previously mentioned conditions are external factor influencing company's ability to practice Revenue Management. Also some internal resources are needed for Revenue Management

approach and those are: market segmentation, booking patterns, pricing knowledge, overbooking policy and IT-systems. (Ingold et al. 2000, 9.)

5.3 Best practices from traditional RM industries for Helkama Rent Ltd

Since this thesis describes rather small rental-car company's problem in a small market, it cannot expect large scale investments for Revenue Management. That is why Helkama Rent may copy the strategic approach for Revenue Management from Aeroflot example in previous chapter (3.1) where Aeroflot decided to focus on work processes, organization, people, reporting and measurement. Work processes are possible to design to be performed in systematic way. If these processes are done in systematic way the overall process can work more efficiently and also be more effective. Processes in Helkama Rent case are for example fleet planning, demand forecasting, capacity control, pricing and market analysis.

Also, to familiarize the organization and staff to the Revenue Management philosophy thoroughly will be extremely important for the Helkama Rent's Revenue Management approach. The organization should have clear areas of responsibilities in Revenue Management process and work co-operatively throughout the process cycle. In order to avoid the employees to destroy the effort of Revenue Management team, all employees should be aware of the Revenue Management strategy in use in Helkama Rent. For example the front desk rental-agents are maximizing last minute walk-up customer revenues during high demand. During the low demand, rental-agents should be trained how to handle walk-in customers (to whom to offer special discounts and how much one may discount if rental location has still excess inventory).

Reporting and measurement may be the hardest issues at Helkama Rent since the old fashioned reservation system is not able to provide accurate reports for Revenue Management purpose. Helkama Rent must develop tactics and tools how to report and measure the effectiveness of their Revenue Management strategy because Revenue Management is an ongoing process that never stops. The development of Revenue

Management strategy is repeated systematically and adjusted constantly because the market environment and technology changes constantly.

Coming back to the Aeroflot's example where Aeroflot also obtained new Revenue Management software, Sabre. In Helkama Rent case the option of obtaining Revenue Management software is indefinitely left out. Anyhow, the functions of Revenue Management software can be simulated in some extent by manually sorting and processing data from reservation system and other relevant sources. For example, demand forecasting methods from airline industry may be applied in car rental industry. The example presented in theoretical framework, Simple Exponential Smoothing, may be used in car rental industry. This method has good features and it may be further enhanced by adding trend and seasonality factor (Holt-Winter's exponential smoothing) that increases accuracy. (Legohérel et al. 2013, 60.)

Continuing from the airline industry to the hotel industry the reader may notice that it is more similar to the car rental industry than the airline industry. Both in hotels and car rentals customers may use the product for one day only or for longer period. In these industries the length of rental/stay has to be considered when setting up Revenue Management strategy. The major differentiating factor between car rentals and hotels is the product mix. Whereas hotels have perhaps 2-5 different room types car rentals often provides 10-20 different vehicles.

In hotel section's case study, Hilton Warwick, use forecasting team for Revenue Management purpose. Forecasting team meet once a month (Ingold et al. 2000, 268). Helkama Rent may apply similar practice from Hilton case study. In Helkama Rent sized company this forecasting team would probably be called Revenue Management team that would meet up at least once a month to discuss about forecasts, pricing, fleet capacity and operative tasks. This meeting would include also station managers and fleet coordinator. In Hilton Warwick case they received a pricing tool linked to the Hilton general reservation system. Perhaps, in Helkama Rent case, there is probably the

possibility to gain similar software support from franchisor (Avis & Budget group) as Hilton Warwick did. Hilton Warwick also identified the importance of front desk employees' ability to hold-out with reservations and wait for more lucrative customers during high demand. At first rental agents will probably resist this approach since it may feel irrational. In order to encourage them for this approach, an incentive plan has to be set based on premium rates and possible upsells. (Ingold et al. 2000, 269.)

5.4 Process description of the thesis

This subchapter will highlight the notable steps and turns during the thesis process. It will start by explaining how it got started, move to the actual planning and writing process, and end to the period of producing the Revenue Management guide.

