MOBILITY 2040

INCUMBENTS AND INVESTMENTS AT RISK

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It's a beguiling vision: You wake up and tell your house management system that you need to be in Munich, or Chicago, or Beijing, by two in the afternoon. The house tells your mobility provider, which computes the journey and sends an itinerary to your smart device. At the appointed time, a driverless car rolls up and greets you by name, and you say hello to a couple of people already seated inside. The car drops you all at an integrated mobility hub, where you board a 750 miles per hour hyperloop that whisks you to your target city in mere minutes. An autonomous bus waits at the station to take you to your final destination, a shared office space in the city center.

To determine if this is what mobility could look like in the year 2040, Oliver Wyman recently conducted a survey of more than 200 executives and experts in the transportation industry globally. Driven by the fourth industrial revolution, technological convergence, new entrants in the mobility space, and changing travel behaviors, we expect the pace of innovation in passenger transportation to accelerate over the next quarter century. Disruption to existing business models will be widespread, and 80 percent of passenger transportation incumbents say they don't feel well prepared for what's coming. (See Exhibit 1.)

A FAST-APPROACHING TOMORROW

Our survey identified four key trends that will shape passenger transport over the next 25 years: 1) sustainable, efficient assets; 2) integrated personal mobility; 3) urbanization and smarter cities; and 4) increased competition and innovation.

Sustainable, efficient assets: The next 25 years will see greater demand for sustainable solutions and more efficient use of transportation assets. Eighty percent of survey participants believe that there will be fewer private cars in the future, while nearly 70 percent see a significant increase in car sharing. These trends will be accelerated by the development of fully autonomous vehicles. It is not too farfetched to imagine autonomous car fleets that are shared across a neighborhood or city on a fee-per-use or subscription basis.

Integrated personal mobility: Current mobility services will coalesce into full-scale mobility providers, who will focus on enabling seamless, on-demand journeys by integrating all modes of transport. For the traveler, transport mode selection and timetables will cease to be an issue – they'll only need to know what time to be ready so as to reach a destination by a given time. Smart devices will become the organizational center for all trip planning and mobility personalization.

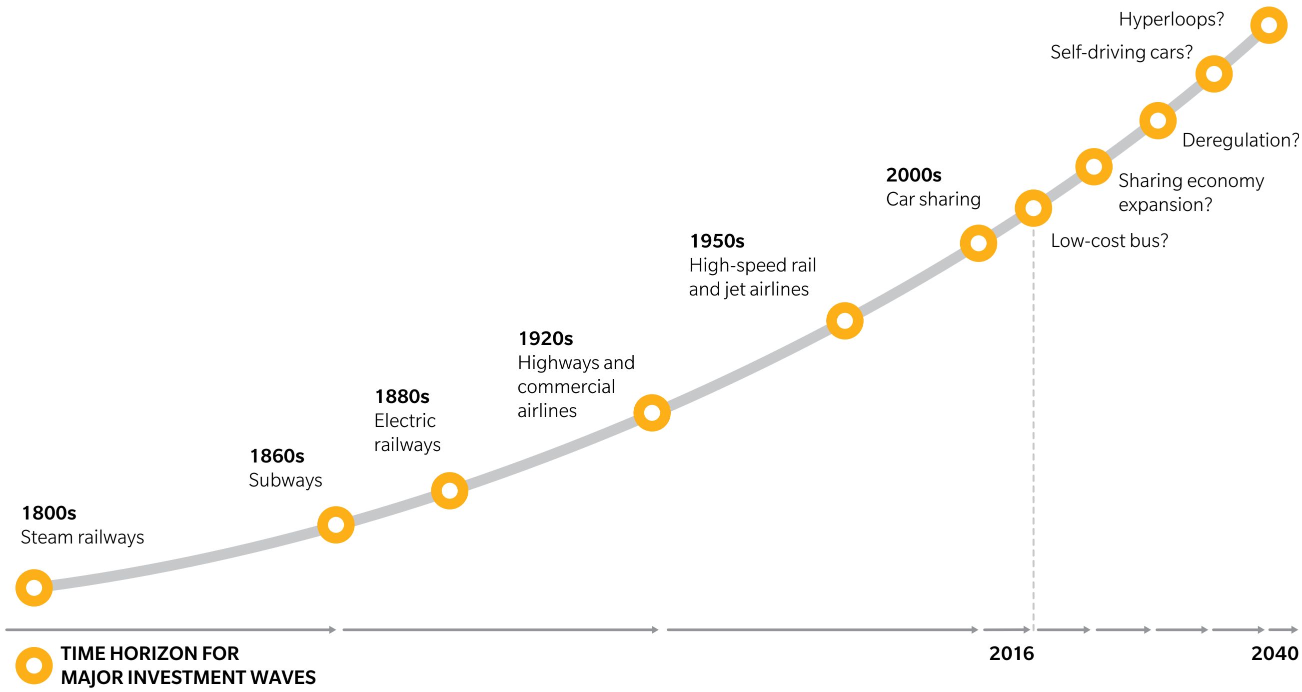
Urbanization and smarter cities: Urban and conurbation populations will continue to grow, increasing passenger volumes. The "smart city" of the future thus will have to invest in technology and transport, with a focus on passenger flow management. Coordination with mobility providers, real-time data monitoring, and responsive smart grid systems

