



EIE/05/059/SI2.421631

SPICYCLES

Sustainable Planning & Innovation for Bicycles

Intelligent Energy – Europe (IEE)

Type of action: **1**

Key action: **STEER**

Bike sharing – Key findings and recommendations

Period covered: from **01/01/2006** to **31/10/2008**

Due date: **14/10/2008**

Start date of the action: **01/01/2006**

Duration: **36 months**

End date of the action: **31/12/2008**

Project coordinator name/ organisation/ e-mail/ telephone number:

Mario Gualdi
Istituto di Studi per l'Integrazione dei Sistemi (ISIS)
E-mail: mgualdi@isis-it.com
Tel +39 063212655
Fax: +39 063213049

Authors: Hendrik Mlasowsky (DB Rent)

Project website:

<http://spicycles.velo.info>

Document Control Sheet

Project	SPICYCLES
Document name	Key findings and recommendations
Document reference	
Other internal reference	
Prepared by (organisation)	DB Rent
Author(s)	<p>Milena Perpelea, Ploiesti City Hall Marco Contadini, Dipartimento X , Rome Italy Pierfrancesco Canali, Chiara Di Majo, Linda Groenerboom, Fabiana Marconi, Vittorio Petrini, Angelamaria Verdi (ATAC, Rome, Italy) Luca Mancini (CPI Progetti, Rome Italy)</p> <p>Håkan Perslow, Traffic & Public Transport Authority, Göteborg Hendrik Mlasowsky, DB Rent</p>
Editor(s)	Hendrik Mlasowsky, DB Rent
Reviewed by	ISIS

Issue History

Issue	Description	Originator	Date of issue
Draft 1	First outline	Hendrik Mlasowsky	Oktober 2008
Draft 2	Including contributions from partner cities	Hendrik Mlasowsky	November 2008
Final Version	Revised all chapters	Hendrik Mlasowsky	November 2008

Table of Contents

Table of Contents	3
List of Figures	5
Executive Summary	6
1 Introduction	7
1.1 Background of SPICYCLES and WP 3: Bike Sharing	7
1.2 Role and Structure of this Document	8
2 Background	9
2.1 Ploiesti	9
2.2 Rome	9
2.3 Göteborg	10
2.4 Berlin11	
2.5 Summary	12
3 Goal with SPICYCLES	14
3.1 Ploiesti	14
3.2 Rome	14
3.3 Göteborg	15
3.4 Berlin	15
3.5 Summary	16
4 Implementation & Results	17
4.1 Ploiesti	17
4.2 Rome	20
4.3 Göteborg	25

4.4	Berlin	29
4.5	New Developments	35
4.5.1	Barcelona	35
4.5.2	Bucharest	36
5	Key Findings	37
5.1	Established standards	37
5.2	Cycling traditions	39
5.2.1	Countries with an established role of cycling	41
5.2.2	Countries with a low level of cycling	41
5.2.3	New EU Member States	41
5.3	Driving powers on the bike sharing market	42
5.4	Rate of spread	45
5.5	Integration into planning for cycling	45
5.6	Clear implementation plan	46
5.7	Financing possibilities	47
5.8	Integration into innovative ICT-Technology	48
5.9	Linkage to marketing activities	48
5.10	Limited transferability	48
6	Recommendations	51

List of Figures

Figure 2-1	Share of Transport Modes - all day trips 1992, 1998 and scenario 2015	12
Figure 2-2	Cycling City Facts - 2005	13
Figure 2-3	Situation Before SPICYCLES.....	13
Figure 3-2	Project Aims	16
Figure 4-1	Bike Sharing in Ploiesti.....	17
Figure 4-2	Map of Stations in Rome.....	Errore. Il segnalibro non è definito.
Figure 4-3	Opening of the System in Rome	Errore. Il segnalibro non è definito.
Figure 4-4	New Station in Rome.....	Errore. Il segnalibro non è definito.
Figure 4-5	Station in Göteborg	26
Figure 4-6	Map of Possible Stations in Göteborg (Roll-Out)	27
Figure 4-7	Tourists on CallBikes.....	30
Figure 4-8	Phone with CallBikes in Berlin.....	32
Figure 4-9	CallBikes at the Brandenburg Gate.....	34
Figure 4-10	Map for First Implementation Periods 2007	35
Figure 4-11	Bicing Station	36
Figure 4-12	Cicloteque Bicycles	36
Figure 5-1	Results of Bike Sharing Activities.....	37
Figure 5-2	Bike Sharing Spiral.....	40
Figure 5-3	Bike sharing Initiative Maimultiverde (Bucharest)	42
Figure 5-4	Driving Powers of Bike Sharing.....	43
Figure 5-5	Bike Sharing Operators in Outdoor Advertising	43
Figure 5-6	Bike Sharing Operators from the Public Transport Branch	44

Executive Summary

This report summarises the activities for bike sharing within the project “SPICYCLES” (Sustainable Planning & Innovation for Bicycles). It includes information about the state-of-the-art of bike sharing and infrastructure in the participating cities as well as the achieved status. Furthermore it will reflect the way of development. Upon the basis of the experiences made in the cities and especially other experiences made since bike sharing is booming, key findings and recommendations are developed.

The project SPICYCLES intended to demonstrate that the modal share of cycling can be increased in European cities with different geographical, climatic and cultural conditions. The experience with different types of means and measures will be disseminated to a wide audience in European cities. Within SPICYCLES, four technical work packages, covering four different subjects concerning cycling policy, were defined. This document will focus on bike sharing systems.