5.4.1 First steps

The thesis process started officially in August 2013 when thesis seminar was launched. The idea for this topic was developed during the exchange semesters of my studies because both of them included studies in the field of Revenue Management. First exchange semester was at The Hong Kong Polytechnic University (2012) and the second stint at IUBH School of Business and Management Germany (2013). The IUBH semester included an extremely interesting Yield Management course that encouraged myself to finally approach Helkama Rent Ltd. I was in talk with the Operations Manager for Helkama Rent who got excited of the idea of studying and considering the possibility for Revenue Management in car rental business. Discussions quickly led to an initial vision of this thesis agreed with Operations Manager and with the Budget Brand Champion who later on was agreed to be the contact person of this thesis.

The need for this study was evident since the assigning organization lacks strategy behind the Revenue Management related operations. Along the process the actual form of the final product of thesis has been reformed couple of times. At first, the thesis

was supposed to be very generic report of the possible Revenue Management functions for car rental business. After the first meeting with thesis supervisors (30th Sep 2013) the final outcome of the thesis was asked to be sharpened, especially in the product form. At this point I started to evaluate the possibility of performing pilot test for applying Revenue Management techniques in constrained operational environment (Downtown location, Weekend rentals).

5.4.2 Planning the product

While tailoring Revenue Management techniques for this purpose, it became evident that piloting a short period in a constrained environment would be extremely difficult to achieve reliable results and also to play out the overall process of Revenue Management. After second meeting with the thesis supervisor (31th Oct 2013), the outcome of the product was somewhat clarified. As an outcome of the couple corrective sessions it was agreed that the outcome would be a Revenue Management guide for Helkama Rent Ltd. The Revenue Management guide will provide an overall picture for Revenue Management and demonstrate each process step in details by using the Downtown location as example.

A guide for Revenue Management was chosen because it gives the best match with the expectations of Helkama Rent Ltd regarding the assignment. The organization of Helkama Rent Ltd was facing a huge reformation during the thesis process which at the same time gave me a great freedom to provide new ideas but also made it more difficult to get guidance from the management. This is also one of the reasons why guide was chosen to be the form of the thesis outcome. The guide was produced as it were a consultant work because during the reformation (with new CEO) the management wanted to search for new models for operations including the revenue generation. This guide is directed to the management including the station managers. The reason why it is for the management is because Helkama Rent Ltd was requesting a consultant type of work from me. The management of Helkama Rent wanted to dig deeper into the Revenue Management world in order to get new ideas and methods for improving the

revenue streams. The guide aims to provide ideas and methods for the management level employees (Channel management, fleet management, sales, controlling, marketing and station management) in terms of Revenue Management.

The other options could have been a pilot test for Revenue Management or a qualitative research for finding out how Revenue Management has been set up in other industries (airlines, hotels, cruise lines etc.). Pilot test would have been too difficult to implement due to the reformation process that was going on. It would have been also pretty risky to go for pilot test and then find out that it may not be the right way to conduct Revenue Management.

Qualitative research would have been an interesting option because we have many well-known companies here in Finland that are conducting high-level Revenue Management. I also had some contacts that could have helped me to arrange the interviews with Revenue Management representatives of few companies. One difficulty in this kind of research could have been the lack of willingness to share Revenue Management secrets. I believe that the companies that I could have interviewed are unwilling to reveal their tactics to outsiders.

5.4.3 Timetable

The writing process of the thesis initiated in September 2013 (Figure 6) when the topic was chosen. Theoretical framework's basis was formed by reviewing some rather old, but highly recognized books. Also, some very recent books were included since they provided very valuable viewpoints for the purpose of this thesis. The traditional Revenue Management books were concentrating on airlines and hotels whereas some newer books provided valuable knowledge from untraditional Revenue Management industries including car rental industry. Other sources of materials were found from different internet databases and websites. The theoretical framework begins with the intro-

duction of Revenue Management as a management science and the theoretical framework was completed by adding two chapters from which first deals with different approach in various industries and the second one presents car rental business in depth.

