



LEIPZIG, GERMANY

## The LeoLiner Tram

### Background/context

After the political changes at the beginning of the 1990s, public transport operators in Central and Eastern Europe were confronted by rapid developments in the transport market and faced an uncertain future. One success story was the formation of a joint venture by the Leipzig Transport Company (LVB) and a company with private capital. This joint venture produced the LeoLiner, a cost-effective tram that has achieved widespread popularity.

The LVB serves an area that is home to 673,000 inhabitants. In 2006, the company transported around 125 million passengers. The tram network is 148 km long, and LVB is the second-largest tramway company in Germany.

### Case description

Tram construction has a long tradition in Leipzig. More recently, the LVB has focused on modifying and reconstructing tram vehicles using reconditioned components and materials from existing Tatra trams in Germany and abroad. The LeoLiner, which is based on several constructional con-

cepts that have already proved their value in Tatra trams, has attracted international attention. It is a six-axle one-directional articulated tramcar equipped with newly built bogies based on the Tatra design and a 60% low-floor section. The LeoLiner tramcar is designed according to high technical standards that ensure low operating and maintenance costs. The articulation and bogies are intended for heavy duty and are able to cope with inaccurate track levels. Its robustness makes it an attractive option for tracks with a high level of wear.

The aim was to manufacture the trams as quickly and as cheaply as possible, in order to make the biggest impact on the market. The LeoLiner is produced from prefabricated and supplied components only. Specialist companies are responsible for certain tasks, such as coating, floor covering and glazing. The LVB group makes every effort to use regional companies and has pooled the know-how of about 25 small and medium-sized businesses, creating a local network and contributing to the economic development of the region. Many jobs have been created, including among suppliers of engines, electrical equipment and interior lighting.

## Cost and financing

The Leoliner, which is made from steel rather than expensive aluminium, is often referred to as a "low-cost" tram: the real costs per vehicle are around 1.3 million, which is half the cost of a new vehicle from a larger manufacturer. No figures have been published for production or similar costs.

## Results

The vehicle benefits from its simple design concept. It uses robust bogies based on the Tatra design, and no roof-mounted heating and ventilation systems with expensive and complicated ducts. The trams have lower energy consumption and emissions than older trams and are cheaper to maintain. They can deal with the tight curves and inaccurate track levels of older networks, making them a less expensive option than rebuilding worn tram tracks.

## Problems

After German reunification, many difficulties arose during the transition from a socialist economy to a market economy, and these difficulties were also faced by public transport companies. Cooperation with external companies with capital strength and additional expertise has proved fruitful for both parties.

It is unusual for a public company to act as a manufacturer. Manufacture within a local company, in the form of "inhouse business", was only possible after extensive legal investigations within European Union systems. Manufacture

is subject to restricting regulations, which means that no more than 20% of production may be transferred to third parties. This quota has already been achieved by the manufacture of five Leoliners for the city of Halberstadt and one repair ordering. This restricting quota can only be modified by investor support.

## Transferability and success factors

The case study illustrates the importance of not remaining within outdated organisational forms. Even transport companies with large infrastructure and maintenance structures have to search for new points of entry into the market in order to ensure survival.

## Lessons learnt

The production of the Leoliner has shown that it is possible to survive in a new market by cooperating with private capital.

## References and contacts

Project website:

[http://www.lfb.de/produkte\\_leoliner.htm](http://www.lfb.de/produkte_leoliner.htm)

Organisation: Heiterblick GmbH

Address: Spinnereistraße 13, D-04179 Leipzig

Tel: +49 341 3552110

Fax: +49 341 35521112

E-mail: [INFO@HEITERBLICK.DE](mailto:INFO@HEITERBLICK.DE)

Website: [www.lfb.de](http://www.lfb.de)