1 Introduction

1.1 Background of SPICYCLES and WP 3: Bike Sharing

Bike sharing systems in urban areas usually differ from traditional bicycle rental services since they are rather offers for daily mobility than leisure oriented systems. In contrast to those conventional renting schemes, bike sharing systems can be used one-way for either monomodal or intermodal trips. As a flexible mobility option they can be considered as an additional part of public transport systems.

A long list of possible benefits makes bike sharing attractive for municipal organisations as well as for businesses. First of all, the increasing price of natural resources especially for oil necessitates thinking about sustainability, efficient use of resources and development of new innovative solutions. This situation is comparable to the late seventies after the two oil prize shocks. Cities like London and Stockholm created a city toll for using the car downtown. Other cities like Rome or Sao Paolo (Brazil) permit car use depending on the number plate.

Furthermore, the increasing urbanisation brings the necessity to think about alternative transport concepts. Growing density of the population in cities intensifies the problem of insufficient infrastructures. Those infrastructures can only be enlarged to a certain level. Thus, new ways and concepts for an efficient use of the existing infrastructures have to be found. Bikes require only little space and also reduce the emission of exhausts and the need for fuel in cities.

Bike sharing also offers an economic effect for cities and individuals. Bikes are an inexpensive mode of transport with need for only low-tech infrastructures. Therefore, a relatively low amount of investments is needed to create or expand infrastructures. With concepts for bike sharing even the costs for owning vehicles cease to apply. Operators benefit from a change of mobility behaviour and the improvement of their image.

As cities are competing for tourists and guests they invest a big effort in presenting their city as modern and innovative. In that context bike sharing can be seen as an environmentally friendly service to support the modernity and individuality of a city. Getting to know the city by cycling will be more and more promoted as a unique experience.

A further long term effect is the overall increase of awareness for cycling and sustainable transport modes. With the possibility to connect bike sharing with other modes of transport new mobility options are being created. This may lead to a change in minds and with that to a change in mobility habits.

Since there have been some successful bike sharing systems operating in different cities for several years (Call a Bike, Clear Adshel, JCDecaux, Cemusa, Veolia, ...) a new market for innovative urban mobility is born. The role of bike sharing is not still a minor one as it was at the beginning of the project.

1.2 Role and Structure of this Document

This document is intended to present and describe the procedures relating to the bike sharing activities. It will describe the actions conducted in WP 3 in the context of the state of the art and targets of bike sharing in each participating city.

Chapter 2 State of the Art summarizes the way each city has done at the beginning, during and at the end of the project. Although not all SPICYCLES-cities were involved in WP bike sharing, all of the participating cities are now actors in the bike sharing market. This is due to the boom of bike sharing.

Chapter 3 Aims and Objectives illustrates each cities intention and goals within the work package.

Chapter 4 Actions demonstrates the activities undertaken by each city within SPICYCLES and gives an overview over the kind of action and making of. It also explains reasons that may have led to a change of the action, to a postponement etc.

Chapter 5 Key Findings and Recommendations elaborates main results that could help other cities follow the successful way to the implementation of bike sharing.

2 Background

To reflect the progress made in the project it is important to look at the status of bike sharing and cycling in the beginning of the project. This is important since the cycling traditions and the general situation of cycling plays an enormous role when it comes to bike sharing, its potentials and in the end its success. Concerning the current situation of cycling in the cities there was a great variety as for instance Ploiesti will finish its first 14 km of bike paths while the city of Göteborg has net of ca. 400 km bike paths.

In this chapter the situation of each city will be described with focus on bike sharing.

2.1 Ploiesti

In 2005, Ploiesti, covering an area of about 50 km² with a population of about 235,000 inhabitants, provided about 415 km of bus lines and 24 km of tram lines for 150,000 passengers per day. 14 km of bicycle lanes were still under construction.

While car use is established and still increasing, cycling had a poor image in comparison. Because of long held prejudices people do not have the habit to use the bicycle as a regular mode of transport in an urban environment. As a result, there was no bicycle climate reflecting a positive attitude towards cyclists.

Within SPICYCLES, Ploiesti had an ambitious goal in convincing people to choose bicycles as a transport mode and continuing the first steps made by SUCCESS – CIVITAS II in order to get a healthier urban environment and healthier citizens.

Before SPICYCLES, the bike sharing system was not known by the majority of the citizens. It was a real challenge for Ploiesti citizens to adopt a new life style focused on the major benefits for their health and the environment. Therefore, it was important to promote and convince local stakeholders of the opportunity connected to such schemes. The whole bike sharing concept was a novelty for the city and even for Romania.

2.2 Rome

Since 2003 the Municipal Administration has started a process of collecting and systematizing the initiatives performed in the past on the cycle lanes of Rome and has planned future action.

The strategy of the project to develop the cycle lanes in Rome is divided on multiple levels.

