

PRESS RELEASE

**Study by Mercer and the Fraunhofer Society:
The new form of collaboration in the automobile industry**

- Automotive suppliers will take over 80% of R&D and production, innovative business designs will prevail
- Auto makers will focus on their own brands
- The reorganization of the industry will raise EBIT margins by 3%
- In the automobile industry of the future, Europe is the winner

Munich, December 15, 2003 After mass production in the 1920s and “lean production” in the 1980s, the automobile industry is undergoing a new revolution. By 2015, automotive suppliers will have taken over large parts of R&D and production from the automobile manufacturers, achieving total growth of 70% in this process. During the same period, the auto makers will give up 10% of their current value creation – even though their output will increase by 35%. The development and production capacities of the automobile makers will be focused in the future on those modules and components that are most critical to the success of their brands. These are the conclusions of a recent study by Mercer Management Consulting and the Fraunhofer Society. These trends will be driven in part by new technologies, the growing complexity of automobiles and the exploding diversity of models, all of which make development and production considerably more expensive. Moreover, automobile makers will find that investing in service capacities is more lucrative than investing in production capacities. The heart of the study is represented by exact modeling of the new structures and division of work in development and production, as well as new business models and forms of cooperation between suppliers and automobile makers.

With 8.8 million direct jobs, both with the automobile makers and the automotive suppliers, the automobile industry accounts for 15% of the world’s gross domestic product. And the automobile industry will continue to be one of the world’s most important economic sectors in the future as well. The value creation represented by automobile development and production (excluding sales, replacement parts and service) will grow at the annual rate of 2.6% over the next 12 years, from today’s level of EUR645 billion to EUR903 billion in 2015. During this period, the industry as a whole will invest EUR2,000 billion in capital spending and annual auto production will climb from the current level of 57 million units to 76 million units. These projections are contained in the recent study entitled “Future Automotive Industry Structure (FAST) 2015” by Mercer Management Consulting, the Fraunhofer Society for Production Technology and Automation (IPA) and the Fraunhofer Society for Materials Management and Logistics (IML).

The future belongs to brand management

Automobiles are emotionally charged, branded products and, therefore, the brand image is just as important as performance and price. Already true today, this maxim will assume even greater relevance in the period between now and the year 2015. For automobile makers, this means that brand management is destined to become the central aspect of their work. They will focus increasingly on brand-specific elements such as design, brand experience and service strategies,

as well as those functions and technologies that are central to the brand profile. In the long term, this is the only way they can differentiate their brands from those of their competitors. Consequently, the roles now played by the automobile makers and their suppliers are bound to change significantly, as auto makers evolve into high-tech brand merchandisers and their suppliers gradually take over all automobile production activities that are not directly related to the brand experience.

Automotive suppliers will become a growth engine

The value creation generated in the segment of automotive suppliers, which includes companies like Bosch, Continental, Delphi, Johnson Controls, Lear, Magna, Siemens VDO Automotive, ThyssenKrupp, Visteon, ZF Friedrichshafen and others, will increase 70% by 2015, growing from today's level of EUR417 billion to EUR700 billion by that time. To accommodate this enormous growth, automotive suppliers will have to create an additional 3.3 million new jobs worldwide by 2015. Most of these positions will be for skilled workers, as indicated by the fact that additional value of approx. EUR30 billion will be created in the pre-development and series development activities of the suppliers.

All modules of the automobile stand to benefit from this growth spurt, but electrical systems and electronics most particularly. While the value of electrical systems and electronics in the average automobile today is EUR2,220, this value will increase to EUR4,150 by the year 2015. And because the total production output will increase as well, the worldwide value creation attributable to electrical systems and electronics will grow from EUR127 billion today to EUR316 billion in 2015. Just considering the automobile makers, this trend will cause the value creation attributable to electrical systems/electronics to grow by 157%, bringing the total to EUR52 billion – even though the suppliers will handle the lion's share of 85%. All together, more than 600,000 jobs will be created in automotive electronics in Europe alone. Furthermore, car body and power train production will also experience substantially above-average growth.

Innovative forms of collaboration will improve EBIT margin by 3%

The established hierarchy of automobile makers and first and second-tier automotive suppliers will continue to be the dominant form of collaboration even in 2015, but will cover only 65% of value creation in the industry. A number of new business models such as system cooperation ventures, production cooperation ventures, engineering service providers, spin-offs and private label production will alter the mode of cooperation in the industry so much that the overall value creation will increase by more than EUR250 billion by the year 2015. The study also identified more than 20 new forms of cooperation that will make it possible to achieve a new level of quality in the collaboration between automobile makers, automotive suppliers and service providers.

