

# Profit Optimization Potentials in the Automotive Industry by Strategic Management of Optional Equipment Sales

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"Master of Business Administration"

supervised by

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Ingolstadt, 18.07.2014

## Affidavit

I, **Thomas Franz Elias Vossaert**, hereby declare

1. that I am the sole author of the present Master's Thesis, "**Profit Optimization Potentials in the Automotive Industry by Strategic Management of Optional Equipment Sales**", 70 pages, bound, and that I have not used any source or tool other than those referenced or any other illicit aid or tool, and
2. that I have not prior to this date submitted this Master's Thesis as an examination paper in any form in Austria or abroad.

Ingolstadt, 06.08.2014

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## Table of Contents

Abstract .....	4
1 Introduction .....	5
1.1 Initial Situation.....	5
1.2 Problem Statement and Aims of the Research Paper .....	6
1.3 Thesis' Structure.....	8
2 Optional Equipment in the Automotive Industry .....	10
2.1 Positioning and Image Building.....	11
2.2 Revenue Management.....	15
2.3 Trends.....	17
3 Identification and Analysis of Profit Optimization Potentials .....	19
3.1 Pricing of Optional Equipment.....	19
3.2 Packaging of Optional Equipment.....	23
3.3 Lines and Upselling.....	34
3.4 Promotion of Optional Equipment .....	38
3.4.1 Promotion to the End Customers .....	39
3.4.2 Promotion to the Dealers.....	42
3.4.3 Promotion to the Importers .....	44
3.5 Profitable Distribution Channels.....	45
4 Validation and Application of the Findings .....	49
5 Conclusion .....	64
6 Bibliography .....	66
7 Table of Figures .....	69

## **Abstract**

Due to increased competition, rising production costs, necessary investments in new technologies and other external factors, many original equipment manufacturers (OEM) face poor financial results. The contribution margins per car are rather low. In contrast to that, sales of optional equipment have significantly better rates of return. Strategically managing and improving the sales of optional equipment might bear significant profit optimizing potential. The intention of this thesis is to identify and quantify those profit opportunities.

After defining the field of optional equipment sales and stating its importance in the OEM's overall performance, promising strategies to improve the profits were derived. To do so, a literature research was performed, experts and practitioners in the automotive industry were interviewed and current practices of OEM were evaluated. To validate the findings, the application is presented in a case study.

By optimizing their processes in three main focus areas, OEM can substantially improve their profits. The pricing of optional equipment has to be based on the actual customers' price acceptance. By applying conjoint measurement studies optimal prices can be defined. A cost plus pricing approach or a pricing based on competitors' prices will not meet the OEM specific target group's price acceptance and hence potentials are wasted. Having optimized pricing for optional items can improve the profits by up to 15%.

If the current status of take rates and unit costs of optional items is known, bundling of items can contribute to further profit increases. Bundles are predefined combinations of items sold with a discount. By bundling items, unused customer's price acceptance for one item can be transferred to another item. This allows supporting the sales of items with low take rates and thereby profits can be improved. The amount of additional profit that can be generated depends on the OEM's initial situation, in the presented case study approximately 50€ per car proves to be realistic.

Involving the entire distribution chain to the customer in the corporate strategy also affects the OEM's results. The salesmen at the dealerships and the importers will only focus on optional equipment profit optimization, if they benefit of it as well. Since the OEM usually has contractual relationships with the importer and not with the dealers, he has to let the importer participate financially, if the profits increase. The importer then has to assure that the dealers also support the strategy.

If all those measures are furthermore supported by target oriented promotion, availability of the optional equipments at the dealer and well trained salesmen, focusing on and strategically managing optional equipment sales indeed bears significant profit optimizing potentials for OEM

## 1 Introduction

Interests, expectations, habits and emotions regarding mobility differ significantly around the world and among the different potential customers. Many of the established and most profitable markets for OEM are highly saturated and the potential supply of cars exceeds the natural demand (cf. OECD 2013: 28). OEM have to adapt their products more and more to the individual needs of the clients. This forces the OEM to change their products and strategies from mass production more to mass customization (cf. Dörflinger et al. 2001: 86). By applying mass customization strategies, OEM enable customers to choose rather freely out of a wide set of extra features and options to be built into the car. This opportunity of personalizing and adapting a car to private demands creates USPs and competitive advantages, which allow the OEM to generate more revenues without fully giving up the cost advantages of mass production. Nevertheless many OEM are still facing poor financial results. Necessary investments in new technologies increased and emerging fierce competition lowered market prices and led to heavy discounts. This results in the situation that for many OEM the contribution margin of a basic car is on a critically low level. (cf. Reichhuber 2010: 61) To antagonize the negative trend of decreasing margins per car, strategic management of optional equipment might provide a solution.

### 1.1 Initial Situation

Many trends in the automotive industry seem to induce that there will be an enormous pressure on the OEM's average margin per car in the next years. Due to the saturation in the mature markets, price competition in those areas will increase. Growth is expected merely in emerging and developing economies, where the price level is lower and as a result also the revenues for the OEM are lower. Rising legal requirements in the field of pollution control and safety are elevating the overall costs of the OEM and to conquer new customer groups there is a trend to integrate smaller and cheaper cars in the portfolio. In the first half of 2013, OEM were able to achieve an EBIT and EBIT margin per car as shown in figure 1. The figures were calculated based on the EBIT and sales volumes shown in the annual income statements and adjusted to only include the automotive divisions if applicable and to not include special occurrences that are not directly related to the sales of cars. Since those figures are based on the total revenues, profits from selling optional equipment are already included. Nevertheless the figure shows that except for premium brands as well the absolute as the relative margins on cars are often on a low level.

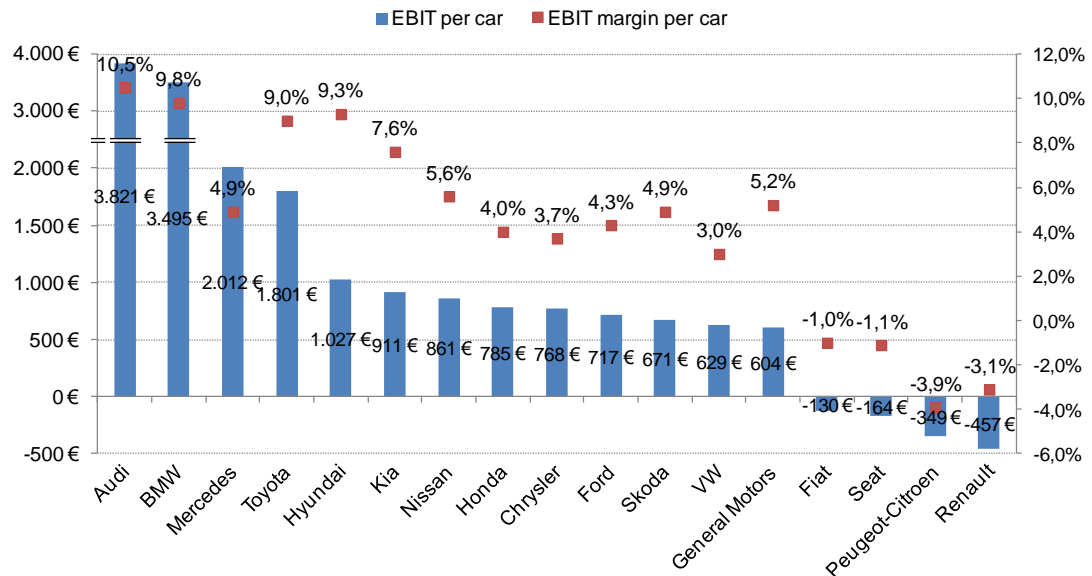


Fig. 1: EBIT and EBIT margin of OEM per car, Jan - Jun 2013, only automotive divisions (cf. CAR-Center Automotive Research 2013)

Optional equipment generates significantly better contribution margins. Having partly rather low unit cost, contribution margins of up to 70-80% can be achieved. In exceptional cases even margins of approximately 100% are realized. Taking a look at the German Volkswagen Golf pricelist (January 2014), the only color included in the list price is “Uranograu”. If the customer wants to have his car in plain black, this costs additional 245€. Both colors are without any metallic or pearl effect, therefore it can be assumed that the unit costs for either paint job are approximately the same. Deducting the German tax and estimating circa 20% margin for the dealer who fixed the contract, selling the optional color to the customer creates around 170€ additional profit for the OEM. This is more than 25% of the EBIT of 629€ per car Volkswagen achieved in 2013. For some models the profit generated out of optional equipment even exceeds the profit generated with the basic car (cf. Ebel 2004: 377). Although optional equipment sales seem to facilitate huge profit increases, OEM’s promotional activities usually do not focus on this field. Most actions target to achieve higher sales numbers, without considering the financial contribution per sold car. Similar observations can be made if distribution channels and networks are analyzed. The quantity of sales and not the quality drags the most attention and resources.

## 1.2 Problem Statement and Aims of the Research Paper

Although optional equipment can have a major impact on the OEM’s profit, the potential of strategically planning the optional equipment sales does not seem to be fully exploited yet. The aim of this thesis is to analyze existing strategies in the area

of optional equipment management, define promising fields of action and create guidelines for profit optimization. Depending on market, brand and model, different strategies should apply because customers' needs vary. In a traditional distribution network of an OEM there are three players that can influence the sales of optional equipment, the OEM itself, the general importer in a country and the dealers. The general strategic orientation has to be indicated by the OEM, therefore the thesis will mainly focus on this player.

Offering the optimal configuration of serial and optional equipment is essential for the success and profit of a car model. Nevertheless the pricing of optional equipment is rarely adapted to specific market requirements. Many OEM base their pricing on a cost-plus calculation or analyses of competitors' prices (cf. Ebel 2004: 378). The real customer value and thus willingness to pay for an option is hardly ever assessed in detail. Furthermore the already rudimental pricing is often being fixed in the home market only and then rolled out to the entire world, not respecting the differing needs of customers in different areas. Mercedes-Benz for example offers most of its optional equipment for approximately the same net price in various countries, although taxation and purchasing power are different (cf. Mercedes-Benz A-Class price list in Germany, Spain and Italy). If this strategy is used, it is very unlikely that the profit maximizing sales price is met in all markets. To meet this optimal price, the correlation between take rate and price has to be known. If customers' price sensitivity to buy an option is identified, the optimal price can be calculated. One of the aims of the thesis therefore will be to evaluate the pricing of optional equipment and derive pricing guidelines. Within this context, the issue of packaging optional items and offering lines and its benefits will also be examined, as well as it will be analyzed which equipment should already be included in the series and which should be offered optionally. While in the US the customers prefer to buy a preconfigured built-to-stock car, Europeans tend to personalize their cars more and purchase built-to-order cars. This also imposes the question, whether there are countries and distribution channels that are more likely to generate higher sales of optional equipment.

Besides price and product, another aspect of the examination will be promotion. Even if the OEM offer a good product at a good price, target-oriented communication on optional equipment could help to improve the profits. It will be subject of the thesis to analyze what opportunities the OEM have to promote optional equipment sales and how to include communication in a comprehensive profit optimization strategy. The effects of traditional media will be evaluated as well as more modern approaches like the online car configurators. To have an even more extensive analysis, in a last step the forms of cooperation with the importers and dealers to improve the profits will be investigated. Figure 2 summarizes the essentials of the initial situation and the aims of the thesis:

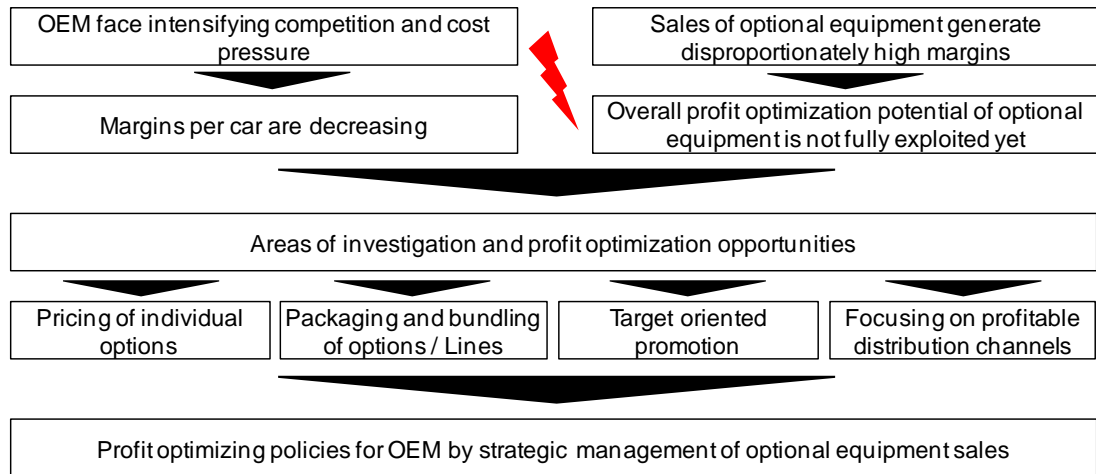


Fig. 2: Initial situation, fields of research and aim of the thesis

### 1.3 Thesis' Structure

The aim of the thesis is to develop profit optimizing strategies in the field of optional equipment. After a short introduction on the initial situation, problems and research focus, a basic understanding of the term optional equipment will be created in chapter 2. To do so, general definitions will be stated and typical characteristics will be explained. Additionally, the relevance of optional equipment in the fields of image building, positioning and revenue creation will be analyzed and presented. An evaluation of current trends in the field of optional equipment will complete this chapter.

Based on the fundamentals evaluated before, in chapter 3, the potentials for profit optimization will be identified and analyzed. Referring to actual practice in the automotive industry, current OEM strategies in the field of optional equipment management will be examined critically. By introducing literature and empirical studies, the existing practices will be dissected to their strengths and weaknesses and analyzed for optimization potential. The research will focus on McCarthy's 4 P's of marketing. The pricing options on optional equipment will be analyzed as well as the specific product offer. Furthermore the aspect of promotion of optional equipment in the external business to customer (B2C) relation and in the internal business to business (B2B) relation between OEM, importer and dealer will be evaluated. Another opportunity of profit enlargement might be in the distribution mix, hence also the benefits of focusing on specific regions or business models as e.g. leasing will be analyzed. Due to the given correlation of those four fields, a clear differentiation will not always be possible.

In chapter 4 the findings created in chapter 3 will be consolidated and profit optimization guidelines will be derived, validated and applied in a business case. The focus will be narrowed down to a representative OEM and the possible impact on the profit will be quantified. Subsequently an exemplarily profit optimization strategy for

a specific model will be developed. Chapter 5 will point out the most striking results and also reflect on open questions. Fig. 3 illustrates the structure.

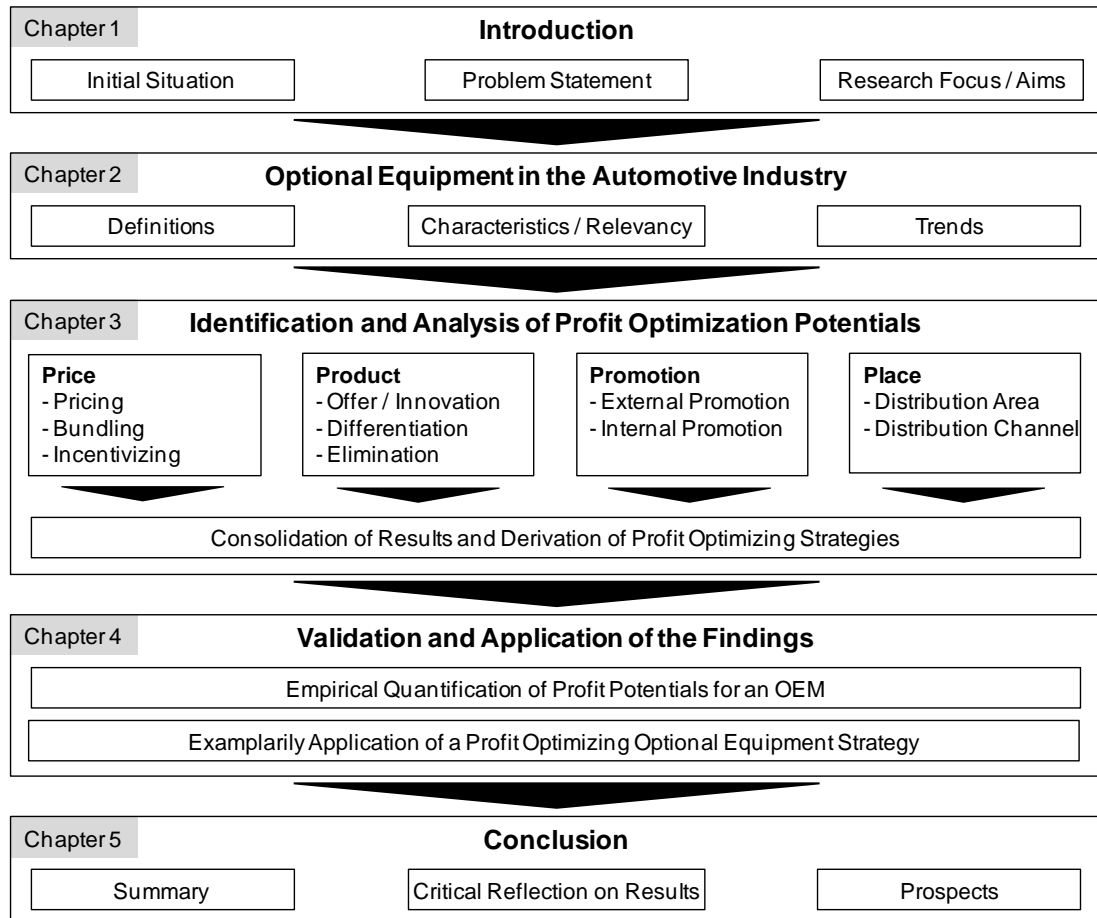


Fig. 3: Thesis' structure

## 2 Optional Equipment in the Automotive Industry

Optional equipment is a customer driven product differentiation that results from the OEM's offer of individual and freely combinable variants (cf. Diez 2006: 147). The difference between serial equipment and optional equipment is not necessarily the product itself, the difference is the possibility of choosing. Serial equipment is generally included in the car, it does not have to be ordered separately and it does not have a surcharge. Nevertheless it can vary depending on market, model or even engine configuration. Optional equipment is not part of the serial equipment and has to be ordered separately. In most cases a surcharge applies. Another group of items customers can choose to buy additionally are genuine accessories or parts. Although they also serve the customers' desire to differentiate the car, they have to be separated from the group of optional equipment. If optional equipment is ordered by the customer, it is built into the car in the factory and therefore has to be considered in the production process. Accessories or parts can be retrofitted and purchased at any time in the lifecycle of the car. The basic definitions stated above are summarized and illustrated with examples in figure 4:

Serial Equipment:	Optional Equipment:	Genuine Accessories & Parts:
<ul style="list-style-type: none"> <li>- Included in the car without explicitly being chosen or paid for.</li> <li>- Can differ depending on market, model or engine configuration to fulfill local or legal needs.</li> <li>- Assembled in the factory.</li> </ul> <p><i>Examples:</i></p> <ul style="list-style-type: none"> <li>- Plain standard steering wheel</li> <li>- Rough road suspension in markets with bad road conditions only</li> </ul>	<ul style="list-style-type: none"> <li>- Customer driven product differentiation.</li> <li>- Additionally chosen items on top of serial equipment, mostly a surcharge applies.</li> <li>- Assembled in the factory.</li> </ul> <p><i>Examples:</i></p> <ul style="list-style-type: none"> <li>- Leather seats instead of standard cloth seats</li> <li>- Bigger rims as in the serial equipment (e.g. upgrade 17" to 18")</li> </ul>	<ul style="list-style-type: none"> <li>- Customer driven product differentiation offered in the after sales business.</li> <li>- Additionally chosen items for an already produced car.</li> <li>- Retrofitting to the car possible.</li> </ul> <p><i>Examples:</i></p> <ul style="list-style-type: none"> <li>- Child car seats</li> <li>- Luggage or ski racks</li> <li>- Snow chains</li> <li>- Special care products</li> </ul>

Fig. 4: Differentiation serial equipment, optional equipment, accessories and parts

Optional equipment can be sold as standalone option, alternatively it is often also bundled in packages. In a package several items are offered together at a fixed price, which is normally cheaper than the addition of the option-prices. Customers thus benefit from a discount, while the OEM can generate additional turnover and try to strengthen the sales of not very often sold items by coupling them to often sold items. Those often sold items are commonly called "heavy items", the not so well appreciated items "sleepers". By the offer of packages, customers are tempted to buy supplemental options they would normally not have considered buying. By increasing the take rate of slow sellers, cross selling and additional sales, overall OEM's profits can be raised. Lines are another special variant of packages. While packages bundle specific options with a discount, lines often include additional distinctive design features and are composed under lifestyle-oriented aspects.

