

Divided Past To Integrated Future

—Developments in local public rail transport in Berlin

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Developments of past 5 years

The fall of the Berlin Wall 5 years ago, ushered in a new era in Berlin's local public transport. Two rail networks, which had been separated for 28 years, and which had developed in fundamentally different directions, had to be united again. This meant that in the eastern and western sectors of the city, plans, which had been in preparation for many years became waste paper from one day to the next.

It was not simply a case of being able to reinstate the connections broken by the building of the Wall in 1961. During the 1950s, West Berlin had already decided to opt entirely for expansion of the underground which was to form the skeleton of local public transport with bus lines oriented towards finer distribution. Initially and for political reasons, the S-bahn system, which had been extended continually up until the beginning of WWII, hardly played any part in the official public transport planning of West Berlin. It was run by the Deutsche Reichsbahn, the German Democratic Republic's state railway, and was beyond the planning reach of the western sector. In addition, it was boycotted by the West Berliners after the building of the Wall. However, the S-bahn played an important role in East Berlin, complemented by the tram network which primarily connected the new suburbs with the inner city.

After the Wall

Following Berlin's reunification, the top priority was quickly defined -- development of a unified municipal rail network maintained by two parties: the city-owned Berlin Public Transport Services (BVG), as operator of the underground, and the

Deutsche Bahn AG, as operator of the S-bahn.

The underground and the S-bahn were to be designed as a single transport system, formed of two different components, despite different operation methods and different operators. This development had already been prepared for during the 1980s, because direct passenger connections to the underground, which were not previously available, were put in place during the reconstruction of the S-bahn.

Logically, on the one hand, the network expansions, which took place at the beginning of the 1990s, could be seen as a mark of the reconstruction of the transport routes that had been abruptly torn apart in 1961. On the other hand, they could be seen as enabling the close interlinking of the two rail systems.

Until 2000, this situation will change very little. Only then can planning considerations, which are connected with moving the German parliament and government to Berlin at the end of the 1990s, be implemented. Consequently, a new underground line is planned in the center of Berlin primarily to connect both the government quarter and the capital's new central main-line railway station, which is also at the planning stage, to the existing network. Also, the S-bahn ring is to be joined once more, and a regional rail network operating deep into the regions surrounding Berlin, will be opened.

En route to integrated design

An integrated municipal railway network as the basis of the Berlin public transport system is an eye-catching advantage to passengers, but who runs the different companies operating the individual parts is of

little interest to them. For this reason, for more than 5 years, the BVG has already set the course towards an integrated Berlin public transport system. This forward-looking decision bore fruit after the unexpected fall of the Wall. It gave the lead for the necessary standardisation during the turbulence following the first days of reunification. The pre-planning carried out by the BVG made quick integration of the public transport system in Berlin and its surrounding areas possible. This integration has made astonishingly rapid progress in the last 5 years.

The principle, forming the basis of the BVG thinking on integrated design, is customer orientation. The passenger leading and information system was the main building block for starting development of the integrated design for the BVG public service company.

In terms of this integrated design, a concept for the future Berlin underground was developed to unify all sectors of underground operations, the rolling stock, personnel deployment, operating procedures and passenger care and passenger information.

