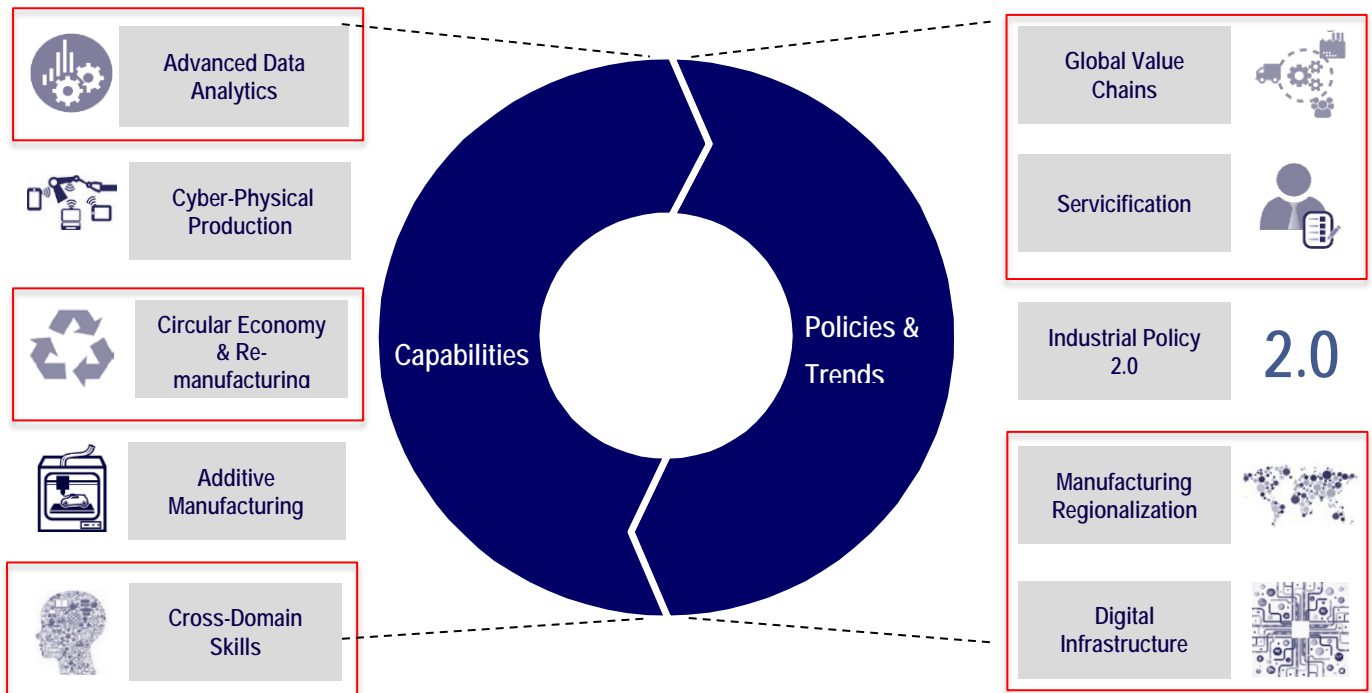


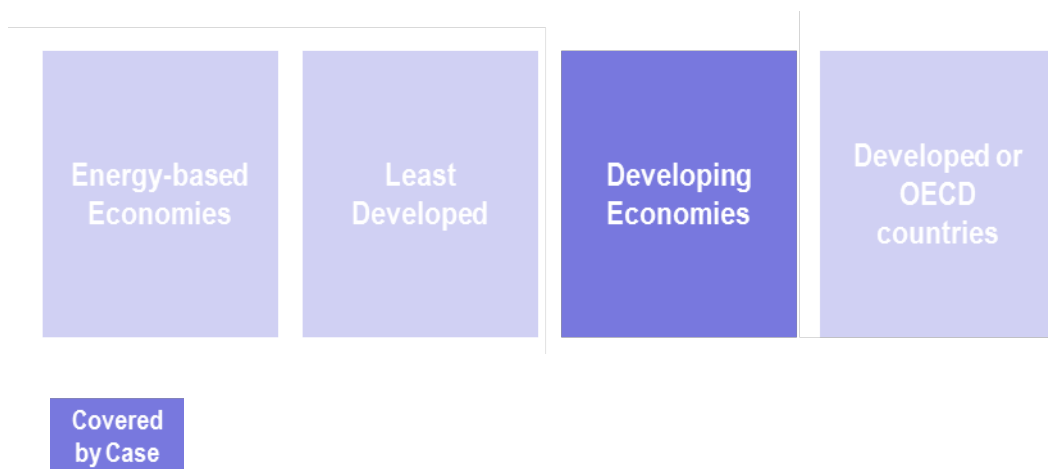
# Case 9

## Vietnam Mobility Study

### Drivers of the Future of Manufacturing



Source: World Economic Forum Global Agenda Council on the Future of Manufacturing, Whiteshield Partners framing



