

Innovation Focus



“Without innovations as an answer to the key challenges of global megatrends, the entire concept of individual mobility stands at risk.”

Envision the long-term chances of innovations

The worldwide megatrends in politics, societies, economies and technology define the requirements that future cars will have to fulfill – and these will affect almost every aspect of the automobile. “Car Innovation 2015” has identified 27 megatrends that will have a significant impact on the automotive industry. Innovation strategies must reflect the respective trends in order to meet technological standards, economic imperatives, customer needs and government regulations.

At first glance, many of these trends may seem all too familiar and fail to inspire any creative thinking. But long-range repercussions to innovation strategies are linked to each of these megatrends. Take the aging society. It is likely to have a powerful effect on fashion cycles, technology penetration and even societal ideals. In ten years, the average customer will be significantly older than today and will have a very different set of needs. In order to succeed, technologies must be both easy to use and easy to understand by older consumers.

Megatrends

More than 20 megatrends are having a strong impact on the automotive industry. Functional and cost innovations are the answer to most of them.

The ongoing specialization in engineering and manufacturing will cause technological product differentiation among manufacturers to continuously decrease. As a result, the value proposition in the automotive industry will continue to move downstream, with even larger amounts of production – and of R&D – shifting to suppliers. Modularization is a necessary technique to better control the increasing complexity of cars. Car manufacturers will focus their innovation efforts on module interfaces and on modules’ brand-defining features (for example, security for Volvo, comfort for Mercedes-Benz, reliability for Toyota), and will outsource the safety issues to suppliers.

Overcapacities in all manufacturing areas will continue to exert enormous cost pressures on the industry. At the same time, raw materials prices will become increasingly volatile, making flexible pricing a necessity. While the polarization in wealth distribution will not lead to a collapse of the middle, it will support the success of low-cost cars as the vehicle segment with the fastest growth worldwide. Toyota was the first to recognize the chances of new low-cost designs as an enabler to new materials, methods of production and design principles. Such “cost innovations” will become a major R&D focus driving the industry beyond 2015.

Example: Cars for an aging population

In the majority of markets, the average new-car buyer is 40 years old. By 2015, that age is expected to increase by four years. Developing cars for this target group does not mean building “old-age cars.” It means equipping cars with design and handling features that the target group will find useful, exciting and desirable – without sacrificing the model’s overall statement. A car designed for an older target group might feature:

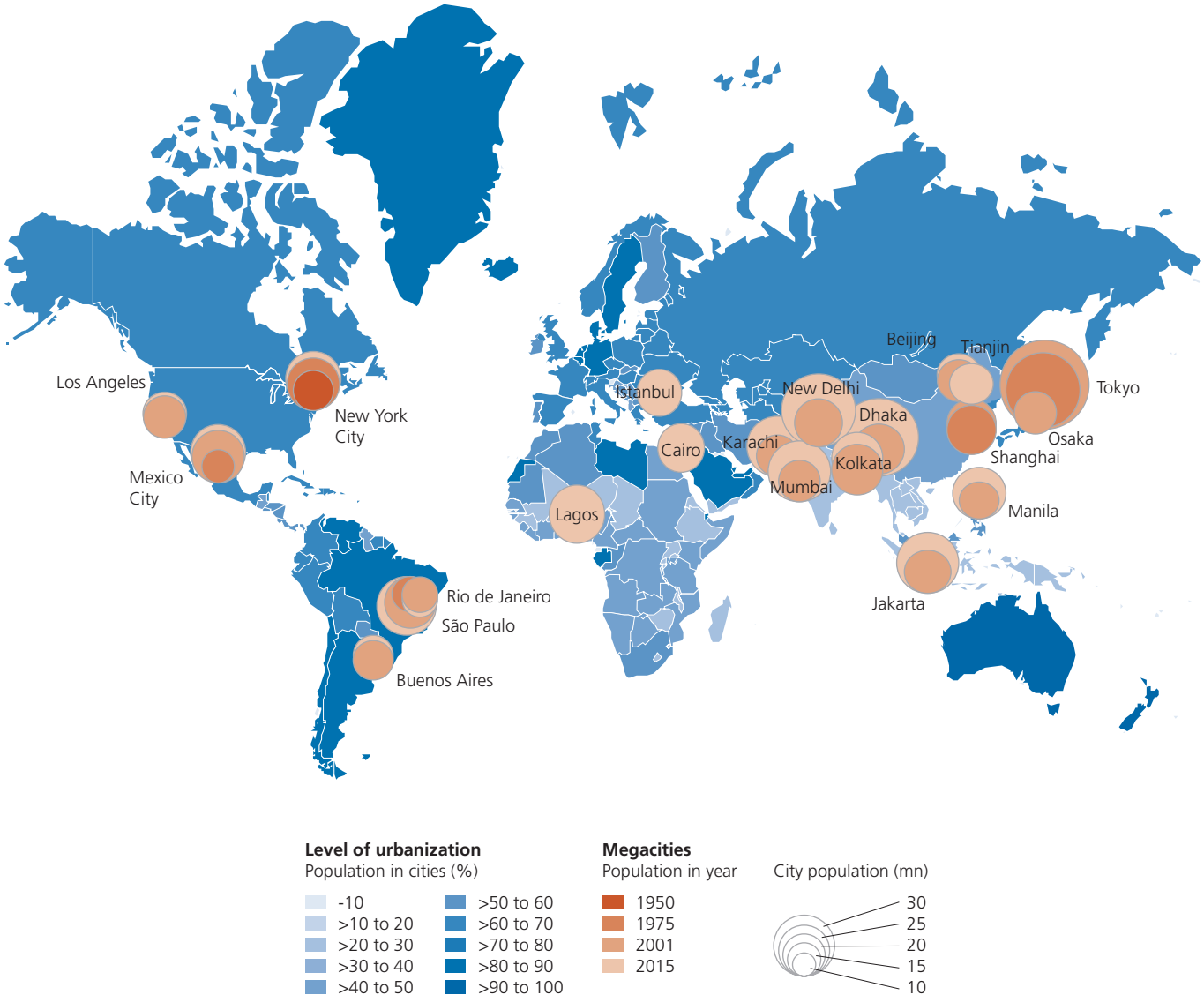
- Ergonomically designed boarding, loading and seating solutions
- Visual aids for better night and rain vision
- Easy-to-use functions even for complicated devices
- Timeless design features
- Speed and special attention recommendation displays
- Side and rear-view cameras
- Customized mobility services