80%

of incumbents aren't prepared for mobility disruptions

EXHIBIT 1: THE NEW RULEBOOK FOR MOBILITY

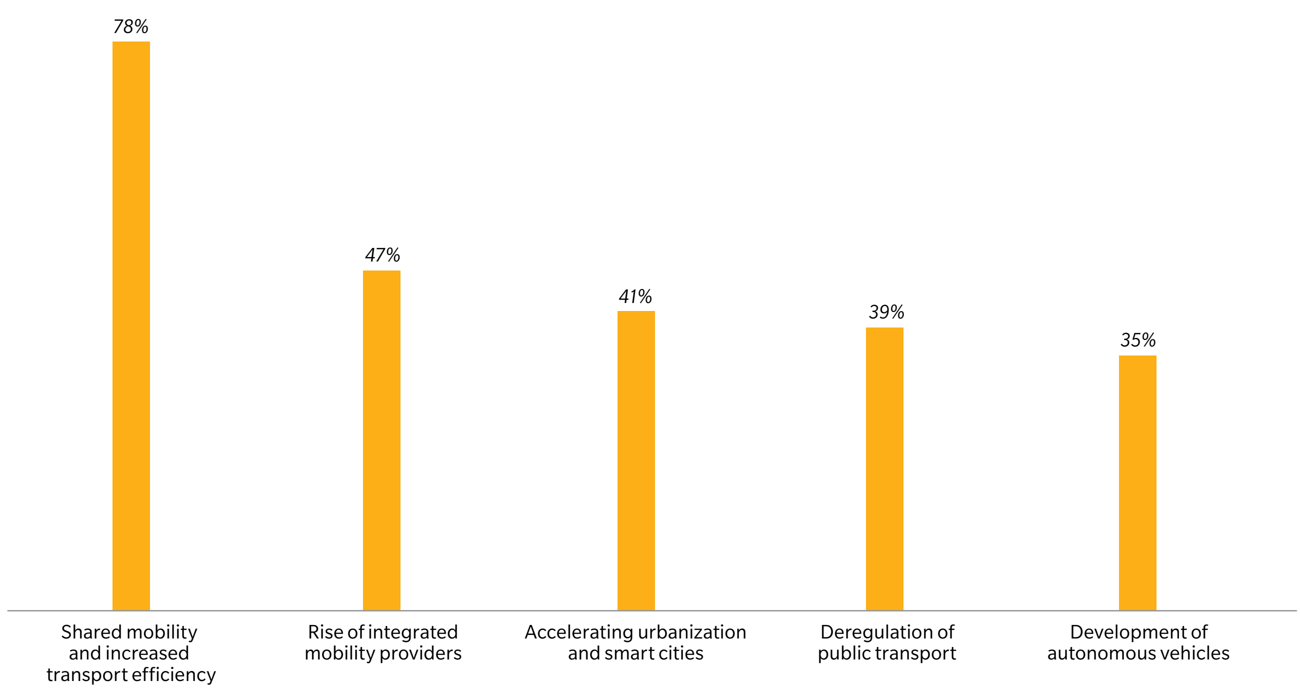
THE PACE OF INNOVATION IN PASSENGER TRANSPORT IS ACCELERATING...