## 2.1 Positioning and Image Building

Customers of middle class vehicles and higher segments pay attention to a wide offer and variety of optional equipment. They want to specify their car to their needs and budget. (cf. Smith 2012: 185f.) In the serial configuration, each car has a basic set of features and characteristics that determine the positioning in the market. Figure 5 shows an idealized set of characteristics for a comparable Mercedes, BMW and Tesla model. The value of the graph represents the customers' perception of the brand's positioning in the specific field. The figures and categories in the spider chart are freely chosen to illustrate the author's statements in the text.

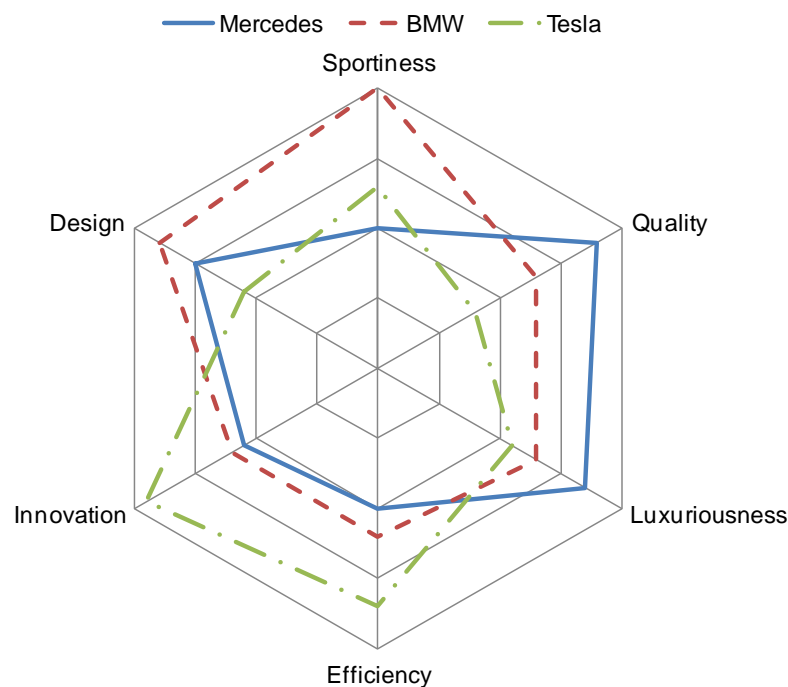


Fig. 5: Exemplary presentation of relevant characteristics for the positioning of a car.

Each OEM has clear strengths and weaknesses in its portfolio. In the hypothetical comparison in figure 5 Mercedes is benchmark in quality and luxuriousness. Its graph has the biggest amplitudes in those fields. BMW is leading in sportiness and design and Tesla occupies the fields of innovation and efficiency. If customers behaved rationally (under assumption of comparable prices) they would have a clear preference for one of those offers according to their personal needs. A customer looking for an innovative car would buy a Tesla, a customer looking for the best quality Mercedes and someone looking for sportiness BMW. Only a specific target group can be addressed with the serial configuration of a car. To enlarge the group of potential customers, optional equipment can be helpful. By offering particular options, the amplitudes for each brand in figure 5 can be shifted towards either field of consideration. Transferring this to the presented example, a customer could be con-

sidering buying a Mercedes but also wants to have an innovative car. In the serial configuration a BMW might better fit the needs, but, by offering innovative technology as optional equipment, the customer might still be convinced to buy a Mercedes, fulfilling his or her wishes by adding optional equipment to the car.

This strategy to use optional equipment to influence the positioning of the car is used mainly in two different ways. New technical innovations are usually sold as standalone options and options that do not represent USPs or innovations are often bundled in specific lines that focus on superior areas as safety, efficiency or sportiness. In many cases technical innovations are introduced to the market as optional equipment in a new model. By doing this, the OEM can present its innovative qualities and improve the brand's image and positioning without having to increase the base price of the model. As long as the innovation is a unique selling proposition (USP) and sold optionally, a skimming strategy can be applied. The objective is to gain as much revenue as possible in the time frame the product remains unique by offering it at a high price (cf. Kroll-Thaller 2013: 50). Since there does not exist an alternative on the market, customers who see additional benefits in the innovation are willing to pay this premium and revenues will be improved. Nowadays it can be seen more and more in the automotive industry that the period an innovation remains a USP shortens. The innovations are adopted at competitors and penetrate new segments rather quickly. Figure 6 shows the market penetration of cruise control in the Audi portfolio. This option was brought to the market at first in the A8 as an option, showing the technological competence of the brand in a segment where customers have the highest expectations and invest the most money. After an introduction phase as standalone option it was included in lines and packages and nowadays it is standard in all cars. At the same time it also entered other segments and take rates increased rapidly.

Take Rate Cruise Control	1998	2000	2002	2004	2006	2008
Audi A8	80%	85%	99%	100%	100%	100%
Audi A6	41%	52%	70%	80%	80%	85%
Audi A4	25%	35%	34%	53%	60%	66%
Audi A3	4%	8%	55%	26%	30%	50%

Fig. 6: Market penetration of cruise control in the Audi portfolio (data based on PISA<sup>1</sup>)

The increasing take rates and the rising market penetration in lower segments are representative for many nowadays innovations. The technologies lose their differen-

<sup>1</sup> PISA: Produktions-IST-Daten Auswertung. Audi internal IT-system to monitor the take rates of options based on production data.

tiating status rather quickly and develop from being technologically outstanding to being almost standard or taken for granted in a short period of time. However, by increasing the overall volume of the option cruise control, economies of scale can be realized. This means that the lowered customers' willingness to pay for this option is partly compensated by the lowered costs (cf. Gottschalk 2007: 109). From a cost perspective, today it is cheaper for the OEM to use electric window lifts than manual ones (cf. Ebel 2004: 389). The enormous increase of the take rate in the A3 in 2002 also shows a typical example of how optional equipment can be used in the lifecycle management to position the car. The first generation of the A3 was sold in Europe until 2003. At the end of the lifecycle discounted packages including cruise control were created to improve the price/value relation of the car without lowering the price of the basic version. This shows that optional equipment cannot only be used for positioning a car as being very innovative in the starting phase but also to influence the positioning in the dimension of price perception in the eyes of the customer.

The concept of lines is another very common strategy to position the car and attract a broader customer group and improve the profits. Lines often not only include freely available optional equipment but also distinctive design features. They support a more flexible positioning, are supposed to attract specific customers and are composed under lifestyle-oriented aspects (cf. Bauer 1997: 3). Contrary to regular packages, lines are often marketed as independent models within the series. In many cases, they are separately declared in the price list with a total MSRP and not only with a package price. The importance of lines for the positioning and revenue of a car series can be derived from the fact, that many OEM apply the approach. Not only for example Audi, BMW and Mercedes apply the strategy in many markets, also OEM from abroad like Volvo, Kia or Nissan do so. Figure 7 shows the additional equipment of the Ambition and Ambiente line compared to the serial version of the Audi A3, which is called "Attraction" (Germany, January 2014).

<b>Audi A3 Ambition</b>	<b>Audi A3 Ambiente</b>
<i><b>Interior</b></i>	<i><b>Interior</b></i>
Decorative inlays Micrometallic	Decorative inlays 3d optics Luv
Aluminium door sill trims	Black door sill trims
Rallye cloth upholstery	Regatta/mono pur cloth upholstery
<i><b>Exterior</b></i>	<i><b>Exterior</b></i>
17-inch x 7.5J '5-arm design' alloy wheels	16-inch x 7J '15-spoke Y-design' alloy wheels
Chrome exhaust tailpipe trims	Chrome exhaust tailpipe trims
<i><b>Functional differentiation</b></i>	<i><b>Functional differentiation</b></i>
Front sports seats	Cruise control
3-spoke leather sports steering wheel	4-spoke leather steering wheel
Color driver's information system	Color driver's information system
Audi Drive Select	Advanced parking system rear
Front fog lights	Center armrest
Sports suspension, lowered by 15mm	Interior lighting package

Fig. 7: Line structure of the Audi A3 in Germany January 2014

The surcharge for both lines is 1.900€. The Ambition line is mainly promoted with the expressions sportiness and dynamic, the Ambiente line stands for luxury and comfort. This intended positioning of the car is supported by the contents of the line. While the Ambition features a lot of items that give the car a sportier look and feel, the Ambiente focuses on comfort items. It is not possible to combine both in one order and some of the interior and exterior design features are exclusively available in the elected line. By offering this product structure, the OEM can communicate a low entry price for the basic configuration but can also supply the customer with an adequate sportier or more comfortable model. A bigger target group can be addressed and the car can be positioned and promoted more flexible. If the OEM manages to control the additional costs for the lines, chances for profit optimization through upselling and bundling of options are created.

Optional equipment contributes considerably to the image and positioning of a car. Most innovations penetrate the market as options. These innovations help shaping the image of a brand in the automotive industry. Because most new technologies are rather expensive at the beginning of the lifecycle, it makes the car too expensive to include them in the basic version. Nevertheless they still positively affect the brand's image, even if offered optionally. Examples are ABS, which promoted Mercedes-Benz' image of paying importance to safety in their cars or the LED-daytime-running-lights in the Audi portfolio which gave the brand a boost in the customers'

perception to be an innovative OEM. Both technologies were not standard in the cars but still the brands were associated with those technologies. (cf. AMS 2010) Having those technologies available for the customer creates leeway for positioning the car. With good promotion and product offer, the characteristics of a car can be pushed in either direction. By the inclusion of optional equipment, a larger target group can be addressed. One model can be attractive to customers looking for a sporty car as well as for someone looking for a more comfortable one. This of course also works in other dimensions as for example design, quality or even efficiency.

## 2.2 Revenue Management

As stated before, expressed as a percentage, optional equipment has a higher rate of return as the basic car. It is a logical assumption that OEM should try to sell as much extensively equipped cars as possible. Looking especially at the German premium OEM, this indeed seems to be a common strategy. Figure 8 shows the maximum possible spending on optional equipment on an Audi A8 in comparison to a Lexus LS in Germany. Those two cars have a similar positioning and base prices in the market. In case there were multiple options for a specific function, the most expensive one was chosen.

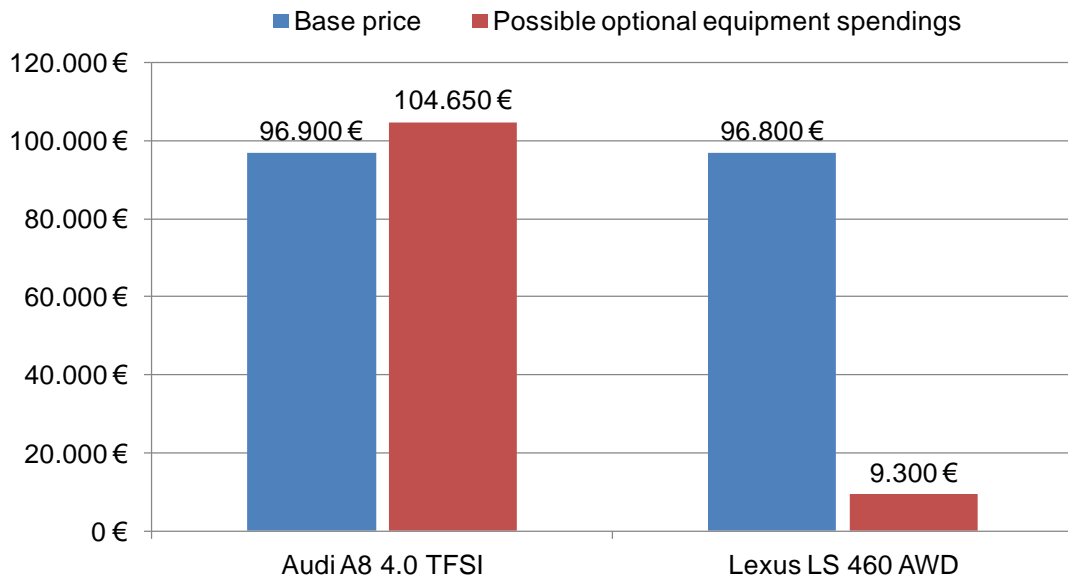


Fig. 8: Comparison of possible spending on optional equipment (based on Audi and Lexus pricelist, January 2013)

An Audi customer can spend over 100.00€ on individualization of his car, which is ten times more as on the Lexus. Audi tries to exploit the potential out of optional equipment sales to generate additional profits. It does not seem to be logical at all that Lexus has another strategy, but, having a closer look at the global footprint of

the brand, there might be two main reasons for it. The core market for Lexus is the US. American customers tend to buy well equipped built to stock cars directly from the dealer. They are neither used nor willing to specify their cars themselves and having to wait for it to be produced. The other reason might be that the abandonment of substantial optional equipment business reduces complexity and development efforts and hence lowers the costs. Which strategy promises the most profits is always dependent on the OEM's global bias, customer groups and ability to handle complexity. There cannot be a "one fits all" strategy in managing optional equipment sales but the Audi example shows that if an OEM manages to handle complexity and achieves high take rates on provided options, the profit on optional equipment sales can even outperform the basic car in absolute terms. In the German premium segment approximately 20% of the total turnover is generated with optional equipment with associated beneficial rates of return (cf. Renz 2009: 3). The quota for most other OEM is many times lower, often due to a more fully equipped built to stock strategy.

As described in the last paragraph, on the one hand optional equipment can be used to generate additional turnover with a high rate of return. On the other hand, offering many options can also be used to support the sales of the basic car to not lose revenues for example in a late phase of a product's lifecycle. A normal car's lifecycle is approximately 7 years. Figure 9 shows 5 different phases in the lifecycle of a car:

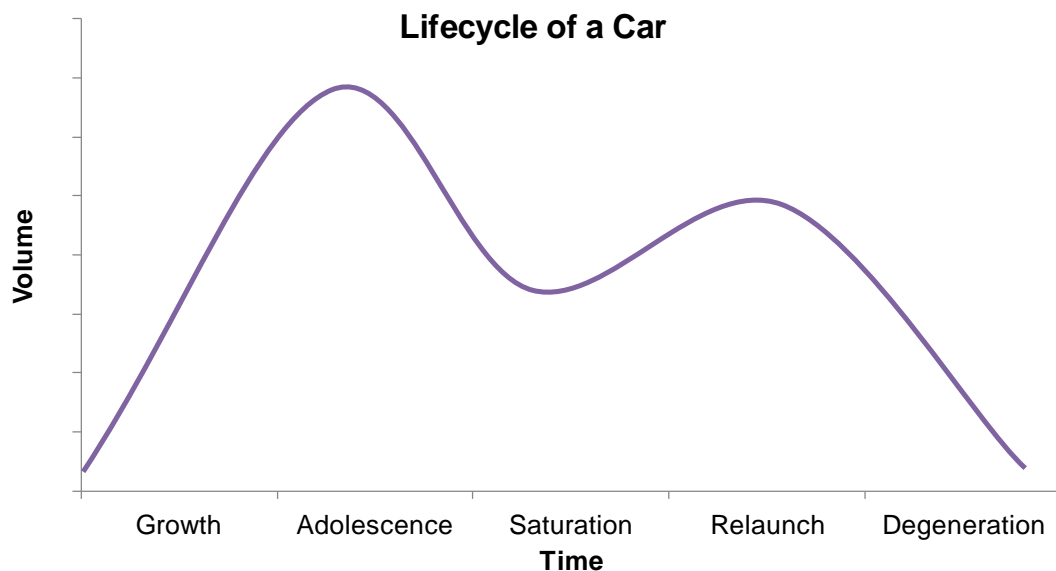


Fig. 9: Lifecycle phases of a car

During the lifecycle of a car, customers' interest in a specific car model changes. In the growth phase the car is new on the market and technologically state of the art. After reaching a state of adolescence, the market starts to be saturated with this

model. The novelty of the car has passed by and competition was able to react and maybe now even sells a newer model. To be able to remain selling significant volumes and to cope with competition, the OEM mainly has two options. Either the price can be reduced or the product substance improved. If the OEM has much optional equipment in its portfolio, in the phase of saturation some options can easily be added to the serial equipment to improve the price/value ratio and to keep on attracting customers. In this case not necessarily additional turnover is created with the options but it is avoided to lose sales volumes or to reduce the vehicle's price. On the long term, improving serial configuration at later stages of the lifecycle costs less than purely reacting with the pricing. Options become outdated and customers' willingness to pay for them decreases anyways, additionally the reference price for a successor model will not be brought down too much due to pricing measures on the predecessor. The same accounts for the degeneration phase after the relaunch, which is a visible product improvement within the lifecycle of a model.

Although offering much optional equipment and personalization to the customer creates an enormous complexity and challenges in the entire value chain, it can have a positive impact on the OEM's profits. On top to the already presented benefits for the positioning and image of a car, the rates of return on optional equipment are high and offering many choices allows skimming the full budget of the customer. In extreme cases it is possible to double the turnover per car, on average depending on brand and market customers spend 5-20% on top of the MSRP for optional equipment (cf. Ebel 2004: 377). Having a wide variety of additional equipment in the portfolio also creates leeway and flexibility in the lifecycle planning of a car, which has positive effects on the overall profits.

### **2.3 Trends**

A clear tendency in the automotive industry is to offer better equipped cars. Leaving out the sector of low cost and ultra low cost cars, the rising customers' desires for individuality seem to provide not yet utilized potentials. The following numbers support this statement. The total turnover on the German automotive market was almost tripled since 1985 while volumes increased only by approximately 40%. The difference can be assigned to increasing engine performance and an extended equipment standard in the cars (cf. Diez 2006: 89). Especially in the field of safety and comfort, new technical developments achieve significant growth rates. Keyless access and go, lane assists, night vision and many other features entered today's cars. The field of infotainment quickly evolves and navigation systems with dynamic route guidance, internet access, automated parking assistance and voice control are becoming more and more common. Only the technical feasibility and the risk of too extraordinary features will limit the growth of the optional equipment business in the future.

At the same time the luxury segment grows on a worldwide level. Especially in the emerging markets more and more people are able to own a car and often the car is used to represent status. This is also an opportunity for the OEM to generate profits with further individualization.

Another important trend affecting the business with optional equipment is the expanding focus on new target groups and specific equipment. Due to demographic reasons, the number of female and elderly customers is going to grow. The purchasing power of those groups is increasing and therefore it can be expected that there will be offered equipment, which has been developed especially for those customers. While young men rather pay attention to the prestige of their car, females and the elderly often prefer utility. (cf. Lienhard 2006: 33)

### **3 Identification and Analysis of Profit Optimization Potentials**

The first two chapters of this thesis show that optional equipment sales and offers have a significant impact on OEM's margins and sales volumes. Several fields were identified where optimization potentials might be revealed. Better understanding customers' behavior and guiding them to buy profit-optimized cars contributes tremendously to the OEM's performance. In this chapter, chances and risk of several strategies will be evaluated, ways of improvement analyzed and the overall impact on an OEM rated.