Example: New cars for megacities

In 2015, 40 percent of the world population will live in cities with more than one million residents, 17 percent will live in megacities with more than five million residents. The cruising speed in these cities will average not more than six miles per hour while the typical driver will use his or her car three hours a day. Car design for this environment will take a very different approach from that of current vehicles. Some new focal points will be:

- Easy switching between relaxation and driving positions
- Emphasis on passenger entertainment and information systems
- Automation of stop-and-go traffic situations
- Concealment of passengers from outside viewers
- Protection of passengers from attacks
- Effective smog protection and air conditioning
- Nearly zero emissions

Emergence of megacities



Implementation: Determine your individual innovation focus

“Car Innovation 2015” takes a general approach to megatrends, trying to identify the developments that apply to the automotive industry as a whole. Individual companies should analyze these trends with a focus on their specific product range and aims. In the past, this approach has led to radical shifts in company and innovation strategies by Oliver Wyman clients.

Our project experiences have shown: Analyzing the direction and speed of market changes, and anticipating future customer needs will shift the focus of the entire organization: Long-term corporate targets become clearer and far more important, and the innovation focus widens from incremental improvements to system innovations.

One example: For its future range of products, an electric and electronics producer in the European car industry has identified an increasing customer need for mobility, safety, comfort, seamless connectivity and ease of use. Despite strong growth in China and India, the company’s main markets will remain Europe and the United States. Based on these assumptions, the company developed a vision of the future driver interface, defined the types of electronics it wants to produce in 2020 and devised a strategy to gradually evolve its current product range from the traditional focus on cockpit electronics to integrated driver interfaces (Human-Machine Interfaces) and security systems. A key element in this strategy is a strong collaboration with consumer electronics partners and a R&D joint venture to integrate procured infotainment functions.

Impact of megatrends on automotive innovations

Top megatrends and their impact on ...

... innovation objectives		Extension of environmental protection	Stagnating population growth	Emergence of megacities	Aging, more active population	Polarization of income distribution	Increasing demand for mobility	Demand for connectivity, simplicity	Increasing demand for safety	Individualization of demand	Increasing technological complexity
Functions	Safety & Security	High	Low	Low	High	Low	Low	Low	High	High	Low
	Comfort	High	Low	Low	High	Low	Low	Low	High	High	Low
	Performance & Dynamics	Low	Low	Low	High	Low	High	High	Low	Low	Low
	Infotainment & Connectivity	High	Low	High	High	Low	Low	High	High	High	Low
	Flexibility & Space	High	Low	High	Low	Low	High	High	High	High	Low
	Design & Feel	High	Low	High	High	Low	High	High	High	High	Low
	Simplicity	High	Low	High	High	Low	High	High	High	High	Low
	Emissions	High	Low	High	High	Low	Low	High	High	High	Low
Costs	TCO ¹ / Fuel	High	Low	High	High	Low	High	High	High	High	Low
	Materials	High	Low	High	High	Low	Low	Low	High	High	Low
	Energy	High	Low	High	High	Low	Low	Low	High	High	Low
	Labor	Low	Low	High	High	Low	Low	Low	Low	High	High
	Assets	Low	Low	High	High	Low	Low	Low	Low	High	High

¹ TCO = Total Cost of Ownership

Legend: ■ no / low impact ■ some / medium impact ■ high / very high impact