### 1. Challenge Confronted

Vietnam's current **mobility model is lacking a vision for the future**. The transportation sector is under strain and underperforming, and this has driven the government to seek out innovative solutions that can both improve transport and boost overall economic competitiveness. Over the last few decades, rising per capita incomes and increased urbanization have driven **reliance on an individual-use model** based primarily on **motorcycles**. Motorcycle registrations number nearly 50 million, and domestic sales increased from 2.5 million units in 2009 to 3.3 million in 2013. Because demand is large and growing, a very high percentage of motorcycles are produced domestically in a handful of large assembly plants (dominated by Honda and Yamaha) and local parts content is also significant. The **passenger vehicle segment** has the opposite characteristics. **Demand is low**, and although the market is protected enough to dampen imports of both new and used vehicles, final assembly is fragmented across a large number of mostly foreign-owned and joint-venture plants and the sector **has failed to develop in a significant manner**. With Vietnam's high urban population densities and sparse road networks, the individual-use modality is simply **incompatible with an efficient mobility system**.

Vietnam has three options, going forward:

- **Move out of the auto sector global value chain and target different sectors.** This is the current strategy of Vietnam's government. It views the involvement in auto-sector global value chains (GVCs) as a failed experience and in its recent development priorities has identified other sectors as targets for the country's participation in GVCs. The new target sectors are: information and communications technology (ICT), agriculture and agribusiness, and the tourism sector.
- Subscribe to traditional approaches to **GVC development**. This approach would recommend a **rationalization of the passenger-vehicle sector** along with increased **support for the export of motorcycles**, key motorcycle parts and automotive wire harnesses. Supporting industry development and attracting global suppliers would be important elements of these policies.
- Take a forward-looking perspective that accounts for **emerging changes in technology** and that shifts the emphasis from a narrow view of the auto sector to a wider view of the sector as an integral component of a **broader mobility value chain**. Local capabilities in the moulding of metals (for motorbikes, for tooling and for mixed-use vehicles) can be used to upgrade the auto sector from the assembly of passenger cars to the production of minibuses, a segment under-represented in the wider region.

### 2. Solution Used (proposal, not yet implemented)

The case study proposes the deployment of **intelligent transportation systems (ITS)** and **shared-use mobility** to help Vietnam reach two goals: (1) **upgrade its participation in auto-sector GVCs** and open opportunities in new target sectors (ICT, tourism); (2) **improve urban mobility** and – by reducing in this way the population's transit time in urban areas – provide a lever for boosting productivity in the economy and improving the quality of life for the society at large. The solution proposes **upgrades primarily in technology and skills, as well as environmental improvements**, and it suggests a shift in emphasis to a different market segment in

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### Key facts:

- Vietnam's transportation sector is under strain and underperforming due to reliance on an individual-use model based primarily on motorcycles.
- Deploying an intelligent transportation system with shared-use mobility can upgrade Vietnam's participation in GVCs in the auto sector and improve urban mobility.
- The solution proposed leads to upgrades primarily in technology, skills, jobs, wage levels and environmental conditions.
- Significant investments in hardware (cameras, sensors, radar, etc.) as well as complex software platforms are required.
- Barriers include the reluctance of customers to switch to public transport, the lack of capacity and ability to coordinate between several public entities and private partners, as well as a weak enabling environment (access to finance, infrastructure, talent).

the auto sector (product upgrading), which also has the potential to foster functional and **inter-sectoral upgrading**.

