SUPPORTING OF AGILITY IN AUTOMOTIVE BUSINESS THROUGH SERVICES BASED ON CAR CONNECTIVITY

PODPORA AGILITY V AUTOMOBILOVOM ODVETVÍ POMOCOU SLUŽIEB PRE KONEKTIVITU AUTOMOBILU

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Abstract
Agility emphasises the turbulence of today's markets and business environment. The coming era of connected vehicles offers great opportunities: automotive manufacturers will gain a direct channel to customers that will help strengthen brand relations, drive aftermarket sales and services and co-operate with new partners in the networked society. This article deals with the impact of connected car services on the automotive business.
Key words
Automotive Industry, Car Networking Application Domains, Services of Car 2 x Connectivity, Business Challenges.

Introduction

Today agility defines the imperatives for doing business in the new customer-centric, knowledge-based, global economy. New digital era will enable entirely new business models. Connectivity and lifestyle trends are changing the way cars are used. Car will become an active, mobile node in the Internet.

This contribution illustrates effects of Internet networking in automobiles, connected to external interfaces, and customer acceptance of these systems which are suitable for multiple application domains – external connectivity, security, telematics, diagnosis, integrated safety management etc. Bringing services and applications from the consumer space into the car is an intensive challenge for automakers. Creating a networking between the car in traffic, its own original data, and its surrounding infrastructure via the Internet will give rise to new applications and business models in automotive. The impulses that can support the development and implementation of standardized services for car connectivity are resulting from information technologies and globalization trends, assuming that the close collaboration of OEMs, Tier-x suppliers, Government bodies and consumers is realised and synergy effect is reached.

The interpretation of subject of this article is based on the combined data set of many published reports and analytical studies.

Challenges of car connectivity services to growth automotive business

After a car is sold, automotive manufacturers have paid little attention to revenue generated by fuel or energy, insurance, parking, car rental, or value-added vehicle ownership and travel services. The advent of vehicle connectivity opens a currently untapped treasure chest of new profit pools, and completely new service and pricing options for automotive manufacturers. [8] Best in class automobile producers (OEM – original equipment manufacturer) and ICT companies (information and communication technologies) are realizing the development in cooperation to use car potential as a gateway to the Internet. Complex solution will provide domain-independent services that can be customized to the needs of a particular application domain addressed to the automotive. By having the vehicle constantly connected, the

automotive manufacturer will be able to monitor the status of the vehicle and to feed information back to the production line resulting in faster turnaround modifications to lower warranty costs. Drivers and passengers will be able to access applications from a screen in the vehicle to enjoy the same level of digital services that consumers today are used to have in their homes, work or on the go. Owners will also be able to connect to the vehicle remotely from other devices. The owner will have an easier service procedure where the vehicle will be able to detect issues that need to be serviced and automatically handle the service booking procedure connecting the dealership and the repair shop, as shows example of application in Fig. 1. [3]

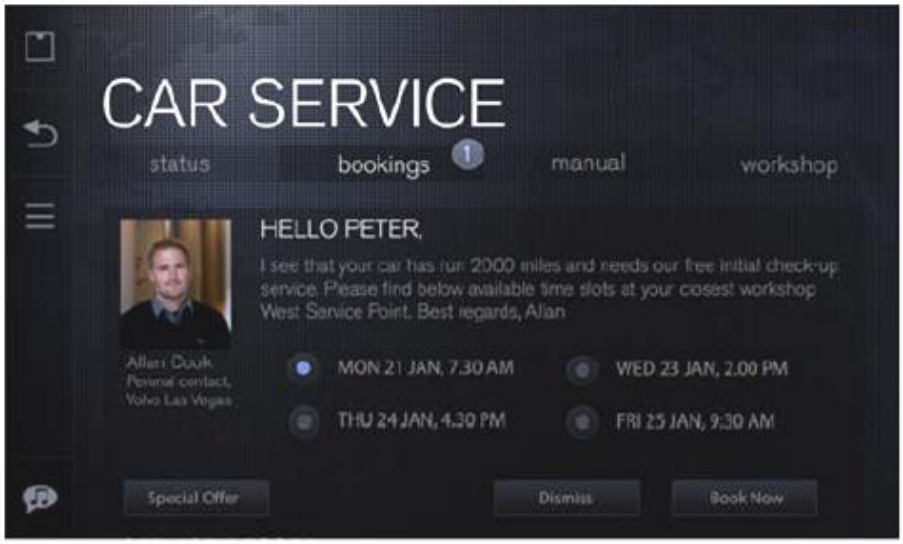

Fig. 1 Example of connected service booking Source: [3]