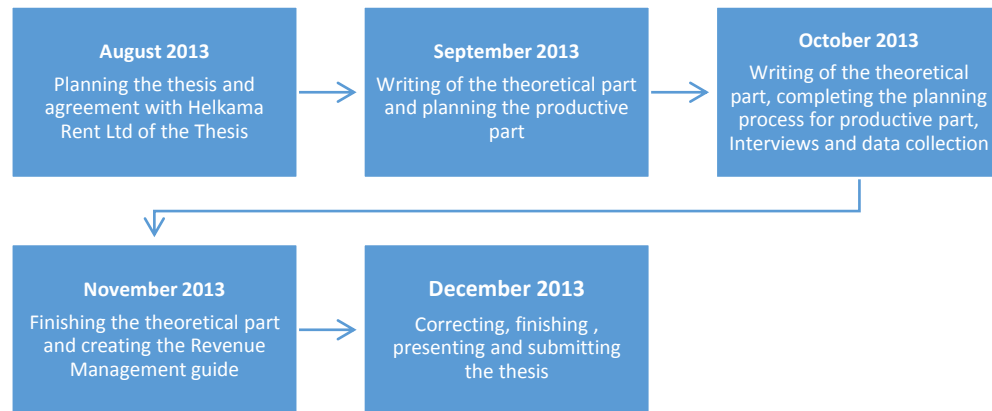


Figure 6. Schedule for the thesis process.

Before the actual writing of the Revenue Management Strategy guide, the starting level of Helkama Rent Ltd needed to be figured out. At the time of exploring the starting level in late October 2013 (Figure 6), Helkama Rent Ltd was facing huge change in organization. That is why the starting level was relatively difficult to analyze due the ongoing organizational change. I was working random shifts at the downtown/airport location while the thesis process. When I was working, I tried to pay attention to the small details related to Revenue Management.

5.4.4 Challenging sections

Unfortunately, the organization reformation is very time-consuming for the management which led to the unfortunate fact that I managed to consult only two managers (Brand Champion & Downtown Station Manager) via emails and interviews. The interview and the email interviews were in this case enough, since these two managers were at that time the most enthusiastic about Revenue Management and could give me the most valuable information about Revenue Management related functions. When assessing the content of the interviews, it became clear that Helkama Rent truly lacked structured Revenue Management. The one interview that I did was a structured theme

interview (Attachment 1). The interview was conducted in October 2013 and transcribed right after. Transcribing was quite challenging since I do not have much experience in interviewing people nor transcribing recorded interviews. Also, Helkama Rent has open-plan office which was not the best venue for an interview.

5.4.5 Producing the Revenue Management guide

The first steps of the planning process of the guide were proven be the most difficult ones. As one might notice from the theoretical part of this thesis, there are loads of different tools and suggestions available for Revenue Management. It was not too difficult to find instructions how to implement Revenue Management in airlines or in hotels. However, the chapters related to the car rental industry did not offer that much about the implementation process. A car rental has typically roughly 20 different physical products and airlines and hotels traditionally offer three different physical products. In Helkama Rent case, a simplified and tailored version of the implementation was needed. Tailored and simple approach was analyzed to be suitable since the organization is rather small, and the resources (financial & technological) for Revenue Management are scarce in Helkama Rent Ltd.

I also lacked the knowledge of how to produce a guide for professional use which is why the planning process started by reviewing similar type of guides and manuals from the internet and by benchmarking other theses' products. Finally after intense studying, a suitable structure for Helkama Rent case was formed. At this point it has to be mentioned that the guide will not go too much in the details because otherwise the size would have been closer to the overall page number of this thesis. Suggestions for further improvements will be provided later in the concluding chapter.

The form of the guide was chosen to be PDF-file because it is easy to deliver to every employee of the company and also to attach to the network drive (intranet). If necessary, the PDF- file is easy to print out and use as hand guide or make markings on it. Another technique to create this kind of guide could have been a larger strategy map in

form of Microsoft PowerPoint presentation or a computer program. In my opinion PowerPoint presentation alone is not enough. PowerPoint presentation is good tool for presenting the guide however. The lack of encoding skills and high-tech computing skills prevented myself of doing the guide in a very sophisticated, technological form. Whether a software would have been more practical for the management to use the guide, it is difficult to answer. Revenue Management guide in form of PDF- file (Adobe Reader) is capable to give a clear structure, responsibilities, ideas and tools for Revenue Management in Helkama Rent Ltd. The Revenue Management guide contains sensitive information about Helkama Rent and could be harmful against Helkama Rent if leaked to the competitors. Due to the delicate information in the guide, it will not be published with the thesis to the general public.