Customer orientation as basis

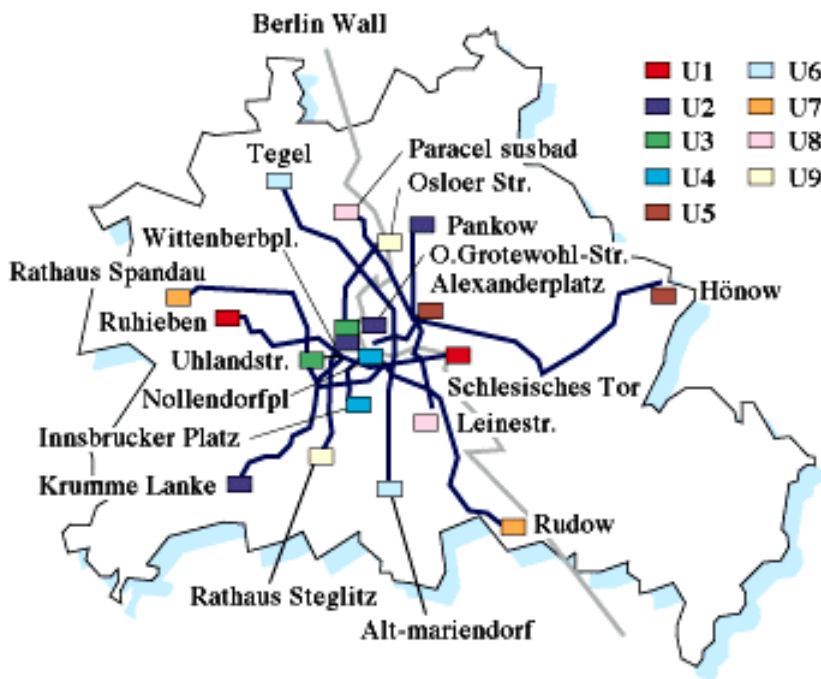
This design concept is made up of the following individual elements:



■ Latest U-bahn carriage

(Author)

Berlin Subway Network (U-Bahn) before 1989



■ Brandenburg Gate and Berlin Wall in 1987 (T.Suga)



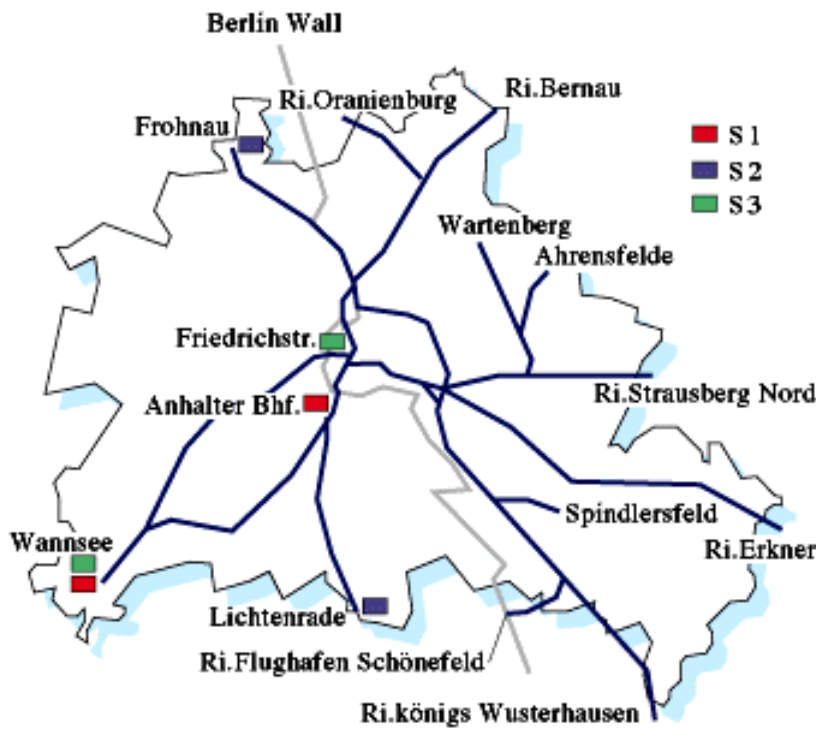
■ Victims of Wall (1987) (T.Suga)

Berlin Subway Network (U-Bahn)



■ U-bahn train (T.Suga)

Berlin Rapid Transit Railway (S-Bahn) Network before 1989



■ Brandenburg Gate shortly after fall of Wall (1990) (T.Suga)

