

Taking the Tram to the Future

Text SVEN HEITKAMP/ Photos MARCO PROSCH

Big cities all over the world are developing new, flexible, connected, and on-demand mobility strategies.



Bus per click
Bus service where and when you want it. Smart options will supplement schedules in the future.

Ulf Middelberg's fingers fly across a map showing blue streets, white cars, trains, and bicycles—and a wide yellow arrow pointing straight to the future, on an innovative app for Leipzig's public transportation company. In 2018, Leipziger Verkehrsbetriebe (LVB) served 156 million passengers, 18 million more than it did five years ago, and Middelberg is one of its managing directors. The app's innovative graphics clearly indicate the direction he wants the company to take in the future. He intends the LVB to be more than a well-oiled bus and rail system. It should also be a flexible, connected mobility provider for all modes of transportation in Germany's fastest-growing major city—including car shar-

ing, rental bikes, shuttle services, taxis, and autonomous transport systems. In short, it should reflect "mobility as a service" (MaaS).

The "Leipzig mobil" app is one of the first major elements of this strategic approach. In addition to ticket sales and schedules, it gives users access to a bike rental system called Nextbike, a regional car-sharing company, and taxis. The app also lets users directly compare different means of transportation and routes. It bills them monthly for all the rides they take. These features give customers more freedom in getting around the city and make LVB one of the most innovative municipal companies in Germany.

"Younger people in particular no longer want to be bound to a private car or a monthly pass,"

says Middelberg. "One of our major aims is to serve the growing trend toward a sharing economy." The goal is to offer multiple parallel mobility solutions, which build on the backbone of the bus and tram system but also extend far beyond it and are well connected. Customers who value flexibility need real-time information for prompt transportation services—and options that go beyond rigid timetables.

The electronic billing service is intended to free customers from complex fare systems and high prices for single tickets. The vision is for smartphone apps or chip cards to calculate the most favorable fares based on where users start and end their journeys. "We want to separate use from payment," says Middelberg. That is more convenient for customers and more cost-efficient for the company. But that's not all. The data thereby acquired give the mobility provider a better idea of passenger use patterns and enable it to further optimize its services.

Smart ticketing is on the rise in major cities around the world. In the London metropolitan area, for example, passengers can use not only Oyster cards but also contactless credit cards for a pay-as-you-go option. The Whim app from the Finnish company MaaS Global offers access to public transportation, bicycles, taxis, and rental cars in Helsinki. It is also used in Birmingham and Antwerp. Hong Kong's Octopus card and New York's OMNY are just two more examples of how cities are developing strategies for standardized, contactless payment systems by smartphone, travel card, or credit card.

Leipzig enjoys ideal conditions for new solutions of this type. With a population of 600,000, it has the second-largest tram network in Germany after Berlin's. Its population has increased by 100,000 over the last decade, and its annual passenger figures have risen by tens of millions. Vehicle fleets and driver teams have grown in response. The city is pursuing a sustainable transportation strategy that aims to raise the share of all trips taken by rail and bus from the current 18 percent to 23 percent by 2030. It aims for the share of trips taken by car to decrease from 40 to 30 percent. And that, says Middelberg, makes the city center a more attractive place for shopping, entertainment, and other experiences—which gives it a competitive advantage over online shopping. This is by no means an anti-car policy. On the contrary. "For cars to still be fun to drive, we need our cities to work. Good public transportation is part of the solution."

LVB is working together with IT experts and scientists from the Max Planck Society on a "mobility factory" project to develop dynamic



Ulf Middelberg
frequently takes the tram himself. The LVB app now makes it even easier to combine different means of transportation.

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Managing Director, Leipziger Verkehrsbetriebe

routing and improve connections and interfaces. Instead of laying more rails, LVB has set its sights elsewhere, with a focus on digital solutions for services such as shuttles to outlying areas of the city. Autonomous vehicles are also expected to play a significant role in the future. Leipzig is having a consortium of companies and experts develop a driverless electric bus for up to sixteen passengers that will run—at speeds of up to 70 kilometers per hour—on its streets by 2021,

both as part of its public transportation network and available by app. Major aims include providing better service to large places of employment on the outskirts of the city such as the Porsche and BMW plants and improving connections to Europe's largest logistics hub for DHL Express.

And that's not all. A variety of innovative tram projects are running at the same time. Traffic lights are being connected to the digital control system and phased to facilitate tram flow. In ad-

dition, free Wi-Fi service has now been installed at each of the tram stops located in the city center and is being expanded to further parts of the city. All 1,200 drivers have been issued tablets to give them faster access to shift schedules, current traffic information, and digital keys for buses. In addition, a joint project with DHL has set up a platform and vehicles for new employee ride-sharing options, including the associated job tickets. "Every passenger has their own mobility needs," says Middelberg. "Public transportation can meet them with smart services."

Porsche Consulting is supporting LVB on its path to becoming a mobility service provider. Its transformation is based on the following business strategy: an all-round service provider can take on new business models and help shape the competitive rules of the game—instead of standing by while private providers forge ahead. As Middelberg puts it, "We want to take our cut of the digitalization profits."