#### **3.1 Pricing of Optional Equipment**

The intention of defining a specific price for a good should be to generate as much accumulated profit as possible. If a new price is to be set, it is important to implement an appropriate one right from the introduction of the product to the market. A too low price can only be raised within a longer period of time and a too high price can lead to a failure in the market. In both scenarios profit potentials are wasted, thus pricing has to be performed very thoroughly. (cf. Dolan 1996: 17f.) To illustrate the effect of pricing on the profit, one can think of the following example: An OEM sells 100.000 units per year directly to the customer for 10.000€. The variable costs per car are 6.000€, therefore each car contributes with 4.000€ to the recovery of fixed cost and profit generation. If fixed costs are estimated to be 300 Mio. €, the current sales volumes and price leads to a profit of 100 Mio. € (10.000 units x 4.000€ contribution - 300 Mio. € fixed costs) and a return on sales of 10%, which is a realistic figure in the premium automotive industry. If now prices are reduced by 20%, the contribution per car is lowered by 50%, resulting in the challenge to have to double the sales volume to compensate for the loss and achieve the same profit as before. On the other hand, a price increase of 20% can compensate 33% loss in volume in the presented setting. Fig. 10 illustrates the different scenarios and shows the high leverage effects of price optimization.

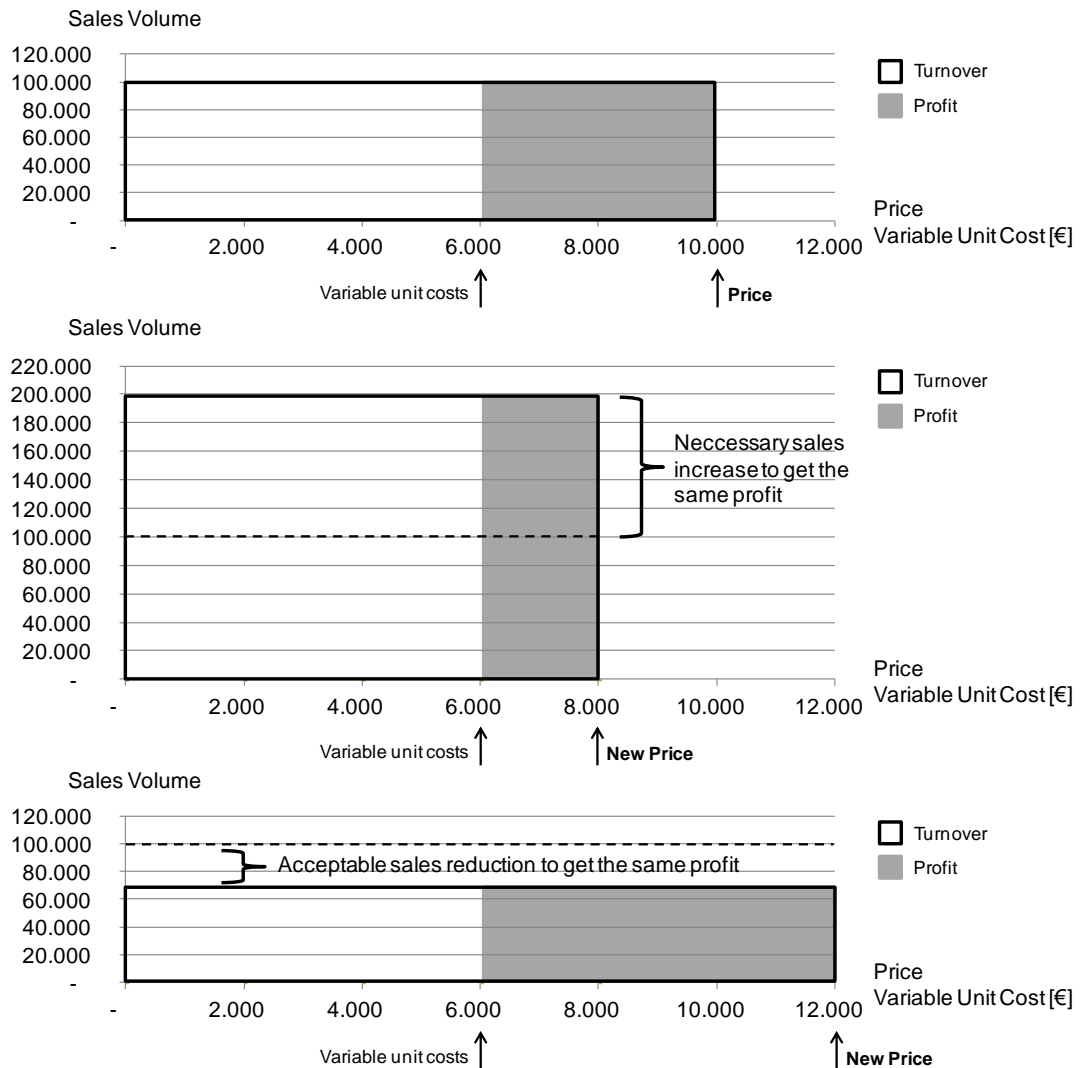


Fig. 10: Leverage effects of price and profit (cf. Dolan 1996: 20)

In traditional approaches, pricing is often based on a cost plus calculation or on competitors' prices. In a cost plus calculation, a premium is added to the costs of an item and this determines the retail price. The weakness of this approach is that the value for the customer is not considered in the process. In some cases it might be that customers see a higher value in an item, in some cases it might be that customers do not consider the item as valuable as it is priced with the cost plus approach. The probability to meet the profit optimal price is rather low and randomly. (cf. Simon 2008: 190f.) If pricing is based on competitors' prices, it is also unlikely to reach the profit optimal price. Influences as having a different target group, having a different positioning in the market or having other core selling proposals to the customer are not reflected. Figure 11 shows the customers' willingness to pay for selected items under certain circumstances as a result of a conjoint analysis and relates the price acceptance to the unit costs. A conjoint analysis is a statistical tech-

nique used in market research to explain and predict preferences and values people give to different features (cf. Gustafsson 2007: 4).

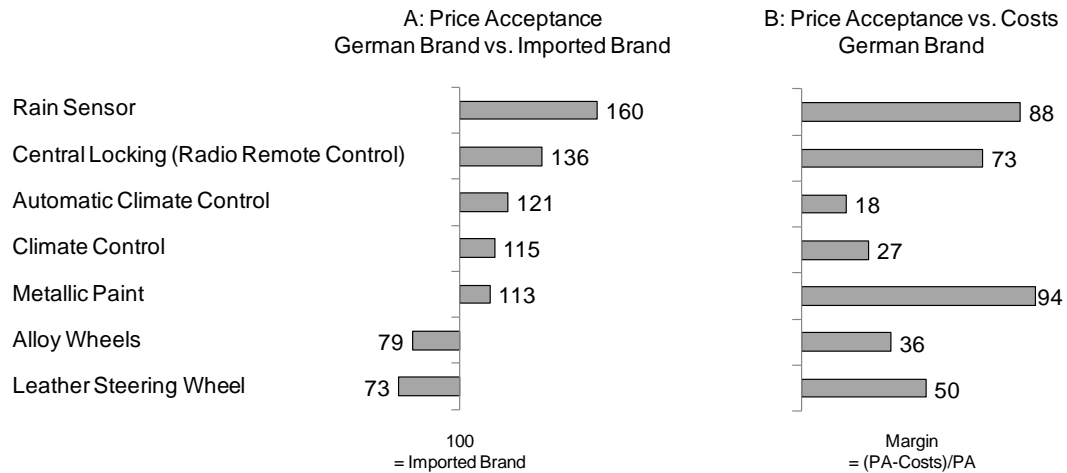


Fig. 11: Price acceptance depending on origin of car (A) and relation of price acceptance and unit costs (B) (Ebel 2004: 379)

Figure 11 A shows that depending on the origin of the car, customers have a different price tolerance for identical items. Figure 11 B shows that the ratio between unit costs and customers' willingness to pay is strongly diverse for different items. Those two figures support the statement that neither the cost plus approach nor the horizontal pricing approach lead to the most beneficial optional equipment prices. The pricing should reflect the specific positioning and competitive environment of the OEM as much as possible and therefore ought to be based on the target groups' individual willingness to pay for each particular item.

In the case of optional equipment this means that the key to implementing a successful pricing strategy is the understanding of the interrelation between the prices and take rates of items. If an optimal price scenario is being developed, customers' average price acceptance for each item has to be analyzed. Nevertheless it is important to not only look at the average price acceptance but also at the distribution of customers' tolerance towards prices. Especially for optional equipment, wide differences of the distribution can be observed. Figure 12 shows the distribution of the price acceptance for 4-wheel drive and a sunroof.

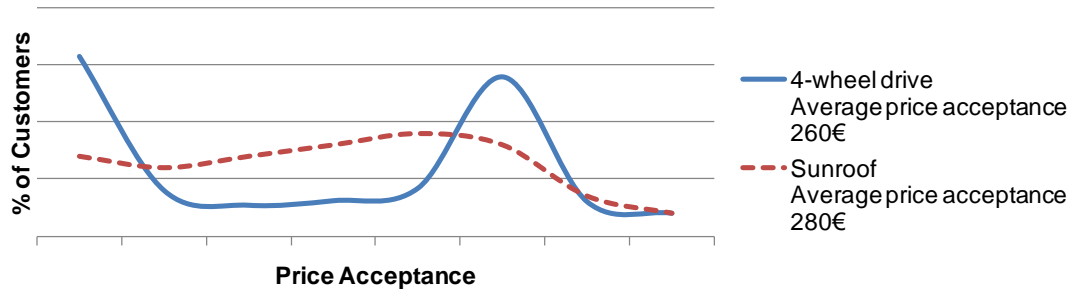


Fig. 12: Price acceptance for 4-wheel drive and sunroof (Ebel 2004: 381)

Although the average prices which customers are willing to pay are comparable, the distribution is on a totally different level. Not many customers are interested in a 4-wheel drive and will not order it, unless it is nearly for free. Those few people who are interested in the option expect a high benefit out of it (e.g. because they are living in the mountains and therefore can make use of the superior winter characteristics of this type of drive) and thus are willing to pay a high premium for it. The distribution for the sunroof is much smoother. The item is generally attractive for most of the customers but depending on the personal value given for the item the price acceptance alternates in a wider interval. Those different distribution curves clearly affect the pricing possibilities. Starting at a rather high price, a price decrease for the 4-wheel drive would probably not increase the take rate tremendously. The people who are interested in this technology see a high value in it and will also buy it at the higher price level. For the majority of the customers, the technology only becomes attractive at a very low price which might even be below the unit costs for the OEM. Reductions of the price therefore would not make sense, because the additional volume could not compensate the loss by the price decrease (cf. leverage effects of pricing, prior in this chapter). For the sunroof the situation is different. Decreases in price will generate several additional sales, the price sensitivity is bigger. In this case, reducing the price could be more than compensated by additionally sold volume and hence profit could increase.

If the demand sensitivity related to the price is known, the turnover depending on the price can be calculated. After offsetting the variable and fixed production costs, the optimal price and the resulting profit can be calculated. Figure 13 shows this basic principle graphically.

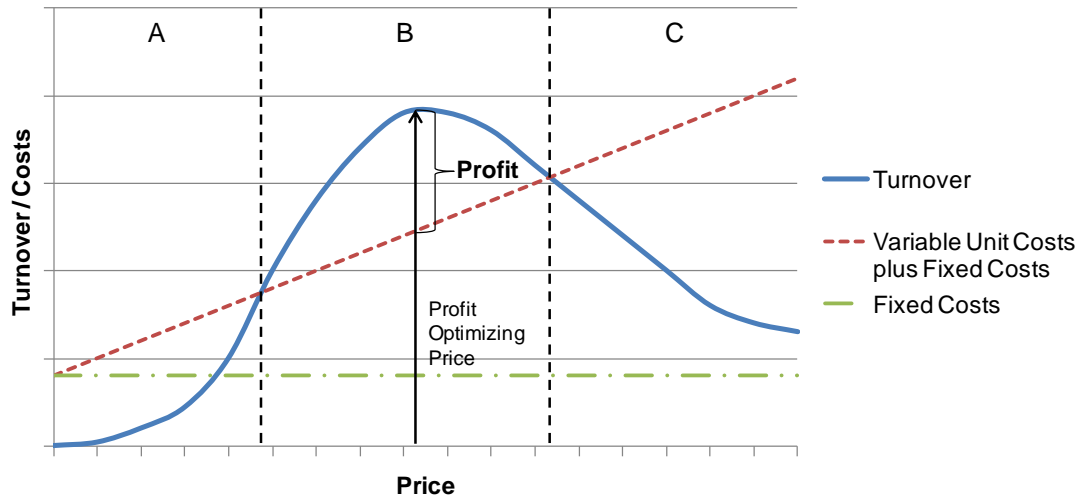


Fig. 13 Profit depending on price sensitivity

In section A of the diagram the price for the option is low. Although this generates a high demand, the overall turnover achieved does not cover the overall costs and therefore a loss occurs. In section B of the diagram, the relation between price and take rate creates more turnover as costs. By selling the option at a price out of this section's range, profits are made. The marked price is the profit optimizing price. At this price the relation between take rate and price per unit creates the biggest output. At higher prices, the resulting reduction of sales volumes has a bigger impact than the additional turnover per unit and the overall turnover decreases. In section C this effect even leads to losses because the overall cost cannot be covered anymore due to the low take rate.

The challenge of the described process is to collect all the necessary data for each item in all relevant markets. To be able to provide a sound analysis, the value of the items for the customer, the price sensitivity and the overall customers' budget have to be known. The information can be gathered by conjoint measurement studies but this requires a lot of effort and the target group has to be identified correctly. The output out of those price optimization efforts is said to be a profit increase of around 10% - 15% (cf. Ebel 2004: 382). OEM therefore should definitely try to exploit this potential, but it is advised to focus on the most relevant items for the customers and the ones that have a rather big impact on the overall profit, because the process is very complex and time consuming.

### 3.2 Packaging of Optional Equipment

Chapter 3.1 focused on the optimization of the pricing for single items. On top of the optional equipment price list, most OEM offer packages. These are predefined combinations of several items, sold with a discount. "Bundling is the widespread practice

of offering a number of products or services in a single package at an attractive price.” (Fuerderer 1999: 61) Fig. 14 shows a selection of packages being sold in the Dutch market for the Audi A3, BMW 1 series, Volvo V40 and Volkswagen Golf:

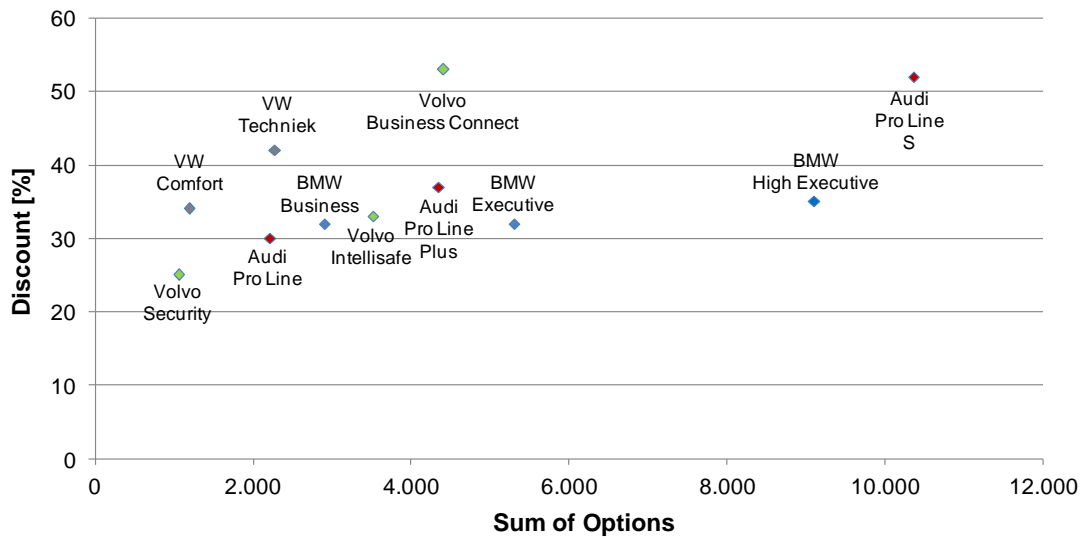


Fig. 14: Package discounts in Dutch compact car segment (OEM’s pricelists May 2014)

It can be seen that heavy discounts of up to 50% are being applied. This raises the question, what strategy could be behind those price reductions and whether this can be a positive business case. To analyze the effects of packaging, some propositions have to be made.

This thesis focuses on the profit optimization of optional equipment sales. As stated in the second chapter, packages can also be used to stabilize the lifecycle and secure the sales volumes of the basic car. Based on the general profit on a car without optional equipment, in late stages of the lifecycle it can be profitable to make the model more attractive to the customer by offering heavily discounted optional packages instead of reducing the base price. In this case the profit on optional equipment can even be reduced, with the intention to compensate this by the profit out of the model sales. This strategy will not be analyzed in detail, but it explains, why discounts on some packages are so high that the unit costs for the contents are not even covered anymore.

Another proposition for this analysis is that all options considered for packaging are also available as standalone options in the price lists. The pricing and composition of packages right from the start of production of a new model is subject to the same processes to price single options as described in chapter 3.1. Nevertheless, due to the interdependencies between the items and prices it is even more complicated to be done in an adequate quality. To optimize the sales of existing optional equipment

for a running model, data about the current sales with the current prices have to be available.

In general, optimization through packaging targets to find an ideal price for a set of items to generate additional profit by increasing the sales volumes. Even if the prices of the optional items prove to be profit optimized, packages can transfer unused price acceptance from one item to another (cf. Simon 2013: 182). In a simplified example this could create the following situation. Conjoint measurement studies pointed to an optimal price for leather seats of 1.200€ and for parking assistance in the front and rear of the vehicle of 900€. A specific customer has a personal price acceptance of 1.300€ for the leather seats and 500€ for the parking system. In this constellation only the leather seats will be bought. If the OEM bundles the two items together for a price of 1.800€, the customer can buy both items for exactly the price he is willing to pay. If the unit costs per item are at 33% of the basic price, the profit out of the two outlined items made with this customer increases from 800€ (1.200€-400€) to 1.100€ (1.800€-400€-300€). The price reduction of approximately 15% leads to an increase of profit of 38%. The challenge of successful packaging lies in the difficulty to skim unused price acceptance among all customers without cannibalizing sales on a higher profit level. Fig. 15 shows three different scenarios that demonstrate the effect on the overall profit under changing circumstances.

**Scenario 1: regular prices, no package offer, unit costs 33% of base price**

Customer	Price Acceptance Leather Seats	Price Leather Seats	Buy?	Price Acceptance Parking System	Price Parking System	Buy?	Profit
1	600	1.200	No	1.000	900	Yes	600
2	750	1.200	No	900	900	Yes	600
3	1.300	1.200	Yes	500	900	No	800
4	1.500	1.200	Yes	300	900	No	800
							<b>2.800</b>

**Scenario 2: package offer for 1.600€, unit costs unchanged at 33% of base price**

Customer	Price Acceptance Leather Seats & Parking System	Package Price Leather Seats & Parking System	Buy?	Profit
1	1.600	1.600	Yes	900
2	1.650	1.600	Yes	900
3	1.800	1.600	Yes	900
4	1.800	1.600	Yes	900
				<b>3.600</b>

**Scenario 3: package offer for 1.300€, unit costs unchanged at 33% of base price**

Customer	Price Acceptance Leather Seats & Parking System	Package Price Leather Seats & Parking System	Buy?	Profit
1	1.600	1.350	Yes	650
2	1.650	1.350	Yes	650
3	1.800	1.350	Yes	650
4	1.800	1.350	Yes	650
				<b>2.600</b>

Fig. 15: Profit optimization scenario by bundling

In the first scenario, the options are offered at the regular price. Customers 1 to 4 have different price acceptances for the items and hence customer 1 and 2 will only buy the parking system and customer 3 and 4 only the leather seats. This leads to a profit of 2.800€. Nevertheless a major amount out of the customers' overall price acceptance is not yet absorbed by the OEM. In scenario 2, the OEM offers both items in a package for 1.600€. All four customers are willing to invest this amount for the two items and the turnover is being increased. By bundling the two items together, unused price acceptances from the customers for one product are transmitted to another one. With the supposed cost structure, overall profit increases by approximately 30%. The third scenario shows the risks of packaging items. Although in this scenario turnover is also being increased, profits are being reduced because sales on a more profitable level are being cannibalized. To be financially viable, packages have to win new customers with a discount that is lower than the margin on the items and the effect may not be diminished by the loss of profit, generated by those customers who would have also bought the items at a higher price level.