Vehicle connectivity has already become available in certain markets, especially for cars in the premium segment. Current offerings focus primarily on extended telematics services. The unique trend in the saturated markets is the growing importance of car connectivity as a purchase criterion. Vehicle individualization is an important factor for younger drivers in particular. Young customers enthusiastic about technology want a car to function as an extension of their virtual environment, taking features such as an individual user profile, personalized services, and social media with them. [5] Consumers will be prepared to pay for services that add value to their driving experience, such as good human-machine interaction (HMI) solutions. On the other hand, it wouldn't be easy to ask consumers to pay for services they already use with their cell phones.

Connectivity is becoming more important in vehicles with alternative drive forms and city cars. For example, electric vehicles require connectivity - systems allow to find the nearest charging station, estimate if it is reachable given the battery load and reserve a charging point online. Also new mobility and user concepts such as multimodal systems and car-sharing concepts will gain relevance in the future. These mobility solutions rely on people and vehicles being fully interconnected. [4] Zipcar, iCarpool, CarBuddy, Zingo Taxi, and car2go are the examples of how the dwindling desire to own a car, combined with services enabled by vehicle connectivity, is creating new business models for car sharing and on-demand driving. [8]

Significant increases are expected in the volume of mobility-related information exchanged, the use of commercial B2B services and in-car infotainment. Creating a link between the car,

its own original data, and its surroundings via the Internet will give rise to new applications and business models. [5]

The connected vehicle system allows automotive manufacturers in their role as service provider to focus on building up the customer relationship and not to worry about building isolated solutions for connectivity, service enablement, content management, charging, billing and customer care. [3] Companies such as Google, Microsoft, Cisco and Oracle are providing the hardware and software needed for connected vehicle technology and the related business models. From the underlying system architecture to the user interface, from end user applications to payment transaction models, these players are integrating themselves into the product development lifecycle, forging partnerships with OEMs and suppliers to develop new solutions. Providers of connected mobility solutions must find business models that are sustainable according to the dynamics of the new value chain. [4]

Connectivity also becomes the catalyst for an entirely new range of collaborative business opportunities with partners. OEMs need to collaborate closely with both developers and customers in order to create successful applications. These include insurance providers, fuel companies, retailers and civic authorities etc. Through strategic partnerships, the connected vehicle will create a number of additional revenue streams for automotive manufacturers from new players, as expressed in Fig. 2. Profitability will be achieved through directly paid services (B2C), and indirectly by leveraging benefits further along the value chain, together with other value creation partners (B2B). [5] Collaboration among these value-chain partners is a critical success factor. Drivers want information e.g. about the most efficient route, the lowest gas prices, and the best restaurants. The ability to deliver this information inside a moving vehicle is becoming increasingly important for auto manufacturers.

