Abstract

The Busway in Nantes

Nantes: The Busway, a line with a specific vehicle for the fourth structuring line of the PT network; it is passing through a roundabout with priority on a contrasting running way.

Background / Context

In order to improve sustainable and affordable mobility in urban areas, France launched in 2005 its own concept “Buses with a high level of service” (BHLS), taking into account the « Bus Rapid Transit » concept developed in USA, as well as experiences from several French authorities, like Île de France, Rouen (TEOR project) and Nantes (Busway project). Throughout Europe, similar strategies can be observed, such as the “trunk network” in Stockholm (Sweden), and the “Quality Bus Corridor” in England and Ireland.

Description

Nantes Métropole is a conurbation located in the west of France, with nearly 600,000 inhabitants. 3 tramway lines have been re-introduced since the 80ies. The line 4, so called BusWay, is the fourth line in dedicated lane which entered into service on 6th November 2006; this 7 km long line has 15 stations. It connects the ring road to the centre of Nantes in less than 20 minutes, with a frequency of 4 minutes at peak times. This line 4 is a bus system which took the elements that made the tramway a success (dedicated lane, well designed and equipped stations, priority at intersections, high frequency and extended hours, 4 park-and-ride facilities) and applied them to. The operator Semitan and the urban authority Nantes Metropole are the main stakeholders.
Investment costs:
Infrastructure: 50 M€ HT for 7 km, that includes studies / design, running ways, park and ride / stations, road works joined to the project, system and operating tools.
Rolling stock: 9,2 M€ HT for the 20 specific Natural Gas articulated buses.
Hence the cost average per KM reaches at 8 M€ /km, that is around 3 time less than for a tramway project.

Results

Regularity and speed:
The line reaches the same very good regularity as the tram lines due to the high level infrastructure. The operating speed is a little higher (20km/h planned), from 21 up to 23 km/h on off peak hours.

Ridership:
The line quickly drew substantial ridership, increasing from 17,000 users per day when it went into service, to 21,000 after four months and 25,000 after one and half year. The park-and-ride lots are always full, so that extension projects were done.

Safety:
Drivers of private cars respect the dedicated lane, and they also understand and respect the traffic signals. No major accident have been registered to date, but a few passengers injuries have occurred inside the vehicles because of strong breaks (a little more than in common buses and in tram).

Owing to crowding at peak hours, the frequency has been brought down to 3-1/2 minutes in September 2007. After that, larger capacity vehicles may be required, such as bi-articulated vehicles (24,5m). The route may also eventually be converted to a tramway line.

Some difficulties to implement such systems has been pointed as follow:

- to convince the different stakeholders for such implementation, more difficult than for a tramway project.
- to reach a design that can be as attractive as for tramway systems, with grass running ways for example; Nantes and Rouen projects have shown that good results can be achieved.
- to convince the road safety Ministry to apply the tramway signalization to the BusWay as they always have the target to maintain the same very good safety observed for public transportation; a safety impact assessment should be delivered by end 2008.

Transferability and success factors

In all countries buses represent currently an important share of urban public transport but they are often increasingly caught in congestion which leads to slow journey times, unreliability, increasing costs, dissatisfied customers, declining market share and a deteriorating image. Moderate bus priority schemes, new buses and marketing efforts cannot compensate the basic perception of customers that buses do not meet their needs.

BHLS systems (i.e. “the bus like a tram” concept) can and should be adapted to each context, they are fruitful tools that can help:

1) provide bus mass rapid systems complementary to metro and tram systems;
2) greatly improve the operating speed, reliability and image of the bus and
3) reduce operating costs.

However the capacities of BHLS are limited, due to the size of the vehicle.

**Lessons learnt / Conclusion**

BHLS is a type of public road transport designed for main network services, which meets specific requirements in terms of efficiency and performance. The comprehensive approach of the « system » is very important and implies that vehicles, stations, traffic lanes, line identification and operating methods are dealt with in a coherent and sustainable manner.

Nantes: the station design that allows an easy and perfect docking without guidance system; it needs to have a straight approach, at least 25 meters long ahead before the station.

**References and contacts for further details**

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