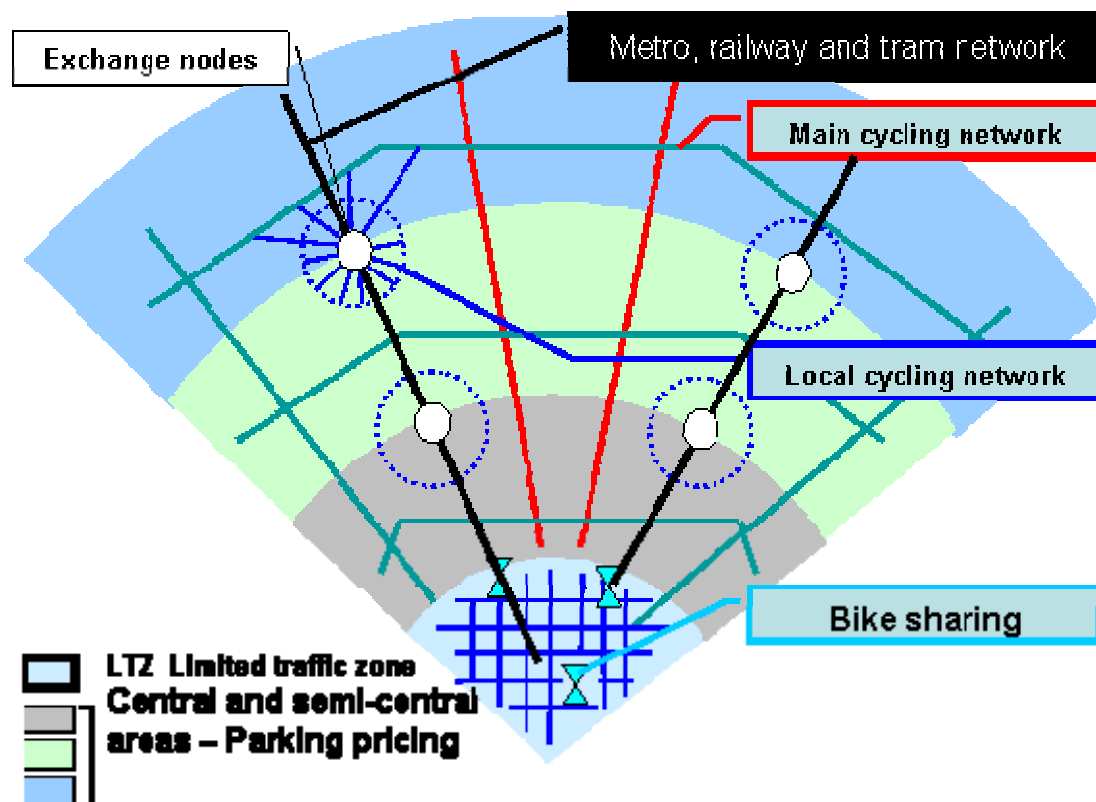
The first level foresees the increase of the bicycle lanes in direction of the city centre that allows the customer to take the bicycle to go from the suburbs into the centre.

Until today about 110 km of bicycle lanes are present on the streets and about 65

km of bicycle lanes in green areas. The financed projects foresee the completion of other 60 km of bicycle lanes of which about 10 will be ready by the end of 2008.

The second level of the project foresees the development of the interaction between public transport and bicycles. A series of action are foreseen to facilitate exchange between bicycle and public transport and then to encourage the citizen to take the bicycle or public transport (from his own residence to the exchange car parks).

The schedule of development of the bicycle lanes, on which the proposal of the framework of the bicycle lanes of the city of Rome is based, is the following:



According to the structure of the Capital and to the O/D scheme, Rome presents a "centripetal" mobility demand from the suburbs converging to the city centre.

With reference to the framework of development of cycling schemes in Rome, the Bike Sharing comes up with an important impact.

In fact this kind of service can support citizens that have reached the central areas with PT or with their cars, to join their final destination by bicycle. Thus taking advantage of a flexible, cheap and environmental friendly mean of transport.

2.3 Göteborg

Göteborg has an extension of 198 km² with a total population of about 485,000

inhabitants. Cyclists can use a well developed infrastructure which consists of 400 km of bicycle lanes and 3,000 bike parking places in the city centre.

The total number of journeys undertaken in Göteborg was constantly increasing. Göteborg had since many years a developed cycling infrastructure but it was not being used to a satisfactory extent. Despite the cycle network developed the past years, the share of cyclists had not increased. Half of all journeys undertaken in Göteborg are car journeys, 25% use public transport, 11% bicycles, whilst the remaining 14% are pedestrians. Of the journeys made by bicycle in Göteborg almost 50 % are made between home and work and another 20 % between home and school.

A bike sharing pilot was in preparation in the Lundby city district, an area which is the mobility management test-site in Göteborg with an established Mobility Centre. The system is directed towards the employees at a number of companies in this area and the bikes are mainly used for short distances during work-hours. It is based on a high-tech system with smart card use which allows users to easily pick up the bike at one rack and after use safely lock it at another.

2.4 Berlin

In an area of about 890 km² – as large as Munich, Stuttgart and Frankfurt / Main together – Berlin unites a large number of urban districts, centres and boroughs, which are completely different in character. As the average income is low and the public transport system offers a very high quality, the car density was still at a low level (less than 330 cars per 1,000 inhabitants) and the share of transport modes shows figures with a high rate for public transport, biking and walking (Fig. 1).

The existing bicycle routes had a length of about 800 kilometres of different characteristics. About 10% of all trips in Berlin in 1998 were bike rides. Cycling in Berlin was again becoming the favoured mode of transport. More and more Berliners left their cars at home and got on their bike as awareness of environmental and health issues increased. Despite being a metropolis, Berlin offers good opportunities for exploring the city by bike.

Approximately 15 bicycle rental services were available but the number was increasing. The market leader was DB Rent GmbH with its flexible rental service called Call a Bike. A fleet of almost 1,300 high-quality, high-tech bikes was available from March to December. The CallBikes could be hired and returned at all junctions inside the core area, defined by a circular train line, by making a telephone call. Call a Bike provides permanent access (24h, 7days), one-way capability, exact billing per minute as well as automated processes for renting and returning. For Call a Bike, the installation of expensive and complex infrastructure in the public space was not necessary. Call a Bike was based on the given infrastructure in the city.

