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MEGA- AND CONSUMER TRENDS – TOWARDS CAR-INDEPENDENT MOBILE APPLICATIONS

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Abstract

The car industry is confronted with fundamental changes in society, technology and economy and forced to rethink its concept of mobility. Through constant strategic foresight, trend management and a holistic mobility vision, car manufacturers must develop innovative strategies that reflect current and future trends, in order to meet customer needs, technological standards and economic imperatives. Therefore, car manufacturers are shifting their value chain more and more towards the aftermarket and information technology (IT). Used as a tool for image branding and innovation monitoring, a closer look reveals that car manufacturers are constantly increasing their investment activities in technology start-ups. This indicates that the car industry is in the middle of a transformation process, transforming from a car producer to a mobility provider. Based on an analysis of future driving factors in the car industry and in-depth interviews, we identified six crucial megatrends: peak oil and global warming, connectedness, safety regulations, sharing economy, urban mobility and aging society. Furthermore, four shaping consumer trends were revealed: ownerless, simplicity, eco-lifestyle and personalization. In summary, the most successful providers in the mobile market might be those who understand thoroughly the consumers' needs and behaviour, in order to offer the mobility services they desire.

Keywords: Future trends, mobile applications, mobility, automotive.

1 Introduction

Continuing urbanization of our world is dramatically changing the need for mobility. In the long run traffic jams, long waiting hours and breakdowns will be difficult challenges for mobility providers, such as car makers. The shift in customer's value system and the need for innovative urban mobility solutions, require car makers to rethink their business models, in order to establish new business models beyond product-related revenue streams and to fulfil mobility requirements of tomorrow. For that reason, car manufacturers are transforming themselves into tech venture capitalists, with the ability of investing faster in young promising start-ups in the field of new mobility service. BMW i Ventures (2011), Fontinalis Partners (2010) and Daimler Business Innovation invest directly in new ventures. These recent developments in the car-industry clearly show that car manufacturers are in the middle of an ongoing transformation process. The main objective of this paper is to answer the question, *how can we create a better understanding for the future trends which will influence the market in the mobility segment of car-independent mobile applications?* By focussing on the concept of strategic foresight, a major step towards a comprehensive understanding will be achieved, building a thorough theoretical basis. Moreover, this paper will not only reveal and analyze the driving factors but also exhibit the trends that will influence the market of mobility of car-independent mobile applications, which is virtually under researched.

2 Theoretical background

From a historical point of view, for over forty years management research has been dealing with the challenge of how organizations can be currently managed in unpredictable environments while preparing for the future. The evolution of strategic management emphasizing the importance of trends, has begun in the early 1950s and 1960s (Ansoff, 1980). At the beginning of the development of strategic management, the aim was mainly to avoid crises and securing the status quo. In the early 1980s, Ansoff (1980) introduced the concept of strategic issue management, which is "... a systematic procedure for early identification and fast response to important trends and events both inside and outside an enterprise". On the other hand Hamel and Prahalad (1994) consider corporate foresight and innovation as important means of preparing enterprises for the future. The basic conditions to successful innovation management are long-term commitment to a business area and the will to secure resources and competencies. As a consequence managers should not only rely on innovation, but also foresee trends at the right time and the ability to adjust the company's strategy to the upcoming changes. However, besides the evolution of strategic foresight, it can be noticed, that this concept can be located within the field of trend- and future studies. The literature embraces a large number of different approaches in foresight studies. Nevertheless, the focus of this study is mainly on the field of forecasting and management, including, environmental scanning, issue management and creating, including the formation of applied strategies. The second theoretical concept of this study is the emergent phenomenon of *car-independent mobile applications* firstly introduced by BMW i Ventures in 2011. This makes it difficult to distinguish and define the term through a literature review. Therefore, the definition is mainly based on an applied concept by BMW. We can distinguish within three main clusters of mobile applications in the car industry based on the segmentation of the potential customers (Quay, 2011): *car-dependent mobility solutions*: encompassing in-board systems; customer segment: car-driver of specific car-brand. *Car-related mobility solutions*: defined as new mobility and car-sharing concepts (such as DriveNow or car2go); customer segment: all car-drivers. *Car-independent mobility solutions*: includes all mobile applications among the broader field of mobility, not necessarily connected to the car itself; customer-segment: mobile users. In this study we focus on the third cluster of mobility services with *car-independent mobile applications* offered by car manufacturers.