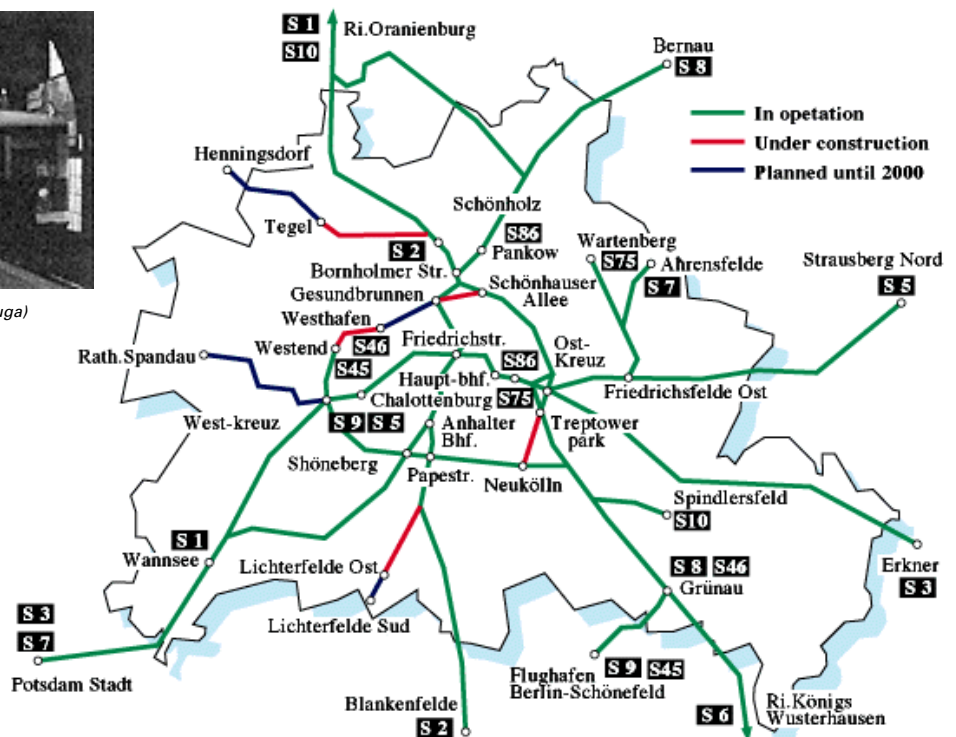


■ Peeping through Wall (1990) (T.Suga)

Berlin Rapid Transit Railway (S-Bahn) Network



■ S-Bahn train (T.Suga)



Berlin Tram Network 1989



■ Brandenburg Gate now (T.Suga)

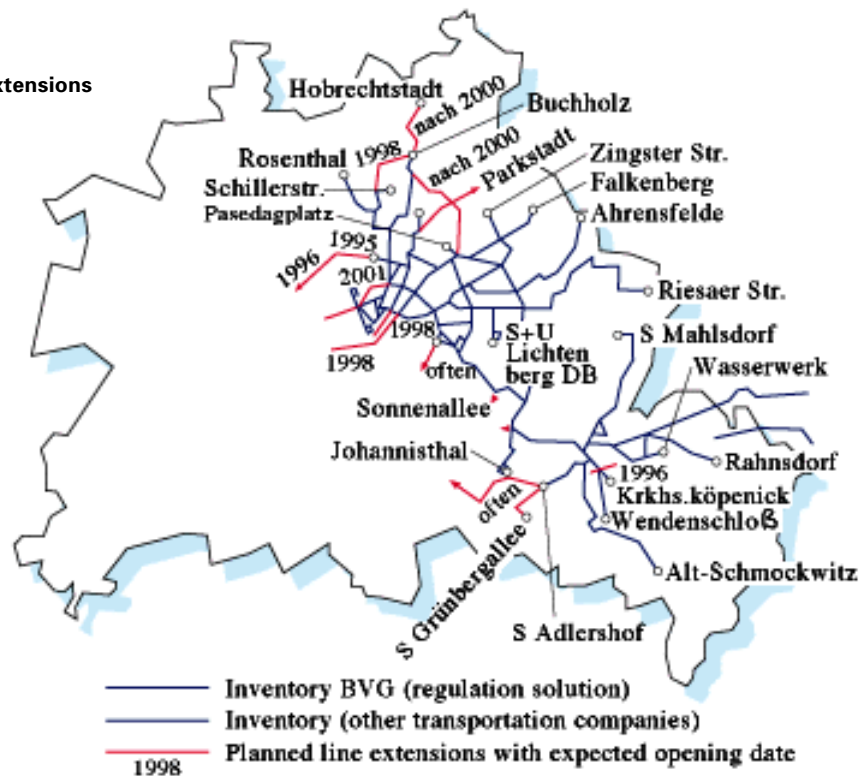


■ Ruined Anhalter main line station (T.Suga)

