



Whitepaper

Ultimate Guide to The Best Public Transport Service

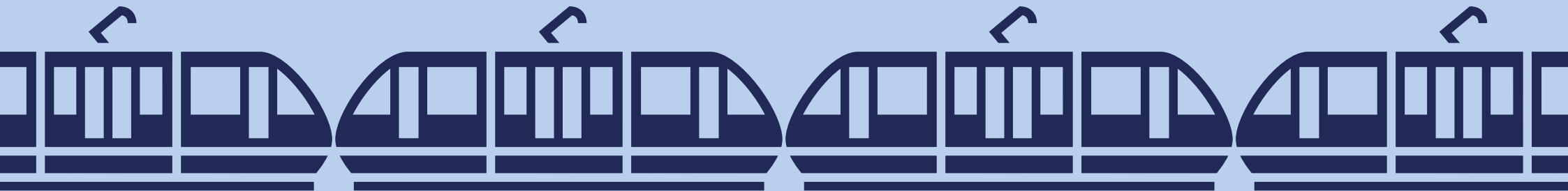
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Public transport doesn't just take people
from point A to point B.

**It's an indispensable part of an
inclusive and sustainable society.**

Public transport offers people the opportunity to participate in
social life, no matter what their income, how old they are, or
whether what they have physical disabilities.



How to make the most of public transport and inspire people to use it

Comfortable, flexible, and time-saving – that’s how most people rate driving a car. Public transport doesn’t score as high; it’s generally considered to be too slow and burdensome. A car offers spontaneous mobility: Car drivers decide when they get in their vehicles and drive off. Public transport can hardly keep pace with this spontaneity. To make public transport more attractive, you need high frequency and good coverage.

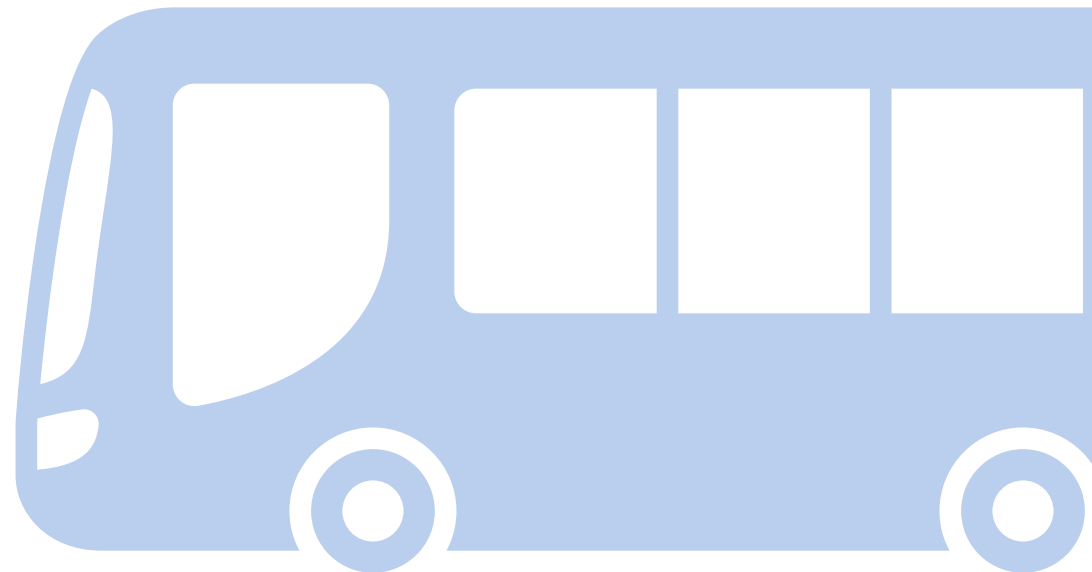
Frequency alone does not make public transport a top service. We listed crucial points you need to consider for your planning.

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Janet Veldstra, Assistant Professor for Behavioral and Social Sciences at the Dutch University of Groningen.

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Make It Accessible

Access to mobility means access to society – to education, to jobs, to leisure. It's a prerequisite for social participation. Those without access to transportation face exclusion from society, with limited opportunities and possibilities in life. Therefore, accessibility is one of the most important aspects of attractive public transport.

Instead of predicting what people will do, as a public transport or urban planner you need to understand and measure what they can do. This information helps to understand the existing mobility systems and can be used to compare the impacts of projects and changes.

This means that accessibility does not only relate to the qualities of the transport system (e.g., travel speed, time or costs), but also to the qualities of the land use system (e.g., density and mixes of opportunities).

