

## Leveraging Business Model Components as Drivers of Business Model Portfolios

Wolfgang Sachsenhofer<sup>1</sup>

---

### Abstract

**Purpose:** The paper develops a systematic overview of business model portfolios and links it to the diversification literature. It conceptualizes the firm as consisting of multiple, different business models, with the purpose of advancing the structural, organizational and strategic understanding of business models and corporations.

**Design:** The research design is an in-depth case study focusing on a large European incumbent firm in the automotive industry, secondary data is supported with primary sources.

**Findings:** Despite its inherently limited nature as single case study, the paper shows important findings in the study of corporations: A new way thinking of the business model architecture within the firm.

**Practical Implications:** For practitioners, the paper offers a new toolkit in conceptualizing their firm and shows strategic options in creating, managing and discarding different business models.

**Originality / Value:** The concept of interlocked business model components as drivers of value creation within business model portfolios offers a new explanation for strategic portfolio creation.

---

Keywords: Business Model Innovation; Portfolio Strategy; Business Model Management; Diversification; Disruptive Technology

---

Please cite this paper as: Sachsenhofer (2016), Leveraging Business Model Components as Drivers of Business Model Portfolios, *Journal of Business Models*, Vol. 4, No. 3, pp. 37-47

---

<sup>1</sup> Institute of Strategic Management, Vienna University of Economics & Business, Austria, [wolfgang.sachsenhofer@wu.ac.at](mailto:wolfgang.sachsenhofer@wu.ac.at)

## Introduction

So far, no generally accepted definition of the term business model (BM) has emerged, a notion that is shared by a majority of researchers within the academic field studying business models (e.g. Chesbrough, 2010; Zott, Amit & Massa, 2011). Consent though exists in the description of a BM; that it is a cognitive device that creates value and allows the capturing of the created value. The concept of a business model outlines (1) how to create sustainable value in an increasingly interconnected and fast moving world and (2) how to protect this value from being captured by competition (Chesbrough, 2010; Teece, 2010). This paper understands the business model as consisting of discreet components (activities & resources) connected by profit formula creating customer value (Johnson et al., 2008). This component view (discreet and systemic) can be observed in many other theoretical musings about the business model (Sabatier, 2010; Zott, Amit & Massa, 2011).

The firm today is a collection of different business models interrelated and interacting with each other (Sabatier, 2010; Casadesus-Masanell & Ricart, 2010; Kim & Min, 2015; Sohl & Vroom, 2016). This conceptualization of business models opens a wide range of managerial possibilities. Managers of corporate business models are not limited any longer by an option space that comprises only restraint, incremental improvement or abandonment of the existing business model. In fact, business model management becomes a critical strategic task - to be carefully managed. Sohl & Vroom (2014) show that relatedness of business models is a greater determinant of performance than industry relatedness when expanding. Furthermore, Casadesus-Masanell and Ricart (2010, 2011) studied interrelations between several business models within one firm. In observing the airline industry, they show the example of a Chilean airline which incorporates two business models at the same time: One carrying passengers and another one carrying freight. Similarly, Kim and Min (2015) observe the retail industry and the propensity of incumbent retailers in adding new online business models. Both works argue that firms add new business models when they see it fit to do so as potent strategic move. Previous work on business model portfolios, for example by Sabatier et al. (2010), introduced this portfolio thinking into the business model community. However, existing scholarly work does not provide a proper and satisfac-

tory definition of a BMP and does not differentiate between simply operating multiple business models within and across the boundaries of a firm and the intended management of a bundle of business models. Further, existing literature is silent when it comes to the elements and dimensions of BMPs and BMP management.

Though, whereas Casadesus-Masanell and Ricart (2011) view mostly efficiency gains as impetus for the operation of two business models, Kim and Min (2015) investigate the antecedents of business model portfolios. They view the incumbent asset basis as an independent variable in their research by distinguishing between complementary assets (Teece, 1986) and conflicting assets, what they define as the opposite of complementary.