3 Research approach

Systematically, the research starts with a qualitative analysis on future studies and trend monitoring, in

order to identify driving factors of new mobility solutions. The process of trend monitoring is oriented around and based on published studies and trends analysis. For the limited extent of this paper, not all trends can be presented. Based on a comprehensive literature review, only the most important trends and trends with the highest impact on the car-industry are examined. The second part of research consists of qualitative experts interviews. It aims at generating branch insights of this emergent phenomenon of car-independent applications and a thorough understanding of the different perspectives of experts. The *expert-based technique* is applied, in order to gain an additional insight in the relevant areas: car manufacturers who act as venture capitalists, start-ups develop car-independent mobile applications, megatrend and consumer trends knowledge. Based on the transcripts of the interviews, a qualitative analysis was applied, following Mayring's (1993) framework of qualitative content analysis (codes, categorization, contextualization). Finally, based on the external driving factors of the car-industry and interviews with experts, six megatrends and four consumer trends are identified.

4 Results

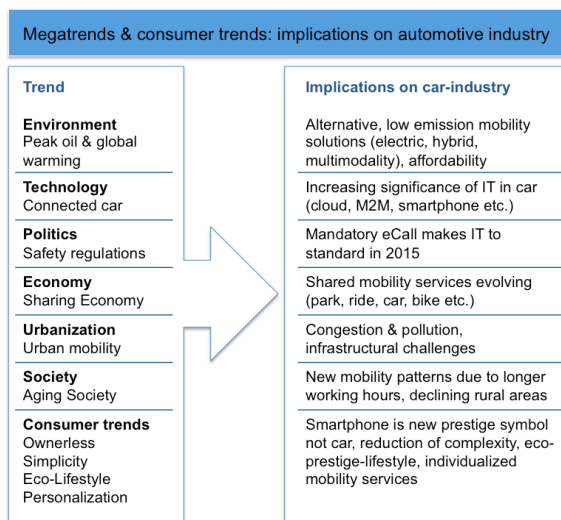


Figure 1. Megatrends & consumer trends: implications on the car industry.

Driving factors, megatrends and consumer trends: globalization, urbanization, economic challenges, changing values in society, the on-going climate change and revolutionizing technologies demands an ever-greater degree of adaptability and flexibility from today's managers. According to Liebl (2009), these trends are considered to be important drivers of environmental discontinuities which may lead to strategic surprises. Thus, they force managers to think ahead. While on one hand there is a need to look ahead to medium/long-term developments, there is on the other hand a need to continue concentrating on daily business. Given this fact, staying up-to-date and monitoring trends of high impact for the business is a highly complex process. The process of trend monitoring and strategic foresight incorporates various environmental, economical, societal, political and technological factors nature. However, it is important to keep in mind, that trend studies, as mentioned earlier, are not accurate studies. Therefore, to predict the future starts always in the present. Based on that, the challenge is to identify and to understand trends of today, because an incorrectly understood or poorly interpreted trend (*strategic disinformation*) is even worse than a trend that has been ignored. Furthermore, according to Pillkahn (2008), a lack of knowledge may lead to poor or wrong decisions in strategic management. In addition to identifying a trend, it is essential to formulate it correctly and apply it as a strategic decision making tool. Therefore, the aim of this section is to identify driving factors influencing car manufacturer's mobility services. First of all, we look at the bigger picture on a macro level, in order to identify the so-called megatrends. These are trends, that can be defined as large, long-term trends or a major change over a time period (20-30 years). Moreover, the presented trend monitoring approach takes a closer look into the micro level of consumer trends today. The reason for this is that