The first step to optimize optional equipment profit by bundling options in packages is to know the current status. Even if the prices of the most important items were thoroughly considered, it might turn out that due to changing customers' expectations, competitors' actions or many other influences, items have a different take rate in reality as expected in the planning phase. With the initial pricing, the customers' price acceptance is not met (anymore). Changing the price of an optional item within the lifecycle of a car is very uncommon, because it aggravates customers, who bought at a higher price. Therefore the more nontransparent way to discount the item would be to include it in a package.

The profit of the current optional equipment sales can be calculated, if the take rate of the items and the profit per sold item is known. OEM headquarters should have this data at their disposal, for this thesis, the figures will only be estimated. Figure 16 shows the hypothetical profit on optional equipment sales for the Volkswagen Passat in the United Kingdom. For the calculation, the prices of the items were taken from the current pricelist, converted to euro and discounted by a uniform factor to respect the dealer and importer margins to obtain the turnover/price per item on OEM-level. The take rates and margins were estimated based on interviews and expert knowledge.

Optional Equipment	Take Rate		Price	Unit Costs	Profit per Item		Weighted Profit per Car	Group
Metallic Paint	85%	A	390 €	20 €	371 €	A	315 €	A A
Upholstery – 'Vienna' leather	35%	B	1.310 €	537 €	773 €	A	271 €	B A
Gas discharge (Bi-xenon) headlights	57%	B	950 €	475 €	475 €	A	271 €	B A
Navigation/DAB radio system	70%	A	550 €	176 €	374 €	A	262 €	A A
Climate control	84%	A	380 €	103 €	277 €	B	233 €	A B
18" rims	30%	B	780 €	156 €	624 €	A	187 €	B A
17" rims	40%	B	430 €	86 €	344 €	A	138 €	B A
Ambient lighting pack	69%	A	340 €	146 €	194 €	B	134 €	A B
'R-Line' styling pack	15%	C	840 €	151 €	689 €	A	103 €	C A
Upholstery – 'Nappa' leather	12%	C	1.590 €	827 €	763 €	A	92 €	C A
Cruise Control	50%	B	200 €	40 €	160 €	B	80 €	B B
Headlight washer system	60%	A	200 €	76 €	124 €	B	74 €	A B
Heated front seats	44%	B	200 €	58 €	142 €	B	62 €	B B
Towbar – swivelling	14%	C	630 €	202 €	428 €	A	60 €	C A
Multifunction colour display	63%	A	120 €	35 €	85 €	C	54 €	A C
Cargo management system	42%	B	200 €	78 €	122 €	B	51 €	B B
Panoramic sunroof	15%	C	670 €	348 €	322 €	A	48 €	C A
Tyre pressure monitoring system	50%	B	110 €	19 €	91 €	C	46 €	B C
Parking sensors, front and rear	20%	C	320 €	96 €	224 €	B	45 €	C B
Front fog lights	34%	B	180 €	54 €	126 €	B	43 €	B B
Carpet mats	91%	A	60 €	17 €	43 €	C	39 €	A C
Brushed aluminium inserts	24%	C	240 €	72 €	168 €	B	40 €	C B
Roof rails	32%	B	170 €	48 €	122 €	B	39 €	B B
DAB radio system	17%	C	250 €	30 €	220 €	B	37 €	C B
Adaptive Cruise Control (ACC)	9%	C	710 €	355 €	355 €	A	32 €	C A
Rooflining	18%	C	160 €	16 €	144 €	B	26 €	C B
Electric tailgate	25%	C	250 €	150 €	100 €	B	25 €	C B
Heated windscreen	32%	B	110 €	32 €	78 €	C	25 €	B C
Integrated child seats	12%	C	290 €	145 €	145 €	B	17 €	C B
Tinted glass	12%	C	160 €	19 €	141 €	B	17 €	C B
Luggage net	41%	B	50 €	15 €	35 €	C	14 €	B C
Keyless entry	11%	C	320 €	176 €	144 €	B	16 €	C B
Electric folding mirrors	22%	C	100 €	31 €	69 €	C	15 €	C C
Parking heater	3%	C	820 €	369 €	451 €	A	14 €	C A
Front seats with lumbar adjustment	17%	C	110 €	36 €	74 €	C	13 €	C C
Side airbag system, rear	9%	C	220 €	121 €	99 €	C	9 €	C C
Dynamic Chassis Control (DCC)	3%	C	600 €	330 €	270 €	B	8 €	C B
Rear-view camera	8%	C	90 €	26 €	64 €	C	5 €	C C
Park Assist	5%	C	150 €	50 €	101 €	B	5 €	C B
Lane Assist	3%	C	310 €	164 €	146 €	B	4 €	C B
High Beam Assist	7%	C	80 €	68 €	12 €	C	1 €	C C
Boot space mat	3%	C	40 €	23 €	17 €	C	1 €	C C

Fig. 16: Volkswagen Passat, hypothetical profit on optional equipment

The table above is sorted by the weighted profit per car. The weighted profit per car equates to the profit per item multiplied with the take rate and in this example adds up to 2.970€, which seems to be a slightly too high number, given Volkswagen's EBIT margin per car presented in Figure 1. Nevertheless, even if the data is not fully valid, the table can support explaining the basic mechanisms in optimizing the profit.

The optional equipment can be categorized in different groups, depending on the take rate and profit per item. In Figure 16, items with a take rate higher than 60% were marked with an "A", items with a take rate of 59% to 30% with a "B" and less popular items with a "C". A comparable logic has also been used to classify the profit per item. Items scoring more than 300€ profit were marked "A", items between 300€ and 100€ "B" and items below 100€ "C". An item marked "AA" therefore has a high take rate and high profit, "AB" stands for high take rate and medium profit, "CB"

for a low take rate and medium profit and so on. Depending on the categorization of an object, the priority of strategically using it in package offers should be determined. Especially items with low to medium take rates and medium to high profits ("CA", "CB", "BA", "BB") should be used in packages, because they have the biggest leeway to contribute to higher profits by the increase of the take rate at an economically justifiable discount. Items that already have a low contribution or items that have a high contribution and at the same time a high take rate should not be used and discounted in packages. The additional profit by the increase in sales volumes for items already having a low contribution will be minimized by the discount and for items that have a high take rate and profit, the potential by the increase in sales volumes is smaller than the loss by the reduced price. An example for this is metallic paint. Already 85% of the customers buy the item at the full price. If the price is reduced by a specific amount, this might help to increase the take rate to 90%, but not only the conquered new 5% pay the reduced price but also the 85% of the customers, who were also willing to pay a higher price. Fig. 17 shows the different groups of items and marks the auspicious fields of action.

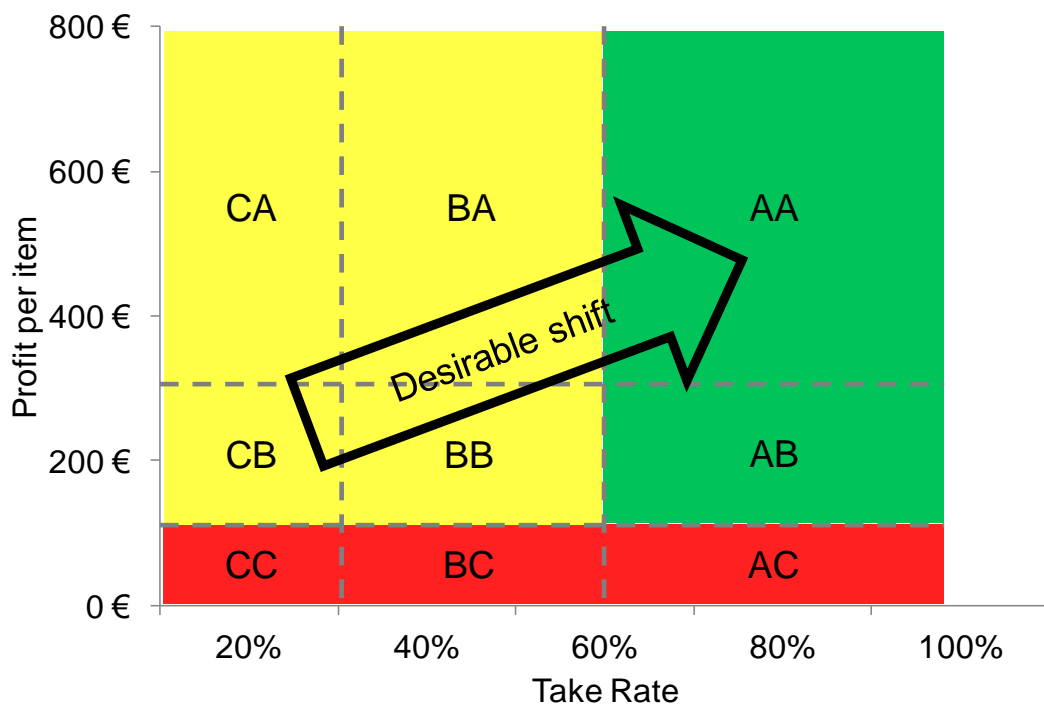


Fig. 17: Classification of optional equipment

The items in the red classification generate a low profit per item, therefore increasing the take rate by utilizing them in packages and lowering the margin even more does not contribute to a profit optimization. The items in the green classification have a high margin and a high take rate. Many people are willing to pay the full price without a discount. The items in the yellow area have an acceptable profit but rather

low take rates. The positive effect of an increase of sales volumes if the items are sold in a discounted package could compensate the reduction of the profit per item.

After having identified the most promising items for profit optimization the process of building a package can be started. Just like in the regular pricing process for options, the two levers that influence the profit of a package are the price and the take rate. Adjacent to the financial optimization of the package contents, it also has to be considered and realistically estimated how many customers will be interested in the package. A package purely with items that have a very low take rate and hence do not seem to be attractive to the customers will probably never be sold numerously, even with a discount. On the other hand, a package full with attractive items will probably be sold successfully, but the financial consequences might be negative because the effect coming from the discount is higher than the one from the additional take rate. The challenge is to find a good product offer that consists of some items that really attract the customers to buy the package and some items that are not sold that well as standalone option but that have a good contribution per unit and might be interesting for the customers at a lower price.

After having made a preliminary decision on what items shall be used in the package, the effect on the profit has to be calculated. By using the data presented in figure 16, the profit contribution of the items before packaging can easily be calculated. To calculate the profit after packaging, assumptions have to be made. The discount and corresponding take rate have to be estimated. As stated before, a detailed scientific analysis on the take rate and price sensitivity for packages is hardly possible, therefore plausibility checks and experiences of the past should be incorporated. Nevertheless, the estimation of the take rate will always be a weakness of the proposed optimization processes. To minimize the risk of making wrong decisions, different scenarios should be evaluated: A most likely scenario, an optimistic scenario and a pessimistic scenario. By the use of quantitative tools as basic statistical analysis and Monte Carlo simulation, the pool of data should be valid enough to make a substantiated decision (cf. Lehman 2011: 27f.). Figure 18 shows the analysis of one scenario. Based on the margins and take rates in Figure 16, it is estimated that bundling the named items and giving a discount of 20% will lead to a package take rate of 20%.

Situation without Package					
Optional Equipment	Take Rate	Price	Costs	Profit per Item	Weighted Profit per Car
Lane Assist	3%	310	164	146	4
Keyless Entry	11%	320	177	143	16
DAB radio system	17%	250	30	220	37
Rear-view camera	8%	90	26	64	5
Adaptive Cruise Control	9%	710	355	355	32
		1.680	752	928	95

Situation with Package					
Optional Equipment	Package items				
	Take Rate Package	Price including discount	Costs	Profit per Item including discount	Weighted Profit per Car
	20%	20%			
Lane Assist	20%	248	164	84	17
Keyless Entry	20%	256	177	79	16
DAB radio system	20%	200	30	170	34
Rear-view camera	20%	72	26	46	9
Adaptive Cruise Control	20%	568	355	213	43
		1.344	752	592	118

Fig. 18: Financial evaluation of bundling

The direct comparison of the profits shows that under the assumed circumstances the package has a positive effect on the overall contribution. The take rate of the package is higher than the take rates on all standalone options. Therefore it is a fair comparison to only show the profit of the standalone items compared to the profit of the package. If the take rate on one option would be higher as the package take rate, this calculation would assume that an item offered in a package will not be bought as standalone option anymore. Even if the principle of caution is followed, this planning is too pessimistic. If 50% of the customers bought cruise control as standalone option and a package including cruise control is being constructed with 40% take rate, 10% sales volume would be lost. A more realistic and still cautious way of planning the profit is to estimate, that the overall sales volume of each item at least stays the same. Transferring this to the example with the cruise control, out of the 50% customers for the item, 40% might be served with the discounted package but at least 10% will keep on buying the function as standalone option. For those customers, the package does not change the initial situation. If they are not interested in the package, they will still buy the item disregarded the package offer. This positive effect also has to be considered when calculating financial consequences. Fig. 19 illustrates a package analysis including the consideration of the profit out of the standalone sales volume of the bundled items.

Situation without Package					
Optional Equipment	Take Rate	Price	Costs	Profit per Item	Weighted Profit per Car
Lane Assist	3%	310	164	146	4
Keyless Entry	11%	320	177	143	16
DAB radio system	17%	250	30	220	37
Rear-view camera	8%	90	26	64	5
Cruise Control	50%	200	40	160	80
		1.170	437	733	143

Situation with Package					
Optional Equipment	Package items				
	Take Rate Package	Price including discount	Costs	Profit per Item including discount	Weighted Profit per Car
	20%	20%			
Lane Assist	20%	248	164	84	17
Keyless Entry	20%	256	177	79	16
DAB radio system	20%	200	30	170	34
Rear-view camera	20%	72	26	46	9
Cruise Control	20%	160	40	120	24
		936	437	499	100
Optional Equipment	Standalone Items				
	Take Rate Standalone	Price without discount	Costs	Profit per Item	Weighted Profit per Car
Lane Assist	0%	310	164	146	0
Keyless Entry	0%	320	177	143	0
DAB radio system	0%	250	30	220	0
Rear-view camera	0%	90	26	64	0
Cruise Control	30%	200	40	160	48
		1.170	437	733	48
Profit Package including remaining standalone sales					148

Fig. 19: Financial evaluation of bundling including standalone sales

Contrary to the items in figure 18, adaptive cruise control was exchanged by the regular cruise control. The take rate for the regular cruise control is higher than the estimated package take rate of 20%. If cruise control would only be sold in the package anymore, then sales volume of this option would drop from 50% to 20% and the overall effect of the package would be negative (100€ versus 143€ without package). Of course this drop in sales volume is not realistic and even if 20% from the 50% normally ordering cruise control will buy the package, at least 30% will still buy the option without discount as standalone option. If this effect is added to the contribution of the package, the package has a profit optimizing effect of 5€ per car.

If the package contribution plus the remaining standalone contribution of the bundled items is bigger than the profit before implementing packages, profits improve.

Both presented package scenarios show that packages can increase earnings. In contrast to the pricing of single items, which is a long term strategic decision, needing a lot of market research, foresight, analysis and also luck to forecast the correct price by the time the item is in the market, building packages is a more flexible approach to improve the current market situation. If theoretically derived prices do not suit the dynamic market needs (anymore), the pricing can be optimized and additional consumer acceptance exploited. The general idea of packages should be to improve the sales of profitable items that are performing below the expectations. A good package mix of few items with a high take rate to attract the customer and boost the package take rate and some items with a low take rate to boost the financial viability of the package can contribute to significant profit increases. The presented process of calculating benefits is based on available up-to-date data and easy to conduct. If the take rate of the package is estimated correctly, the assessment of the profits is even conservative, because a full substitution of standalone take rates by the package take rate is implied. Nevertheless, the weakness of the method is exactly this correct estimation of the package take rate. It is very hard to predict how many customers will actually be interested in a bundle of items if they are discounted to a certain level. If take rate estimations are wrong, losses can occur rapidly. In the example in figure 19, a take rate of 17% instead of 20% already reduces the profits compared to the situation without package. This risk should be diminished by scenario analyses.

The described method of offering discounts for bundles of items presupposes that the package is predefined by the OEM. By forcing the customer to specific items, unaddressed price acceptances from one item are transferred to other items which normally would not have been bought. Nevertheless this means that the customer only has the opportunity to either buy the predefined package or he does not get a discount. There might be customers who are interested in 80% of the package contents but do not want to have one item at all. BMW offered a "Communication-Package" in Germany in the predecessor of the current generation 7 series. Many customers were interested but among other items the package contained a TV-function. Although the package had an attractive discount, the customers were not willing to buy it because they did not see a value in this function and did not want to pay whatever premium for this. After eliminating the function out of the package and simultaneously even reducing the percental discount on the package, its take rate increased and the overall take rate of the TV function remained stable, because the people who saw a value in it were also willing to pay the full price (cf. chapter 3.1: distribution of price acceptance for 4-wheel-drive). (cf. Ebel 2004: 387) Reflecting the BMW case, it might be reasonable to give the customer the free choice to order whatever optional equipment he wants and grant a discount based on the turnover

generated. By creating different turnover thresholds, the customer could be attracted to choose additional items to get to a higher discount scheme. Although this new approach is very customer oriented and sounds convenient at first sight, it bears major risks. Even if the free choice of items was limited to options with a high or medium profit, the method totally ignores the take rates of the items. As described earlier this chapter, the main positive effect in packages comes from increasing take rates of underperforming items. If customers are not forced to buy infrequently chosen options, the risk is high that they will buy already well appreciated items and the slight increase in take rate will not cover applied discounts. Nevertheless, if it can be observed that it occurs more often, that customers do not buy a package due to one or two items, OEM could offer alternatives for some package items. If the offered choice remains under control of the OEM and there are several items with a comparable take rate / profit relation, then it would be a positive business case to offer some alternatives with equal financial implications in favor of a further take rate increase of the package. Those exchangeable items should of course not be the core content of the package but rather the complementary items with a low take rate. Varying the so called heavy items will make the take rate estimation of the package even more difficult or even unpredictable but offering alternatives in the so called sleepers could lead to a wider coverage of transferred price acceptances and a higher profit. Fig. 20 shows two possible scenarios and the financial implications.

Situation without Package (DAB radio system)					
Optional Equipment	Take Rate	Price	Costs	Profit per Item	Weighted Profit per Car
Lane Assist	3%	310	164	146	4
Keyless Entry	11%	320	177	143	16
Rear-view camera	8%	90	26	64	5
DAB radio system	17%	250	30	220	37
		970	397	573	63

Situation without Package (aluminum inserts)					
Optional Equipment	Take Rate	Price	Costs	Profit per Item	Weighted Profit per Car
Lane Assist	3%	310	164	146	4
Keyless Entry	11%	320	177	143	16
Rear-view camera	8%	90	26	64	5
Aluminum inserts	24%	240	72	168	40
		960	439	521	66

Situation with Package (DAB radio system)					
Package items					
Optional Equipment	Take Rate Package	Price including discount	Costs	Profit per Item including discount	Weighted Profit per Car
	23%	21%			
Lane Assist	23%	246	164	82	19
Keyless Entry	23%	254	177	77	18
Rear-view camera	23%	71	26	45	10
DAB radio system	23%	198	30	168	39
		770	397	373	86
Standalone Items					
Optional Equipment	Take Rate Standalone	Price without discount	Costs	Profit per Item	Weighted Profit per Car
Lane Assist	0%	310	164	146	0
Keyless Entry	0%	320	177	143	0
Rear-view camera	0%	90	26	64	0
DAB radio system	0%	250	30	220	0
		970	397	573	0
Profit Package including remaining standalone sales					86

Situation with Package (aluminum inlays)					
Package items					
Optional Equipment	Take Rate Package	Price including discount	Costs	Profit per Item including discount	Weighted Profit per Car
	23%	20%			
Lane Assist	23%	249	164	85	19
Keyless Entry	23%	257	177	80	18
Rear-view camera	23%	72	26	46	11
Aluminum inserts	23%	193	72	121	28
		770	439	331	76
Standalone Items					
Optional Equipment	Take Rate Standalone	Price without discount	Costs	Profit per Item	Weighted Profit per Car
Lane Assist	0%	310	164	146	0
Keyless Entry	0%	320	177	143	0
Rear-view camera	0%	90	26	64	0
Aluminum inserts	1%	240	72	168	2
		960	439	521	2
Profit Package including remaining standalone sales					78

Fig. 20: Financial evaluation of bundling with alternatives for the customer

The basic package presented in figure 20 features lane assist, keyless entry and rear-view camera. On top of those items the customer can choose DAB radio system or aluminum inlays. The price for the package is independent from the customer's choice 770€. Looking at the financial implications for the OEM, it does not make a tremendous difference which item the customer chooses. The benefit for the OEM is that due to the alternatives of choice the take rate of the package increases to 23% instead of being for example 20%. The presented further optimization of the package offer has the advantage, that the offer can be more tailored to the customers without having financial risks. This might generate some extra sales, because customers see different personal values in items. The challenges however are to manage the additional complexity and to find items with a comparable take rate / profit relation that moreover suit the general idea of the package.