5.5 Content of the Revenue Management guide

The Revenue Management guide will consist of introduction, chapter of how Revenue Management integrate with overall strategy, process steps of Revenue Management at Helkama Rent and the detailed descriptions (from Downtown location point of view) of every process step in the overall process cycle. The function of the introduction chapter is to propose the reader to the topic and present what will be in the further chapters. The introduction chapter try to convince the reader that this guide will fill the need of structured Revenue Management in Helkama Rent and that every employee is valuable and needed in this process. The separate text box justifies the simple approach used in the guide.

The first chapter will discuss the meaning and purpose of Revenue Management in Helkama Rent and finally continue to what it could achieve after the successful implementation. Second chapter is the main chapter of this guide and it will provide the framework for the Revenue Management guide. First it will start by presenting how to get started with the process. The process cycle of Revenue Management in Helkama Rent will be demonstrated and justified. It will include the process steps, organizational

structure with areas of responsibilities and needed actions to perform the entire process. The figure will give a snapshot of what is it all about when talking about the Revenue Management in Helkama Rent Ltd. After the process figure, a measurement kit with Key Performance Indicators were shown in an example table. The measurement part was included with the process steps because it is the connecting activity between the first and last step of Revenue Management process at Helkama Rent Ltd.

After the overall structure of Revenue Management in Helkama Rent Ltd, the presented process steps will be exposed as attachments of the guide. It will begin with the analysis of the organization and surrounding market. The chosen method was SWOT analysis. According to Wheelen & Hunger (2006, 138) strategy formulation begins with analysis. SWOT analysis is not limiting only to the identification of organization's strengths and weaknesses but also the external factors are considered. Over the years SWOT analysis has proven to be one of the most used tools for strategy analysis. SWOT also has some disadvantages. It lacks the logical linkage to the strategy implementation, no obligation for verifying opinions with hard facts and it does not use weights to indicate priorities. (Wheelen & Hunger 2006, 138-140.)

However, SWOT analysis was chosen because it was the most suitable method for Helkama Rent case. Other possible analysis method could have been for example Porter's Five Forces- analysis. Porter's method did not work as well as the SWOT analysis did. The analysis part included a lot of information relating to the operational environment of Helkama Rent Downtown location.

Next attachment in the guide will present the baseline segmentation for Helkama Rent and especially for the downtown location. Segmentation is one of the cornerstones of Revenue Management and a segmentation study could be one of the suggestions for further improvements for Helkama Rent. Segmentation was somewhat difficult topic since the clientele vary from one location to another and in order to fully understand

all segments, a deep research is needed. The segmentation part requires a lot of time and resources from the sales & marketing function.

Subsequent topic was about forecasting and fleet planning. The reason why I wanted to put these under the title was that they should work closely together in Helkama Rent. Forecasting is one of my favorite topics, and again, it would be interesting to research this more within Helkama Rent but unfortunately the current data collection and other resources are not sufficient for deeper methods. This causes problems for the structured fleet planning. Fleet planning became the most problematic part of the Revenue Management guide because it is really difficult to create any suggestions for this part without proper tools and theory behind. Without the tools, it will lean against to the fleet planner's expertise and experience. Also, the naïve approach is compromise solution at the moment since no better solutions are available with the current tools.

The inventory control and rate shopping are functions that were already working and done pretty well in Helkama Rent. That is why the thing to add on this function is that the information received from inventory control and rate shopping should be working more closely with the capacity allocation and pricing. Pricing function could be the most sophisticated element in Revenue Management if Helkama Rent had the sufficient resources and tools.. Anyhow, the simple versions of dynamic pricing would be rather easy to implement with reasonable effort. My goal was to create simple ideas and tools to conduct low-level dynamic pricing for high-demand periods.