- **Technology:** The deployment of an ITS and associated technologies for shared-use mobility will require sizeable investments, especially in platforms for software and in sensors for gathering data in real time over the territory.
- **Skills:** The **skills acquired** in the conception, development and implementation of software transportation solutions and those possibly originating from new opportunities for ancillary services **can be redeployed to provide solutions to other industries as well**, including logistics, transportation, tourism and healthcare. The expertise gathered by Vietnam's firms in establishing and managing a modern urban mobility system can become the basis for exporting services of urban mobility management internationally (first-mover advantage and leapfrogging).
- **Environmental conditions:** Inducing a shift in the domestic market **from motorcycles to mobility via public transport** and shared-use vehicles will reduce greenhouse gases and pollutant emissions.
- **Product, functional and inter-sectoral upgrading:** Advances will be obtained by specializing in the production and export of minibuses equipped with innovative ICT for shared use and networked mobility.

### 3. Lessons Learned



1. The traditional **GVC analysis** of the auto-sector value chain **needs to expand into a mobility value chain**.
2. The **public sector** should take a **“whole value chain” approach** and implement regulatory changes and incentive systems to foster the adoption of the new model. These could include parking restrictions, higher taxes for motorcycles/individual passenger cars, lower taxes for mixed-use cars or for the rental car market, congestion charges to enter designated zones in urban areas, etc.
3. Effective **industrial policy** requires a **complete change of approach**. It first requires moving **from sectors to tasks and competencies of comparative advantage**. It then requires identifying if specific regulatory barriers hinder the full potential in these tasks and activities. It also needs **prioritizing the development of skills and technology that can be redeployed** to other sectors, and the financing of public goods in education and infrastructure that are informed by a forward-looking approach to development in technology and emerging business models. Finally, it requires **supporting the creation of local markets, in particular for services**. The clustering of firms in a well-integrated ecosystem may support upgrading and leapfrogging in GVCs.
4. Supporting **information** and data **gathering** and using open source systems **can also promote upgrading and leapfrogging**. Data and information are important assets, as most industries evolve towards an ever-more intensive use of big-data infrastructure and content. Interesting data sets and **open-source ICT systems allow attracting the best technology, skills and leading expertise in a sector** and in a country that is identifying problems and simulating the impacts of alternative remedies. These create innovative solutions that can become a source of comparative advantage and can support exports of high value added services, goods and technology.

#### Description of the Work Performed (proposal, not yet implemented)

Both **manufacturing firms and local service providers** are at the centre of this approach; they can **either integrate existing GVCs at higher value added stages**, or become **lead firms of new GVCs**. Manufacturing firms can **specialize in the production of minibuses**, a market segment under-represented in the ASEAN region that hence has both export

potential and local demand for Vietnam at higher segments of the auto GVCs (than assembly). They will also be needed to build the physical infrastructure. Service providers are needed to develop software and applications that will operationalize the model and manage the system. Local service providers will also gain new market opportunities to deliver new services using the urban mobility software platforms and/or to develop and sell – locally and internationally – advisory services on creating and managing similar models of networked mobility.

## Key Outcomes

- Renewed emphasis on public transportation as the core of the new mobility model will **increase demand for buses**, which can **create new manufacturing jobs and export opportunities**. By 2030, Vietnam will need 38,285 buses in circulation to meet demand. This would translate into **300 to 500 jobs by 2030**.
- Because the local bus industry can develop more **capabilities beyond assembly**, the type of **jobs created will be better and wages will be higher**. For instance, by successfully integrating into mould making and testing, the local bus industry could pay a wage **premium of over 25%**.
- The **biggest potential benefit of switching to a multimodal system will be related to software development**. An ITS like the one proposed provides **opportunities for local engineers to develop software** for bus scheduling, maintenance scheduling, integrated ticketing systems and real-time passenger information for smart phones, in addition to services needed to integrate third-party software into the public transport system.

## Drivers & Enablers



Investments in hardware and complex software



Close collaboration between the public and private sectors



- Jobs
- Export opportunities
- Capabilities

## Barriers

- Motorcycle **users will need to be convinced to switch to public transportation** as their main mode of transportation.
- The **lack of capacity and ability to coordinate between several public entities and private partners** could have negative effects on a seamless integration of the different transportation modes.
- Vietnam will face strong **competition from established players** (e.g. Volvo and Siemens) **and countries** (e.g. Malaysia and Singapore) trying to carve a niche as ITS software providers.
- **The enabling environment** is weak due to limited access to finance and to internationally effective managerial talent, limited infrastructure (i.e. incubators and accelerators), and a general lack of support and encouragement for private entrepreneurship.