

Bicycles as public-individual transport – European Developments (Meetbike Conference, Dresden 2008)

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Abstract

Can the bicycle become an element of the public transport system of European cities? It seems that it can. Currently the concept of public bicycles is spreading throughout Europe and adds a new element to the public transport system of many cities.

Public bicycles are innovative schemes of rental or free bicycles in inner urban areas. They differ from traditional, mostly leisure-oriented bicycle rental services as they provide fast and easy access and can be used for daily mobility as one way use is possible. The success of the concept has for example been proven in Lyon, Paris, Munich and Barcelona, where large scale and automated bicycle rental services have been implemented and offer thousands of public bicycles to the citizens.

The concept of public bicycles has been analyzed in the NICHES project (2005-2007, funded by the European Commission), which elaborated guidance documents on the planning and implementation process for different innovative urban transport solutions, including public bicycles (see www.niches-transport.org). Within the project, public bicycles received high attention from cities all over Europe and even from North and South-America.

Since 2006, there has been a real boom of public bicycle systems in some parts of Europe. Particularly in France and Spain it seems that nearly every larger city wants offer such a service. These countries do not have a pronounced bicycle culture yet, but there is much discussion about the important role that the bicycle could play in urban transport as a new form of individualized public transport. In Spain, the concept is even promoted on the national level.

In Central and Eastern European countries, the interest in the bicycle in general seems to awaken slowly, but public bicycles are no big topic yet. The concept might, however, have potential for cities in these countries that are already working on improving the cycling conditions (e.g. infrastructure) and want to achieve a “change of mind” regarding the possible role of the bicycle in urban transport.

While there is much enthusiasm about Public Bicycles and much potential to make such schemes a success, it also seems that the concept has become very “fashionable”. This can be a danger as it may sometimes hinder the view on the complexity of planning and implementing a public bicycle system, which only works in an integrated strategy hand in hand with accompanying measures (e.g. bicycle infrastructure, traffic education, bicycle training, marketing). The costs of starting and maintaining a public bicycle system also need to be analyzed carefully. This makes the exchange between forerunner cities and newcomers to the topic particularly valuable.

Public bicycle schemes have the potential to achieve a change towards a more sustainable multi-modal travel behavior (“the right mode for the right trip”), if properly implemented. They can be part of the “bigger puzzle” of an integrated urban transport strategy, which enables cities to reduce motorized traffic and its environmental impact.

1 The boom of public bicycles

Over the last years, Europe has seen a real boom of public bicycle schemes, which make the bicycle accessible as part of the public transport system. During the last years the number of cities that already implemented or plan to do so, increased strongly. The scale of the systems has also reached new heights, with Paris offering around 20,000 public bicycles at 1450 stations. Beyond Europe, the interest in the concept of public bicycles is also rising, e.g. in the US, in Canada, Australia, Argentina or Israel.

Figure 1: The boom of public bicycles (selected cities with existing services or planned schemes)



2 Characteristics and examples

The Vice-president of Grand Lyon, Gilles Veso, was one of the driving forces behind the implementation of the successful Vélo'v scheme. He commented on the concept:

“Very quickly, we've moved from being a curiosity to a genuine new urban transport mode. We invented the public-individual transport.”

The European NICHES project, which examined public bicycle schemes in Europe, characterized the concept as follows.

Public bicycles:

- are innovative schemes of rental or free bicycles in urban areas;
- can be used for daily mobility as one-way-use is possible and they can be seen as part of the public transport system;

- differ from traditional, mostly leisure-oriented bicycle rental services as they provide fast and easy access;
- have diversified in organizational layout, the business models and the applied technology towards “smart bikes” (automated rental process via smart card or mobile phone).

3 Examples

Some cities in Europe have implemented large scale public bicycle systems and proven that the idea has high potential to successfully establish the bicycle as urban transport mode if combined with other measures and if planned appropriately. The most successful schemes offer the service for a moderate subscription fee and at least free use for the first half hour, which may explain part of the success.

It needs to be stressed that these cities did not implement the schemes as isolated measures, but within integrated packages to facilitate safer and more convenient urban cycling.

