Time for a Model Change: Re-engineering the Global Automotive Industry

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CAMBRIDGE UNIVERSITY PRESS, 20040521837154

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The authors are co-founders and directors of the consultancy firm, autoPOLIS Strategy Consultants, which specialises on the automobile industry. They published their first book on ‘the industry of industries’ in 1995, *Driving Over a Cliff? Business Lessons from the World’s car Industry*, and their second book is following the same approach, taking a holistic view on the industry. This makes it legitimate that yet another book is written on an industry, which – according to the authors - attracts biased or partial publications from all quarters.

As Maxton and Wormald are consultants and industry practitioners, it may be surprising and challenging that they aim to take a systemic view of the automotive business and reach the conclusion that the business system needs a fourth revolution! “Fourth”, because Henry Ford instigated the First Revolution of standardised mass production; Alfred Sloan designed the Second Revolution, which included the organisational creation of the Corporation with multi-product divisions emphasising marketing and branding; and **Eiji** Toyoda created the Third Revolution with ‘lean production’ and the endless limitation of waste combined with quality development.

Maxton and Wormald’s premises are persuasive: First, the object is the most important industry in the world generating around $ 2.6 trillion or 8-9 percent of world GNP, using 15 percent of the world’s steel, 25 percent of the world’s glass, while the end products, the vehicles, consume 40 percent of the world’s annual oil output. Yet, the location of the industry is extremely biased toward the developed world, the Triad countries accounting for 85-90 percent of automobile value added.

Second, the automobile has added enormous flexibility to mankind in terms of transportation of persons and goods, and the authors estimate that this effect double or triple the societal economic benefits of the industry, but the industry is also causing traffic casualties in millions every year, pollution, depletion of natural resources, global warming.

Third, the automobile is a very complex product to manufacture involving a diverse set of more or less advanced technologies and high investments, making the industry very capital intensive and technology integrated, while its organisation has been revolutionised and presented business models for organising other industries.

Fourth, the industry is maturing, although emerging markets and developing countries, especially in China and India, are evolving. Yet this would not solve the serious problems associated with excess capacity and low utilization rates because all major vehicle makers scramble to emerging markets and in particular China (and India) with foreign direct investments.

Fifth, the industry is controlled upstream and downstream by the vehicle manufacturers, which squeeze the suppliers and the dealers, but it is even so unable to deliver a good return on capital investment, such that the industry as a whole is destroying value – with a few corporate exceptions.

Based on these premises, the authors conclude that the automobile industry has two alternatives, either ‘Graceless Degradation’ if it continues along the existing road; or the ‘Fourth automotive Revolution’, if the industry re-engineers itself through unbundling and re-bundling of business activities focussing on core competences and getting rid of excessive product proliferation. As indicated above, the authors advocate the revolutionary solution.

The book is very well written, structured and documented with empirical evidence and personal experiences. The book is even a bit thrilling as the authors step by step disclose the problems and their eventual solutions building up to the structural constraints and self-inflicted ‘economic nightmare’ before unveiling the options and preferred solution. The story begins with a description of the maturity of the industry supplemented with a clear presentation of the unevenness of the global dispersion of the automobile industry. Then, the authors address the social and environmental impact of the industry and carry the optimistic message that several problems (emission, security, traffic congestion) can be solved or considerable reduced with existing technology or economic development. Other issues, such oil depletion and global warming, require technological innovation like renewal energy based engines, and have been the focus of R&D by several vehicle manufacturers.

After the presentation of the social, environmental and technological issues of automobile production and use, the global industry is described and analysed in national state and corporate terms (chapter 4). The authors suggest that, firstly, only four countries will be sustainable for the next decade as core locations of automobile clusters (USA, Japan, Germany, France) even in spite of the expansion of the Chinese and Indian auto industries. Secondly, they argue that the vehicle manufacturers are not very often global players although “They are obsessed with globalisation, in the belief that salvation lies in global scale” (p. 115).During the 1990s automakers underwent consolidation through M&A, which put 10 corporations in charge of 90 percent of world production and sale. Six auto groups or alliances with equity linkages emerged around GM, Ford, DaimlerChrysler, Toyota, Renault-Nissan, and Volkswagen.