Check your public transport supply for the following:

- Provision of wheelchair ramps
- Low-floor buses
- Barrier-free guidance systems
- Elevators at your stops
- Escalators
- Priority seating
- Audible announcements
- and other accessibility upgrades



The Karlsruhe Model

- an Exemplary Model for Connecting the Region



Accessibility is one of the most important aspects of attractive public transport services. While there are many approaches to achieve greater accessibility, the city of Karlsruhe in south-west Germany has developed a world-unique method. Although transport networks in the city centers are usually extensive, there is often no good connection to areas in the region. “The Karlsruhe model is a pioneering solution,” says Prof. Dr. Alexander Pischon, managing director of various transport companies in southern Germany.

Connecting these areas with tram-trains not only connects the region with city centers without requiring transfers, but it also integrates state-of-the-art transport services into mobility offerings

The Verkehrsbetriebe Karlsruhe (VBK) and the Albtal-Verkehrsgesellschaft (AVG) provide the tram and railway network for the KVV. What do you as the operator do to inspire more passengers to use public transportation?

“First and foremost, we offer a very dense rail network with transfer-free connections from the region directly to Karlsruhe city and vice versa. Our city trams serve many stops along the way, so they offer an extremely good regional network centered around Karlsruhe. Within the city, we have one of the best headway-based service in Germany in terms of the number of inhabitants. In the city center during rush hour, a train runs every few minutes. And the strong rail network is complemented by bus services in districts of the city and especially to areas around Karlsruhe. We are always working to enhance our network, to make it more attractive, which means that we’re successively integrating state-of-the-art mobility services such as on demand transport, shared bicycles, and car sharing services, and we’re testing autonomous shuttles with research institutes.”

What’s special about the “Karlsruhe Model”?

“Whereas in most cities around the world, passengers from surrounding regions arrive at the main train station and then have to transfer to trams there to reach the city center, here, passengers can simply remain where they are. We offer passengers transfer-free connections from the region directly to the Karlsruhe city center and we have also expanded this model in the region to the city centers of Heilbronn, Bad Wildbad, and Wörth am Rhein. This works thanks to the special two-system technology of our tram-trains, which can run as railways and trams. After the successful invention of this system in Karlsruhe about 30 years ago, the model has been copied in other cities around the world. It makes public transportation easy, comfortable, and thus attractive.”

For a sustainable mobility transformation, the concern is to inspire young people to use public transportation. State-of-the-art apps and techniques are the means of choice. How can these services be linked to your offerings?

“Our services are gradually becoming more digital. This creates entirely new possibilities for our passengers. And it creates new opportunities and ways to link various forms of mobility with one another. For example, our app kvv.regiomove offers all services quickly and easily from a single source, from multimodal connection searches to the purchase of a suitable ticket to the booking of car sharing for the last mile to the front door. That’s smart. That’s easy, and in my opinion, that’s how public transportation has to be to encourage people to switch. Or course, always paired with reliable, good services.”



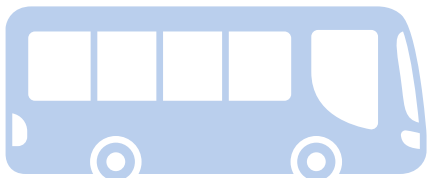
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Improve Safety & Security

People are more likely to use public transit if they feel safe and secure. Because of the nature of public transit, most efforts surrounding safety and security center around customer service.

This may involve

- increasing security staff presence
- improving lighting and surveillance systems
- and creating more visible and reliable transit stops.



If buses approach stops at night, the stops should be well-lit and also in well-lit areas. This makes users' lives safer.

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Antonio García Pastor, Director of Operations at Avanza Group ADO, and Chair of the UITP Bus Committee.

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Speed It Up

Public transport is losing time, especially at stops and traffic signals. Anyone who wants to advance public transport must prioritize it on the roads. This is the only way to accelerate public transport. This can be realized in many ways.

1.1 Priority at traffic lights

If a traffic jam forms at an intersection with a traffic light, it can take several green cycles until the vehicle may cross. This is also how a few minutes' delay can add up quickly.