Especially pricing, but also the other functions require a full commitment from location level operations. That is why I tried to highlight the importance of staff training and involvement through-out the process of Revenue Management. The last step will go through how the philosophy and strategy of Revenue Management will be incorporated to every level of the organization. The emphasis however, will be on the operations that are carried out by the location level staff. Also, the new approach for incentive programs was presented and discussed.

6 Conclusions

The purpose of this concluding chapter is to ponder this thesis. Chapter will start by discussing about the feedback received from Helkama Rent Ltd. After the feedback session, an evaluation of the Revenue Management guide will follow. Subsequently to the evaluation and assessment of the Revenue Management guide, the last sub-chapter will focus on self-assessment of the overall thesis process.

6.1 Feedback from Helkama Rent Ltd

In overall, Helkama Rent Ltd was satisfied with the outcome of this thesis. When the thesis process started Helkama Rent Ltd was at a crossroads. The business logic that had been in place for several years was not profitable anymore. The business plan of Helkama Rent Ltd was not updated with the changing market environment. The operations manager for Helkama Rent Ltd discussed with Budget Brand Champion about the possibility of making thesis of this topic. The original purpose of the thesis was to help Helkama Rent Ltd to integrate Revenue Management to the overall business model. Later on the goal was clarified that the outcome would be a Revenue Management guide including overall picture of Revenue Management operations and detailed descriptions how to conduct it at the Downtown location level. (Jääsola 6.12.2013.)

The thesis process was perceived as inspiring, though-provoking and coherent. Budget Brand Champion highlights sees that the author's good overall picture and the experience from car rental business helped in the thesis process. Brand Champion highlights that the theoretical framework did find valid convergence between the car rental industry and the advanced Revenue Management industries (airlines and hotels). It was predicted that it would be difficult and it became apparent that there are not that many writings about Revenue Management in car rental business. Budget Brand Champion sees that it can be due the complex nature of car rental business.

To create comprehensive Revenue Management strategy for Helkama Rent Ltd is a very demanding task. This is why it would have been rather unfair to ask for a complete solution for Helkama Rent Ltd Revenue Management. Budget Brand Champion sees that the merits of this thesis are the comprehensive ground work and the projection of right questions for Helkama Rent Ltd. (Jääsola 6.12.2013.)

6.2 Evaluation of the Revenue Management Guide

After the decision to make a product-oriented thesis I knew that it would be the most challenging project for me so far in Haaga-Helia. The topic itself is very challenging and the fact is that it is not easy to improve things that people are doing as their profession also created pressure towards me. Helkama Rent employees are experts and my challenging task was to deepen their existing knowledge of Revenue Management.

In overall I am very satisfied with the outcome. The Revenue Management guide includes valuable information for the management how certain functions may be improved and how to proceed in future when dealing with Revenue Management. I see this Revenue Management guide more as an eye-opener, than a strict guide how Helkama Rent has to conduct Revenue Management in the future. This is down to the fact that one may never be sure that any of the methods would work in real life before the implementation. Also, the management level needs have their voice in the decision making which is why the purpose is to provide a solution that is not rigid.

However, all methods and tools in the guide are based on common business sense which should make it easy to follow the logic in the guide. Previous fact also underlines that the methods and tools are valid for Helkama Rent Ltd case since the characteristics and nature of this kind of business are proven to be suitable for Revenue Management. The validity is found on the theoretical framework of this this. Unlike the validity of the product of this thesis, the reliability has to be questioned since almost none of the tools and methods have been put in practise yet in Helkama Rent Ltd. One can never be sure whether the suggested methods and tactics will work in real life. This is

why management's consideration is reasonable before implementing the content of the guide.

The introduction chapter is compact and descriptive. It includes the needed information to introduce the reader to the topic. The first chapter has one purpose and in my opinion it delivers it very well. The purpose is to justify and validate the need of Revenue Management as management practise and the need of documented Revenue Management guide. I am unsure whether the introduction chapter and chapter one are too close to each other. Perhaps chapter one could have been made with different message.

Chapter two gives a snapshot of how Revenue Management could be structured in Helkama Rent Ltd. I think it is good idea to provide a well-knit overview of the guide because it is not always purposeful to study the entire guide for every management level employee, however it is recommendable to do so. It will tell immediately the reader what Revenue Management is all about especially if the term Revenue Management is unheard unknown. After this process chart follows the method how to evaluate the effectiveness of Revenue Management in Helkama Rent Ltd. I put this here because management are concerned about the numbers. If I could not show in numbers what benefits Revenue Management can achieve no-one from the management would not read the guide to the end.