nowadays developments of innovations are not only determined by what is technologically feasible, but by what generates the greatest benefits for the consumer, and what appears to be acceptable in societal terms (Weyrich, 2008). Therefore, it also aims to identify this crucial consumer trends and mobility needs. However, technically speaking, since consumer trends are not that impactful in terms of time (5-10 years), they can not be termed megatrends. In addition, due to the important role of user insights into the innovation process, it is useful to focus on this part separately. Megatrends are global factors that constitute the basic conditions for all areas of the economy and society on a long-term perspective, which has become all pervasive (Schnitzler, 2005). These exemplary megatrends are in brief (Fig. 1): *peak oil and global warming (environment)*, *connected car (technology)*, *safety regulations (politics)*, *sharing economy (economy)*, *urban mobility (urbanization)* and *aging society (society)*. After looking at megatrends and driving factors (on a macro level), the next section aims at showing the resulting societal and consumer trends. The focus is on major changes in the world of customers on a micro level. This part is driven by the concept of human-centered innovation approach “Design Thinking” (Brown, 2009). The core of this user-centric approach is to deeply understand the consumer perspective, to examine their behaviour, values and needs. Moreover, it will help to capture unexpected insights that reflect precisely the zeitgeist of our society and future mobility customers. Also, this excursion helps to convert need into demand. According to Brown (2009), innovations often fail because companies invest too little in consumer research and know too little about customer requirements. At the same time, only about one out of six innovations offered is actually purchased. Thus, car manufacturers need to know their customer and their needs very well in order to target the market with desirable products. We will therefore look at those needs and changing value system closely in this part of the study. The present section focuses only on the most influencing trends on future mobility solutions. Therefore, four main consumer trends can be identified as the most important and representative trends (Fig. 1): *ownerless*, *simplicity*, *eco-lifestyle* and *personalization*.

In conclusion, the global megatrends in societies, politics, economies, technology and environment define the requirements that future cars will have to fulfil. They show how innovation strategies must reflect current and future trends in order to meet customer needs, technological standards and economic imperatives. These implications for the car industry based on the representative trend are concluded in the following. Due to shifted priorities such as new prestige symbols (smartphones) and the increasing importance of sustainable lifestyles, car manufacturers need to reposition themselves from car producers to eco-lifestyle oriented mobility service providers with affordable services. Car manufacturers are even more frequently confronted with the challenge of finding new ways of value creation. A way for this to be realized could be by empowering the human mobility experience in a holistic 360° personalized manner (e.g. full smartphone integration). This is undermined by the demographic challenges (aging society) and the ongoing urbanization. Mobility patterns will shift on one hand towards multimodality (due to congestion). On the other hand, car manufacturers are confronted with infrastructural challenges due to declining peripheral rural areas (responsive mobility services demanded) and new demands in the majority market. The increasing need for individualization to realities without boundaries (on-/offline) and 24/7 connectedness shift the value chain of the car industry more and more towards the aftermarket and IT. Telecommunication providers and suppliers see also big opportunities in terms of entering the car IT market. This development of connected vehicles is supported by legal regulations (eCall). Thus, connectivity is shifting to a mandatory standard.

Expert-interviews: the following section shows the main results of the interviews carried out. In total, five experts were interviewed (between August 17th 2012 and September 13th 2012). The interviews lasted 56 minutes on average. Due to the fact that the topic for this study had not yet been selected, all qualitative interviews helped to gain relevant branch insights. Based on the theoretical sampling method, the aim was to interview respectively one expert from each category, as defined earlier: car manufacturer acting as venture capital firm; mobility related mobile app start-up financed by car manufacturer/ not financed by any car manufacturer/ independent, but strategically connected to car manufacturer; bigger picture (megatrend/consumer trend) expert. Each expert stands for a unique perspective, which shows the complexity of this study. Based on the sampling structure the following interviews were conducted: car/VC (A1, one interview partner), start-up (S1), financed, one interview