These papers constitute important additions to business model innovation research: Innovating business models not by changing the internal dynamics of the existing business model, but by adding a new one. At the same time, there is a noted absence of a systematic overview of this new field. Attempting to understand the new research (sub-)field in the business model innovation stream contributes in answering fundamental questions of business strategy and business model research: Kim and Min (2015) have identified corporations that add new business models to their old one(s). Whereas Casadesus-Masanell and Ricart (2010) describe existing firms operating at least two business models at the same time. Therefore, implicitly there are different options as to how several business models are operated in the same firm. For instance, potentially a new business model might just be added to the existing portfolio of BMs in the firm, or it might be swallowed by one of the existing models. Meaning, we ask the questions of: How can business model portfolios be managed in fundamentally disruptive environments?

To answer these questions, this paper attempts a two-folded approach. The paper reviews the existing literature on multiple business models as well as the literature on corporate diversification as a basis to find theoretical constructs aiding in understanding the phenomenon of multiple business models within one firm. Then, exemplarily, this paper conducts a case study of

BMW AG, a German Original Equipment Manufacturer (OEM) to highlight the different business model interactions of a business model portfolio within a single firm. Also, the different origins of multiple business models and the challenges of multiple business model management are discussed. The data collected in the case study is the result of several in-depth interview conducted with employees of different BMW business models, as well as data obtained from desk research. BMW as a whole corporation is divided into different business models, following the logic of Johnson et al. (2008), who identify a business model as possessing a distinct customer value proposition, a profit formula and operating resources and activities. The resulting business models and components are then analysed for their interaction. This paper explains the logic of business model portfolio architectures as a static concept, then uses four identified disruptive trends to illustrate the dynamics of managing a business model portfolio in the face of fundamental change within different business models using the aforementioned case of BMW. The case and literature overview serve as the basis for theory on the use of business model portfolios; how both practitioners and academics can perceive the business model as a construct of components that interact with each other. It also shows that four different options exist for managing business model portfolios; Business model reconfiguration, Business model innovation, Business model elimination and Business model coordination for successfully operating a business models portfolio depending on internal and the wider strategic environment.

## Theory: Diversification of Business Models

Fundamentally, diversification presents itself as a rational move, when corporations possess specialized knowledge or strategic assets, as is argued by Markides (1996). Teece observes that managers naturally possess systematic knowledge advantages over investors and therefore should be better at diversifying into new product lines than investors (Teece, 2010). The initial

impetus for diversification stems from economics – creating economies of scope and reducing fixed costs. Markides and Williamson (1996) argue that a more important factor is to derive long-term benefits by looking for types of “dynamic relatedness” to pursue asset sharing (Markides & Williamson, 1996). Tanriverdi and Venkatraman (2005) show, that the concept of relatedness does not only matter when discussing resources or assets just as well with different knowledge dimensions. R&D relatedness, customer relatedness even managerial processes show relatedness that when combined yield positive results (Tanriverdi & Venkatraman, 2010). What follows is that synergies from diversification exist in several different dimensions within a business. When combining the positive effects (synergies or economies of scope), on the component level the entire corporation profits.

This logic works just as well for business models. Considering the often more complex nature of business models vs. products – this component view ought to be true for firms diversifying their business models as well. Diversification in the context of BMI means, that a corporation is able to leverage its components strategic or otherwise<sup>1</sup> of one business model and combine it with the component(s) of another business model. Thereby the new business model not only profits from the same specific advantages inherent in the component(s), the sometimes considerable portion of fixed costs that a standalone business model would have to operate under, is reduced as well. Depending on the depth of leverage, the fixed costs portion and the general competitive environment, this sometimes results in a significant inherent advantage. The cost advantage and the advantage of possessing a potential bottleneck result in the accrual of a greater share of profit over the standalone Corporation B (without possession of these strategic assets). Markides and Williamson (1994) also show, it is not the product or service as outcome of a set of assets or capabilities, but the inner workings of the process of how these are created that are the source of at least temporary competitive advantage<sup>2</sup>.