1.2 Extra PT lanes

If public transport prioritization can be justified, special bus lanes not only reduce the average travel time, they also reduce fluctuations in delays. Special bus lanes can be implemented in different ways. For example, as:

- 1 Dedicated bus lanes**
- 2 Bidirectional bus lanes**
- 3 Contra-flow bus lanes**

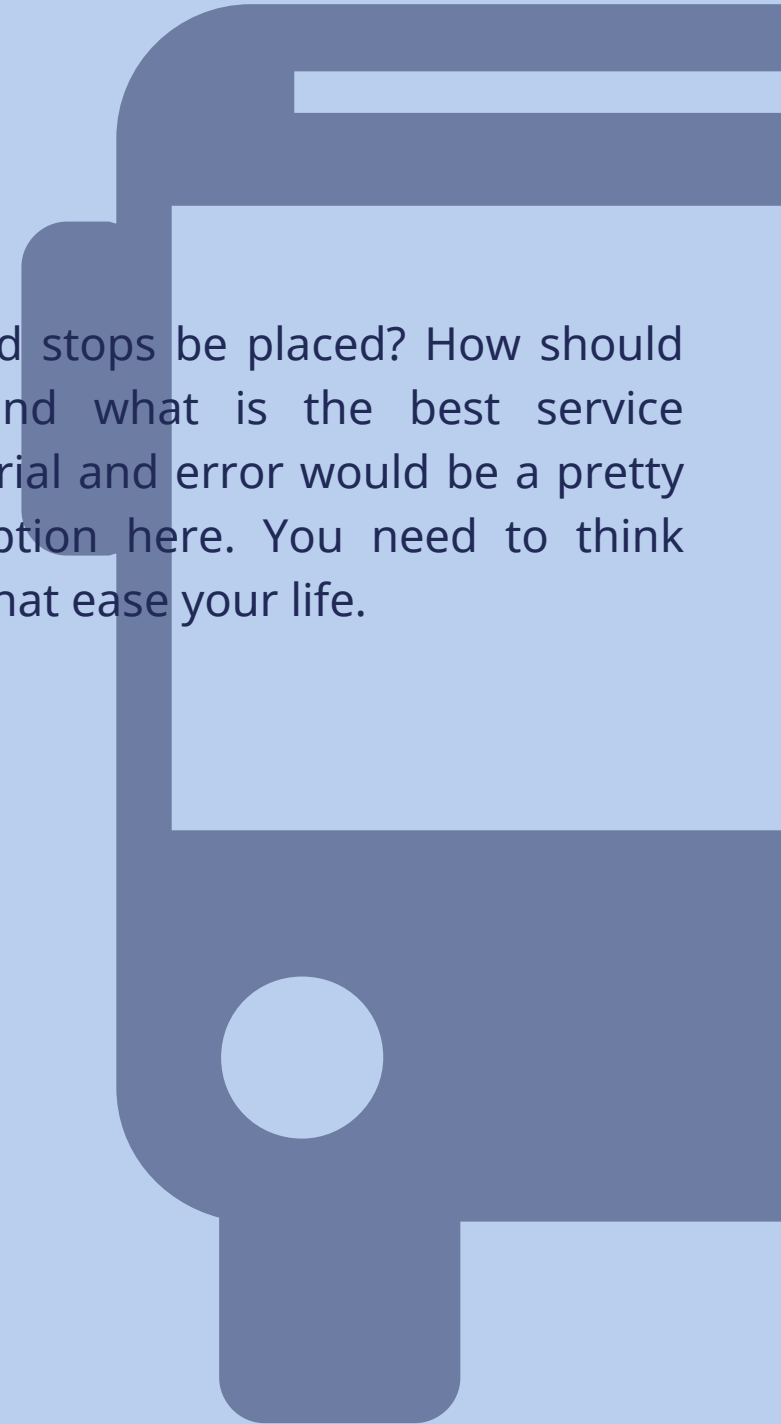
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Be Efficient at Stops

In addition to signals at intersections, stops are critical for fluid travel. If the bus has to turn into a bay and then make its way back into traffic, it loses time. By contrast, if it stops on the road to let people get on and off, it can travel on quickly.

When stopping on the road, bus bulbs offer special convenience for both drivers and passengers: At the bulb, the bus stop extends to the edge of the road or even protrudes slightly into the road, which means that the bus can approach it by driving in a straight line.

Where should stops be placed? How should lines run, and what is the best service frequency? Trial and error would be a pretty expensive option here. You need to think about tools that ease your life.



5 Optimize Operations with Effective Public Transport Planning

Today, there's a lot more data available than there was in the past: Mobile phone data helps to identify people's most important movements from one part of the city to another. Another valuable data source is information from the ticketing systems.

In addition to the various data sources, it's increasingly important to involve citizens. In the process, you come into contact with people, learn what their needs are, and what this means for the stops and line planning.

You now are dealing with completely different needs of several stakeholders: Passengers expect a high-quality and convenient ride, operators need to provide economically viable services, and authorities need to match their citizen's needs with political topics, talking about accessibility and a sustainable modal split.

Meeting all these interests at the same time is challenging. Besides, planning must be of high level to be judicially approved.



You want to learn more about how software solutions take this burden off your shoulders?