Source: Oliver Wyman analysis

...DRIVEN BY DISRUPTIVE NEW MOBILITY TRENDS...

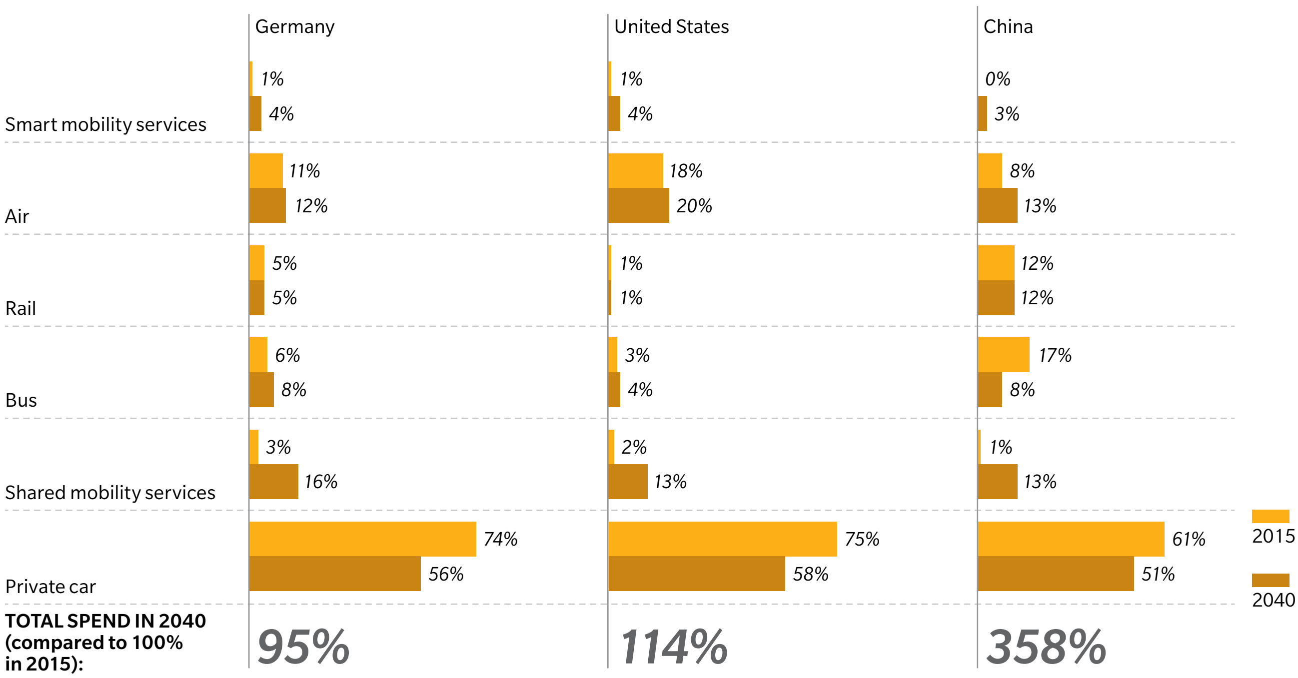
SHARE OF MOBILITY 2040 SURVEY RESPONDENTS WHO CONSIDER TREND TO BE AMONG THE THREE MOST IMPORTANT



Note: Multiple answers possible.
Source: Oliver Wyman Mobility 2040 survey

...ALTERING THE PASSENGER TRANSPORT SHARE OF SPEND

PERCENTAGE SHARE OF EACH MODE, 2015 VERSUS 2040



Source: Oliver Wyman analysis

will ensure the best use of public transport and minimize congestion.