#### **3.3 Lines and Upselling**

As extension to packages, many OEM offer lines. In principle lines are differently positioned packages including design- and emotional elements that were created under lifestyle oriented aspects to respond to the different expectations of additional target groups (cf. Diez 2006: 146). They are used for target group specific communication. Configuration and quantity of lines depends heavily on the customers' structure and preferences (cf. Bauer 1997: 3). Respecting and better meeting those preferences can help to create a more customer oriented offer and eventually improve the sales and financial performance of a model. Figure 21 shows the customers' preferences for a compact car based on a study performed in Germany 2004. Overall, four different customer groups could be identified with similar preferences.

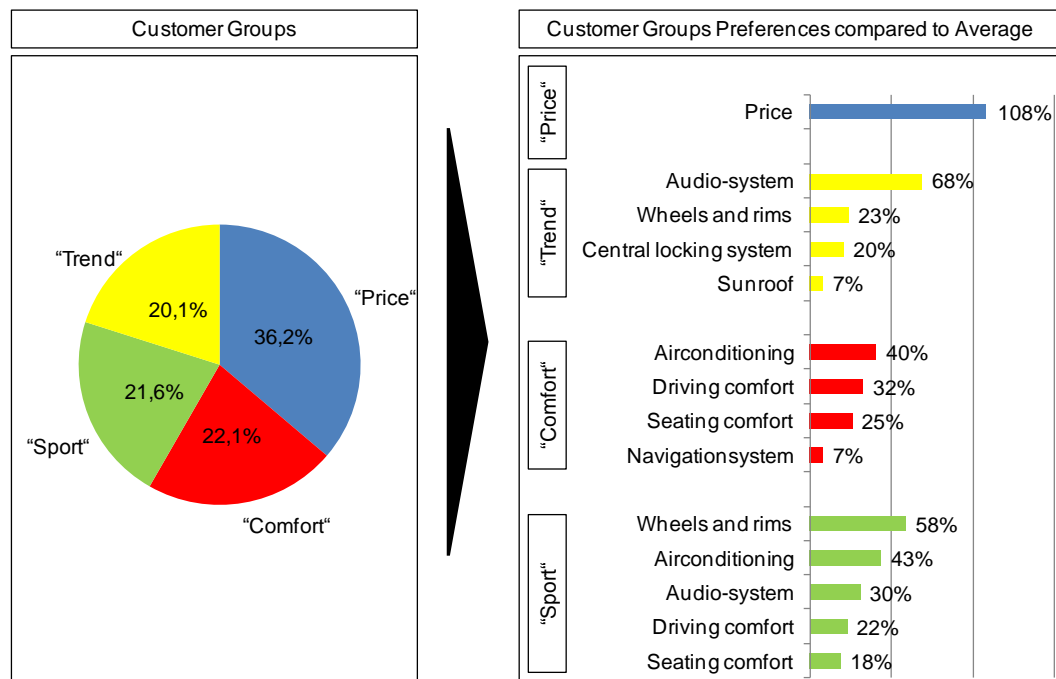


Fig. 21: Segmentation of customer groups (Ebel 2004: 388)

Approximately one fourth of the customers value air-conditioning, seating- and driving comfort above average. Those customers can be allocated to the comfort segment. Other customers prefer design elements and infotainment ("Sport") or focus on the price and/or functional options ("Trend"). After having identified those customer groups, lines can be determined with customer oriented contents to reflect the different preferences. Pricing those lines is even more multidimensional than pricing optional equipment or packages. Since lines are more seen and marketed as sub brands within the car range, the interaction with and migration to competitors has to be considered and substitution within the OEM's own portfolio must be calculated. Generally the pricing of lines is more similar to the general pricing of different engine specifications, replacing the different engines with different design and specifications levels. The overall idea of the line concept is to offer an attractive product that meets the customers' expectations at a price premium to skim additional profit. Especially in markets where customers prefer buying built to stock cars instead of configuring their fully personalized car and having to wait for it to be produced, the increased offer and variety of trim levels enables the OEM to better fit the customers' demands and optimize the profits. Once a line is established in the market, additional profit optimizing potential exists by reducing or replacing certain contents. Furthermore it is possible to increase the line's surcharge without having to change the basic MSRP of the car. An attractive MSRP can be maintained and used for promotion while the majority of customers will anyhow still pay a higher total price due to the new line surcharge.

If an OEM chooses to implement lines in its product offer, many options are offered in a quasi-serial trim level. The strategic decision whether to use items in the serial trim or to offer them as option also influences the overall profit. In a traditional approach, optional equipment passes through a typical lifecycle. At first, it is offered only optionally, then it is being introduced in high class lines and packages and at last becomes part of the serial equipment. The speed of this diffusion heavily depends on the competitive environment. The general economic guideline to introduce optional equipment as serial standard should be to maximize the profit. If enriching the serial configuration is not inevitable due to a superior competitors' offer, this should only be done, if the marketable price increase on the basic car generates more profit than selling the item as optional equipment. If OEM intend to focus on profit optimization by sales of optional equipment, another aspect has to be taken into account. Many OEM do not only offer one upgrade in a specific field, but several levels of upgrades. Seats for example are often equipped with cloth as standard but people can upgrade to artificial leather or real leather. In this case it is not only interesting how many customers buy an upgrade, but also which update customers buy and how much additional profit is generated with the entire family of seat covers. The same logic also accounts for other families as for example navigation systems, audio systems or rims. Depending on the cost structure of the different items, upgrading the serial setting with 1st level upgrades (e.g. artificial leather) might lead to an increase of sales of 2nd level upgrades (e.g. leather), which could lead to a positive business case. Figure 22 shows two examples and the financial implications of enriching the serial configuration. The first example picks up the seat cover family. Before optimization efforts, the overall weighted profit per car generated with the seat covers is 170€. 60% of the customers pick the artificial leather, which generates 120€ weighted profit per car and 10% even upgrade to leather generating another 50€ per car. 30% do not buy an upgrade. The second example illustrates the profit with radios and navigation systems. The only difference to the first example is that the on top costs for the big navigation system are not as much as the costs for the leather on top of artificial leather. The reason for this is that the main cost causing components for the navigation already have to be built into the car for the small system and the big system mainly features better software and a better screen.

The calculated examples now assumes that the first upgrade was put as standard and the base price of the car was increased by the unit costs of the upgrade (300€). The profit on the basic car therefore remains unchanged, but the profits generated by the sales of the first upgrades are fully offset. The decisive fact, whether enhancing the serial configuration might still contribute to a positive business case is how the take rates of the former 2nd level upgrades evolve.

**Profitability of Seat Covers and Infotainment before Optimization Scenario**

	Cloth	Artificial Leather	Leather	Radio	Navigation Small	Navigation Big
Take Rate	30%	60%	10%	30%	60%	10%
Price	serial	500	1000	serial	500	1000
Unit Costs	0	300	500	0	300	400
Profit	0	120	50	0	120	60
			<b>170</b>			<b>180</b>

**Profitability of Seat Covers and Infotainment after Enhancing Serial Configuration**

	Cloth	Artificial Leather	Leather	Radio	Navigation Small	Navigation Big
Take Rate		50%	50%		50%	50%
Price		serial	500		serial	500
Unit Costs		0	200		0	100
Profit		0	150		0	200
			<b>150</b>			<b>200</b>

Fig. 22: Financial implications of enhancing serial configuration

In both cases, before the optimization scenario 60% of the customers were willing to pay additional 500€ for an upgrade and 10% even paid 1.000€. In the new situation, the next available upgrade only costs 500€. By improving the serial setting, a basic customer need and expectation has already been fulfilled. Therefore it would be unrealistic to assume that still 70% will buy an upgrade. Nevertheless an increase in the take rate of the former 2nd level upgrade option should occur, because the premium for the top level upgrade has been significantly reduced due to the improved basis. In this scenario, 50% of the people decide to invest another 500€ for the premium upgrade. In the scenario with the navigation systems, this approach improves the profit, although the margin on the 1st level upgrade was given up fully. Due to the higher unit costs, the scenario does not work out in the seat cover scenario. Those calculated figures are of course just exemplarily and if only 40% of the people in the navigation scenario upgraded to the big navigation, the business case would also be negative. As presented before, the entire evaluation depends on the changes in take rates, which are very hard to predict in this multidimensional environment. Nevertheless one should be aware that there are constellations, especially if the on top unit costs of an upgrade of an upgrade are not very high, where not only the specific pricing of each item should be considered but also the price gap to the next upgrade. Even better equipping a car in the serial configuration can lead to an increase in optional equipment sales. This effect is even stronger, if a rather expensive option is the enabler for additional features. If a leather seat is required in a car to be able to buy seat heating, massage function and a ventilation system, having the leather seat as standard will lower the barriers to buy the on top features. However, of course the overall profits including the base car have to be optimized. If the price increase for including the leather seats in the basic car is not high enough, the increase of sold seat heating cannot compensate for the loss by giving away the leather seat.

### 3.4 Promotion of Optional Equipment

All opportunities of an OEM to influence the customers and communicate to them before, during or after a transaction are called promotion (cf. Steffenhagen 2004: 151). To optimize profits on optional equipment sales, promotion should also be used target oriented. In the automotive industry, the distribution channels and interactions between the partners are complex. In most cases the OEM sells its cars to the general importer, who sells them to the dealer who finally sells them to the end customer. Nevertheless, there are various communication and promotional channels that do not follow this supply chain. The OEM directly targets the end customer with its advertising, the importer creates special offers for the dealers, the OEM supports the dealers with infrastructural projects or the end customer complains directly to the OEM about the bad service he experienced. To be able to optimize the promotion to increase the profit out of optional equipment sales, a basic understanding about communication and promotion has to be established. There are several forms of communication. Figure 23 illustrates the most relevant ones.

1	personal communication	impersonal communication
2	two-sided communication	one-sided communication
3	physical communication	audiovisual communication
4	targeted communication	anonymous communication

Fig. 23: Forms of communication (cf. Steffenhagen 2004: 152)

Personal communication (1) occurs face to face. It is always live and offers the opportunity to directly interact with the conversational partner. This communication is typical for salesmen talking to the end customer. Impersonal communication is characterized by the spatiotemporal separation of the participants. This is typical for communication between OEM and importer. Two-sided communication (2) is characterized by the immediate possibility to give feedback to the communicator; one-sided communication does not allow this. A spokesman giving a speech on a product at a fair is an example for this kind of communication. Physical communication (3) is purely based on the presence of a product and is non verbal, like a static presentation of a car in the showroom. Audiovisual communication is the most common in the markets. Advertisements in print media, TV or radio are among this category. Targeted and anonymous communication (4) differs regarding the people addressed. While targeted communication addresses specific customers directly, anonymous communication is delivered to a broad audience. Normally dealers make the contract with the end customer and store the individual data locally, therefore it is hardly possible for OEM to address the individual target groups.

The OEM can use and steer promotion of optional equipment mainly to three different recipients. They can promote it to the end customer, to the importer and to the

dealers. Each target group requires a different approach. While communication to the end customer intends to motivate him to buy additional items, communication to dealers should lead to the result that they want to sell more additional items. The importer has a double function and has to be addressed twice. On the one hand he is a customer of the OEM and ought to be convinced to buy well equipped cars, on the other hand he is retailer to the dealers and should encourage those as well to order highly equipped cars. Figure 24 shows the different addressees, the OEM's focus of promotion and possible strategies.

Addressee	End customer	Dealer	Importer
Focus of Promotion	Motivate to buy optional equipment	Motivate to sell optional equipment	Motivate to buy and sell optional equipment
Strategies	Classical advertising See, feel and experience the benefit of optional equipment	Bonification Training	Bonification Define guidelines and targets

Fig. 24: OEM's addressees, focus fields of promotion and possible strategies

### 3.4.1 Promotion to the End Customers

Since the OEM does not know the final customer directly, communication can only be done impersonally, one-sided and anonymously. To stimulate the sales of optional equipment, the OEM has to build awareness of the available optional equipment and give the customer the chance to see and experience the benefits of it. Therefore either an audiovisual or physical approach can be chosen. To start an audiovisual communication with the customers, the OEM has to define a layout and design of a campaign, determine the placing and used media, plan the intensity and local density, set a time frame and allocate a budget. (cf. Steffenhagen 2004: 151) An interesting example for an implemented campaign focusing on optional equipment has been the Audi Super Bowl television commercial in 2012. In this campaign Audi showed a quite new car but did not even mention the car type. They focused fully on the technical superiority of their LED headlights that were available in various models. With campaigns like this, optional equipment can be highlighted and it is being discussed among the potential customers. This can create a desire to buy those items in an early stage before the customer even comes to the showroom.

While television commercials can transfer various aspects like emotions or technical functionality quite well, a physical communication is more limited. It has to focus on the looks and design highlights of a car. It is important that customers can see the optional equipment on the car. If they can experience themselves how well a car looks with for example a special spoiler package, the chance that they consider buying it increases. On the other hand it is very unlikely that they buy anything they have not seen before. Therefore optional equipment should be presented in catalogues or point of sales material. Figure 25 shows the official covers of the catalogues for Mercedes A Class, Audi A3 and BMW 1 series (as of April 2014). All

three OEM show optional equipment on the photo. Among others, all cars feature xenon headlights, which are an option for about 1.000€.



Fig. 25: Product catalogues showing optional equipment (OEM pricelists as of April 2014)

In addition to visiting a dealer, the OEM's website and articles in professional journals are among the top five sources where customers inform themselves about the product, if they concretely start considering buying a new car (cf. IMAS, 2013: 2). Those websites are normally operated by the OEM's head offices and allow purposive communication to the customer. This can be used to foster the optional equipment sales. Most OEM show several pictures of cars with optional equipment and give comprehensible explanations of specific technologies on their website. Often those explanations are even accompanied by short videos, showing the technologies in action. The interested customer can browse through the different offers and might be seduced to buy additional options, but this requires the customer's own initiative. A non euphoric customer will probably not spend time on a website to inform him- or herself about possible upgrades and has to be addressed differently.

Another interface between the OEM and the customer on the website is the online car configurator. Most OEM offer this functionality. Customers can configure a car as they wish and immediately get to see how the car would look like and what the car would cost. In general there are two different approaches how the configurator is set up. One philosophy is to start the show the car with the basic trim level and without any optional equipment. This of course leads to the lowest possible price for the car but available design differentiations are not shown right away. The customer actively has to choose the optional equipment. The other philosophy is to already have some optional equipment preselected before the customer starts his configuration. The customer actively has to deselect those items, if he does not want them. This has the disadvantage that the displayed price increases, on the other hand a better looking car is presented and the customers is forced to think about the choice of specific optional equipment which he would have ignored if it had not been preselected. Figure 36 shows the implications of both approaches. The first picture shows the basic trim level of an Audi A3 without any optional equipment. The car looks good but not extraordinary and costs 21.900€. In the second picture xenon head-

lights, bigger rims and a spoiler kit were selected. The car appears to be more aggressive and powerful now but the displayed price increases to 26.780€ which represents additional 4.880€. Nevertheless, the positive effect might be that the customer for example sees how the expensive spoiler kit looks like and can make up his mind, whether the price premium might not yet be worth it. If it would not have been preselected, the customer might never have seen or considered the option in his relevant set of items. Nevertheless, until today, mostly the first approach is used.

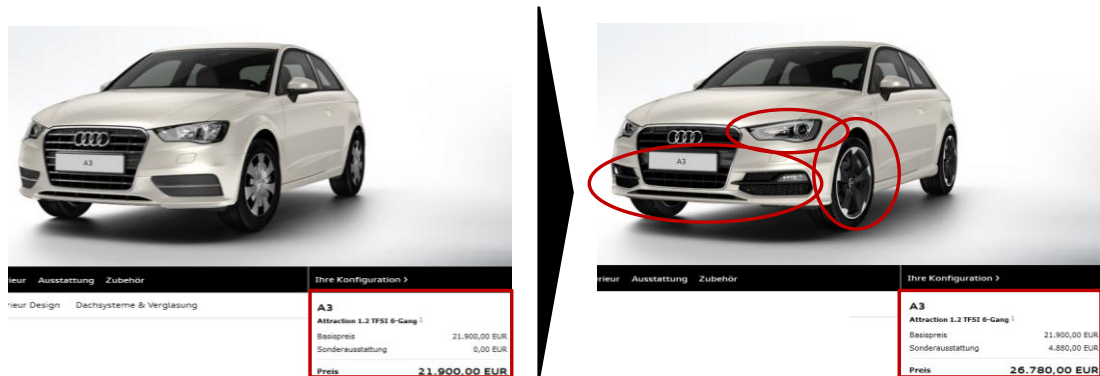


Fig. 26: Implications of preselection in car configurators (www.audi.de)

As presented before, articles in professional journals also influence the customers' buying decisions and can be used for promotion. Therefore they can also contribute to the sales of optional equipment. Although these articles are not written by the OEM themselves, they can still try to communicate to the customers via the journalists. A positive article and extensive description of several technical features, design or handy extras can positively influence a customer's buying decision. Since journalists are perceived being neutral and without reservation, their statements are more credible than OEM's statements. Therefore it is advisable to maintain a good relationship to them, to give them the opportunity to test the optional equipment and to provide the necessary details to understand the features. Lobbying can as well be a part of such a strategy as inviting journalists to specific events.

No matter what way of communication an OEM chooses to promote optional equipment directly to the customer, it is of major importance that an eagerness to buy those additional items is created. The customer has to see the items, get emotionally affected and has to be convinced that the optional equipment creates an additional benefit for him. Hence, the focus in a campaign should not be on the pricing, the better approach is to target to increase the customers' price acceptance for additional items by demonstrating their iconic features. If customers are willing to spend additional money, logically the turnover will increase. If this increase is higher than the additional costs for e.g. the necessary focused advertising, profits will also grow. Figure 27 shows some more examples of communication from the OEM to the customer that involve optional equipment.

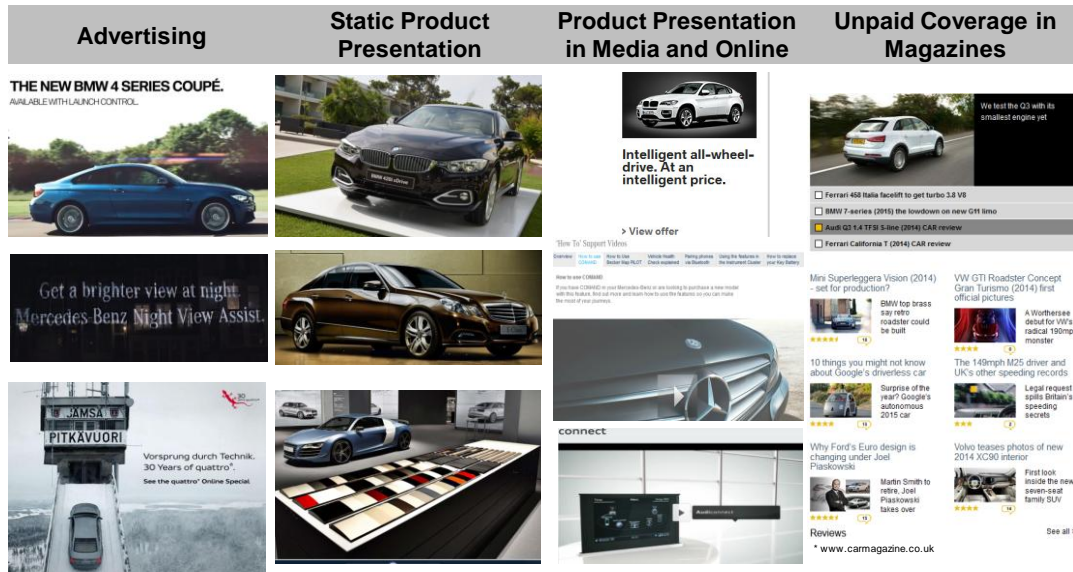


Fig. 27: Channels of OEM's promotion to the end customer

### 3.4.2 Promotion to the Dealers

In the automotive distribution chain, the salesmen in the dealerships are the ones having direct contact to the customers who are inclined to buy a car. They can have a two-sided personal communication with the clients and they are the ones who fix the final contract. Therefore they play an important role in influencing the customers' buying decision and hence can have an impact on the sales of optional equipment. In order to properly sell something, the salesmen need to know as much as possible about the product and they have to be motivated and see a personal benefit in selling additional optional equipment (cf. Seka 2013: 48). This framework of training and motivating has to be created by the OEM and, depending on the organizational structure, agreed upon with the general importer.