Jump to the end of the whitepaper.



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Get People Excited about Public Transport

Regardless of whether on-demand service, optimized bus routes or extended tram network – it always takes a certain amount of time before users adapt to a new public transport service and adjust their usual mobility behavior.

4.1 Overcoming a Lack of Willpower

People can only abandon habitual behaviors if they feel an inner conviction that they are up to the new situation. It's called achieving self-efficacy. Precisely for people who believe that they are unable to use public transport, offering free tickets can help convince them to the contrary.

4.2 Work on the Image of Public Transport

In addition to attractive public transport services, public transport operators must work on the image of public transport. The automobile industry demonstrates how this works. It creates positive associations in people's minds. You need to achieve the same for public transport. For example, this can involve cooperations with companies on site, who offer their employees a free or reduced-price public transport ticket. Or good marketing can do the trick.



For many people, the financial incentive is not enough to encourage them to change from their cars to public transport. It's more the identity that they can express with their mobility behavior. Therefore, advertising for public transport should create an identity.

Public transport advertising could demonstrate how, as a loyal public transport rider, you can reduce your ecological footprint and reduce CO2 emissions. It could show how much less space public transport requires and how the space created this way could be devoted to improving the quality of urban life.

In 2015, BVG, Berlin's PT operator, launched a bold marketing campaign to polish up its image. "Because we love you" has become quite a success, being named a prime example not only in financial terms but also in soft terms like customer satisfaction. The massive media attention either does not hurt for sure.





4.3 Smart Technology

A smartphone is now an essential commodity that everyone carries with them. Being able to harness its power to connect touchpoints and information to passenger activity improves the experience for users and operators alike.

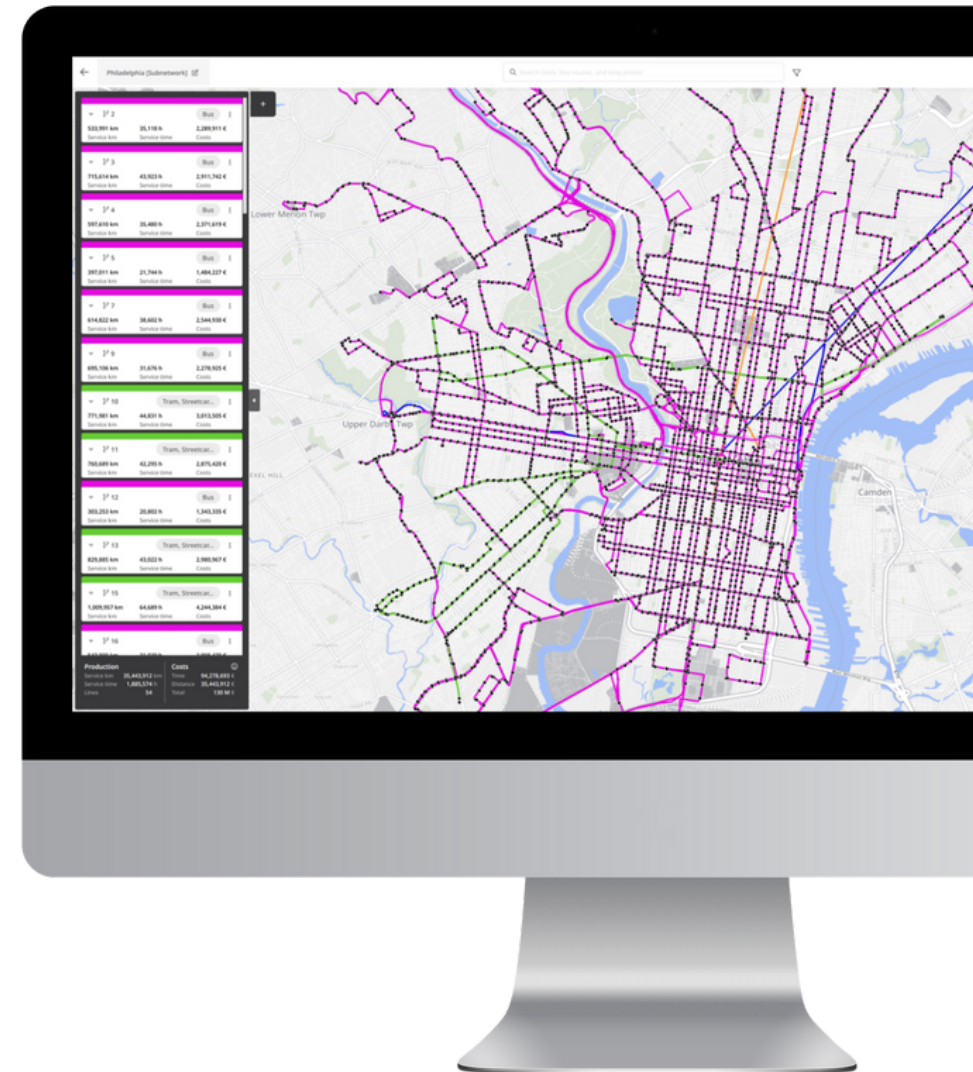
Smart technology can allow customers to open gates with smartphone tickets, instead of worrying about purchasing a ticket from the machine. This reduces queue times even during rush hour, and allows users to easily pass through gates, regardless of their user type.