Despite globalisation, markets and consumers are segmented along cultural and regional lines. Thus, the luxury up-market brands such as Porsche, Mercedes and BMW are the only true global brands. These brands are controlled by European manufacturers, but they do not have a globally integrated production system. The authors argue that the only maybe world-wide vehicle corporation is Renault-Nissan, which is more a successful alliance than a full merger of two corporations. The losers of the international battle among the vehicle giants are the American Big Three (GM, Ford, Chrysler), and the new winners will be national champions of China (SAIC, FAW) and India (Tata). These newcomers are grown in countries through protective, autarchic regimes, but the authors do not give a dam for the survival of similar grown auto makers like the Koreans or Malaysians, yet they are a bit more positive regarding the fate of the Russian and Iranian vehicle manufacturers.

The problems of the vehicle manufacturers are not only the maturity of the industry and its technology, but also that it is de-integrating both upstream and downstream. Hence they are in danger of loosing control. From the early days of the First Revolution when Henry Ford aimed for a totally integrated industry under his centralised management, the choice of ‘make’ has been turned away in favour of the ‘buy’ through delegation and outsourcing. This trend has especially something to do with the Third Revolution of lean production, but it is also related to the generic complexity of the product and the rise of huge and international components and systems suppliers, which may have proprietary technology. The de-integration of the automobile industry is weakening the leaders of the global industry to the point of hollowing-out their technological and ownership advantages. Hence, the power relations between makers and suppliers are changing, but this change has not been acknowledged by all major vehicle manufacturers and especially not by the US giants accustomed to arms-length and harsh treatment of their suppliers. The downstream control over the dealers and after sales services have also been partly broken by legislation in the USA, and recently in Europe by the intervention of the EU Commission (the new Block Exemption Regulation). New independent dealers of single brands and especially the emergence of retain chains of multi-brands sale are shaking the downstream control and profit making of the vehicle manufacturers, too.

The evolution of the automobile industry through several revolutions has ironically and unintentionally brought the industry to the point of collapse - financially speaking. The authors take on the important and difficult bottom line analysis of the automobile industry as viewed from the perspective of the finance sector in chapter 7. Their conclusion is articulated in the title of the chapter“When the numbers do not add up”. Beginning with “The Value destroyers – the rotten financial performance of most vehicle manufacturers” the authors quote a report from Deutsche Bank 2002 that the market capitalisation of the automobile industry has declined over the last two decades from 3.6 percent in Europe and 4 percent in the US to 1.6 percent and 0.6 percent in Europe and the US respectively, while it has increased from 4 percent to 7 percent in Japan! This divergence between the West and the East (Japan) recurs at the corporate level as well, where Toyota’s market capitalisation is double the market cap of GM and Ford together! In terms of net margin on sales Toyota is only surpassed by the up-line niche manufacturer, Porsche, and paralleled by Nissan (if treated separately from Renault), which is anyway doing as well as Honda, and again traced by Hyundai and BMW.

In terms of market capitalisation and vehicle output, Toyota, Honda and BMW are considered strong brands, while GM, Ford and VW are seen as weak brands, with Renault-Nissan, DaimlerChrysler, PSA, Suzuki, Mazda, Mitsubishi and Fiat taken as mediocre brands. This picture fits with recent news that GM bonds have reached junk status in the US. However, Fiat is desolated after GM paid close to two billions US to get out of the agreement to buy Fiat! Mitsubishi has been abandoned by DaimlerChrysler and saved by its business group (keiretsu) in Japan. Mitsubishi has also sold its shares of the Malaysian national company, Proton, which the authors see as "an entirely artificial creation, living behind protectionist walls" (p. 262). In fact, even the Koreans "are unlikely to have created any companies that are sustainable in the long run" (p. 253), the authors argue. The overall financial mess of vehicle manufacturers impacts again tremendously on the business of the upstream suppliers and the downstream distributors and dealers due to the vehicle corporations' control, although challenged, over the entire automobile chain.