---

1 Strategic assets (Markides & Williamson, 1994): A firm's asset under control that cannot be accessed / replicated / substituted quickly and cheaply by other competitors. Strategic assets form the basis of the profit formula as they are the driving force behind differentiation and quasi-monopoly rents

2 Assuming that in a market economy no asset offers permanent / sustainable competitive advantage

This translates into the business model logic as following: It is neither a single business model component that leads to temporary competitive advantage. Instead it is the system that is behind creating a strong customer value proposition (being a product or service), the profit formula of a business model and of course the resources (asset based) and activities (knowledge based) that drive value capture through diversification of business models.

## **Ecosystems and platforms as foundation for business model portfolios**

Today's developments in the individual mobility space are – from a strategic and competitive point of view – fundamentally different from traditional notions of competition and strategy. Over the past 50 years OEMs derived their profits from either being technology or cost leaders. Differentiation happened within the industry through product innovation (e.g. automatic steering, engine efficiency) (Bakker, Van Lente & Meeus, 2011); Tillemann, 2014) and process innovation (e.g. Ford's conveyor belt) (Tillemann, 2014). The car as such did not undergo major breakthrough developments – with the described technology disruptions, this is likely going to change. Besides technology and business model innovation within the traditional automotive industry, similar developments appear outside the automotive industry. Major technology corporations that have previously only stayed at the margins of the automotive industry are entering. These developments are the more relevant as Adner and Kapoor (2010) point out – they therefore argue that the concept "ecosystem", ought to take the place that was previously reserved for the industry concept to take account of these developments.

Value creation and delivery in most industries is critically dependent on a network of corporations in the ecosystem. An ecosystem today is a complex web of interdependent layers of corporations that contribute towards a solution solving a customer need. In more and more differentiated economies<sup>3</sup> these allow greater specialization between firms. Value generation and capture mechanisms therefore occur within that space. All the same, this leads to greater interdependencies

between firms. These interdependencies are made apparent when using the business model lens: Shared business model components within firms and beyond act as glue in the creation of related business models that ultimately make up entire ecosystems.

Exemplary for such a complex web of interdependencies is the ecosystem that is forming around the individual mobility services and beyond. There, these effects are visible in the value chain and solution differentiation. The ecosystem consists of a complex web of secondary and tertiary suppliers, who themselves often possess supplier subsystems. Large cooperation networks enable firms to further reduce costs and participate in R&D that would on standalone basis to costly and / or risky. Furthermore, networks organizing after sales service, repair, maintenance and upkeep (fuel industries) are following after the OEM's value add. In addition to the core system, the automotive industry is part of a wider ecosystem, consisting of for example in-drive information provision, entertainment, mapping and parking services, but also the railways, rental car firms or city authorities planning to reduce traffic in inner cities.

This has important implications for corporations and their perspective on the business model as a concept as well as a strategic tool. Choosing to focus on the ecosystem, rather than purely on the immediate environment of innovation, changes the prioritization of opportunities and threats, thinking about market timing and positioning, defining and measuring success (Iansiti & Levien, 2004) and strategic decision making.

## **Disruptive technologies as drivers of business model dynamics**

Potentially, traditional OEMs face four distinct exogenous drivers of change, each with the possibility of disrupting the current business model:

- *Autonomous driving* (The Economist, 2012) – The developments have been noted remaking the use of the car – instead of being one an objectified symbol of freedom, it might lose its branding edge. Technical features of the car might become less important, instead of the possibilities associated with having from individual time and a second living / working space outside the house.

