
Editorial

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Biographical notes: Heike Proff holds the Chair of General Business Administration & International Automotive Management at the University of Duisburg-Essen. She studied Business Administration at the University of Frankfurt and University of Mannheim, PhD in University of Frankfurt and Habilitation in University of Mannheim. She spent six months as a Visiting Professor in South Korea and four months as a Visiting Researcher at the Wharton School in Philadelphia. She is a Principal Researcher in the International Motor Vehicle Program (IMVP) of MIT and Wharton. She is member of the ‘Groupe d’Etude et de Recherche Permanent sur l’Industrie et les Salariés de l’Automobile’ (Gerpisa) and Founder and Director of the Center for Automotive Management (CAMA). She is active in the researchers group on ‘Competence-based Strategic Management’ (CBSM).

1 Introduction

The automobile is still a product with an emotional appeal, which arouses enthusiasm in millions of people all over the world because it expresses their individual personality and ensures individual mobility. Nevertheless, the automotive industry is faced with major challenges for the following reasons: 1. what customers want is changing more and more in the traditional and in the new growth markets, and at the same time is becoming increasingly divergent; and 2. although the international automotive companies have overcome the sales volume crisis (which also led to a recovery of their share prices), they are still valued at a discount by analysts because they are not thought to be sufficiently dynamic (cf. Proff and Proff, 2013).

- 1 In the traditional markets of the triad, i.e., in Europe, North America and Japan, the automobile is losing more and more of its significance in the eyes of customers as a status symbol, image factor and lifestyle product because
 - a trend is emerging towards higher rationality in customers
 - for young first-time buyers, the automobile as a status symbol is lagging further and further behind travel, new media, leisure activities and low-energy houses
 - many automobile buyers, particularly corporate customers, are changing their mobility patterns and are more and more often choosing high-speed trains for long distances and buying smaller vehicles with lower emissions as an expression of increasing environmental awareness.

Despite the major differences in economic power and dynamics among the new growth markets, including the BRIC countries Brazil, Russia, India and China, a completely different demand behaviour from that of the triad markets is emerging in all of them: a relatively small customer group is purchasing large vehicles with highly superior finish and extras (with the exception of the Brazilians, who ask for unassuming cars for fear of attack) and is displaying characteristics of demonstrative consumption rather than economic rationality. However, most customers can only afford very small vehicles, if they can afford any at all. Mini and supermini vehicles therefore form the largest market segments (cf. Proff, 2011). Simultaneously offering

- innovative, small vehicles for the triad markets
- large vehicles for wealthy customers demanding high standards of quality, safety and reliability in the new growth markets
- small, very cheap vehicles for the mini and supermini segments in these countries

places high demands on automotive manufacturers and suppliers.

- 2 Analysts penalise the international automotive companies with a discount on their market value or a low price-earnings ratio. From the point of view of the capital markets, the automotive companies respond too undynamically to changes such as new customer wishes, but also to other risks in the corporate environment (e.g., stagnating demand in the triad markets, increasing raw materials prices and increasing competition) and to their own weaknesses (poor cost and earnings management).

In the years 2011 and 2012, automotive companies' average EBIT margins have returned to a pretty high level at around 7% to 8%. Nevertheless, the automotive industry is still not very popular with capital market analysts. As of mid-2012, PSA was worth just 2.9 billion euros, and Fiat 4.7 billion euros. Capital market expectations continue to be pessimistic: the actual market value (share price multiplied by the number of shares) of all automotive companies today – and also before the crisis – is around 40% below the mathematically calculated market value of all automotive companies when taking a more tailored view, e.g., differentiating between German premium manufacturers or French mass producers.

A poor capital market evaluation for automotive companies (partly due to high debt levels) means higher interest charges and more restrictive lending by banks, and is therefore putting these companies under pressure to become more dynamic.

This pressure is driving the automotive industry into new competences, since above-average earnings can only be achieved by above-average organisational competences and individual skills, and no longer by scale and scope advantages (cf. Proff and Proff, 2013).

In addition, the pressure to be more dynamic is rising again in the automotive industry due to newly developed alternative drives, headed by the transition to electric mobility which comprises range extenders, plug-in hybrid vehicles, purely battery-powered electric vehicles and vehicles with fuel cells. The transition to electric mobility has been triggered because crude oil, with a growing world population and increasing difficulty in being able to develop new deposits, can be put to better use than powering vehicles. Even

the banks and the International Energy Agency therefore see electric mobility as a new era in the automotive industry.

The transition to electric mobility offers the automotive industry the chance to continue to appeal to its customers in future with more environmentally friendly individual mobility – at least if the technical prerequisites (e.g., weight, range and battery charging time) are put in place and new, more attractive and more individual business models can be presented to the capital markets. Naturally, there are still many economic and technical uncertainties in electric mobility, such as the unfavourable price/performance ratio of electric vehicles, the low energy density of the currently available batteries and the supply of rare earths for battery production. The special challenge for electric technology lies in the fact that it will radically change the basic technical output of automotive manufacturers and many suppliers. In addition, unit sales figures will drop as a result of car sharing and low volumes of service for electric vehicles. Fundamentally new vehicle concepts are needed in which not only drive systems and energy supply units have to be replaced, but lighter, differently anchored seats, new body concepts and newly developed motor units such as climate control systems will be required. As a result, new services will also be needed: from banks and insurance companies, which will be faced with new and hard-to-assess risks, insurance companies and repair shops which will have to handle new types of accidents, and car sharing providers and energy utilities because of the users' new driving, parking and charging behaviour. New key features will emerge, particularly in the case of batteries and high-performance electronics. The automotive companies will have to build competences in this area which they have never had before.