Lyon – Vélo’v scheme

The showcase of Lyon was probably one of the reasons for the current boom. Vélo’v was implemented in 2005 and the scheme is very successful. The Vélo’v bicycles have become part of the city’s image. Some numbers:

- 3,100 bicycles in use
- 340 stations
- > 100,000 users
- 16,700 rentals per day
- 80% increase in public and private bicycle use

Picture 1: Vélo’v station (Photo: Rupprecht Consult)



Barcelona – Bicing

Barcelona implemented the Bicing scheme in March 2007. High acceptance and demand led to a continuous expansion of the service:

- Spring 2008: 6,000 bicycles, 400 stations
- 118,000 registered users
- 13-15 rentals per bike/day
- Main motivation for use: travel time, sport, comfort, ecology, practical, cheap

Picture 2: Bicing station (Photo credit: Bicicleta Club de Catalunya)



Paris – Vélib'

After its implementation in July 2007, Paris offers a public bicycle system to its citizens, which has reached a scale not seen previously. Other measures to facilitate and promote urban cycling combined with the Vélib' scheme had a good impact. The media spoke about the "Vélorution". Some numbers:

- 20,600 bicycles
- 1,451 stations
- 75,000 trips/day (in case of nice weather up to 140,000)

Other schemes

Meanwhile the diversity of larger and smaller public bicycle schemes has increased considerably. The map below shows in which European countries automated public bicycle schemes exist. The table below includes some examples from across Europe.

Figure 2: Countries with public bicycle schemes (note: several cities in most countries)
(Map and photos: Rupprecht Consult)



Table 1: Examples of public bicycle schemes

City	Name	Operator	started	# bicycles	# stations
Rennes	Vélo à la Carte	Clear Channel	1998	200	25
Munich	Call a Bike	DB Rent	2000	2.000	flexible
135 places for all over the Netherlands	OV-fiets	Nederlandse Spoorwegen (NS)	2002	flexible	-
Viena	City Bike	Gevista (JCD)	2003	900	53
Lyon	Vélo'v	JCDecaux	2005	4.000	340
Burgos	Bicibur	ITCL	2006	200	8
Brussels	Cyclocity	JCDecaux	2006	250	23
Stockholm	City Bikes	Clear Channel	2006	500	40
Barcelona	Bicing	Clear Channel	2007	6.000 spring 2008	400 spring 2008
Paris	Vélib'	JCDecaux	2007	20.600 spring 2008	1.451 spring 2008

4 European developments

As with many innovations, public bicycles were also pushed by some forerunners and found followers who looked at successful showcases, while the market uptake is a still an ongoing dynamic process.

“The forerunners”

Early implementation took place on the one hand in cities with a pronounced bicycle culture (e.g. a simple but large scale system in Copenhagen in 1995). On the other hand, there were also cities that recognized early the potential of the concept to promote cycling and saw the added value for the citizens (e.g. Rennes 1998). Public bicycles were also relatively early made available on a larger scale by German Rail (Call a Bike scheme 2000), helping to improve the company’s image as “mobility provider”, or by the Dutch OV-fiets scheme, which was pushed as tailor made service for rail commuters.

Picture 3: DB’s Call a bike scheme (Photo: Rupprecht Consult)



“The dynamic followers”

The real boom of public bicycle systems began with the dynamic followers, who recognized over the last years that the concept can be an effective door-opener to promote urban cycling, if combined with other measures (e.g. cycling infrastructure). Lyon, Barcelona, Paris and Sevilla are some of the best examples. Particularly dynamic markets are France and Spain.

“Awakening interest”

In the New Member States of the European Union, public bicycles are not a big topic yet, but it seems that interest in the concept and in cycling as transport mode is growing (e.g. Krakow tendering a public bicycle service).

Regarding the service operators, one can see a few big players in the market, which is becoming increasingly competitive. There are many mature schemes available which are constantly improved. Since last year, the number of providers has been growing considerably (especially in Spain).

An interesting initiative is currently being undertaken by the City of Barcelona, which aims at forming an European network of cities with public bicycle systems. Such a network could help to exchange knowledge.

5 Success factors and challenges

Some selected factors for a successful implementation can be summarized as follows:

- Well thought-out layout and scale of scheme and (nearly) free use (e.g. Lyon)
- Integrated approaches to cycling and overall transport strategy (e.g. Paris)
- Stakeholder cooperation, example Barcelona: Comissió de la Bicicleta de Barcelona (e.g. Strategic plan), Intergrup de la Bicicleta de Catalunya (delegates of regional parliament)
- “Local champions”, e.g. local politicians who promote urban cycling and push the idea of implementing a public bicycle system
- Promotion and communication in advance and during the implementation process.
- In the case of Spain, the promotion of the concept on the national level had decisive influence on the dynamic development (IDAE Action plan to promote the public bicycle: funding, national conference, guidance document), while many cities are committed to also make local resources available to enhance conditions for urban cycling.