How then to rescue the bleeding automobile industry? The reader gets very curious when arriving to the concluding chapter 9, where the authors promise a proposal for a model change. This chapter has probably been most difficult to write, and it turns out to be the weakest one, too. The Fourth Revolution has to un-bundle and re-bundle the assets and division of labour within the automobile industry in order to facilitate more productive allocation and use of resources and capabilities. In short, it has to install a market-driven industry! The crux of the matter is to reduce the excessive proliferation of products, which began with the Sloan revolution and was speeded up with the lean revolution of Toyota. Based on the Deutsche Bank 2002 report the authors have calculated that the automobile industry can earn Euro 17 billion through a massive de-proliferation (on certain conditions). But they seem to be very one-sided, blaming the misfortunes on the increasingly bad 'economies of scope' (proliferation), assuming that the industry is and must be based on 'economies of scale' without analysing how the worldwide de-proliferation may impact on sales. The authors do not pay much attention to the ongoing efforts to rationalise product proliferation through common use of vehicle platforms together with the increasing modularisation of automobile manufacturing, spearheaded by VW. Moreover, they neglect in the end that the most successful vehicle producers are up-line European brands (Mercedes, BMW, Porsche) and Japanese volume manufacturers (Toyota, Nissan). These two groups represent two different business strategies and challenges, focusing on sustaining brands and premium value, and volume manufacturing with efficient production and cost reduction respectively.

Finally, Maxton and Wormald pretend that the Fourth Revolution can be initiated and implemented within a stakeholder community of competing vehicle manufacturers, suppliers, traders and dealers, unions, consumer groups and governments, which cross national and regional boundaries and are beyond any international decision-making authority (except WTO).

In sum, the authors call for a united unbundling of business activities in order to establish a market based world wide automobile industry at the costs of a worldwide automobile value chain governed more or less by the giant vehicle manufacturers. It is like the authors practical knowledge and experiences of the industry shade for the conception of more basic structures and dynamics of the industry. However, they hit several nails on the head, for example by identifying the vehicle manufacturers as the dominant actors within the industry as well as in their criticism of the myth that the automobile industry is a global industry, highlighting for example that product markets and production systems are rather regionalised.

Probably, the authors could have informed their valid empirical findings by interpreting the results in theoretical frameworks that embrace their findings. Several more or less competing theories exist beyond the lean production theory of Womarck et. al. 1990, for example the theory of 'productive models' of the GERPISA research network (Freyssenet et. al. 2003; Wad, 2004) and the global value chain (GVC) theory in general (Gereffi et.al. 2005) and applied on the automobile industry (Humphrey & Memedovic 2003). These theories absorb the basic principles of lean production thinking while acknowledging the contextualisation and the internationalisation of the automobile value chain in the 21st century and hence, the diversity of automobile manufacturing and successful strategies contrary to the universal recipe of lean production. While Maxton and Wormald mainly refer ad hoc to classic economists like Adam Smith (and even Karl Marx) and doubt the universal blue print of lean production, the GERPISA and GVC researchers deal theoretically with the situated structures, problems and dynamics of the contemporary automobile industry. The systemic approach of Maxton and Wormald help them to diagnose the problems but the solution is suspended midair at the systemic level where no unifying authority or united community of actors exist.

The downgrading of theoretical analysis is anyway legitimated by the purpose of the analysis, targeting readers among the broad segments of automobile industry stakeholders in order to present a better way than graceless degradation. When the pages add up, we have read a highly informative and extremely well documented book by two authors who know the industry from the inside and yet try to take an outside and prospective view, too. They even dare to outline a solution, where they probably stumble, being a bit idealistic about the opportunities for a worldwide consensual solution. Who are going to un-bundle and re-bundle the tremendous assets of the industry, and how are they going to do it? Institutional and chain governance may be the hidden abode of the restructuring of the international automobile industry, and it will probably not be a tea party but a game with a lot of casualties.

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Published at http://aib.msu.edu/JIBS/BookReviews/HTML/2005-07.html
Reviewed on: August 12, 2005

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