The “personal urban mobility” strategic segment is concerned with transporting small groups of people over short distances in urban areas. This segment is undergoing a sea change as innovative technologies and business models revolutionize how people move around cities.

The “personal rapid transit” strategic segment is based on new modes of urban transport. These innovations, such as automated people movers, are supplementing traditional urban rail transport (such as rapid transit and commuter rail).

Opportunities in Croatia may lie in aligning the activities of rail parts manufacturers with trends disrupting the sector. Some rail parts will disappear from the market entirely. Others will undergo shifts in buyer demands due to the changing uses of urban transit.
Industry Snapshot

The automotive and rail sectors overlap. Both are “mobility” industries—their common purpose is to transport people and goods safely and efficiently. The value chains in both sectors are based primarily on usage and not on products. Both value chains rely heavily on “Tier 1” and “Tier 2” suppliers that sell components to an original equipment manufacturer (OEM). Products often compete for customers in both sectors.

Road

The global automotive part export market was EUR 324 billion in 2014. It grew at an annual rate of 6 percent between 2005 and 2014.

The Croatian automotive industry grew at 8 percent a year over the past 10 years. Croatia has 130 automotive sector businesses employing 10,000 people.

Croatian automotive parts exports are EUR 719 million. Together, Germany, Slovenia, and Slovakia account for 65% of Croatia’s automotive parts exports.

Rail

The global rail supply industry is worth EUR 159 billion and could grow at 2.6 percent annually through 2021. Croatian companies, however, are not significant players in the global market.

Croatia’s domestic railway equipment cluster is worth about EUR 150 million and accounts for 40 percent of revenues. Croatia has 2,604 kilometers of railways, with coverage just in line with the EU average. However, it lags in speed, maintenance, signaling, safety, technology, and electrification. A EUR 213 million upgrade program from 2015 to 2017 will help. However, this investment will not necessarily translate into business for Croatia’s industry. Other global suppliers are in better positions to pursue and win contracts.
Mobility is in a period of momentous change globally. Urban populations are growing rapidly. Aging populations will affect the design and choice of mobility solutions. The growing middle class will change the volume of travelers and how people move around.

The future of mobility is multimodal commuting. Multimodal commuting enables door-to-door solutions using dedicated technology-driven mobility platforms. It improves users’ ability to combine products from different sectors into a single journey.

Software skills are increasingly becoming critical differentiating factors for the industry. The new mobility integrators must be capable of capturing and analyzing big data for effective integrated traffic management and urban planning. Software will deliver a broader range of features and services. They will include mobility services, advanced safety, location-based services, in-vehicle content, and remote analytics.

Two urban passenger mobility strategic segments are at the front line of mobility industry changes:

- “Personal urban mobility,” typified by the automobile in today’s market, refers to flexible, short-distance individual travel in an urban environment. This strategic segment is bringing new products and services—such as electric vehicles (EVs) and their associated parts and materials—to market. It has also cultivated technologies at advanced stages of development, such as autonomous mobility.

- “Personal rapid transit,” typified by the subway in today’s market, refers to short-distance urban rapid transit focused on individual needs. One example is the Ultra Global system at Heathrow Airport. Ultra Global is a car park to terminal personal rapid transit system. It uses lightweight, driverless electric “pods” running on special-purpose guideways.

Each emerging strategic segment has a unique value chain that reflects the technological innovation required to be competitive globally.
“Personal Urban Mobility”
Flexible, Short-distance Individual Travel in an Urban Environment

The emerging “personal urban mobility” strategic segment requires:

- **Integrated mobility service providers.** To keep their share of the automotive profit pool, OEMs are evolving their value proposition. They are transforming from ‘hardware providers’ to ‘integrated mobility service providers.’

- **Partnerships.** OEMs increasingly see the relationship as a partnership in which the talent pools of the OEM and its suppliers are synergistic.

- **Customization.** Manufacturers of customized EVs for ride-sharing solution providers are looking for bespoke components.

“Personal Rapid Transit”
Short-distance Urban Rapid Transit Focused on Individual Needs (e.g. Parking Lot to Terminals)

The emerging “personal rapid transit” strategic segment requires:

- **Technical characteristics.** Technical requirements include adaptations for passenger comfort, passengers with restricted mobility, systems technology, and safety. Passenger comfort technologies include infotainment screens and noise reduction. Accommodations for passengers with limited mobility include designated spaces large enough for wheelchairs and low floors for entering and exiting easily. Systems technology requirements include advanced communication technology and intelligent power management. Safety technologies include closed-circuit television (CCTV) cameras and continuous monitoring.