The attachments expose how Revenue Management functions can be done in practice. In this guide, downtown location was used as an example location for demonstration. This part was very challenging for me. It was not easy at all to link the theoretical framework into practise at Helkama Rent. My evaluation is that if I would have more experience and knowledge this part could have been done in better way. A viewpoint and expertise is needed from very experienced car rental professionals. It is my own

flaw that I did not consult our staff more concerning this aspect. Regardless, I managed to produce methods and ideas that are tailored for Helkama Rent Ltd and which can be implemented into practise with current resources and technology.

6.3 Self-assessment of the thesis

When I started this thesis I knew that it would not be the easiest topic to write thesis of. Before the thesis process I thought I had learned a lot of things about Revenue Management. This was because of the three different Revenue Management courses I took during my bachelor degree studies. Along the thesis process I realized that I had reviewed only few percent of the materials available that were concerned with Revenue Management. The topic of Revenue Management is massive and it contains several entities that are large enough for bachelor's thesis. Anyhow, it was clear for me that I want to write the thesis of Revenue Management because it was the most widely studied subject of my study plan. My professional career was concentrated on the car rental business which suited well for my plans to write something about Revenue Management. The combination of car rental business and Revenue Management seemed to be the best idea for thesis.

Initially it felt that the planning process took off well in August 2013. Regardless, minor problem arose pretty quickly after that. The nature and type of the thesis was too unclear. It seemed that the product-oriented thesis was the right one for the case. The problem was not detected right away because of schedule problems and my lack of knowledge of how theses' can be constructed. Anyhow, it did not do serious damage since the theoretical framework was progressing nicely and theoretical framework was at first very general content of Revenue Management. This is why the rather mechanical writing of theoretical framework started on time in September 2013.

After the first meeting with thesis supervisors in September 2013 I got feedback that the product of the thesis has to be defined clearly. I got confused a little bit because originally I thought that it would be enough that I do just that what was asked by

Helkama Rent Ltd: to produce ideas for Revenue Management. I understand now that it was a naïve thinking from me. The period during late September and late October was not easy. I was struggling with the actual outcome of the thesis. I am glad afterwards that I did not go for the Revenue Management pilot test since that would have been way too difficult to implement. After couple of consultation sessions with supervisors and independent studying I got an idea of producing the Revenue Management guides.

Forming the Revenue Management Guide was indeed a challenging task. It was challenging in all aspects starting from the format to the content of the guide.

Even though I have written many essays in English during my studies, I had not paid that much attention to the academical writing diction or citing rules. During this process my writing skills improved significantly. I have to thank the thesis supervisors and English lecturer for this since they provided valuable feedback to make corrections to the thesis report. My skills have also improved in the field of Microsoft Word, Excel and information searching from the internet and library.

Before I started to write my thesis, I made a simple schedule for my process since everyone told me that it would be beneficial. I agree that it was a wise idea however my schedule was constantly changing throughout the thesis process. In future projects I must pay attention to this and keep up with schedule. The changes in the plan did not cause serious damage to thesis process since I worked only few shifts during the autumn 2013.

My initial plan was to finish planning process early September 2013, write the theoretical framework before October 2013, execute the product part during October 2013 and finalize the writing process by December 2013. The thesis presentation was supposed to be in early December 2013. It is fair to say that my schedule almost kept until the end. From the different stages of thesis process, if I could go back to the future, I would pay more attention to the planning phase. I realized that once

something is well-planned, it is also easier to execute. The things that were not planned perfectly, were proven to be problematic sometimes.

For further product-oriented theses' at Helkama Rent I would suggest students to study and produce very detailed descriptions how certain area of Revenue Management should be conducted at Helkama Rent. For bachelor thesis, a comprehensive (detailed Revenue Management strategy and tactics) is too wide topic as it is possible to notice from the conclusions of this thesis. It would make more sense to produce a detailed analysis/tool for demand forecasting which could be implemented straight away. Of course when planning this kind of approach one must consider if it is plausible to perform.