<sup>3</sup> Coase's (1937) theory of falling transaction costs powerfully explains value chain differentiation

- *Digitalization of the car* – data in the car poses great opportunities for data management firms such as Amazon, Google and Facebook to tailor the driving experience and capture great parts of the value associated with mobility spent. Conversely this poses a threat for traditional automotive firms, as differentiation potential diminishes.
- *Ownership of the car* – owning a car is becoming much less attractive with the increasing diversity of different car sharing options as well as increasing national regulation by cities around the globe (most prominent example is London, The Economist, 2002). Business models like the ones from car2go or UBER offer constant availability of cars to urbanites – making individual ownership of cars less attractive. OEMs business models might come under threat through stagnant revenue and lower profits.
- *Power train* (Bakker, Van Lente & Meeus, 2011) – the modern car is a technology system centred around the internal combustion engine that established itself as dominant design. With both Electric Vehicles (EV) and Fuel Cell Vehicle (FCV) technologies on the rise, this hegemony is threatened; with possibly grave effects on business models in the individual mobility ecosystems.

The fourth described disruptions (FCV and EV power train systems) are most likely the most fundamental challenge for several of the current business models of traditional OEMs. The entire mobility ecosystems might change from being based on hydro-carbonates to a more diverse and potentially exclusively electric power-based source. Fundamental technology transitions such as these usually impact much wider fields than just the immediate competing technology, such as the transition from horse-drawn carriage to the internal combustion engine driven vehicle at beginning of the 20th century (Tillemann, 2014).

## Management of Business Models Portfolios

To be able understand business model additions, this paper looks at several automotive corporations and their operations. We evaluated the scope of their production – effectively what parts and which operations

in the wider ecosystem around the car are done within the firm and which operations are usually done outside it. In the end, for practical purposes and to best demonstrate the different types of business model portfolio logics, the BMW AG case offers both a widened scope of interrelation types as well as a concise logic in how they interact.

### BMW Group Case

BMW Group comprises BMW AG and all subsidiaries controlled directly or indirectly by BMW AG. BMW was founded in 1916 as a manufacturer for airplane engines. 1923 the first motorbike was built by BMW and in 1928 the production of cars started. Today BMW Group is a manufacturer of cars and motorbikes and provider of related services. BMW Group is represented in more than 140 countries, employs more than 116.000 people, and has an annual revenue of 80.401 €million in 2014. The company is among the largest industrial companies in Germany.

Following the argument that the value proposition is the unit of analysis to identify a BM, four BMs of the BMW Group were selected for further investigation: BMW (cars), BMW Group Financial Services, BMW i and DriveNow.

A corporation such as BMW AG might colloquially be termed as a “car company” operating a “premium car business model” (a comparison would be Ryanair in the airline industry “low cost carrier business model”). Despite its general truth, this paper argues it to be an oversimplification of what the business model concept both in terms of its descriptive power of the firm in its entirety and beyond as well as a tool to contribute to increased performance.

### The Business Model as an expression of a corporation's architecture

The exemplary statement above equates the concept of the business model with the initial definition of the concept by Margretta (2002); being a narrative or story. With that perspective, business models of incumbent automotive firms are much less clear cut as will be demonstrated using the case of BMW AG:

- (A) BMW AG's electric vehicle operation “BMW i”
- (B) BMW AG's financial services operation

As a result of technology developments coming from the wider ecosystem (power train: in particular the standard Lithium-Ion battery enhanced through the development of the Cobalt-Cathode), BMW AG has created a new initiative, BMWi. This initiative has grown to satisfy customers' needs for individual mobility by harnessing the new technology of electric mobility. This, by opening a joint-venture based battery production facility, by establishing an entirely new sub-brand; by planning, developing and producing a carbon-based chassis (lower weight). Furthermore, BMW AG develops partnerships with other firms to source new transmission technologies, in-car electronics, and using utilities' grids to supply electricity and building electric refueling stations.