The concept of bike sharing was known since the introduction of Call a Bike in 2002, but still it was a private initiative that was not supported in any way (public spaces, financing etc.) by the city of Berlin. Although the number of rentals was still increasing, bicycle hiring accounts for a minor share of cycling. It was estimated that on a normal summer's day less than 1 % of all bike trips are made on rental bikes. However the Berlin Tourism Marketing (BTM) has observed a trend to exploring the city on a rental bike among young travellers.

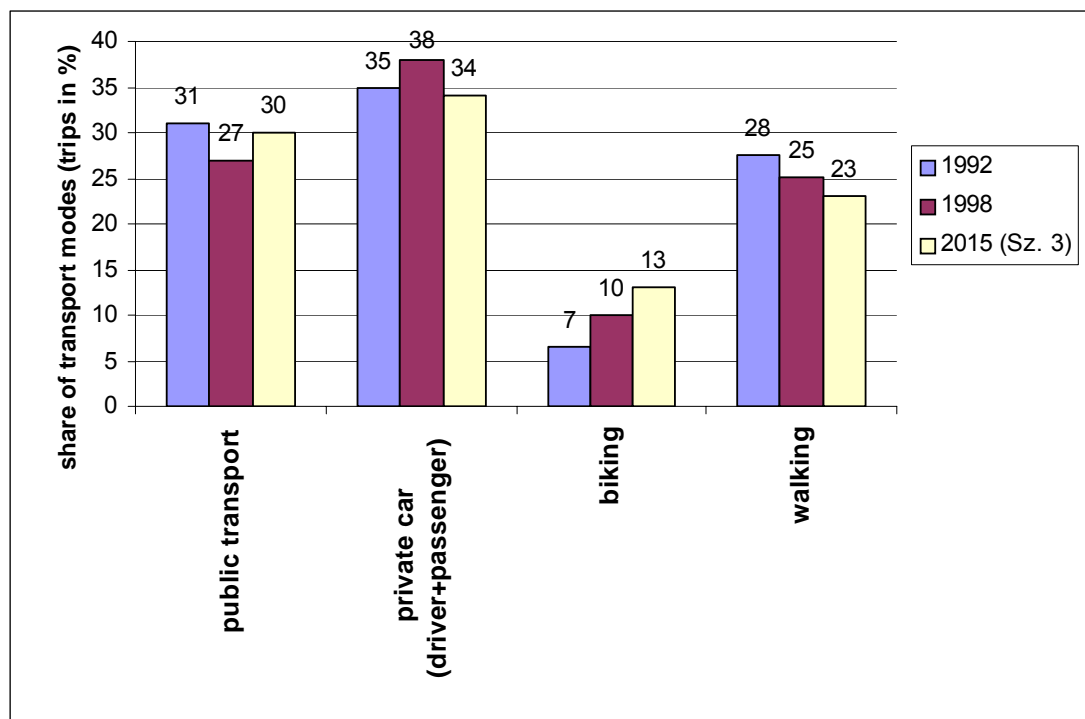


Figure 2-1 Share of Transport Modes - all day trips 1992, 1998 and scenario 2015

2.5 Summary

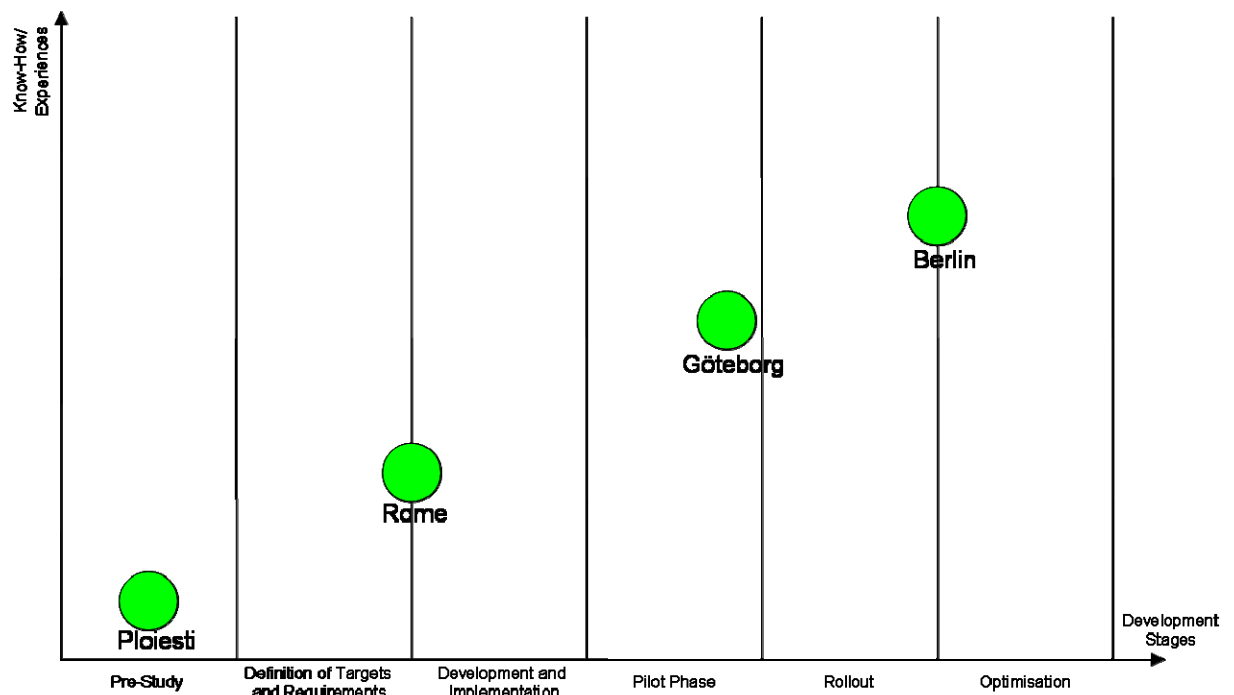
As described in chapter 2, situations in the cities strongly differed. Every city had an individual set of preconditions to be considered during the development and improvement of bike sharing systems. The table below shows the key factors of each city at a glance.