This special issue, 'New competences in tomorrow's automotive management', is about new competences in the traditional automotive industry, particularly in electric mobility.

2 The contents of this special issue

The five papers presented in this special issue address different issues of 'New competences in tomorrow's automotive management' – the first three papers are concerned with the traditional automotive industry, the last two with the transition to electric mobility:

- modularity as a competence of automotive companies
- the possibility for automotive companies to gain resources and competence through diversification into services
- the link between organisational means aimed at achieving ambidexterity (simultaneously exploring new capabilities and exploiting existing ones) and the individual competences of the employees in the automotive supplier industry
- competence building in electro mobility
- scenarios for the possibility of developing design and production competences for electric vehicles in Brazil.

The first paper by Ron Sanchez is on ‘Building real modularity competence in automotive design, development, production, and after-service’. This paper suggests that there is still limited understanding of what modular strategies really mean and of what effective implementation of modularity strategies would consist of in the automotive industry – with the result that at least some automotive firms that claim to be using modular strategies are in fact doing so in name only. This paper proposes the essential principles on which effective implementation of modular strategies depends in any industry. It illustrates these principles with examples of both effective and faulty modularity practice from the automotive and other industries. The paper proposes a modularity maturity model for assessing the degree to which a firm has developed and is applying a real modularity competence in automotive design, development, production, and after-service.

The second paper addresses ‘Service transition in the automotive industry’. Tim Kessler and Michael Stephan observed that service transition has found its way into the automotive industry in recent years, but that the service business is still inferior. They raise the questions of why automotive companies diversify into services and which advantages they have compared with other firms. To answer these questions, they investigate the changing business environment in the automotive industry and take a closer look at general characteristics and advantages of services as compared with manufacturing activities. With recourse to the resource-based view, they outline the major competitive advantages of automotive companies with regard to their idiosyncratic resources and competences. In the case study of BMW, a strategic approach to becoming an integrated mobility provider is presented. Nevertheless, the comparison with the mechanical engineering industry reveals why the service business of the automotive industry is still in its infancy.

The third paper looks at ambidexterity, the simultaneously exploration of new capabilities and exploitation of existing ones and addresses ‘Facilitating ambidexterity with HR practices – a case study of an automotive supplier’. Birgit Renzl, Martin Rost and Jürgen Kaschube show that research has identified that ambidexterity, which is always based on individual competences of organisational members, can be achieved through different means (e.g., structural ambidexterity, contextual ambidexterity). However, the authors state that the link between organisational means aimed at achieving ambidexterity and the individual competences of the employees has remained imprecise. In order to tackle this link, they conduct a case study of a technological leader in the automotive supplier industry. They analyse how ambidexterity can be combined with issues of psychological management research, transformational leadership style, competence management and new theories on work performance. By doing so, they shed light on the link between individual competences and human resources (HR) practices aimed at achieving organisational ambidexterity.

The last two papers in this special issue concentrate on competences in the transition to electric mobility.

Martin Gersch, Tilman Rüsike and Florian Reichle consider ‘Competence building in electric mobility: solving the paradox of specific investments in nascent industries’. Drawing on the concept of specificity, they analyse the building of resources and competences in the emerging industry of electric mobility. In a qualitative multiple case study on two major car manufacturers and their investments, the authors show how firms handle the paradox of specific investments. Their results indicate that specificity depends upon strategic management. By varying the degree of specificity, firms can balance the

resulting commitment in nascent markets and remain flexible. From a co-evolutionary perspective, firms are driving and are driven by these specific investments. Hence, they continuously engage in creating and securing deployment options for existing resources and competences by (de-)specification strategies but also by trying to shape the firm's environment.

Finally, Adriana Marotti de Mello, Roberto Marx and Adcley Souza address 'Exploring scenarios for the possibility of developing design and production competencies of electrical vehicles in Brazil'. This paper therefore adds a country-based perspective. The aim of this study is to analyse, on the basis of institutional and evolutionary theory, what kind of conditions would be necessary to enable markets and develop competences for electrical vehicles development in Brazil, and to assess possible future scenarios. Literature, secondary data documents as well as patent-based research and interviews with relevant actors of the sector were employed, trying to map and to prospect what kind of competences are being developed in the country. Results showed that there are some small movements being made towards the development of electrical mobility in the country, mainly outside the traditional automotive sector, but they lack strong coordination and support from public policies. A possible strategy of developing specific products, such as small urban vehicles, or applications, such as busses or utility vehicles, could be one way to start the development path to a stronger local industry in the near future.

New competences are the foundation of tomorrow's automotive management – this special issue shows major fields of research.

References

- Proff, H. (2011) 'What will happen to Brazilian automotive subsidiaries after their parent companies make the transition to electric mobility?', *International Journal of Automotive Technology and Management (IJATM)*, Vol. 11, No. 4, pp.356–375.
- Proff, H. and Proff, H.V. (2013) *Dynamisches Automobilmanagement. Strategien für internationale tätige Automobilunternehmen im Übergang in die Elektromobilität*, 2nd ed., Gabler, Wiesbaden.