BMW AG does not just diversify its portfolio of automobiles, but creates a new business model besides the old, incumbent business model, effectively operating two BMs. Although BMW AG serves a different customer group in general, it sometimes consciously cannibalizes (at least some of) its existing revenues. More fundamentally, for that move to happen successfully, it established entirely new factories, hired new staff and adapted its corporate culture. In fact, BMW AG operates a different business model beside the traditional one, building and selling premium cars. The rationale behind the business model portfolio is fundamentally linked to the principles of related diversification (Markides & Williamson, 1994; Tanriverdi & Venkatraman, 2005). BMW AG's existing - in fact all firms' - business model are composed of components, namely resources (e.g. factories); activities (lean management); a customer value proposition (exciting, unlimited driving in a branded German automobile) and a profit formula describing the overall costs and benefits for the firm (Johnson et al., 2008). The new business model is critically linked through one or more components to the existing model(s), leveraging economies of scale and scope. The move of establishing a new business model by serving different customers / markets in this paper is classified as vertical business model link. BMW AG'S customers rarely pay cash when acquiring a new car, but usually finance it using a financing solution. That solution requires a financial institution as backing (in many cases a bank license) and has traditionally been performed by banks or other asset managing firms (and still is to some degree). BMW AG

though has moved into that space as well, now providing several leasing and credit solutions for which it needs specialized financial services personnel; furthermore it has established relations to the financial services community to partner with a reinsurance firm insure credit risk, also it instructs its dealers how to sell the developed financing solutions directly (besides offering them online as well); and they brand it under their BMW brand.

In the existing literature on firm boundaries (e.g. Lafontaine & Slade, 2007), BMW AG would be seen as integrating downwards along the value chain. This, without differentiating between fairly simple integrations: e.g. instead of exclusive partnerships with car dealers. In this case though, BMW AG operates a different system of activities downstream. It has to acquire a banking license, needs financial services specialists, create and manage relationships with car dealerships to sell its financial products. At the same time, it ensures financing by capital markets and re-insurance of its portfolio risks. The different business models are - just as in the case of the vertical business model link, linked by its components. BMW AG manages to use its brand and its dealerships as a platform to establish different business models at the same time. BMW financial services profits from the critical resources of the existing business model: the brand and the access to potential customers through dealerships as fundamental components of the financial services business model. The paper understands this therefore to be a different business model developed on the value chain, naming it horizontal business model link. This would apply in the same way to upstream integration; if BMW AG were to start operating an aluminum smelter it would constitute a new and different horizontal business model link.

### **The Business Model as a Tool**

This paper defines four different types of managerial actions to manage business model portfolios. These actions have already been discussed in literature related to the management of single business models (e.g. Massa & Tucci, 2013) and adapted to the arena of multiple business models:

- (1) Business model reconfiguration
- (2) Business model innovation

- (3) Business model elimination
- (4) Business model coordination

(1) *Business model reconfiguration* is an action for managers to increase the overall value in BMPs. It means to reconfigure existing business models, i.e. to adapt one or more components of a business model. Adaptation might be necessary due to evolution of the components and / or the ecosystem of a certain business model. Assets of a portfolio can decrease in value and thus need to be substituted. The environment might change, e.g. related to technology or consumer preferences, so that a reconfiguration of the profit formula is necessary. Resources, such as financial resources, might also be redistributed from less value generating to higher value generating business models e.g. in order to expand the business model by adding new assets. For BMW AG, for instance, business models are under constant scrutiny due to the increased competitive pressure due to digitalization, power train re-design (battery / fuel cell), and automation. From a portfolio perspective this implies that the overall number of business models in the portfolio stays the same. If business models in a portfolio are highly interrelated, however, the reconfiguration of selected business models might create positive or negative repercussions for related business models. The determining factor for a reconfiguration decision is the net increase in the overall portfolio value, meaning, by how much does the potential value created, outperform the potential costs in related business models.