As described before, the four participating cities started from different positions concerning bike sharing to different target points. As Ploiesti is at the very beginning of bike sharing the running systems in Göteborg and Berlin have much more experience. While Göteborg and Ploiesti market their system towards companies and institutions, Rome and Berlin try to establish their systems among citizens and tourists. Concerning the technology, the Call a Bike system in Berlin is operating very flexibly at about 3,500 junctions for returning the bikes. Rome was thinking about the flexible system as well as to offer both station-based system and flexible system.

City	Ploiesti	Rome	Göteborg	Berlin
Area in km ²	50	1280	198	890
Inhabitants in Thousands	235	2550	485	3388
Bicycle Infrastructure	(14 km bike lanes); 150 parking spaces	90 km bike lanes, 370 parking places	400 km bike lanes; 3000 parking places	800km, parking places n/a
Bicycle Modal Split	n/a	0,30%	20%; (9% city centre)	10%
Bike Sharing System	None	None	Pilot System running	Call a Bike running

Figure 2-2 Cycling City Facts - 2005

While Göteborg offers bike sharing free of charge, customers using Call a Bike in Berlin had to pay rates due to the time of use (per minute). Bike sharing systems can be distinguished by the access technology. In turn, Call a Bike tries to achieve sustained success by using mobile phones. The diffusion of both mediums is very high but with the use of mobile phones further combinations to other services seem to be possible.

**Figure 2-3 Situation Before SPICYCLES**

3 Goal with SPICYCLES

This chapter contains information about the objectives of each city's bike sharing policy, its innovative aspects and expected outcomes of WP3, as well as the different milestones to be reached within it.

3.1 Ploiesti

The following specific objectives were defined:

A bike sharing pilot system was designed and promoted among the commercial companies, local government institutions and agencies as well as educational institutions. The measure will be focused on the Petroleum and Gas University of Ploiesti, which may offer an important basin of volunteers.

A strategy was deployed to set up a fleet of 50 bicycles, solve the logistic problems, cover the operational expenses and ensure the customer care.

A matrix origin-destination of the potential cycling trips and the establishment of a soft transport mobility centre promoting the reduction of the dependence on the automobile was studied.

To prepare a further spread of bike sharing the demand of the different categories of Ploiesti citizens were to be identified. Regarding this, the type of bike sharing scheme that meets the need of the citizens was to be settled.

3.2 Rome

The Municipality of Rome considered this project as a strategic option for the affirmation and diffusion of alternative ecological vehicles, contributing to the reduction of urban shifts traditionally made with private vehicles.

ATAC managed and coordinated a feasibility study, with the supervision of Dipartimento X, within the activities related to the Bike Sharing.

A statistic model was set up in order to assess the potential demand of the service and to evaluate 5 different scenarios. In relation to each scenario:

- different transport modalities have been evaluated;
- the energy consumption, emissions and fatalities have been calculated;
- Externalities, fair collection and modal shift have been assessed.

At the end of 2007 the final results of the feasibility study was issued. The study

envisaged the identification of main expectations and the appraisal towards this kind of service, with particular attention to the city centre of Rome.

In May 2008, the Cycling Office of the Municipality was offered a sponsorship proposal by Cemusa SA to carry out a six months bike sharing experimentation in the city centre. The installations of bicycle rack, and collection points as well as the implementation of all the back office services were concluded in May 08 and the experimentation started on June 13th 2008.

Four months after the experimentation start up the first data were collected, highlighting a very good level of success for the initiative amongst the users.

As a consequence the Local Administration started considering the idea of consolidating and extending the initiative to a larger portion of the City through a Public Tender.

The Monitoring methodology developed within SPICYCLES by ATAC will be substantial to give guidelines on how to implement the tendering documentation.

ATAC in fact designed and implemented a methodology to monitor and assess the Bike Sharing Service. The main tool of assessment was an “ad hoc” questionnaire, developed by the partners ATAC and CPI, to survey the feeling, impression, expectations and suggestions of people that have taken advantage of Bike Sharing, in order to improve the final service offered.

3.3 Göteborg

Göteborg's plan in SPICYCLES has been to implement a bike sharing pilot scheme for companies, with the ambition to upscale the system to the whole city. The initial aim with the pilot scheme in Göteborg was to market the bike sharing system and create a public demand for renting bikes, and gain experiences on how to best launch a similar system for the whole city and what demands there are from the users for such a system. The point-to-point bike sharing system is the first one in Göteborg. It targets employees and their short distance trips during work-hours, using a high-tech system with smart cards.

3.4 Berlin

Due to the overall aims of Deutsche Bahn AG:

- Establishment as a provider of mobility services
- Offering mobility services from door to door
- Strengthen co-modality to attract PT at all

DB Rent – as the responsible subsidiary for intermodal services – aimed to strengthen the Call a Bike scheme in Berlin as an important part in the mobility strategy.