But it doesn't end there. Smartphones can further improve public transport. New technology can also give station managers insightful data that they can use to improve the function of their station even further and help to keep customers safe. For example, by forecasting peak times or identifying gates in need of repair.

Technology as Enabler to Plan and Optimize Public Transport

Planning is key to the previously listed aspects in this white paper. In most cases, public transport planning is not about finding a single “ultimate” solution. It is rather about considering a range of possible measures, policies, and conditions, before suggesting suitable actions to political or commercial decision-makers.

It's no secret that public transport planning is too complex - and implementing the output may be way too expensive - to simply base it on gut feelings or excel sheets. Digital modeling tools enable planners to quickly develop different scenarios for public transport and to test them under a range of possible conditions.

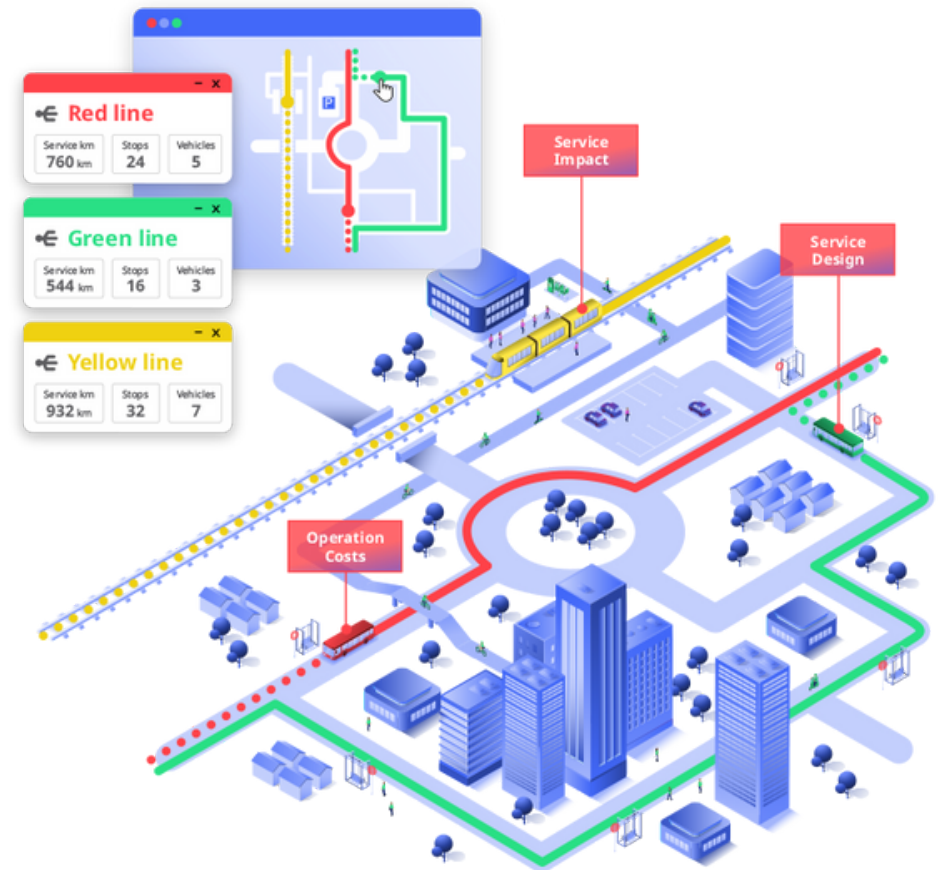


PTV Lines - The Public Transport Tool with All the Scope and None of the Complexity

If you are limited in resources and knowledge of modeling software, but still would like to improve your public transport planning process, **PTV Lines** is the ideal starting point. The cloud-based software is intended for quick service planning of public transport networks and timetables. And the best thing is: It does not require advanced knowledge of mobility modeling.

You can use PTV Lines to:

- Plan and test of seasonal timetables
- Temporary changes to the public transport network, e.g. when a major event or a construction site requires a detour
- Adjust services due to connection optimization



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