There are, however, also manifold challenges for the implementation of a public bicycle system, as for example the following:

- Getting it started is not as easy as it seems (need for integrated approach, infrastructure, scale of scheme and layout, traffic safety etc.). Cities need advice to avoid mistakes.
- Financing model is key. There are many options, which should be thoroughly evaluated by a city before tendering and contracting a service:
 - PPP: outdoor advertisement contract (e.g. Rennes, Lyon)
 - Service paid through parking revenues (e.g. Barcelona, 10 years - 22,3 Mio. €)
 - Advertisements on bicycles (e.g. OYbike, Next)
 - Others (e.g. backed-up by operator)
- Automatic systems are often not very suitable for small and medium cities, which are well advised to also look at tailored manual systems if the aim is to enable the citizens to get to know the bicycle as urban transport mode.
- Achieving real long term impact needs continuous development of urban transport strategies. The direct impact of public bicycle schemes regarding the reduction of motorized traffic in the city centers and of CO₂ emissions is limited. In the mid- to long run however, public bicycles can be an important building block towards a multi-modal and more sustainable travel behavior (“using the right mode for the right trip”).

Please see the NICHES guidance brochure on Public Bicycles for more details on success factors and challenges for planning and implementing a public bicycle scheme. The document is available for download on the NICHES website (www.niches-transport.org).

6 Integration with public transport

Public bicycles have become a part of the public transport system in some cities. But in how far are they already been integrated with other public transport modes?

Picture 4: Vélo'v bicycles at a transport interchange (Photo: Rupprecht Consult)



Intermodality, i.e. using the public bicycle in a travel chain combined with other transport modes, is in most cases not very pronounced (with few exceptions such as OV-fiets or Bikey). In Barcelona for example, 71,63% of “Bicing” trips are mono-modal, i.e. not combined with another transport mode. 28,37% of the users combine “Bicing” with other transport modes (especially Metro and train). Therefore, public bicycles can rather be seen as an element of multimodality, i.e. they help to augment the available mobility portfolio, giving people more options. To a big share, public bicycle users are also public transport users. In Lyon, 94% of “Vélo'v” clients are public transport users, 57% take the bus, tram or train daily or at least once a week.

Integration in ticketing is still not common, while some cities such as Lyon enable holders of a public transport pass to use it as access medium to the public bicycles (e.g. Lyon, Carte Técély).

In many cities, websites with travel information of the city or transport operators include links to public bicycle services. Often, maps are also available, which include the main public transport network/stations and show the public bicycle stations in relation to them (e.g. Bicing).

So far there are only few integrated "mobility providers", which offer a variety of transport services, including public bicycles, under one roof (e.g. call a bike within DB Rent and German rail).

Some schemes have a specific intermodal layout at rail stations (e.g. OV fiets, Bikey).

7 Future developments

It seems that the boom of public bicycles will continue and reach new regions (worldwide). Smart Card based systems with fixed stations have a relatively strong position. Public bicycle schemes will further be optimized in their technology and layout as well as disposition systems. The diversity of providers and financing models will increase. With batteries becoming cheaper and more efficient, electric bicycles might also find their way into automated public bicycle systems. Many cities have realized that an integrated package of measures is necessary to promote urban cycling. Public bicycles can be one element of such an approach. A current example is London, which assigned £500 million (652 million €) to a "cycling and walking transformation" over the next decade, including 6,000 bicycles by 2010.

8 Conclusions

Public bicycle schemes have become increasingly fashionable. However, they need careful planning and implementation to avoid failure and the creation of "bicycle cemeteries". This calls for integrated packages that create comfortable and safe cycling conditions and promote urban cycling as daily transport mode.

While public bicycle systems have little direct impact with regard to the reduction of motorized traffic in cities and CO₂ emissions, they have considerable potential as "door opener" to promote urban cycling in general and to change people's travel behavior. They can be one element of an augmented mobility portfolio (besides e.g. car sharing and good public transport), that enables citizens to use the car less and choose the "right trip for the right mode".

As cities like Lyon, Barcelona and Paris show, public bicycles can become a well accepted element of the local public transport offer.

Clearly, public bicycle systems are not for free, but have a high added value in the long run if properly implemented. They can help to come to a real "bicycle culture" and to change people's travel behavior.

Sources

IDEA (2007): Guía metodológica para la implantación de sistemas de bicicletas públicas en España.
(Authors: Harritz Ferrando, Esther Anaya, Idoia Arauzo),

hyperlink: www.bacc.info/documents/Guia_bicicletas_públicas.pdf

NICHES project (2007): Public bicycles. New Seamless Mobility Services. Guide for implementers
(Author: Sebastian Bührmann), hyperlink: www.niches-transport.org/

The World City Bike Collaborative website (2008), hyperlink: www.worldcitybike.org

The Bike-sharing Blog (2008), hyperlink: <http://bike-sharing.blogspot.com/>