If these new forms of collaboration are systematically and jointly implemented, they promise to deliver significantly higher returns than those that can be achieved through traditional forms of cooperation. The average EBIT margin of automobile makers over the last 10 years has been 4.8% and that of the top automotive suppliers 6.5%. The findings of the Mercer "FAST" study suggest that profit margins will come under serious pressure if the traditional cooperation forms are continued. Innovative business models, in conjunction with a new quality of cooperation, will counteract this erosion of profit margins. Mercer and Fraunhofer simulated the influence of these new forms of collaboration in the framework of an industry business model and determined that they can produce cost savings of between EUR600 and EUR1,000 per vehicle. Thus, automobile makers and automotive suppliers can improve their EBIT margins by around 3% and their return on capital employed (ROCE) by 4% to 10%.

The discussions with senior automotive industry executives conducted as part of the "FAST" study have shown that the majority of them are firmly convinced of the coming structural changes and the

new quality of cooperation. Some executives, however, still see high barriers such as existing investments in plants, the influence of trade unions or the risks of change. The model analysis performed by Mercer suggests, however, that serious competitive disadvantages of a kind that automobile makers can no longer afford will result if they hesitate to transform their structures.

The new division of work in the industry

The concentration process affecting the automobile industry is slowing. The current number of 5,500 suppliers will shrink to about 2,800 by 2015, and of the 12 independent automobile manufacturers today (BMW, DaimlerChrysler, Fiat, Ford, GM, Honda, Porsche, PSA Peugeot Citroën, Renault/Nissan, Rover, Toyota and Volkswagen), presumably about 9 to 10 will remain independent. In the future, automobile makers will devote much more attention to post-production activities, such as sales, service and customer support. A number of reasons will prompt them to focus on this “downstream” business:

- Contact with customers and brand image are destined to become the critical success factors in competition. The high level of international production standards and the faster rate of obsolescence of technology allow less and less room for product differentiation. Thus, brand differentiation will increasingly be sought in the brand experience.
- Downstream investments in sales and service require less capital than investments in new technologies and production equipment and promise significantly higher returns – especially considering that the capital intensity of the automobile industry is very high in comparison to other industries.
- The 800 million vehicles already in the market represent a potential for business opportunities and customer loyalty reinforcement that has not yet been adequately tapped.

As automobile makers focus more and more on the downstream end of the business, development and production will be shifted increasingly to the automotive suppliers. Already today, automobile makers develop and build only about 35% of their autos themselves; at present, the self-produced content of an “average automobile” is only about EUR4,000 and by the year 2015 this share of production will sink to EUR2,670 or 23%, the rest being built by suppliers and service providers. The vehicle components most affected by this trend will be the body, sheet steel, paint and chassis. Furthermore, automobile makers will increasingly withdraw from the production and assembly of modules. The amount of money that auto makers spend on pre-development and series development activities will remain nearly constant at about EUR30 billion; they will continue to invest heavily only in automotive electronics. All in all, therefore, the “dependency” of auto makers on their suppliers will continue to grow.

Automobile makers will focus on the characteristics of their brands

In the future, the positioning of the automobile brands will be the decisive factor determining which areas of production will be retained and which will be outsourced. In fact, 80% of the senior executives questioned by Mercer expect that the areas of production which the manufacturers will keep for themselves will be closely linked to brand and product differentiation strategies. In the “FAST” study, 70 brands were plotted in clusters along the dimensions of premium/mass-market, sportiness/comfort and price/quality. This analysis showed how differences in the brand character influence the areas of production that will be retained, instead of outsourced, by the automobile makers. In the premium/quality/sportiness cluster, with brands like Audi and BMW, the share of production retained by automobile makers will be 25% higher than in the cluster of mass-market/price/comfort, with brands like Daihatsu, Kia and Rover.

This analysis also revealed that only very few automobile makers intend to increase their own production through 2015 in absolute numerical terms. In particular, the mass-market brands will

decrease their own production share by up to 30% and their total own production in absolute terms will fall by 15%. This trend will affect brands like Chrysler, Ford, Citroën and Nissan. Premium brands like Audi, BMW and Mercedes-Benz, on the other hand, will increase their own production in carefully selected areas. Finally, all brands will see a significant increase in the volume of outsourced production that has to be managed, which will more than double in some cases.