partner, start-up (S2, non-financed, one interview partner), start-up (S3, strategic partnership, one interview partner), trend (T1, infrastructure, one interview partner). All experts are in leading position (CEOs, managing directors, founders) and have shown comprehensive branch knowledge. The gained insights are based on qualitative content analysis based on Mayring (1993) through codes, categorization and contextualization. These main findings are presented in the following. The interviews showed insights into all three areas provided by five different perspectives of the current development of car manufacturers investing in mobility start-ups. However, we can cluster the outcome of the expert-interviews into three main areas. *Strategy & motivations: why are car manufacturers investing in mobility start-ups?* Most of the experts believe car manufacturers are in the middle of a transformation process (from car producers to mobility service providers). As mentioned above, this assumption is also supported by the experts who were interviewed. Some of them believe, however, that the investments in start-ups are caused by chances missed some years ago, when the time ripe was to rethink the mobility concepts. Now they are acting under pressure and see the need for “buy ideas” and innovation to accelerate their innovation process through newly gained knowledge. Significantly, some experts mentioned that the main driver is “image branding” (attractivity to younger people). Furthermore, some experts clearly stated that car manufacturers are not looking for high revenue streams. Profitability is, if at all, a long-term goal. Strategic advantages stand well in the fore and investing in the next big thing might mean gaining useful competitive advantages in the future mobility service market. *Megatrends & consumer trends: What will influence the market of mobility?* The interviews also aimed at gaining insights into potential trends for the mobility sector. All three interview partners with an entrepreneurial background pointed out that the entire sharing movement (sharing economy) will literally drive the business of mobility providers in future. Another trend, which appears important to four of the experts is multimodality, which is connected to the general development of alternative fuel vehicles (“e-mobility”). In connection with this, one expert mentioned the trend of “downsizing”, the production of smaller, cheaper cars due to “cost-efficiency”. However, one main trend all of the interviewed experts are strongly agreeing on, is the fact that the consumer will have big impact on the market (“customer is king”). It is crucial to know the consumer needs and to understand deeply their behaviour thoroughly, in order to offer them the services they desire (“flexible mobility solutions”). In addition, trust and safety play an important role, especially when it comes to sharing or renting private assets. *Challenges: what issues will confront car manufacturers in the future?* Most of the experts believe that car manufacturers will have to deal with many challenges when entering the emerging mobility market, starting with one big challenge: integration, whether at an organizational level, integrating the new gained competence and knowledge in the own corporate knowledge system or the challenge of integrating of the product (e.g. new venture) in the existing, emerging product portfolio. This also implies the opportunity to create new business models around multimodal platforms. In terms of potential competitors, the experts have given very varied perspectives on this issue. Some think there is a big competition in the mobility market, for instance through telecommunication providers, who will have technically big advantages (mobile internet). On the other hand, one thinks competition in the traditional sense could not be seen, and car manufacturers work in a cooperative relationships together with different industry sectors. In terms of R&D expenditure, one expert pointed out that car makers still spend too little. Car manufacturers recently established new venture capital firms are confronted with internal and structural problems (internal decision-making processes are slow). Usually, product life cycles and planning cycles run over years. This concept clashes with the fast acting innovation cycles of start-ups.

5 Conclusion

In conclusion, the challenges in this study can be summarized in five success factors (Fig. 2).

The presented study suffers from several limitations. Firstly, a fundamental challenge to the concept of strategic foresight and trend studies is that the future is never one-hundred-percent predictable. Therefore, trend monitoring needs to be critically assessed. However, an analysis of crucial megatrends and consumer trends can lead to insights and strategic implications on the future of the car industry. Addi-

tionally, it is important to bear in mind that due to the limited extent of this study not all trends can be presented and examined. Also connected to this issue, all reviewed trends are based on the literature and studies of others, which always implies the risk of missing important factors or getting misleading information. Furthermore, another point that must be critically reviewed is that the topic of this is virtually under researched. A lack of data leads to the need to develop new concepts and to get in touch with experts in the field of venture capital, automotive, start-ups and trend research. Since the emergence of car manufacturers investing in technology start-ups is part of a bigger transformation of the automotive manufacturers, it was crucial to talk to such experts. All of the experts are in leading positions. The senior roles and high credentials of the experts made it difficult to make an appointment and to get the chance to interview them. Secondly, due to the qualitative approach the results are not representative.

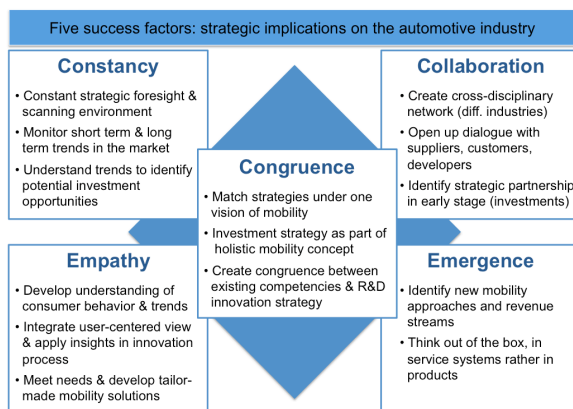


Figure 2. Five success factors: strategic implications on the automotive industry.

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