I am very happy with the fact that Helkama Rent Ltd was pleased with the result of my thesis and it has been helpful to the organization. I think that the Revenue Management guide truly helps Helkama Rent Ltd and the aim of this thesis' outcome is fulfilled. Also, according to the newsletter that was published just before Christmas, Helkama Rent Ltd has now a person who is responsible for Revenue Management activities. The final feedback received from the newly assigned "Revenue Manager" was that he can for sure make good use of this thesis in order to perform Revenue Management at Helkama Rent Ltd. The aim initially could have been more explicit during the process nevertheless the aim was clear in the end. The aim had been pretty clear but the documentation and articulation of the primary goal was insufficient until November 2013.

I am pleased with the theoretical framework of this thesis because it has comprehensive introduction and requisite information about the tools and methods in order to create the Revenue Management guide for Helkama Rent Ltd. In overall I was able to include decent amount of different sources and include dialogue between different sources although few sub-chapters have only one source. The problem with these sources were that they were dealing with issues that are very specific and I could not

find alternative sources. That is the reason why some sub-chapters are lacking viewpoints from more than one source.

The planning of the Revenue Management guide was really challenging. I reviewed numerous product-oriented theses' in order to find something similar and to get some ideas. It was difficult to find suitable written material for building a guide. After the revision of other theses' I got a rough idea how to formulate the guide. The product itself follows closely the set targets and during the process both Helkama Rent representatives and thesis supervisors were consulted multiple times. In overall I am pretty satisfied with the planning and implementation of the product of this thesis. The planning could have done better way in one way. I could have set better evaluation criteria for the Revenue Management guide in order to be able to assess the felicity of the guide. Nevertheless the guide met the primary goal set by Helkama Rent Ltd.

In its entirety, this thesis process was truly an educational experience for me in many ways. It has been challenging, frustrating, wearing yet very rewarding. Writing this thesis prepared and developed me for the future challenges whether they are in working life or in another educational institute. Thesis process did fill the blank spot in my timetable September 2013. Fortunately it seems like the hard work and hundreds of working hours were not wasted.

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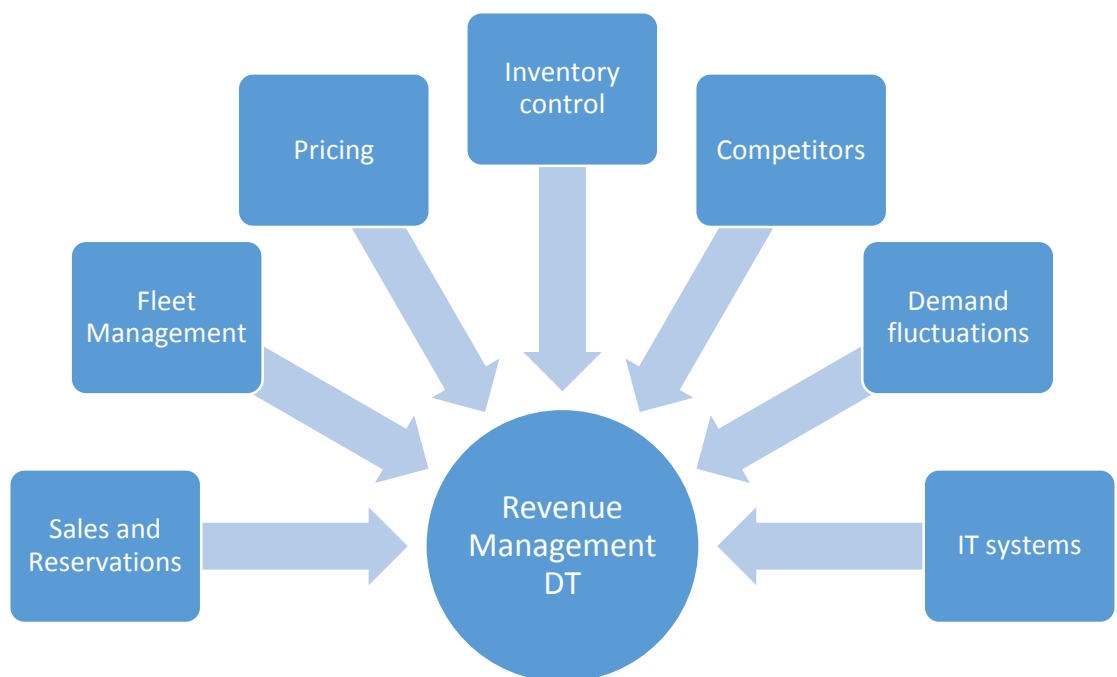
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Attachments