Berlin Tram Network with Planned Line Extensions



■ Tram in Eastern Berlin (T.Suga)





■ Rathaus Reinickendorf Underground Station
(Author)

1. The service concept (software design)

All underground services will be designed with customer friendliness in mind. New customer care possibilities are being developed. Monotonous, stereotyped operational tasks within the service will, if possible, be carried out by computer. The human work-force is to be freed for service to the customer based on the motto "Customer service instead of operational service". Since transport is a service-oriented business, service design is of primary importance. Furthermore, the service concept utilises new passenger information and passenger leading systems to make trains, stations and other associated facilities such as equipment, ticket machines, emergency and aid facilities, easy to use. What we call a "uniform user interface" is achieved by this means.

2. The security concept (software design)

Many older underground systems in big cities are perceived as dangerous places frequented by criminals, although in objective terms, they are not. Subjective and objective passenger security is the target of the integrated underground concept.

The so-called subjective passenger security, or each passenger's perception of the security, is the crucial yardstick for acceptance and evaluation of the quality of the underground system.

The starting point for a uniform security concept is analysis of all types of unease on the part of passengers. These range from objective situations of unease, such as isolation on empty platforms, to loss of orientation in the labyrinthine underground. The

BVG's security concept therefore contains measures to increase objective security, as well as measures to lead to an increase in subjective security.

3. New computer-aided operational management concept (infrastructure design)

To direct, control, monitor, and secure the safety of the underground system, the BVG has developed a broad new computer-aided operational management concept making operation more reliable, safer, faster and more rational.

The new orientation away from company service and towards customer service necessitates different, computer-aided operations management. In this regard, linking various computer-aided systems means treading new paths in data acquisition, data preparation and data processing.

4. New train concept (hardware design)

The central design target is the new Berlin underground train concept to be realised within a few weeks. Based on this new train concept, a number of other improvement concepts become possible.

The new train concept has main design targets of better and multifunctional customer use, increased subjective and objective security and user-friendliness for the disabled, plus increased operational reliability, capacity and performance.

The features of the new train concept are:

- Six-carriage, continuous trains with wide, open transitional sections from carriage-to-carriage
- Open and clear layout of interior architecture
- Removable driver's cabin for future driver-less operation
- Parallel seating for increased sub-

jective security (no one is behind you)

- Multi-purpose areas for prams/pushchairs, wheelchairs, bicycles
- Electronically-controlled level equalisers on platform edges
- Uniform operating 'interface' with all other BVG vehicles (trams and buses) (coordinated design for entire BVG vehicle family)

5. The station concept (hardware design)

Underground stations are an important part of underground passengers 'user interface' and require particular attention by the designer. In the main, they are designed with two aspects in mind:

- a. Every underground station is to be regarded as unique. Its particular distinguishing features are determined by its location within the city center, its importance in terms of traffic and its individual architecture.
- b. Each underground station is a part of the total underground system and is therefore part of the public transport system. This must be clearly reflected in the station design. In this respect, the station is also a part of the corporate BVG design.

As a result of this program, Berlin is changing from one of the world's oldest underground systems into one of the most modern and forward-looking systems. It is soon to become the most important artery in the throbbing Berlin metropolis. ■



Konrad C.F. Lorenzen

K. Lorenzen was born in 1936. He studied economic sciences at the Free University of Berlin and the universities of Munich and Cologne. He began his professional life as a member of the planning staff of Hamburger Hochbahn Inc. In 1983. For more than 20 years he was general manager of MVG Markische Verkehrsbetriebe Ud., a regional bus and railway company. Since 1988 he has been a member of the board of the BVG in Berlin. He is a member of the Managing Committee and the Metro-Commission of UITP and a member of the presidential board of VDV Verband Deutscher Verkehrsunternehmen (Association of German Public Transport Systems).