Increased competition and innovation: Survey respondents expect that transport deregulation will continue to spread. Liberalization of railways, bus services, taxis, and ride-sharing will enable new companies to enter the market, giving travelers more choice and driving further innovation. One big concern: that liberalization and the rise of low-cost bus and rail services will force revenue per passenger downward, adversely impacting incumbent transport providers.

Taken all together, what do these trends imply for the future of mobility? Private cars will lose their leading role, as shared mobility – using autonomous vehicles – increases dramatically. Public transport usage will increase moderately but function more as one component in seamless multimodal passenger flows. Meanwhile, the number of companies operating in the mobility space will increase and become more diverse, likely leading to more "co-opetition."

The biggest story however will be the rise of mobility services and information. Out of many different providers now attempting to establish themselves in this space, we expect only a few will rise to the top, gaining enough share and reach to provide personal mobility coordination that stretches from one end of the journey to the other.

THE THREAT – AND POTENTIAL – FOR INCUMBENTS

Private cars will lose their leading role, as shared mobility increases dramatically

Incumbents in passenger transportation face the greatest risks from this vision. Customer relationships and data are at risk for capture by new-entrant mobility providers offering increasingly integrated travel planning. And as the transportation landscape becomes more diverse and competitive, the revenue pie will be split more ways. Investment capital may even be harder to come by for traditional transport modes if investors see better opportunities elsewhere.

Our analysis found for example that over the longer term, regional passenger railway services (which are common in Europe) may be especially vulnerable, as shorter, low-volume routes could be more cost-effectively served by autonomous buses. In Germany alone, 20 percent to 30 percent of fixed assets are expected to be at risk. And automotive manufacturers in developed countries may see a substantial reduction in the number of cars they sell as car sharing moves mainstream. Fully autonomous cars – expected to be as much as one-third of all car sales by 2040 – will further expand this trend.

More than half of railway operators, original equipment manufacturers, and infrastructure providers report that they are tracking trends and developing response plans. But few say they are well prepared, with a plan in place to start responding to these trends. When asked what they are likely to do, incumbents cite changes to business models, development of new products/services, and increased levels of customer service. Unfortunately, these "business as usual" responses to the threat of change don't get at the heart of how radical the coming wave of personal mobility will be.

In particular, it will be critical for all incumbents in the mobility value chain to consider the impact of disruptive trends (many of which are already underway) on investment planning. Given that many transportation assets have lifespans of 30 to 40 years or more, the investment planning cycle for 2040 starts now. Investment obsolescence is a real risk, while on the other side of the investment coin, peak capacity management will become more of a headache as urban and conurbation populations continue to grow. This will require a series of steps (such as active capacity management, optimized asset utilization, and cooperation with other modes) to keep asset requirements from spiraling out of control.

Incumbents also will need to determine if they are content to participate in only certain steps in the customer journey or if they want to optimize mobility door-to-door. The former may require less investment and keep the organization focused on its core skills, but carries the risk of loss of value and commoditization. The latter is a much bigger ask that may involve acquiring technology providers and greater co-opetition, but that could keep revenues and customer control from shifting to new entrants.

Incumbents do have the advantage of vast stores of customer data, which could be leveraged to build personalized mobility offers and partnerships that offer other services using travel time – if they don't wait too long. When it comes to how fast they can turn, however, many transport players tend to be ocean liners rather than speedboats. Faster-moving targets will mean that organizations must speed up innovation in-house to quickly recognize and claim opportunities and reach critical mass.

In some ways, the future of mobility looks to be thrilling. But for incumbents in passenger transportation, it is going to be an unprecedented challenge. Collaboration with or integration of mobility providers, technology and data investments, and an open ecosystem for sharing real-time journey data are just a few of the necessary adjustments they will need to make. The game is about to change, and the rules will, too.

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