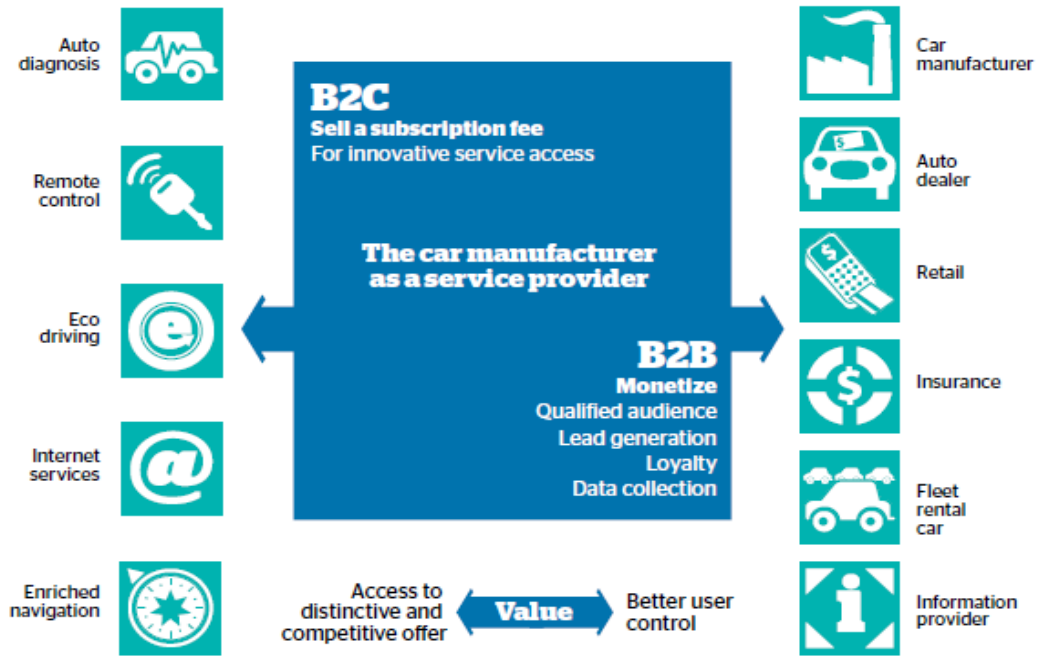

Fig. 2 Schematic formulation how can the car manufacturer exploit connectivity with other businesses to create and sustain new streams of revenue Source: [2]

Participating partners would pay for access to this new vehicle user customer base, and connected car manufacturers or fleet operators could emulate successful business models from the technology industry. The technologies involved in realizing the connected car currently exist primarily in the automotive, software, and telecommunications sectors. [2]

Many stakeholders intuitively see the benefits of connecting vehicles and have started to develop business cases for their respective domains, including the automotive and insurance industries, government, and service providers. The prognosis of car connectivity services development is based on two different scenarios: [5]

1. Automotive manufacturers are in control of all services based on the connected vehicles marketed under their brands. Content and applications are hosted on servers operated by the automotive OEM with access provided only via manufacturer-specific portals. All services not developed directly by the manufacturers and their partners undergo a certification and review process within the OEM's organization. The automotive manufacturers' main concern – system security – thus remains under their control. Automotive OEM however, can hardly keep up with the rapid pace of development on the Internet, short update cycles, and the many different user profiles and applications in use.
2. These applications are developed and provided either by independent programmers or by software developers. They represent an intelligent way to combine different pieces of information from the Web, thereby generating high added value for users in their cars.

The market potential for aftermarket in-car connectivity solutions is certainly interesting because the segment of customers who are young, tech-savvy, but less willing to pay demands low-cost, flexible solutions. The challenge for OEM in terms of this target group is to provide attractive services at the speed and quality these users are accustomed to receiving from the Internet community. [5]

Aftermarket features are generally installed directly at OEM dealerships or at locations operated by automotive accessory specialists. Automakers are seeking connectivity solutions that can adapt to a wide range of use cases, such as a change of business model, a change of mobile operator and a change in the ownership of the vehicle, countries of operation, etc. [7]

The automakers have the opportunity to make driving safer and reduce the impact vehicles have on the environment by leveraging new C2C communications pathways that can also be formed as a result of these new developments. Those automakers that take a cross-functional approach in developing their connected services business model and engage functions across the enterprise, while also creating services that address consumer experiences from other industries, may have the most significant chances of taking an advantage against their competitors. [6]

Conclusion

Vehicle connectivity has the potential to transform the automotive industry. It allows manufacturers to expand the automotive value chain from building cars to selling travel time well-spent. Web-based applications and services specifically designed to enhance the driving and ownership experience represent in automotive business a significant chance to generate consumer interest. The volume of data exchanged and value-added services accessed via in-car Internet will rise significantly – there is growing demand for mobility-related information, commercial B2B services, and in-car infotainment. Cars would turn into "personal digital assistants on wheels".

Agility is in general defined as: the ability to thrive in a competitive environment of continuous and unanticipated change and to respond quickly to rapidly changing markets driven by customer-based valuing of products and services. The automotive industry is an increasingly global business and connecting the vehicles demands a global solution with standards-based infrastructure to lower the cost of ownership and fully leverage the potential in the automotive ecosystem.

Key words
Automobilový priemysel, aplikačné možnosti konektivity vozidiel, služby pre v internetovej sieti pripojené automobily, podnikateľské a obchodné výzvy a príležitosti.

Acknowledgements
*This contribution is the result of the project "**VEGA 1/0879/13**: Agile, to market adaptable business systems with highly flexible structure in enterprise" - supported by the scientific grant agency of the Ministry of Education of the Slovak Republic (ME SR) and of Slovak Academy of Sciences (SAS).*

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