As a company, Deutsche Bahn takes its social and ecological responsibility

seriously. With its strategy for sustainability, Deutsche Bahn's long-term intentions are to establish itself as an ecologically sustainable and socially responsible company. This focusses the attention on future mobility needs. Rail is a very environmentally-friendly transport mode and the more it is used, the better for the environment. With the offer of environmentally-friendly services before and after using the train, the Deutsche Bahn confirms its ambitious goal of being a provider for sustainable mobility services.

A further goal for Call a Bike is to create a business segment running successfully itself independently from the railway segment. Within an expansion to additional cities or regions a network of a bicycle rental system can be established. Upon that, the system can benefit from net effects like synergies in operating, added values for customers etc. The best way to establish a new PT-service is to make the service self funding as much as possible.

The DB Rent aimed to improve the acceptance of the existing Call a Bike scheme as well as optimising its sustainability.

3.5 Summary

To give an overview about the different stages and objectives the following graphic gives a very simplified illustration. It is geared towards a mix of life cycle of a product/service and the learning curve. The more experience, the more know-how will be gained.

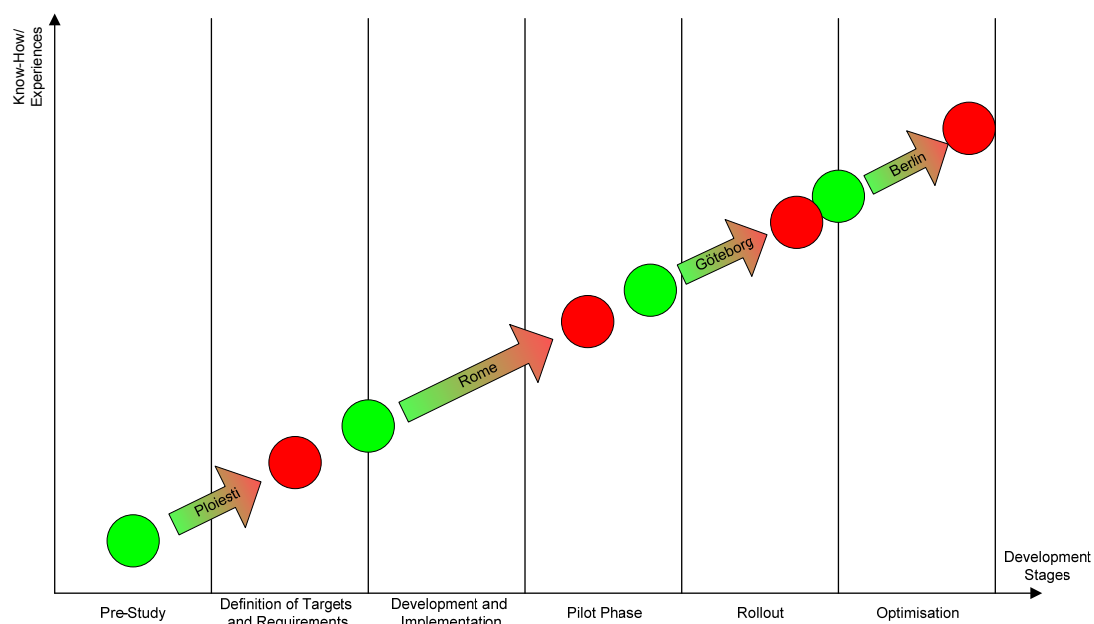


Figure 3-2 Project Aims

This figure displays the starting position and the target of each city. Since every city had different positions (current situation as well as target) many different activities were defined and undertaken within SPICYCLES. So, many actions that go along with the set-up and development of a bike sharing system will be demonstrated.

4 Implementation & Results

Chapter 4 describes local activities to achieve the defined goals. The chapter explains how the programmes were implemented and what kind of difficulties or even barriers became apparent.

4.1 Ploiesti

The city of Ploiesti considered bike sharing as an interesting option and used SPICYCLES to conduct studies, develop strategies and a pilot scheme, and acquire know-how from the other partner cities. The aim was to enable the city to pick and start up a bike sharing scheme fitting the needs of the city. The main actions were:

- Collection and analysis of traffic data to assess the potential demand;
- Development of a pilot scheme with a fleet of 50 bicycles;
- Design and administration of a communication and promotion campaign to stimulate a positive behaviour and change attitudes toward cycling.
- Increasing the number of bicycles composing the pilot fleet in order to sustain the promotion campaign and to involve more local investors;
- Identification of citizens' needs through questionnaires at different public events;
- Analysis of the results of the pilot and the questionnaires in order to develop a bike sharing scheme fitting the needs of Ploiesti.



Figure 4-1 Bike Sharing in Ploiesti

The Implementation

The approach involved several innovative aspects, since bike sharing is a new concept for Ploiesti:

- Promotion of the use of the bicycle not only for leisure, but for commuting and other regular trips,
- Awareness raising of cycling as a means to promote a healthy life style
- Creating sensibility of drivers and cyclists about each others needs, fears, options
- Integrating mobility information systems, including on street online electronic information
- Setting up a cycling reference group
- Finding specific methods of communication and facilities aimed at cyclists
- Launching of a free-of-charge promotional bike sharing pilot for students, PMP employees, retired people, and other interested citizens.

The measure was designed as a bike sharing pilot with a communication and promotion campaign. This design was created to change the image of cycling on Ploiesti, to make bike sharing more attractive to citizens. The work started by analysing experiences and know-how of the. To locate Ploiesti within the framework of the analysis, traffic data was collected and analysed. Thus, the potential demand was determined. This involved:

- Monitoring and management forms for alternative traffic;
- Integration into public transport;
- Establishing cycling flows;
- Designing solutions for cycling lanes respecting the existing conditions;
- Demarcation of the cycling lanes.