Attachment 1. Starting level interview questions

Luonnostelin alla olevan kuvion, jossa uskoisin olevan tekijät, jotka vaikuttavat Downtown- toimipisteen vuokrauksien hinnoitteluun ja kapasiteettiin. Tämän kuvion pohjalta pyydän alla oleviin kysymyksiin mahdollisimman kattavat vastaukset, jotta saan määriteltyä lähtötason mahdollisimman hyvin ennen kuin aloitan varsinaiset kehittämissuunnitelman tekemisen.



1. Mitkä osastot/henkilöt Helkama Rent Oy:stä ovat mukana Downtown toimipisteen kysynnänennustamis-, hinnoittelu-, kapasiteetinsuunnittelu- ja myyntiprosessissa?
2. Miten kysynnänennustamis-, hinnoittelu-, kapasiteetinsuunnittelu- ja myyntiprosessien suunnittelu toteutetaan Helkama Rent yrityksessä?
3. Mitä ja miten erilaisia tietokoneavusteisia (Microsoft Office, Varausjärjestelmä, muut) ohjelmia Helkama Rent hyödyntää kysynnänennustamis-, hinnoittelu-, kapasiteetinsuunnittelu- ja myyntiprosessissa?
4. Miten arvioitte nykyisten toimintatapojen toimivuutta? Mitkä osa-alueet toimivat hyvin ja missä osa-alueissa on parantamisen varaa?
5. Onko edelle mainittujen toimintojen taustalla yhtenäistä strategiaa/suunnitelmaa jota Helkama Rent noudattaa kyseisten toimintojen osalta?
6. Kuvailkaa kysynnänennustamisprosessia. (Forecasting)
7. Kuvailkaa kapasiteetinsuunnitteluprosessia. (Fleet planning)
8. Kuvailkaa hinnoitteluprosessia. (Pricing)
9. Kuvailkaa kapasiteetinhallintaprosessia. (Inventory control)
10. Kuvailkaa myyntiprosessia (Sales and Marketing department)

Viimeiset kysymykset ovat suunnattu ensisijaisesti Susanna Francelinolle (DT station manager)

11. Kuvaile edellä mainittujen prosessien tehokkuutta operationaalisesta näkökulmasta. Miten mielestäsi Helkama Rent organisaationa on onnistunut kysynnän ennustamisessa, hinnoittelussa, kapasiteetinhallinnassa (autoluokkien saatavuus vs. kysyntä) ja myyntiprosesseissa?
12. Mitkä yllä mainituista prosesseista toimivat hyvin ja mitä voisi parantaa?
13. Kuvaile Downtown toimipisteen perjantai-lähtöjen kysyntää. Miten vaihtelee vuoden aikana? Kuukauden aikana? Mitkä ovat asiakasryhmät?
14. Mitkä ovat asiakkaiden pääasialliset syyt vuokrata auto Downtown toimipisteestä?
15. Kuvaile asiakkaiden varauskäyttäytymistä näppituntumalla. Miten paljon etukäteen asiakkaat varaavat? Walk-in asiakkaiden määrä? No-show ja peruutukset?
16. Miten uskot asiakkaiden reagoivan jos Helkama Rent kokeilisi hinnoittelua, jossa hintoja (varsinkin paikan päällä maksettavien vuokrauksien) nostettaisiin maltillisesti noutopäivää lähestyttäessä? Kuinka herkkiä uskot asiakkaiden olevan hinnalle?

Attachment 2. Revenue Management guide

(Double click the cover page of the guide below)



HELKAMA



HELKAMA RENT OY

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Revenue Management Guide