- **Energy efficiency.** To improve return on investment, the system should have lower energy consumption than other transport modes such as bus or car.
MAKING CROATIA COMPETITIVE

Where Is the Value Chain Weak?

Croatian companies’ ability to enter emerging strategic segments will depend on evolving their offerings to meet buyers’ demands.

- **Innovation and research and development (R&D).** Most of Croatia’s auto part manufacturers lack innovation capabilities. Croatia lacks a comprehensive R&D ecosystem focused on new materials and technology-driven solutions. Croatia’s nascent R&D ecosystem does not coordinate firms and other stakeholders, such as academia.

- **Network integration.** Croatia does not have network integrators that can capture and analyze big data for integrated traffic management.

- **Labor skills.** Croatia will need to develop the engineering skills of its domestic workforce to align with industry trends.
Areas for Reform

Certain aspects of the industry ecosystem limit Croatia’s competitiveness in emerging urban mobility strategic segments.

Demand Conditions

The key driver for the automotive supply industry is the local presence of OEMs. There are only two OEMs in Croatia. Both engage in the pioneering production of EVs. However, they are not generating demand for Croatian parts suppliers.

The railway in Croatia is modernizing. The EUR 2 billion in funding available through the EU provides an opportunity for Croatia to upgrade its railway.

Factor Conditions

Labor productivity is low. From 2000 to 2014, productivity increased by only 20 percent while real wages increased by over 70 percent.

Access to finance is limited. Typical short-term loans have interest rates of 4.7 percent in Croatia, compared with an average of 2.3 percent in the Eurozone.

Vocational education and training could better match industry needs. Professional training is not keeping pace with industry needs. The best workers are migrating to countries offering better pay and working conditions.

Strategy, Structure, and Rivalry

The Croatian automotive sector market is export-oriented. Production of vehicles accounts for only 11 percent of its annual output. The balance comes from the production of parts and components. Some 85–90 percent of these products are destined for Tier 1 and OEM companies outside of Croatia.

The Croatian automotive sector is fragmented. Most companies make a narrow range of products in small batches. These small- and medium-sized enterprises (SMEs) have limited negotiating power vis-à-vis Tier 1 companies and OEMs.

Croatian producers face fierce competition. The competition comes particularly from southeast European countries with lower prices and larger volumes. Croatian firms also produce products that have little potential to climb the value chain.

Collaboration between companies in the automotive sector is low. There has been little cooperation among auto companies in production, sales, and procurement.

Unlike the automotive sector, the railway sector is global. Croatia’s railway supply sector includes both OEMs and parts manufacturers. Global OEMs manufacture and export finished vehicles. Parts manufacturers supply OEMs. However, demand hinges on a few large public railway investments.

Related and Supporting Industries

Croatia has no significant suppliers of input materials for parts production. Both in the automotive and rail sectors, international firms supply most input materials for parts production.

Croatia has limited systematic research collaboration between the public and private sectors. Cooperation on specific projects between the private sector and academia depends on private contacts and individual efforts.

Companies in Croatia are less innovative than their neighbors. The R&D intensity of SMEs in Croatia is in 16th place in the EU for small firms. It is in 21st place in the EU for medium firms.

Croatia needs further improvements in the business environment. Despite recent efforts, there is still room for improvement. The areas of land registry, business registration, resolving insolvency, and construction permits are particularly pressing.

Croatia faces stiff competition from other countries that strategically support the automotive industry. They provide significant R&D spending, tax breaks, and strong incentives to encourage foreign direct investment.
Recommendations

Croatia could improve its position in emerging urban mobility strategic segments by:

1. Founding a technical center for mobility as a collaboration between private companies, supporting organizations, and ministries. The Ministry of Economy Entrepreneurship and Crafts (MoEEC), the Ministry of Science and Education, the Ministry of Labor and Pension Systems, and other line ministries could implement this recommendation (via a ‘level 2’ fiduciary implementing body).
   
   Estimated timeframe: 10 years.

2. Technology scouting to find firms that could partner with Croatian firms. MoEEC could implement this recommendation (through a technical assistance program) as a matching grants scheme.
   
   Estimated timeframe: 3 years.

3. Focusing foreign direct investment (FDI) outreach on smart mobility system integrators for automated people movers. MoEEC and other relevant agencies could implement this recommendation through public institutions, government agencies, and the private sector.
   
   Estimated timeframe: 2 years.

4. Providing a partial guarantee to encourage Croatian suppliers to participate in foreign tenders. MoEEC (via a ‘level 2’ fiduciary implementing body) could coordinate services and guarantees to cover the cost of bidding for foreign tenders.
   
   Estimated timeframe: 5 years.

NOTE

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