In addition, the city launched a communication and promotion campaign to stimulate positive behaviour and a change in attitudes towards cycling. It involved an on-street communication campaign using promotional and informative materials. It also promoted the system through local newspapers, TV and radio, local events and regular meetings with students, pupils and interested persons. Some schools set up "Cycling Movements".

For the pilot, local investors were involved in the development of the infrastructure's logistic (parking for bicycles in schools, university, private and public companies) such as Timisoreana and Unilever Ploiesti. These two companies acquired the bikes for the demonstrative pilot fleet. Additionally, meetings with representatives from private companies like Coca Cola Ploiesti, Petrom and Distrigaz were set up to

interest their employees in bike sharing. The project also worked with local police officers in order to establish rules for local cycling traffic and set up special cycling zones.

Finally, the pilot was launched on September 22nd during the “Mobility Week”. It was set up with 50 bicycles offered to the pupils, students, teachers, local police and employees of PMP. The system especially had a promoting role. The citizens used the system for a period of six months free of charge with the only responsibility to keep the bikes in a proper condition. These volunteers were given questionnaires on occasion of May 9th (Europe Day) and June 5th (Environment Day).

There were a few deviations from the initial plan. The study's elaboration was delayed in order to research the demand for bike sharing service and integrate it with the adequate logistics. This was due to the fact that the bicycle was a new aspect for the national and local traffic so there was no team of specialists that could appropriately conduct the research study. Finally, the “Search Corporation” conducted the study.

The Evaluation

The bike sharing system was targeted at students, pupils, employees of PMP and private companies, active citizens and retired people.

Questionnaires to potential users were distributed in schools, the university, during street campaigns and special public events organized by public authorities in order to find out the level of bike use.

Another online questionnaire it was posted on the PMP website (www.ploiesti.ro) concerning the important role of citizen's involvement and of changing the social environment.

Finally, a special questionnaire was distributed to local authorities, private companies and decisions makers to find the specific conditions which must be created for infrastructure, logistics and other cycling facilities.

It was found that the number of bikes had to be raised to meet the demands of the private companies. Initially the number of bikes was 50 but with the help of interested local private companies (Unilever) the actual number of bicycles was raised to 100.

In comparison to other European bike sharing schemes, the Ploiesti system is system is free, without taxes, and the only obligation of bikes' users is to maintain the bike in a good condition. Also, bike sharing in Ploiesti is not a commercial enterprise; it is aimed at promoting and supporting cycling as a new means of daily transport.

The main difficulty was to ensure a coherence and convergence between the decisions and perception of all the local actors involved. The innovative character of the system could be a barrier for older citizens but in the same time could arises the interest of young people. Therefore, it is very important to choose the appropriate methods for promoting the bike sharing system according to the different target groups. Students who have received bikes could be used as promoters of this new system.

The project was related to WP5: Planning for cycling and WP6: Building local partnership.

The project found that in the future it might be necessary to be more aggressive in promoting the project's objectives and actions to local authorities and citizens and to valorise all the opportunities appearing in the private field in order to develop cycling infrastructure.

Results

Finally, the bike sharing pilot was launched on September 22nd during the "Mobility Week". It was set up with 50 bicycles offered to the pupils, students, teachers, local police and employees of PMP. The system especially had a promoting role. The citizens used the system for a period of six months free of charge with the only responsibility to keep the bikes in a proper condition.

Furthermore the activities raised the awareness for bike sharing and generally for cycling at all. New stakeholders (companies, institutions etc.) could be involved in the cycling project by financing bikes,

4.2 Rome

The Feasibility Study

The preliminary step towards the implementation of a Bike Sharing Service was the implementation of feasibility study, in order to estimate the potential demand of the service as well as the main features and target groups. The outputs of the Study were used to implement the Bike Sharing.

The final results of the feasibility study have highlighted the following data:

- a remarkable interest in the service;
- tourists and residents outside the LTZ showed preference for traditional bicycles;
- preference for a diffuse service in easily recognizable areas;
- take and release of bicycles on different spots by means of an electronic card enabling block/release and payment services;
- service must be active all year/day long
- fare integration with public transport required;

Further incentives to be considered for the implementation of the service:

- Conventions with shops / commercial centres with possibility of "bonus" collection;
- Courtesy bike at shops;

- Reduced entrance tickets to museums.

The results so far emerged by the preliminary survey supported choices to the start up phase of the service.

Implementation of the Bike Sharing Service, main features:

- Duration of the experimentation: 6 months
- N° of public bicycles: 200
- N° of locations: 19
- N° of racks: 270
- Start up of the service: June 2008.

Bicycle rental is active from 07:00 am to 11:00 pm and free of charge for the first 30 minutes. The relevant magnetic badge (smart card) can be found in one of the following Touristic Info Point (PIT):

- Stazione Termini (Termini railway station on the corner of Via Giolitti)
- Piazza delle Cinque Lune (next to Piazza Navona)
- Via Nazionale
- Santa Maria Maggiore
- Via Minghetti (on the corner of Via del Corso)
- Castel Sant'Angelo (between Castel S. Angelo and Via della Conciliazione)
- Piazza Sonnino.