(2) *Business model innovation* means the reconfiguration of business models within a portfolio, depending on the radicalness of reconfiguration and the level of novelty of the existing business model after reconfiguration (Massa & Tucci, 2013). However, business model innovation might also occur when a new business model is added (for example through M&A) or created from scratch. The differentiating element to business model innovation from business model reconfiguration from a portfolio perspective is that the number of business models in the portfolio increases. Triggers for business model innovation are the same as for business model configuration, however, with the difference that the environmental changes cannot be fully absorbed by a simple reconfiguration of existing business models. For example, BMW AG is faced with a phase of dynamism mainly through the efforts related to mitigate climate

change. Exemplary is the increasing popularity of electric and hybrid vehicles, which will decrease the demand for standard combustion engine powered vehicles, eventually rendering this business model obsolete. For adequate adoption of alternative products (i.e. EVs) new business models need to be created. Business model innovation might create additional super-additive effects e.g. through new complementary business models or sub-additive effects through decreasing costs due to scale effects across business models.

(3) *Business model elimination* is the task of terminating a business model within a portfolio that generates value below the performance threshold of the firm. In order to compensate for eliminated business models, new business models might be created or acquired. Business models also follow life cycles similar to products, technologies or industries (Abernathy & Utterback, 1978; Klepper, 1997). During the life cycle of the business models, business model reconfiguration is more appropriate in order to revive it and to increase an existing business model's value. However, if one of BMW AG's business models reaches the end of its life cycle, it is likely to be terminated due to profitability loss and falling below the threshold of their expected value contribution set by management. Business model elimination leads to a decrease in the number of portfolio elements in the business model portfolio.

(4) *Business model coordination* relates to the day-to-day coordination and optimization activities of BMP managers to increase the overall BMP value without changing the overall number of business models in the portfolio and without changing components of the standalone business models in the portfolio. Business model coordination activities are for instance the optimization of business processes, the transfer to managerial best practices, cross fertilization of ideas.

## Implications

To acknowledging that most OEMs operate several business models also means to acknowledge its implications: Business models of an OEM are depending on managerial choice and therefore are able to be managed and strategically deployed. In particular, this becomes relevant in rapidly changing business environ-

ments – for example triggered by technology changes. Managers can, by applying the described business model logic to their corporation and by developing an understanding of its critical components, steer the corporate business model portfolio. This, in combination with a well-thought out strategy, can indeed lead to superior performance and strategic competitive advantage, in particular in turbulent business environments. Besides professionals, this paper also clarifies and develops a distinct question within the community of business model researchers. Corporations are more than one anecdotal business model, indeed, they operate different ones at the same time. A closer look therefore at the diversification literature, dynamic capabilities and potentially alliance literature in connection with the concept and theories of business models and business model innovation is therefore recommended.

At the same time, this paper has distinct limitations. The case study is representative of rather traditional corporations operating business model portfolios. More advanced, mostly software & data driven firms might yield different results, as do different industries in different cycles of innovation. Also, this concept is based on firms operating in a position enabling direct or at least close contact with customers. B2B business models might look differently again.