Since product proliferation has increased complexity of the sales process enormously, training has become very important. The salesmen have to be able to answer customers' questions. They have to know the entire product offer and they also have to be able to deliver the benefits of additional items and new technologies, which the customer might not yet know, to be able to improve the profits on optional equipment. Since there are too many salesmen to have everyone trained individually by the headquarters, OEM have to set up a continuous system in their organization, that all salesmen are trained to a comparable level. One approach can be to use so called multipliers. Some selected persons out of each sales organization are trained at the facilities of the OEM by the product experts and then are responsible to train the other people in their organization and are also the experts to be addressed if questions occur. Since those trainings are usually associated to an entire event with test drives and other incentives, the selection process can be linked to

the salesmen's performance on selling optional equipment as motivation. Nevertheless, since not the entire sales force can be reached by those events, OEM additionally have to provide accurate and detailed product information. On the one hand this can be realized by documents and product information brochures, on the other hand online trainings can be set up which salesmen have to pass in defined intervals. If OEM have managed to have their salesmen trained to such a high level that they could enthuse the customers with their knowledge to buy optional equipment, they still also have to give them the opportunity to present the items. It is easier to convince the customer to buy something if he can really see and experience something personally and is not just being told about the benefits. (cf. Bhalla 2010: 89) This can either be by having the option available on a showroom car, by having samples at the showroom or by virtual presentations. Fig. 28 shows some examples of optional items made capable of being experienced by the customers at the dealer by the OEM.

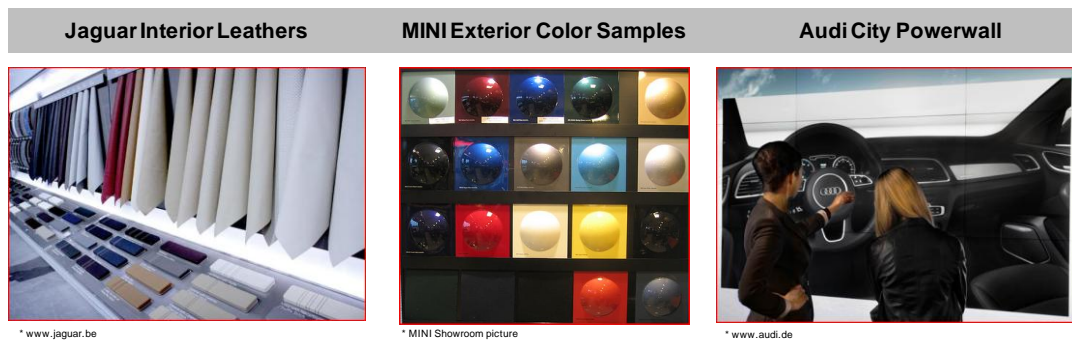


Fig. 28: Showroom exhibits to foster optional equipment sales

While the first two pictures show traditional material samples, the third picture shows "Audi City", which is a new digital showroom format where every detail (e.g. the multifunction steering wheel) of the car can be shown in detail on a big videowall. The advantage of this concept is that not many cars, material samples, etc. have to be available in the showroom because everything can immediately be shown digitally. Nevertheless the question arises, whether customers will accept not having cars physically at the dealership. Since those extraordinary expenses in showrooms, samples or well equipped demo cars might overstrain the dealers, financial support by the OEM is unavoidable, nevertheless the investment should promise a positive return on invest on the long term.

Even if salesmen are trained, well informed and have the resources to present optional items, they still might not set their focus on profit optimization in this area. The reason for this is that there exist various contract forms and often the employees do not necessarily benefit from additional equipment sales. If an employee is for example getting a provision depending on how little discount he has given, selling addi-

tional items might increase the overall car price, increase the OEM's profit but decrease the employee's salary, because he has to give an additional discount. This is of course a contradictory situation, therefore the financial remuneration has to be aligned with the focus on promoting optional equipment sales. According to human resource management, management by objectives will influence the employee's performance in the respective fields (cf. Drumm 2005: 550ff.). The problems in this topic are that the contracts to dealers/salesmen are normally closed with the importer and not with the OEM and not every one of the three players in the delivery chain accumulates the same financial benefits in an OEM driven profit optimization strategy. The logical consequence out of this situation is that for a long term strategy on optional equipment revenue management, the importers have to adapt their contracts to the dealers. To motivate them to do so, the OEM must focus on rewarding the importer if he adopts the new strategy. Nevertheless the OEM can still support on dealer level by financing optional equipment based sales competitions or comparable actions for the salesmen with bonuses that do not affect the general contractual framework like a holiday trip or a driving event.

### 3.4.3 Promotion to the Importers

The importers in different countries are usually entities striving for their own profits. They are the link between dealers and OEM. In this function they have contracts and agreements with the OEM as well as with the dealers. As reward for this function they normally get a percental margin on the value of the car sold. Figure 29 shows an exemplary price built up used by the OEM to calculate and propose an MSRP of a vehicle. Of course, due to block exemption regulations, the OEM cannot limit competition and dictate at which price a car is sold to the dealer or to the customer (cf. Reichhuber 2009: 198ff.), nevertheless those built ups can function as orientation.

Modell	XY 1.4T petrol 160hp manual
ex works price OEM to importer	17.000
transport to importer	300
additional costs	150
net margin importer on ex works 15%	<b>2.550</b>
price importer to dealer	20.000
transport to dealer	200
additional costs	250
net margin dealer on ex works 15%	<b>2.550</b>
recommended net price	23.000
VAT 23% on net price	5.300
<b>MSRP</b>	<b>28.300</b>

Fig. 29: Exemplary price built up

The figure shows that for this model both the importer and the dealer get a margin of 2.550€. If no different agreements are made, importer and dealers can earn additional 15€ per 100€ optional equipment they sell on top. This ratio is independently from what items they sell. Herein lays a profit optimization chance for the OEM. Importers and dealers often do not know how much profit an item generates at the OEM level. Going back to our example of the Volkswagen Passat in chapter 3.2, it can be seen that some items have approximately the same price but a different contribution ratio for the OEM. For the importer it does not make a huge difference which item he sells, but for the OEM it certainly does. If the importer manages to increase the sales of the options with the better margin for the OEM, this could justify an additional bonus for the importer. By agreeing on additional financial rewards for increasing the take rate of profitable items, OEM can guide the importers to selling those. Of course the additional financial rewards have to be high enough to be a stimulus but low enough that the effect on the OEM's profit is not nullified. Furthermore some risk avoiding agreements should be in place, because there will not be a positive impact if the overall turnover on optional equipment drops significantly. If importers get rewarded for selling optional equipment, they also have the interest that the dealers order well equipped car and can on their part put actions in place to reward them. To support the importer in working with the dealers, of course the OEM also has to provide detailed product information and perform trainings.

Not all orders by the importer are really customer driven. Many importers have internal fleets for the employees, courtesy car programs and external fleet customers. Those cars are often supported with discounts by the OEM and many of them have to be remarketed as used car after a certain period of usage. For those cars ordering guidelines can be agreed upon, stating that a certain amount of optional equipment has to be ordered. This can also contribute to the optional equipment profit, it guarantees especially in the case of courtesy cars that customers get to experience certain options they might not have tested before and the residual values for the remarketing will be higher.

### **3.5 Profitable Distribution Channels**

The distribution of cars can be handled via different channels. Most often it is managed by a local importer in a two layered process. The OEM sells the cars to the importer and the importer sells them in a second stage to retailers or dealers (cf. Kroll-Thaller 2013: 91). This is also the setting presented in the last chapter. If the sales opportunities and importance of a country for an OEM grow, the manufacturers in many cases establish an own subsidiary as importer in the country. By doing this, on the one hand they get more influence and control over the sales, on the other hand they have to set up an entire organization in a country abroad and carry the risks of failure. Except the fact that ideas and strategies from the headquarters are easier to enforce in an own subsidiary than with an independent importer, this struc-

tural change does not seriously affect the profit optimization of optional equipment. The processes to be implemented maintain the same. One of the disadvantages of this two layered distribution system can be seen in Figure 29. Both the importer and dealer get a certain margin on the car. If this margin would not exist, the car could either be sold approximately 6.000€ cheaper to the customer without negatively affecting the OEM's profit or at the same MSRP with a much higher profit. Direct sales to the customer evidentially bear major profit optimization potentials in the new car sales business and therefore also for optional equipment profit maximization. However, in a global industry like the automotive one, OEM cannot handle their entire volume with direct sales, if they are not only a niche manufacturer with a few units a year. Furthermore much added value is performed at the dealerships with service, repairs, used cars and parts and accessories and also test drives and initial selling approaches are usually done at the dealership. Enlarging focus on direct sales therefore would be a revolution in the automotive industry, offering chances through the omission of additional margins but also containing many risks through the undefined handling of the after sales business. BMW recently started a first pilot project with the BMW i3. This car is serviced by the existing dealer net but sold directly to the customer from BMW. The mediating dealer only gets a provision. (cf. *Automobilwoche* 2012: 1f.) The initiative was not very well appreciated by the dealers although they are released from the risk that the car cannot be sold, because they never own it. The outcome and further development of those initiatives have to be monitored, anyway, with the information and experiences we have today, the chances for profit optimization of the optional equipment business through direct sales cannot be estimated yet.

Nevertheless, also in the traditional distribution model with importer and dealer, focusing on specific distribution channels can affect the sales of optional equipment. In general there are two different production principles that correlate with particular customer groups. Built-to-order is the practice of building customized or standard products as they are ordered and shipping them directly to customers (cf. Anderson 2004: 1). In the automotive industry this means that every order of a car is from a customer and it is exactly in the configuration and with all the optional items the customer wants. This is typical for most of the European markets. Customers go to dealer, configure their car, wait for it to be built and then get exactly their personalized car. Opposed to this is the principle of built-to-stock. Built-to-stock refers to products that are built before a final purchaser has been identified, with production volume driven by historical information (cf. Parry 2008: 3). This approach creates a higher stock level and hence a faster accessibility of products, but the product specification does not entirely match the final customer's wishes and profit opportunities are not fully utilized. This is a rather typical for example for the American market. On the one hand this is mentality driven because Americans want to go to the dealer and drive away with their new car. On the other hand, for European exports to the US transportation time influences the product offer. Since cars are usually freight by

ship, delivery time to the customer including building the car to order and transporting it is considered to last too long by many customers. If one compares the American websites of OEM with the European ones, one can see that the focus is clearly on finding the customer an already built car matching the customer's expectation the best instead of guiding him to build his own. This is shown in Figure 30.

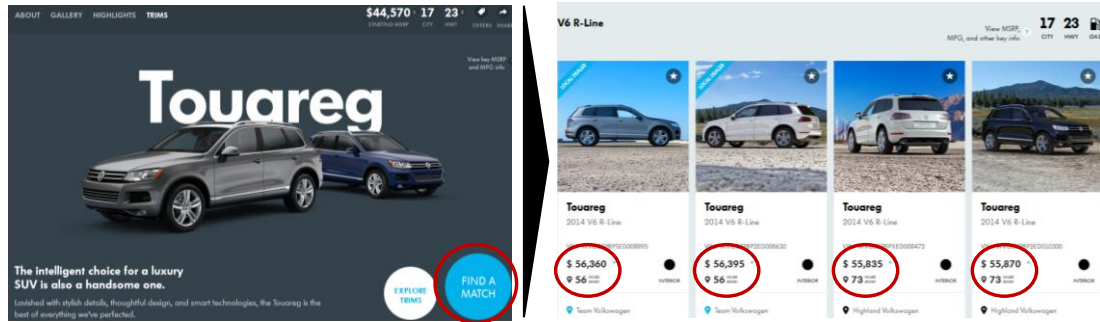


Fig. 30: New car configuration in the US (www.vw.com)

Although building an own car is possible at most OEM-sites, the opportunities of personalization are far lower than in Europe and the offer is not very well appreciated. Therefore there are a lot less profit optimization opportunities in those regions, where customers tend to buy out of stock. If OEM want to improve their profits on optional equipment sales, they should concentrate on regions where there exists a market with freely chosen items and cars are built to order. In regions where cars are built to stock, profits can only be optimized by improving the margins on the different predefined trim levels.

Not only the preferred sales region influences the profits but also the chosen sales channels. Financing and leasing have become common offers in the automotive industry. If a customer decides to finance a car, he becomes the legitimate owner of the car and pays the entire retail price plus interests for the loan. This is an option for people wanting to buy a car and not having enough money at their disposal at the time they purchase it. In leasing contracts, the lease provider is the legitimate owner of the car and the lessee only pays a monthly fee for the use of the car and usually also has to make a down payment. At the end of the lease period the leasing provider takes the car back and has to remarket it as used car. For the lessee this saves capital investment. Regarding the sales of optional equipment, every additional cost of the car is broken down to the monthly leasing rate and therefore on short side does not seem to have a big impact on the overall costs. Furthermore the rates are tax deductible for company users (cf. Kroll-Thaller 2013: 60f.). This leads to the effect that leasing customers actually order more equipment than cash paying or financing customers. Figure 31, taken from an investor's relation presentation of Volkswagen Financial Services, shows this effect.



Fig. 31: Effects on equipment level through captive (VW FSAG 2014)

In the case of Volkswagen Financial Services, the equipment level of the procured cars was 26% higher as the one of the regular cash paid cars. This seems to imply that increasing the leasing penetration will increase the equipment level of the sold cars. The disadvantage about leasing is that the car has to be sold twice, once to the lessee and a second time as used car to another customer. The major risk is the residual value. This value is incorporated in the calculation of the leasing rates but if the residual value was calculated too high, the price cannot be achieved in the used car market and the business is in deficit. Fully focusing on increasing leasing penetration to increase the profits out of optional equipment should be a too narrow interpretation of the facts. The implications on the residual values and used car business have to be evaluated as well to estimate the effects on the overall OEM's profit. Nevertheless, if leasing is being evaluated, a positive financial effect resulting from higher optional equipment sales should occur.

#### 4 Validation and Application of the Findings

In Chapter three various potentials for profit optimization measures were identified. Figure 32 summarizes the most promising ones.

Pricing of optional equipment	Focused advertising on optional equipment
Lines and packaging of optional equipment	Training salesmen
Rewarding importers for profit optimized sales	Choosing optimal distribution channels

Fig. 32: Measures for profit optimization on optional equipment sales

Optimizing the initial pricing of optional equipment by attempting to reflect the customers' price acceptances rather than using cost plus calculations or referencing to competitors' prices promises profit increases of up to 15% (cf. chapter 3.1). Therefore OEM should thoroughly consider the issue when planning a new model. Once the general pricing of optional equipment is fixed, depending on the current status of the sales, setting up a well-thought-out package and lines offer can contribute to further improvement. By offering certain lines, additional customers can be attracted and by integrating packages to the portfolio, excessive price acceptances for options can be transferred to other options and take rates of slow sellers and hence profits can be increased.

Besides providing the right products at the right price, OEM have further opportunities to influence the sales of optional equipment. Including or even focusing on optional equipment in advertising can arouse extra interest and desires. If advantages and benefits of options can be conciliated, the probability that customers want to buy additional items increases. Those interests and desires can also be awoken in the showroom where the salesmen have the opportunity of direct communication to the customer. Therefore it is very important that the staff at the dealer is well trained, aware of all the offered optional items and able to present its benefits in an authentic way.

In a common distribution network in the automotive industry, OEM sell their cars to general importers who sell them to the dealers who finally sell them to the customers. Since every player in this chain wants to optimize its own profits, OEM have to make sure that dealers and importers also benefit from an optional equipment profit optimizing strategy to assure their support. Additionally, all actions and strategy implementations should be analyzed, whether they match the targeted market and customer group. Choosing the right markets and distribution channels will significantly influence the success of a strategy.

The intention of this chapter is to apply those strategies in a business case and to present the possible effects on the overall profit. The starting point for the analyses will be the (hypothetical) profit situation for the Volkswagen Passat, displayed in

figure 16 in chapter 3.2. In status quo, the overall profit on optional equipment adds up to approximately 2.970€. With the methods presented before, this amount can be increased. Although training and advertising were presented as influencers of the sales of optional equipment, the exact effects cannot be quantified without performing a widespread empirical study. Therefore these potentials cannot be included in the validation and application in this thesis.

The Volkswagen Passat is approximately 4,70m long and has a width of 2,06m. With those dimensions and its 5 seats the car can be considered a large family car. Within Volkswagen it is positioned between the Golf and the Phaeton. (cf. [www.volkswagen.de](http://www.volkswagen.de)) The car is considered to be a middle-class vehicle, therefore the main competitors among others are Ford Mondeo, Hyundai i40, Mazda 6 and Opel Insignia. Nevertheless also customers driving a lower class vehicle who might upgrade to a Volkswagen Passat are part of the extended target group as well as potential Audi A4, BMW 3 series and Mercedes C-Class customers. To be able to attract customers from the premium segment, technically sophisticated options like intelligent assistance systems are available. The car is sold nearly worldwide.

Strategies to improve profits on optional equipment sales have to consider this versatile and international target group. The initial pricing of the optional equipment should be based on the actual customers' price acceptance. This will vary in between the different countries as well as in between the different targeted customer groups. People coming from the premium segment might have a higher price acceptance for certain options than people coming from lower segments. Therefore the surveyed people for determining the optional equipment prices should be clearly defined and reflect the majority of the customers. This can be realized by specifying for example the age, net income, marital status and educational background of the interviewees. These containments can secure that the arising price acceptances will be representative for a large part of the customers. As seen in figure 11 in chapter 3.1, price acceptance also differs depending on origin of car and accordingly for this German car in each country of destination. Theoretically, the best absorption of customers' price acceptance can be generated by pricing the options individually for each country. The disadvantages of this approach are that it would be a very time- and resources consuming process and that due to free trade agreements within many regions and the obvious comparability of prices within Europe because of the Euro, customer dissatisfaction and grey imports may occur. Nevertheless, the country individual potentials should not be fully wasted. At least in different geographical regions with different customers, diverse technical standards and unequal currencies, an adapted pricing is manageable. Depending on the sales volumes in the global regions, one country can be elected as representative and these country's specific optional prices are then applied in the entire region. Figure 33 shows Volkswagen Group's deliveries to customers per country 2012 and 2013.