Europe is to become the world's most important region for automobiles

The regions of the world that will experience above-average growth include China, India and Europe. And yet the growth rate of Chinese production is often overestimated. Today, 1.8% of global automobile production is realized in China; by 2015, it will grow to 4.8%. In absolute terms, Europe will come out the winner in the next decade. Today's production of EUR204 billion will grow to EUR318 billion and the current 30% share of global automobile production will be slightly extended.

Experiencing an absolute increase of EUR114 billion euros, Europe will assume the world's leading role in the development and production of automobiles, clearly overtaking the NAFTA zone, which will see its production increase only slightly from EUR227 billion to EUR267 billion by 2015, while Japan's automotive production will stagnate. The Japanese manufacturers are siting their new plants and development centers in Europe and the United States. The success of the European automobile industry can be attributed first of all to the strong innovation capacity of the Europeans and secondly to their dominant position in the segment of premium brands, which have experienced strong growth.

The growth in automobile production and development in Europe will also have an impact on jobs. By 2015, 1.2 million new jobs will be created in Europe alone. It should be noted, however, that this scenario is likely to materialize only if the legal and regulatory conditions applicable to automobile sales and employment in Europe do not worsen further. An international industry like the one in question can easily shift their capital investments, and the jobs that go with them, to new plants in other countries of the world.

Consequences for business strategies

The revolutionary changes affecting the automobile industry will also have a tremendous impact on the strategic objectives of industry players in the next few years:

- The premium brands are destined to become the flag-ship of the automotive groups. This is where the automobile companies will seek to build and maintain their core competence and groom their management successors. Technology and expertise will flow from the premium brands to the mass-market brands.
- In the future, every brand will need a precise value creation apportionment strategy setting out the production to be retained, as opposed to outsourced, and the necessary competencies, capacities and partnerships.
- Most of the automobile makers have already introduced a module strategy. This creates obvious interfaces with suppliers and allows for seamless transitions between model and innovation cycles.
- Manufacturers and suppliers will form close-knit networks. The key success factor will be to build lasting relationships with the right partners at an early stage of the game. The shared goals and the distribution of duties will have to be clearly defined if a new quality of cooperation is to be achieved.
- Early on, automobile makers will have to identify and build up promising business models in their networks in order to gain competitive advantages. They will also have to reinforce key strategic areas of competence and hand off peripheral areas to viable cooperation ventures.
- The component manufacturing plants of the automobile makers will act as the direct competitors of the automotive suppliers; they will supply not only the brands of their corporate group but also third-party brands as well. In the long term, they will survive as component production plants of the automobile makers only if they are vested with strategically vital core competencies.
- In the future, suppliers will carry the brunt of capital investment activities. But even today their capitalization is inadequate. They can solve this problem by offering stock to the public, accepting investor groups as partners or obtaining start-up assistance from the auto makers. Suppliers need to start working on suitable financing strategies before it is too late.
- In the premium brand segment, electrical systems and electronics already account for more than half the vehicle's value. To date, neither the auto makers nor the suppliers have developed adequate strategies for keeping abreast of the development process and accommodating the expected growth of EUR189 billion by 2015.

Main points of the new forms of collaboration

- After mass production in the 1920s and “lean” production in the 1980s, yet another production revolution is underway in the automobile industry.
- The auto makers will restrict their own share of production to components that are crucial to the success of their brands.
- Mass-market brands will reduce their own production depth to a greater degree than the premium brands, which require more exclusive features.
- Suppliers and service providers will take over large parts of R&D and production; they can nearly double their revenues by 2015.
- The traditional roles of manufacturer and supplier have outlived their usefulness. New forms of collaboration will emerge.
- The new quality of cooperation will boost EBIT margins by around 3% and return on capital employed by around 4% to 10%.

Background information on the study

The study entitled “Future Automotive Industry Structure (FAST) 2015” was based on 60 interviews with decision-makers at automobile makers, first and second-tier suppliers and service providers, plus a detailed analysis of all available data sources and the model strategies of the brands. All 70 of the significant passenger automobile brands were analyzed and the automobile modules and production stages that are critical to the success of their brands were identified. The projections for the automobile makers and automotive suppliers were derived from a simulated model of the production system from 2002 to 2015, related to brands, vehicle clusters, vehicle modules, production stages and regions. The study formed the basis for detailed conclusions concerning the future development of individual segments and regions. In addition, more than 20 new forms of cooperation, which can bring about a new level of quality in the cooperation between automobile makers, suppliers and service providers, were identified.

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