## Reference list

- Abernathy, W. J., & Utterback, J. M. (1978), Patterns of industrial innovation, *Technology review*, Vol. 64, pp. 254-228.
- Adner, R., & Kapoor, R. (2010), Value creation in innovation ecosystems: how the structure of technological interdependence affects firm performance in new technology generations, *Strategic management journal*, Vol. 31, No. 3, pp. 306-333.
- Bakker, S., Van Lente, H., & Meeus, M. (2011), Arenas of expectations for hydrogen technologies, *Technological Forecasting and Social Change*, Vol. 78, No. 1, pp. 152-162.
- Casadesus-Masanell, R., & Ricart, J. E. (2010), From strategy to business models and onto tactics, *Long range planning*, Vol. 43, No. 2, pp. 195-215.
- Casadesus-Masanell, R., & Ricart, J. E. (2011), How to design a winning business model, *Harvard Business Review*, Vol. 89, No. 1/2, pp. 100-107.
- Chesbrough, H. (2010), Business model innovation: opportunities and barriers, *Long range planning*, Vol. 43, No. 2, pp. 354-363.
- Christensen, C. M. (1997), *The Innovator's Dilemma*, Harvard Business School Press, Boston.
- Coase, R. H. (1937), The nature of the firm, *economica*, Vol. 4, No. 16, pp. 386-405.
- Johnson, M. W.; Christensen, C. C., Kagermann, H., (2008), Reinventing your business model, *Harvard Business Review*, Vol. 86, No. 12, pp. 57-68.
- Kim, S. K., & Min, S. (2015), Business Model Innovation Performance: When does Adding a New Business Model Benefit an Incumbent?, *Strategic Entrepreneurship Journal*, Vol. 9, No. 1, pp. 34-57.
- Klepper, S. (1997), Industry life cycles, *Industrial and corporate change*, Vol. 6, No. 1, pp. 145-182.
- Lafontaine, F., & Slade, M. (2007), Vertical integration and firm boundaries: the evidence, *Journal of Economic Literature*, Vol. 45, No. 3, pp. 629-685.
- Margretta, J. (2002), Why Business Models Matter, *Harvard Business Review*, R205G.
- Markides, C. C., & Williamson, P. J. (1994), Related diversification, core competences and corporate performance, *Strategic Management Journal*, Vol. 15, No. 2, pp. 149-165.
- Markides, C. C., & Williamson, P. J. (1996), Corporate diversification and organizational structure: A resource-based view, *Academy of Management Journal*, Vol. 39, No. 2, pp. 340-367.
- Massa, L., & Tucci, C. L. (2013), Business model innovation, Dodgson, M., Gann, D.M. & Phillips, N., *The Oxford Handbook of Innovation Management*, Oxford University Press, Oxford, p. 420.
- Mitchell, D. W., & Coles, C. B. (2004), Business model innovation breakthrough moves. *Journal of Business Strategy*, Vol. 25, No. 1, pp. 16-26.

Sabatier, V., Mangematin, V., & Rousselle, T. (2010), From recipe to dinner: business model portfolios in the European biopharmaceutical industry, *Long Range Planning*, Vol. 43, No. 2, pp. 431-447.

Sohl, T., & Vroom, G. (2014), Business Model Diversification, Resource Relatedness, and Firm Performance, In *Academy of Management Proceedings*, Vol. 2014, No. 1, p. 10894.

Teece, D. J. (1986), Profiting from technological innovation: Implications for integration, collaboration, licensing and public policy, *Research policy*, Vol. 15, No. 6, pp. 285-305.

Teece, D. J. (2010), Business models, business strategy and innovation, *Long range planning*, Vol. 43, No. 2, pp. 172-194.

The Economist, (2012), "The driverless road ahead", available at: <http://www.economist.com/news/business/21564821-carmakers-are-starting-take-autonomous-vehicles-seriously-other-businesses-should-too> (accessed on 12 January 2016).

The Economist, (2002), "The War against the car", available at: <http://www.economist.com/node/1155093> (accessed on 12 January 2016).

Tanriverdi, H., & Venkatraman, N. (2005), Knowledge relatedness and the performance of multibusiness firms, *Strategic Management Journal*, Vol. 26, No. 2, pp. 97-119.

Tillemann, L. (2014), *The Great Race: The Global Quest for the Car of the Future*, Simon & Schuster, New York.

Zott, C., Amit, R., & Massa, L. (2011), The business model: recent developments and future research, *Journal of management*, Vol. 37, No. 4, pp. 1019-1042.

## About the Author

**Wolfgang Sachsenhofer** is a PhD student at the Vienna University of Economics and Business. His research complements his practical experience as a strategy consultant for technology corporations, since he focuses on business model innovation in incumbent technology firms. As a member of the OMV-WU Energy & Strategy Think Tank, he specifically focuses his research on mobility and (clean) energy industries. Wolfgang Sachsenhofer holds an MA from the University of St. Gallen, Switzerland in strategy and innovation management