	DELIVERIES (UNITS)		CHANGE
	2013	2012 <sup>2</sup>	(%)
<b>Europe/Remaining markets</b>	<b>3,715,298</b>	<b>3,677,682</b>	<b>+ 1.0</b>
Western Europe	2,734,534	2,739,082	-0.2
of which: Germany	1,044,477	1,052,400	-0.8
United Kingdom	454,400	399,388	+ 13.8
France	245,926	263,317	-6.6
Italy	176,231	188,323	-6.4
Spain	173,893	169,017	+ 2.9
Central and Eastern Europe	599,265	602,665	-0.6
of which: Russia	287,264	301,574	-4.7
Czech Republic	83,215	80,826	+ 3.0
Poland	75,920	68,972	+ 10.1
<b>Remaining markets</b>	<b>381,499</b>	<b>335,935</b>	<b>+ 13.6</b>
of which: Turkey	126,853	97,764	+ 29.8
South Africa	103,720	98,606	+ 5.2
<b>North America</b>	<b>878,923</b>	<b>833,624</b>	<b>+ 5.4</b>
of which: USA	611,747	596,078	+ 2.6
Mexico	180,123	156,974	+ 14.7
Canada	87,053	80,572	+ 8.0
<b>South America</b>	<b>747,542</b>	<b>861,956</b>	<b>-13.3</b>
of which: Brazil	558,317	666,578	-16.2
Argentina	148,979	148,955	+ 0.0
<b>Asia-Pacific</b>	<b>3,616,212</b>	<b>3,150,619</b>	<b>+ 14.8</b>
of which: China	3,266,235	2,809,689	+ 16.2
Japan	100,535	82,078	+ 22.5
India	92,561	114,084	-18.9
<b>Worldwide</b>	<b>8,957,975</b>	<b>8,523,881</b>	<b>+ 5.1</b>
Volkswagen Passenger Cars	5,932,308	5,738,417	+ 3.4
Audi	1,575,480	1,455,123	+ 8.3
ŠKODA	920,750	939,202	-2.0
SEAT	355,004	321,002	+ 10.6
Bentley	10,120	8,510	+ 18.9
Lamborghini	2,121	2,083	+ 1.8
Porsche	162,145	59,513	x
Bugatti	47	31	+ 51.6

Fig. 33: Annual deliveries to customers, Volkswagen (Volkswagen 2014: 80)

After analyzing those figures it can be recommended to have individual optional prices for Europe based on the German market, for Northern America based on the US-market, for Latin America based on the Brazilian market and Asian prices based on the Chinese market. Those four countries account for approximately 5,5 Mio. sold units which correlates to circa 60% of the total volume. Having profit optimized prices for those four countries and at the same time offering more market adequate prices for the neighboring countries will contribute to the improvement of overall turnover without generating too much complexity. However, in the case of the current generation Volkswagen Passat, prices are already communicated to the markets and cannot be simply changed within the lifecycle. Only selective adjustments are possible without aggravating the customers. The most obvious items to change are the ones having a high take rate and a low contribution. This “AC” ranking, due to the classification in figure 16, implies a too low price and it is improbable that a slight increase will devastate the take rates. For the VW Passat only two items are classified AC. An increase in price of 5€ for the multifunction color display and carpet mats will improve profits per car by approximately 8€ (take rates items multiplied

by price increase). Besides those minor adjustments, the profit generated out of the general pricing of optional equipment cannot be substantially changed before the successor model is introduced to the markets.

Within the lifecycle of a car, lines and packages are tools that allow influencing the optional equipment sales. As stated before, due to its size and quality, the Passat attracts versatile customer groups. Under inclusion of the insights of figure 21 in chapter 3.3 it can be assumed that the customers can be assigned to four main segments. Approximately 35% attribute high importance to the price, 20% focus on price and functionality and the remaining 45% can be split evenly between customers wishing for sporty or luxury features. Offering lines specifically designed to suit those customer groups should bear profit optimization potentials in the field of optional equipment sales and additionally allows a broader and more flexible positioning of the car, which could even attract new customers. The general idea to construct a line should be to increase the take rate of the bundled items to create additional profit. As presented in figure 17, items classified CA and CB offer the biggest lever to do so. Figure 34 shows a potential offer for the customers focusing on functionality and price (Line “Trend”).

The line is offered at a price of 950€ instead of 1.060€ which corresponds to approximately 10% discount. It comprises mainly functional items that are requested by the targeted customer group. No design differentiation is applied and the expected take rate of the line is 20%. While the profit on the electric folding mirrors is decreased with the discounted package, the increase of the take rate for the other items compensates the granted discount. If 20% of the customers choose the line “Trend”, the profit on the bundled items improves by 4€ which is approximately 4%. As discussed in chapter 3.2, the financial effect is highly dependent on the actual take rate. If 35% of the customers would choose the package, the additional profit would be boosted to approximately 80€ and 80%. Looking at the available figures, 20% take rate seems to be a conservative estimation indeed. Even without the discounted offer, three out of four items already have a take rate of about 20% and the boot space mat has such a low price that it is probably not decisively for the customers. Given the fact that the price for the package is not very high and 35% of the customers are allocated to the price sensitive group of customers, additional chance might exist, that some customers out of this group also decide to buy the line “Trend”. Nevertheless, even in a realistic worst case scenario with a take rate of 20%, profits increase.

Situation without Line "Trend"						
Optional Equipment	Group	Take Rate	Price	Costs	Profit per Item	Weighted Profit per Car
Electric folding mirrors	CC	22%	100	31	69	15
DAB radio system	CB	17%	250	30	220	37
Panoramic Sunroof	CA	15%	670	348	322	48
Boot space mat	CC	3%	40	23	17	1
			1.060	432	628	101

Situation with Line "Trend"						
Package items						
Optional Equipment	Group	Take Rate Package	Price including discount	Costs	Profit per Item including discount	Weighted Profit per Car
		20%	10%			
Electric folding mirrors	CC	20%	90	31	59	12
DAB radio system	CB	20%	224	30	194	39
Panoramic Sunroof	CA	20%	600	348	252	50
Boot space mat	CC	20%	36	23	13	3
			950	432	518	104
Standalone items						
Optional Equipment	Group	Take Rate Standalone	Price without discount	Costs	Profit per Item	Weighted Profit per Car
Electric folding mirrors	CC	2%	100	31	69	1
DAB radio system	CB	0%	250	30	220	0
Panoramic Sunroof	CA	0%	670	348	322	0
Boot space mat	CC	0%	40	23	17	0
			1.060	432	628	1
Profit line including remaining standalone sales						105

Fig. 34: Financial evaluation of line "Trend"

A similar calculation can be set up for the lines "Sport" and "Luxury". Of course those lines also intend to optimize the profit on optional equipment, but another main focus is to offer visually differentiated models to enlarge the potential target group. Therefore design differentiations will be incorporated. Those differentiations can be for example different inlays, badges, a lowered suspension or a different dashboard background color. All the mentioned items have a value for the customer but do not create additional unit costs because they only replace an equivalent but not exclusive item. Figure 35 shows a potential offer for the line "Sport". It is priced at 1.800€ and the discount, if only the functional items are considered, is very low. Nevertheless the customer gets 4 exclusive items that make the car look sportier and additionally some heavy items that are already very well appreciated. The conservatively planned take rate of 22,5% leads to a profit increase of 13€ respectively 3%. Although the financial effect once again does not seem to be very big, on the one hand one should not forget that the optimization is calculated per sold car and therefore has to be multiplied with the total volume and on the other hand the line "Sport" positions the car in a sportier segment and might help to attract customers considering to buy a BMW 3 series or Audi A4. To complete the line structure and to have a differentiated offer for the customers looking for luxury and comfort, also a "Comfort"

line can be offered. This line is also shown in figure 35. To be able to achieve a take rate of 22,5%, again some heavy items were included in the package which limit the possible discount. Nevertheless, due to the positive effects because of the broader positioning of the model and hence the increase of potential customers, it is acceptable that the line itself does not generate excessive additional profit. In the presented specification the “Comfort” line is sold at a price of 1.950€ with a discount, if only the freely available items are considered, of 7%. This has a positive effect on the profit of 8€ and approximately 2%.

Situation without Line "Sport"							Situation without Line "Comfort"						
Optional Equipment	Group	Take Rate	Price	Costs	Profit per Item	Weighted Profit per Car	Optional Equipment	Group	Take Rate	Price	Costs	Profit per Item	Weighted Profit per Car
17" rims exclusive design	BA	40%	430	86	344	138	Upholstery - "Vienna" leather	BA	35%	1.310	537	773	271
Front fog lights	BB	34%	180	54	126	43	Parking sensors front and rear	CB	20%	320	96	224	45
Tinted glass	CB	12%	160	19	141	17	Park Assist	CB	5%	150	50	100	5
Bi-xenon headlights	BA	57%	950	475	475	271	Keyless entry	CB	11%	320	176	144	16
Front seats lumbar adjustment	CC	17%	110	36	74	13	Wooden optics inlays	-	-	-	-	-	-
Lowered suspension	-	-	-	-	-	-	Blue dashboard background color	-	-	-	-	-	-
Colored inlays	-	-	-	-	-	-	Badges "Comfort"	-	-	-	-	-	-
Red dashboard background color	-	-	-	-	-	-							
Badges "Sport"	-	-	-	-	-	-							
			1.830	670	1.160	481			2.100	859	1.241	336	

Situation with Line "Sport"							Situation with Line "Comfort"						
Optional Equipment	Group	Package Items		Costs	Profit per Item including discount	Weighted Profit per Car	Optional Equipment	Group	Package Items		Costs	Profit per Item including discount	Weighted Profit per Car
		Take Rate Package	Price including discount						Take Rate Package	Price including discount			
		23%	2%						23%	7%			
17" rims exclusive design	BA	23%	423	86	337	77	Upholstery - "Vienna" leather	BA	23%	1.216	537	679	156
Front fog lights	BB	23%	177	54	123	28	Parking sensors front and rear	CB	23%	297	96	201	46
Tinted glass	CB	23%	157	19	138	32	Park Assist	CB	23%	139	50	89	21
Bi-xenon headlights	BA	23%	934	475	459	106	Keyless entry	CB	23%	297	176	121	28
Front seats lumbar adjustment	CC	23%	108	36	72	17	Wooden optics inlays	-	23%	-	-	-	-
Lowered suspension	-	23%	-	-	-	-	Blue dashboard background color	-	23%	-	-	-	-
Colored inlays	-	23%	-	-	-	-	Badges "Comfort"	-	23%	-	-	-	-
Red dashboard background color	-	23%	-	-	-	-							
Badges "Sport"	-	23%	-	-	-	-							
			1.800	670	1.130	260				1.950	859	1.091	251

Standalone Items							Standalone Items						
Optional Equipment	Group	Take Rate Standalone	Price without discount	Costs	Profit per Item	Weighted Profit per Car	Optional Equipment	Group	Take Rate Standalone	Price without discount	Costs	Profit per Item	Weighted Profit per Car
17" rims exclusive design	BA	17%	430	86	344	58	Upholstery - "Vienna" leather	BA	12%	1.310	537	773	93
Front fog lights	BB	11%	180	54	126	14	Parking sensors front and rear	CB	0%	320	96	224	0
Tinted glass	CB	0%	160	19	141	0	Park Assist	CB	0%	150	50	100	0
Bi-xenon headlights	BA	34%	950	475	475	162	Keyless entry	CB	0%	320	176	144	0
Front seats lumbar adjustment	CC	0%	110	36	74	0	Wooden optics inlays	-	-	-	-	-	-
Lowered suspension	-	-	-	-	-	-	Blue dashboard background color	-	-	-	-	-	-
Colored inlays	-	-	-	-	-	-	Badges "Comfort"	-	-	-	-	-	-
Red dashboard background color	-	-	-	-	-	-							
Badges "Sport"	-	-	-	-	-	-							
			1.830	670	1.160	234				2.100	859	1.241	93
Profit line including remaining standalone sales						494	Profit line including remaining standalone sales						344

Fig. 35: Financial evaluation of lines „Sport” and “Comfort”

Adding up the extra profits generated by the three lines leads to an increase of 25€ per car. The current profit on the items considered is 918€, therefore the 25€ improvement represent 3% increase. On the overall profit generated on optional equipment of 2.970€, the 25€ only represent barely 1% improvement. Therefore, the effect of introducing lines seems to be rather low. Nevertheless, two facts should be recalled in the evaluation. Firstly, the take rates of the lines were calculated pessimistically. The take rates of the considered items are even without discount approximately on the planned take rates of the lines. A discount might further increase them. If for example 35% instead of 20% chose the line “Trend”, the additional profit goes up to 80€ per car which is a substantial improvement. Secondly, the main idea of lines is to be more flexible in positioning. If OEM offer a sporty or luxurious line,

they might attract additional customers and sell additional cars, which will also positively influence the profits (cf. fig. 5 in chapter 2.1).

As described before, setting up a lines concept has plenty of advantages. Nevertheless, because lines intend to position the car in a certain direction and are supposed to address a specific target group, OEM are limited in the items they can include in a line. A rear-view camera does not suit the theme sport or 18" rims do not suit the theme comfort. Therefore the included items can not only be chosen from a profit optimizing perspective. To be able to support the sales of items that do not necessarily qualify for being in a line but promise optimization opportunities, packages can be offered. Those are also bundles of items with a discount, but only regularly available items are considered and they are not used for positioning purposes. Packages improving the sales of CB and CA items have the most potential to enhance the profits. To push the sales of those items, the packages normally have to be supported by well appreciated "A"-take rate items to attract the customers. In the case of the presented Volkswagen Passat, several combinations are possible. The first example is shown in figure 36. This package intends to attract young parents, caring for usability and their children's safety. A heavy item to attract the customers' attention is combined with five other items that only have a "C" take rate but might be convenient for those kinds of customers. With a discount of 11% a take rate of 25% is estimated. This estimation is based on the high take rates of climate control, electric tailgate and roof lining.

Under the assumed circumstances the package improves the weighted profit per car by 10€. As stated before, if the take rate increases, additional profits occur, but of course there is also a risk of lower take rates. Fortunately, in most package scenarios the chances are higher than the risks. The reason for this is that a package offer, even if it is not successful at all, should not influence the standalone take rates. A lower package take rate correlates with less substitution of those standalone take rates. If no one buys the package, the profit on the items should be 315€ again, as in the initial situation. It is also possible to calculate the maximum financial risk of the package offer. In the case of the family package least profit is made at a take rate of 12%. If 12% of the customers bought the discounted package, 14€ of profit compared to the situation without package would be lost. If more or less people bought the package, the loss is being reduced.

Situation without package						
Optional Equipment	Group	Take Rate	Price	Costs	Profit per Item	Weighted Profit per Car
Climate Control	AB	84%	380	103	277	233
Electric tailgate	CB	25%	250	150	100	25
Integrated child seat	CB	12%	290	145	145	17
Rooflining	CB	18%	160	16	144	26
Side airbag system, rear	CC	9%	220	121	99	9
Rear view camera	CC	8%	90	26	64	5
			1.390	561	829	315

Situation with package						
Package items						
Optional Equipment	Group	Take Rate Package	Price including discount	Costs	Profit per Item including discount	Weighted Profit per Car
		25%	11%			
Climate Control	AB	25%	339	103	236	59
Electric tailgate	CB	25%	223	150	73	18
Integrated child seat	CB	25%	259	145	114	28
Rooflining	CB	25%	143	16	127	32
Side airbag system, rear	CC	25%	196	121	75	19
Rear view camera	CC	25%	90	26	64	5
			1.250	561	689	161
Standalone Items						
Optional Equipment	Group	Take Rate Standalone	Price without discount	Costs	Profit per Item	Weighted Profit per Car
Climate Control	AB	59%	380	103	277	163
Electric tailgate	CB	0%	250	150	100	0
Integrated child seat	CB	0%	290	145	145	0
Rooflining	CB	0%	160	16	144	0
Side airbag system, rear	CC	0%	220	121	99	0
Rear view camera	CC	-	90	26	-	-
			1.390	561	765	163
Profit Package including remaining standalone sales						325

Fig. 36: Financial evaluation of package offer for “young parents”

Another imaginable package would be a sport plus offer. Really focusing on exterior highlights, this package, presented in figure 37, could attract as well customers already having bought the sport line as also customers having ordered the comfort line who want their car to look good on the outside. The items mainly pushed in this package are the ‘R-Line’ styling pack and the dynamic chassis control.

Situation without package						
Optional Equipment	Group	Take Rate	Price	Costs	Profit per Item	Weighted Profit per Car
Metallic Paint	AA	85%	390	20	370	315
18" rims	BA	30%	780	158	622	187
'R-Line' styling pack	CA	15%	840	151	689	103
Dynamic Chassis Control (DCC)	CB	3%	600	330	270	8
			<b>2.610</b>	<b>659</b>	<b>1.951</b>	<b>613</b>

Situation with package						
Package items						
Optional Equipment	Group	Take Rate Package	Price including discount	Costs	Profit per Item including discount	Weighted Profit per Car
		<b>20%</b>	<b>12%</b>			
Metallic Paint	AA	20%	344	20	324	65
18" rims	BA	20%	687	158	529	106
'R-Line' styling pack	CA	20%	740	151	589	118
Dynamic Chassis Control (DCC)	CB	20%	529	330	199	40
			<b>2.300</b>	<b>659</b>	<b>1.641</b>	<b>328</b>
Standalone items						
Optional Equipment	Group	Take Rate Standalone	Price without discount	Costs	Profit per Item	Weighted Profit per Car
Metallic Paint	AA	65%	390	20	370	241
18" rims	BA	10%	780	158	622	62
'R-Line' styling pack	CA	0%	840	151	689	0
Dynamic Chassis Control (DCC)	CB	0%	600	330	270	0
			<b>2.610</b>	<b>659</b>	<b>1.951</b>	<b>303</b>
<b>Profit Package including remaining standalone sales</b>						<b>631</b>

Fig. 37: Financial evaluation of package offer "sport plus"

Derived from the current take rates of the options and lines, it is estimated that 20% of the customers choose the package if a discount of 12% is applied. This improves the profit by 18€ per car.

Another group of items eligible for packaging are driver's assistance systems. They have rather low take rates, customers are often not aware about the benefits and they contribute to an innovative image. Figure 38 shows a potential package offer, focusing on those items. The package adds another 9€ to the achieved profit improvements.

Situation without package						
Optional Equipment	Group	Take Rate	Price	Costs	Profit per Item	Weighted Profit per Car
Parking sensors, front and rear	CB	20%	320	96	224	45
Adaptive Cruise Control (ACC)	CA	9%	710	355	355	32
Park assist	CB	5%	150	50	100	5
Lane Assist	CB	3%	310	164	146	4
High Beam Assist	CC	7%	80	68	12	1
			1.570	733	837	87

Situation with package						
Package items						
Optional Equipment	Group	Take Rate Package	Price including discount	Costs	Profit per Item including discount	Weighted Profit per Car
		13%	15%			
Parking sensors, front and rear	CB	13%	274	96	178	24
Adaptive Cruise Control (ACC)	CA	13%	607	355	252	34
Park assist	CB	13%	128	50	78	10
Lane Assist	CB	13%	265	164	101	14
High Beam Assist	CC	13%	68	68	0	0
			1.342	733	609	82
Standalone Items						
Optional Equipment	Group	Take Rate Standalone	Price without discount	Costs	Profit per Item	Weighted Profit per Car
Parking sensors, front and rear	CB	7%	320	96	224	15
Adaptive Cruise Control (ACC)	CA	0%	710	355	355	0
Park assist	CB	0%	150	50	100	0
Lane Assist	CB	0%	310	164	146	0
High Beam Assist	CC	0%	80	68	12	0
			1.570	733	837	15
Profit Package including remaining standalone sales						96

Fig. 38: Financial evaluation of package offer “technology”

In total the three packages are good for an increase in contribution of 37€ per car. Of course many other combinations could be thought of and the benefits calculated. The limitation of those actions lies in the interdependence of the offers. If complexity remains low, take rate changes can be well estimated. If the quantity of packages and lines gets too high, substitution among the different bundles becomes unpredictable and the customers might become overstrained by the manifold choices they have to make. The technology package already has overlaps with the comfort line, so those overlaps have to be considered by the OEM in its pricing and take rate estimations as well as by the customers, who have to decide which offer they want to buy. Furthermore the calculations presume that the total take rates of items are not affected if packages are offered. If an item has 80% take rate nowadays and a package including the item is created with a take rate of 30%, a standalone take rate of 50% is estimated. In the presented “sport plus” package (figure 37) it can be seen that a substantial part of the overall contribution is generated by the standalone sales of metallic paint and 18” rims and that a loss would occur if those sales would not be made anymore. Nevertheless, as presented in chapter 3.2, this risk should

not be overrated. There is not a rational reason why people would discontinue buying standalone items because the OEM offers a package that they are not interested in. Hence the maximum substitution of the item take rates should be the package take.

As presented in the anterior paragraphs, lines and especially packages can contribute to improve the profits on optional equipment sales and allow reacting to market developments. If the additional complexity can be handled without creating extra costs and the take rate estimations are valid, offering the presented three lines and three packages improves the profit on optional items by 62€ per car. Compared to the current status this is an increase of 2%. Although the hypothetical current profit out of optional equipment sales of 2.970€ seemed to be a bit too high (cf. chapter 3.2) in relation to Volkswagen's EBIT margin per car of 629€ (cf. figure 1), significant additional earnings can be realized by focusing on optimizing the product offer. Given the fact that the Volkswagen Group delivered nearly 9 million vehicles to customers in 2013 (cf. figure 33), a profit increase of 60€ per vehicle would generate more than 500 million € additional revenues.

Besides working with the product and prices, rewarding the importer for the sales of selected optional equipment can help improving the OEM's profits. Without subsidiary agreements, the importer's margin is based on the total value of a sold car. Unit costs for specific optional items are not reflected in this calculation. Assuming an importer margin of 15%, figure 39 shows the profit for certain items on importer and OEM level.

Optional Equipment	Price	Unit Costs	Profit per Item Importer (15%)	Profit per Item OEM
'R-Line' styling pack	840 €	151 €	126 €	689 €
Parking heater	820 €	369 €	123 €	451 €
18" rims	780 €	156 €	117 €	624 €
Towbar – swivelling	630 €	202 €	95 €	428 €
Dynamic Chassis Control (DCC)	600 €	330 €	90 €	270 €
17" rims	430 €	86 €	65 €	344 €
Metallic Paint	390 €	20 €	59 €	371 €
Climate control	380 €	103 €	57 €	277 €
Parking sensors, front and rear	320 €	96 €	48 €	224 €
Keyless entry	320 €	176 €	48 €	144 €
Lane Assist	310 €	164 €	47 €	146 €
DAB radio system	250 €	30 €	38 €	220 €
Electric tailgate	250 €	150 €	38 €	100 €
Brushed aluminium inserts	240 €	72 €	36 €	168 €

Fig. 39: Profit on optional equipment on importer and OEM level

The importer's margin on for example a DAB radio system and electric tailgate is exactly the same. This is obvious, because the items have the same price. Looking at the OEM level it emerges that on this tier there are significant differences on the profits of the items. While the importer merely looks after the absolute value of sales, the OEM should try to push the sales of items with high margins. The importer itself will not put additional focus on selling the DAB radio system instead of the electric tailgate, although this would generate 120€ more margin for the OEM. A possibility to motivate the importer to sell profitable items is to establish a kickback model. The basic idea is to grant the importer an additional margin if he manages to increase lucrative sales. To provide the importer with the necessary information which items to push, three clusters can be made. Based on price and unit costs, rates of return (RoR) can be calculated and the items can be classified in gold items with more than 85% rate of return, silver items with more than 80% rate of return and bronze items with more than 70% rate of return. Figure 40 illustrates this classification for the case study of the Volkswagen Passat.

Gold Items			Silver Items			Bronze Items		
Optional Equipment	Price	RoR	Optional Equipment	Price	RoR	Optional Equipment	Price	RoR
Metallic Paint	390 €	95%	Tyre pressure monitoring system	110 €	83%	Climate control	380 €	73%
Rooflining	160 €	90%	'R-Line' styling pack	840 €	82%	Carpet mats	60 €	72%
DAB radio system	250 €	88%	18" rims	780 €	80%	Roof rails	170 €	72%
Tinted glass	160 €	88%	17" rims	430 €	80%	Heated front seats	200 €	71%
			Cruise Control	200 €	80%	Multifunction colour display	120 €	71%
						Heated windscreen	110 €	71%
						Rear-view camera	90 €	71%
						Parking sensors, front and rear	320 €	70%
						Front fog lights	180 €	70%
						Brushed aluminium inserts	240 €	70%
						Luggage net	50 €	70%

Fig. 40: Classification of optional equipment in gold, silver and bronze items

The mentioned items generate extraordinary high profits on OEM level. Those profits permit to grant an additional margin to the importer if the take rates of the items improve. Based on the current sales figures, for gold items, an additional margin of for example 10% on the additional sales could be paid out, for silver items 7,5% and for bronze items 4%. To ensure that the overall business case remains positive, the bonus is only effective, if the overall turnover on optional equipment at least remains constant. In case of the considered Volkswagen Passat, the weighted turnover on optional equipment per car is 4.473€ (take rates multiplied by prices). Considering 15% margin on this amount, in the current situation the importer earns 670€ per car. In a cautious scenario, the bonus will not lead to additional turnover, but it will also not lead to a decrease. There is no indication why customers would spend less money on optional equipment just because the importer gets a supplemental reward. The bonus should only lead to a shift towards more profitable items if the importer focuses on selling those. Figure 41 illustrates the situation, if an importer would be able to improve the take rates of gold, silver and bronze items by 4 % and to maintain the overall turnover at the cost of losing take rate at the not classified

items. If the loss on those other items was evenly spread, the not classified items lose 2% take rate to maintain the overall turnover of 4.473€.

Optional Equipment	Basket	Take Rate		Price	RoR	Weighted Turnover		Weighted Profit per Car		Weighted Kickback Importer
		old	new			old	new	old	new	
Metallic Paint	Gold	85%	89%	390 €	95%	332 €	347 €	315 €	330 €	1,6 €
Rooflining	Gold	18%	22%	160 €	90%	29 €	35 €	26 €	32 €	0,6 €
DAB radio system	Gold	17%	21%	250 €	88%	43 €	53 €	37 €	46 €	1,0 €
Tinted glass	Gold	12%	16%	160 €	88%	19 €	26 €	17 €	23 €	0,6 €
Tyre pressure monitoring system	Silver	50%	54%	110 €	83%	55 €	59 €	46 €	49 €	0,3 €
'R-Line' styling pack	Silver	15%	19%	840 €	82%	126 €	160 €	103 €	131 €	2,5 €
18" rims	Silver	30%	34%	780 €	80%	234 €	265 €	187 €	212 €	2,3 €
17" rims	Silver	40%	44%	430 €	80%	172 €	189 €	138 €	151 €	1,3 €
Cruise Control	Silver	50%	54%	200 €	80%	100 €	108 €	80 €	86 €	0,6 €
Climate control	Bronze	84%	88%	380 €	73%	319 €	334 €	233 €	244 €	0,6 €
Carpet mats	Bronze	91%	95%	60 €	72%	55 €	57 €	39 €	41 €	0,1 €
Roof rails	Bronze	32%	36%	170 €	72%	54 €	61 €	39 €	44 €	0,3 €
Heated front seats	Bronze	44%	48%	200 €	71%	88 €	96 €	62 €	68 €	0,3 €
Multifunction colour display	Bronze	63%	67%	120 €	71%	76 €	80 €	54 €	57 €	0,2 €
Heated windscreen	Bronze	32%	36%	110 €	71%	35 €	40 €	25 €	28 €	0,2 €
Rear-view camera	Bronze	8%	12%	90 €	71%	7 €	11 €	5 €	8 €	0,1 €
Parking sensors, front and rear	Bronze	20%	24%	320 €	70%	64 €	77 €	45 €	54 €	0,5 €
Front fog lights	Bronze	34%	38%	180 €	70%	61 €	68 €	43 €	48 €	0,3 €
Brushed aluminium inserts	Bronze	24%	28%	240 €	70%	58 €	67 €	40 €	47 €	0,4 €
Luggage net	Bronze	41%	45%	50 €	70%	21 €	23 €	14 €	16 €	0,1 €
Electric folding mirrors	-	22%	20%	100 €	69%	22 €	20 €	15 €	14 €	-
Navigation/DAB radio system	-	70%	68%	550 €	68%	385 €	374 €	262 €	254 €	-
Towbar – swivelling	-	14%	12%	630 €	68%	88 €	76 €	60 €	51 €	-
Front seats with lumbar adjustment	-	17%	15%	110 €	67%	19 €	16 €	13 €	11 €	-
Park Assist	-	5%	3%	150 €	67%	8 €	4 €	5 €	3 €	-
Headlight washer system	-	60%	58%	200 €	62%	120 €	116 €	74 €	72 €	-
Cargo management system	-	42%	40%	200 €	61%	84 €	80 €	51 €	49 €	-
Upholstery – 'Vienna' leather	-	35%	33%	1.310 €	59%	459 €	432 €	271 €	255 €	-
Ambient lighting pack	-	69%	67%	340 €	57%	235 €	228 €	134 €	130 €	-
Parking heater	-	3%	1%	820 €	55%	25 €	8 €	14 €	4 €	-
Gas discharge (Bi-xenon) headlights	-	57%	55%	950 €	50%	542 €	523 €	271 €	261 €	-
Adaptive Cruise Control (ACC)	-	9%	7%	710 €	50%	64 €	50 €	32 €	25 €	-
Integrated child seats	-	12%	10%	290 €	50%	35 €	29 €	17 €	14 €	-
Upholstery – 'Nappa' leather	-	12%	10%	1.590 €	48%	191 €	159 €	92 €	76 €	-
Panoramic sunroof	-	15%	13%	670 €	48%	101 €	87 €	48 €	42 €	-
Lane Assist	-	3%	1%	310 €	47%	9 €	3 €	4 €	1 €	-
Keyless entry	-	11%	9%	320 €	45%	35 €	29 €	16 €	13 €	-
Side airbag system, rear	-	9%	7%	220 €	45%	20 €	15 €	9 €	7 €	-
Dynamic Chassis Control (DCC)	-	3%	1%	600 €	45%	18 €	6 €	8 €	3 €	-
Boot space mat	-	3%	1%	40 €	42%	1 €	0 €	1 €	0 €	-
Electric tailgate	-	25%	23%	250 €	40%	63 €	58 €	25 €	23 €	-
High Beam Assist	-	7%	5%	80 €	15%	6 €	4 €	1 €	1 €	-
<b>Sum</b>						<b>4.473 €</b>	<b>4.473 €</b>	<b>2.970 €</b>	<b>3.025 €</b>	<b>14 €</b>

Fig. 41: Financial evaluation of importer kickback model

The overall turnover does not change in the simulation. As before, customers spend approximately 4.500€ on optional equipment. Nevertheless, due to the shift to items with a better rate of return, the weighted profit per car increases from 2.970€ to 3.025€. This additional profit can be shared between OEM and importer. In the presented scenario with the described extra margins, the importer gets a total kickback of 14€ per car (e.g. Metallic Paint, gold item: 4% take rate increase times 10% extra margin on the price of 390€ equals a weighted kickback of 1,6€ per car). Based on

the current profit per car of 670€, 14€ represents 2% increase. On OEM level the mix shift generates 55€ additional profit per car of which 14€ have to be transferred to the importer. Nevertheless the overall profit still increases by 41€ (1,4%). The decisive question on this optimization method is whether it is possible for the importer to affect the customer's choice of optional equipment. It will probably not be possible to fully manipulate the customers but the knowledge about the higher profitability of for example cruise control compared to a park assist and the therewith related bonus can influence the salesmen's behavior in a sales conversation. If the importer wants to benefit from the kickback, he has to find a way to influence the dealers to order the classified items. The risk of the kickback system is very low for the OEM, since the bonus is only paid for on top sales. The framework for the bonus payments has to be updated every year and of course changes in the product offer like new packages have to be considered in the targets given to the importer. Directly controlling the dealers would provide additional optimizing potential for the OEM but that is hardly possible, because normally there is no contractual relationship between them. Therefore they have to try to optimize their salesmix via the importer.

If a car is sold internationally, additional potentials lie in the choice of the right allocation of production. If specific markets generate higher profits, they should be prioritized. In markets with low optional equipment sales due to the preference of buying built to stock cars, having a lines concept can help improving profits because dealer can not only sell basic cars but also enriched versions. To quantify those effects, detailed information on the OEM's sales per market is necessary. Therefore the possibility of optimization has to be highlighted, but for detailed calculations company specific data would have to be evaluated. The situation is similar if the potential of leasing is to be evaluated. Due to the avoidance of residual value risks for the customer and the low impact on the monthly rate, leased cars are often better equipped than bought or financed cars. Nevertheless, the entire business case of the leasing model has to be analyzed to state whether a bigger focus on leasing will increase the overall profits.

The applied and quantified optimization measures show a profit increasing potential of approximately 100€ per car. Based on the current profits on optional equipment sales of 2.970€ per car, this represents an improvement of 3,4%. This can be accomplished by the creation of a line structure, the offer of packages and embedding the importers in the strategy. While the first two strategies target to transfer unused price acceptances from one item to another, the last strategy focuses on selling the items with the best rates of return. As shown in chapters 3.4.1 and 3.4.2 advertising, training salesmen and enabling dealers to present optional equipment to the customers will also meliorate the profits. To be able to analyze the exact effects of those actions empirical studies, especially tailored to the case, would have to be performed. Nevertheless, for important key markets, OEM should analyze their performance in those fields to find further optimization potentials. Of course all those

measures are interdependent and influence each other; nevertheless, substantial potentials are shown. The take rate estimations for the lines and packages are rather conservative and even if the established kickback model is not as successful as planned, it will not worsen the current status. Further chances lie in the more customer oriented basic pricing of optional equipment, which should reflect the actual customer's price acceptance. This strategy can hardly be applied within the lifecycle of a car but, if applied in new models, profit increases of up to 15% are possible (cf. chapter 3.1). Of course an already optimized basic pricing limits the optimization potential with lines and packages, therefore this effect cannot be considered as an additional profit potential on top of the presented 100€. However, an overall improvement of 100€ per car appears to be realistic.

## 5 Conclusion

Optimizing the sales of optional equipment bears significant profit optimizing potentials for OEM. Those potentials are not yet capitalized systematically. Conjoint measurement studies allow calculating the customers' individual price acceptance for specific options. By analyzing this data, the interdependence between price and take rate can be found out and hence profit optimizing prices for options can be determined. Compared to today's situation, where optional equipment prices are mostly defined based on unit costs or competitor's prices for only on one market and then applied all over the world, this can lead to profit increases of up to 15%. To execute this process within an OEM, project teams can be set up before the introduction of a new model, responsible for the analyses and pricing of the optional equipment based on conjoint measurement studies. To maintain a good balance between additional effort and additional profit this should be done regionally, based on the most important market in the considered geographical area.

Another field of action for the OEM to improve the profits is to offer lines or packages. By offering those bundles of items and selling them with a discount, excessive price acceptances from one item can be transferred to other items. To optimize the profits, the sales of items with good contribution rates but low take rate should be increased. An analysis of the current sales and classification of the items by take rate and contribution margin can support this process. The challenge is to find a marketable mix of attractive, already well appreciated items to assure a certain take rate of the package and of profitable items, to have a positive financial effect. Since the package take rate is a decisive element in the calculation of the profitability, it has to be thoroughly assessed and planned conservatively to reduce the risks. Supplemental basic statistical analyses can help to avoid incorrect take rate planning and focused promotion of special offers can support achieving sales targets. By applying this concept in the case study of the Volkswagen Passat, approximately 60€ additional contribution was generated.

In a comprehensive strategy to increase the sales of optional equipment, promotion also has to be focused on this topic. Advertising must promote the superior options or bundles and create a desire to buy those options. TV campaigns are very suitable to convey emotions, print media can be used to inform about specific items or actions and the OEM's websites and car configurators can be used for showing and explaining technologies and special offers in detail. Those advertising efforts have to be flanked by the availability of the items at the dealers and well trained salesmen who can communicate the benefits. The challenge is to establish a promotional concept that sustainably improves the profits generated with optional equipment and not only boosts the sales for a limited amount of time. The exact financial benefit of promotion is hard to quantify because it heavily depends on the invested sums, the

positioning of the brand and the channels that are served. Therefore this has to be analyzed in detailed field studies, involving the specific circumstances.

General importers form the link between dealers and the OEM. Since their margin is usually based on the turnover they generate, they are indifferent to which items they sell. Agreeing on granting an additional margin if take rates of highly profitable items are increased can align the importers with the general OEM's strategy to improve the contribution in the field of optional equipment sales. If the importers then also focus on this kind of revenue management, additional profits on OEM-level can be generated. Under the frame conditions of the presented case study, profits increased by approximately 40€ per car.

The area of distribution also has to be considered in an OEM strategy. In the distribution channel leasing the equipment level of the marketed cars is higher. Nevertheless additional risks like residual values and discounts on the used car markets have to be offset, therefore the overall effect cannot be quantified without further analyses. Depending on the degree of capacity utilization, allocating production to more profitable markets with a higher rate of optional equipment sales is an additional possibility to increase the profit.

To exploit the full potential of the optional equipment business, OEM would have to perform the presented measures in all markets and for the entire car range. To reduce complexity, control the additional costs and avoid customer dissatisfaction, focusing on the core markets is a reasonable approach and will still have a significant impact. To improve the reliability of the predictions and quality of the recommendations, subsequent studies could elaborate on one of the following questions:

- How can conjoint measurement studies be introduced in the standard pricing procedures?
- How can take rates of packages be reliably predicted?
- How can dealers and salesmen be addressed more directly by the OEM without violating antitrust laws and the contracts to the importer?
- How can the effects of promotional efforts be quantified?

If those additional questions can be answered, OEM can create a toolbox with strategies to considerably improve their profits on optional equipment sales and become more competitive.

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**7 Table of Figures**

Fig. 1: EBIT and EBIT margin of OEM per car, Jan - Jun 2013) .....	6
Fig. 2: Initial situation, fields of research and aim of the thesis .....	8
Fig. 3: Thesis' structure.....	9
Fig. 4: Differentiation serial equipment, optional equipment, accessories and parts .....	10
Fig. 5: Exemplary presentation of relevant characteristics for the positioning of a car. ....	11
Fig. 6: Market penetration of cruise control in the Audi portfolio .....	12
Fig. 7: Line structure of the Audi A3 in Germany January 2014.....	14
Fig. 8: Comparison of possible spending on optional equipment .....	15
Fig. 9: Lifecycle phases of a car .....	16
Fig. 10: Leverage effects of price and profit .....	20
Fig. 11: Price acceptance depending on origin of car (A) and relation of price acceptance and unit costs (B) .....	21
Fig. 12: Price acceptance for 4-wheel drive and sunroof .....	22
Fig. 13 Profit depending on price sensitivity .....	23
Fig. 14: Package discounts in Dutch compact car segment.....	24
Fig. 15: Profit optimization scenario by bundling .....	25
Fig. 16: Volkswagen Passat, hypothetical profit on optional equipment.....	27
Fig. 17: Classification of optional equipment.....	28
Fig. 18: Financial evaluation of bundling .....	30
Fig. 19: Financial evaluation of bundling including standalone sales .....	31
Fig. 20: Financial evaluation of bundling with alternatives for the customer .....	33
Fig. 21: Segmentation of customer groups .....	35
Fig. 22: Financial implications of enhancing serial configuration.....	37
	69

Fig. 23: Forms of communication .....	38
Fig. 24: OEM's addressees, focus fields of promotion and possible strategies .....	39
Fig. 25: Product catalogues showing optional equipment .....	40
Fig. 26: Implications of preselection in car configurators (www.audi.de).....	41
Fig. 27: Channels of OEM's promotion to the end customer .....	42
Fig. 28: Showroom exhibits to foster optional equipment sales .....	43
Fig. 29: Exemplary price built up .....	44
Fig. 30: New car configuration in the US (www.vw.com).....	47
Fig. 31: Effects on equipment level through captive.....	48
Fig. 32: Measures for profit optimization on optional equipment sales.....	49
Fig. 33: Annual deliveries to customers, Volkswagen .....	51
Fig. 34: Financial evaluation of line "Trend" .....	53
Fig. 35: Financial evaluation of lines „Sport" and "Comfort" .....	54
Fig. 36: Financial evaluation of package offer for "young parents".....	56
Fig. 37: Financial evaluation of package offer "sport plus" .....	57
Fig. 38: Financial evaluation of package offer "technology" .....	58
Fig. 39: Profit on optional equipment on importer and OEM level .....	59
Fig. 40: Classification of optional equipment in gold, silver and bronze items .....	60
Fig. 41: Financial evaluation of importer kickback model .....	61