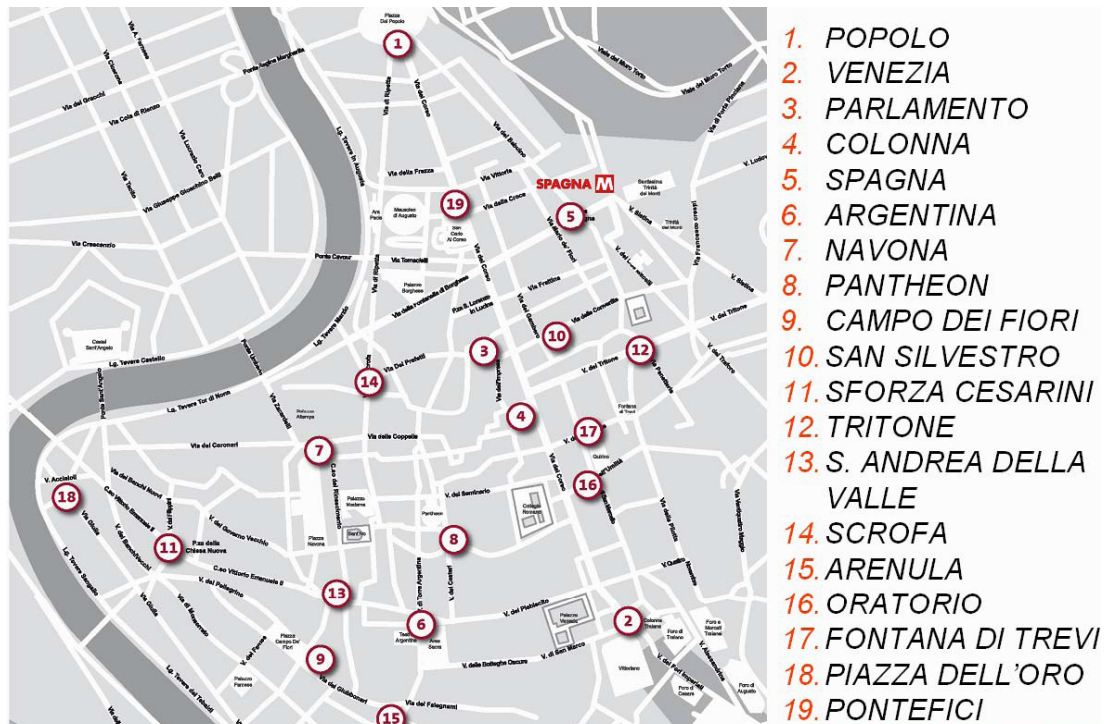


Figure 4-2 Map of Stations in Rome

The fare is 1 Euro for the second half an hour, 2 Euro for the third half an hour, 4 Euro for any successive half an hour.

The Bike Sharing portal is: www.roma-n-bike.com.

The URL supplies all the available information on the service detailing as well in real time the actual availability of bicycles in each parking area.



Figure 4-3 Opening of the System in Rome



Figure 4-4 New Station in Rome (Piazza di Spagna)

The Assessment Methodology

Before the testing phase of the bike sharing service started, ATAC set up a methodological document for both the monitoring and the evaluation of the service, aiming at the following objectives:

- Creation of a tool supporting the decision making process in the definition of the characteristics and performance of the bike sharing service to be introduced at the end of the testing phase.
- Collection of data regarding the testing phase of the service and evaluation of its “performance” (also through the submission of a questionnaire to the possible final users);

According to the aforementioned objectives, a specific methodology was designed, focussing on the idea that many different kinds of data should have been collected and then processed.

Monitoring has been planned according to the following main phases:

- Data Collection;
- Data Entry;
- Analysis and Processing.

For what concerns the first two phases, these were developed according to the following actions:

1. Designing and building a new data base (by CPI Progetti), based on the provided data of the Bike Sharing information system (by CEMUSA).

Database (in csv format) will contain data concerning different transactions of the users as: numbers of locks/unlocks in a specified period of time (June-November 2008) and for a specified bicycle rack, number of “closed” uses (taking a cycle from a rack and returning it to the same one), starting point-destination of each displacement, personal data deriving from contracting the user at the time of registration.

The data set will be complete only at the end of the testing time period and will include data from submitting a satisfaction questionnaire.

2. Planning, preparation and administration of a customer satisfaction survey that will, in addition to the above, provide data that will complete all the information necessary to assess service and to complete the data base as mentioned above.

The questionnaire will be submitted to the final users once the testing phase of the bicycle sharing service will be over (December 2008).

The questionnaire was articulated in three sections:

- The first one focuses on the knowledge and the utilization habits (reasons to subscribe to the service, type of shifts, distances, other possible transports used, estimate of safety of bicycles in the urban traffic, utilization of the green phone line and of the Internet URL)
- The second one, called “Customer Satisfaction”, will specifically evaluate the service. Users will be asked to express their opinion on the service as a whole and on each of its elements: availability of information, organization of service, parking areas, bicycles maintenance, fares. Evaluations are expressed with marks ranking from 1 to 10.
- The third section includes the entire user's structure data: sex, age, education, residence.

It will then be exported from the source database to the new database to initialize and prepare for operations monitoring final service. The application for the management of the monitoring will be hosted by the municipality of Rome and will be available to the staff of the Dipartimento X.

The last stage of analysis and processing of data in database will then allow to get statistics and indicators for assessing the service and to acquire indications for the next phase to extend operation of the system.

Results

Just after four months since the experimental service has started in Rome, over an area of 4 km², the following data were registered: 2.000 subscribers, 34.000 movements, more than 6.000 enquiries to the dedicated contact centre.

The users categories are different: employees, self employed, students. Most of the people's age ranges from 30 to 50 years, 62% of the users were men and 38% women.

4.3 Göteborg

The bike sharing pilot was launched in the city district of Lundby, which is nowadays the mobility management test-site of Göteborg. Since spring 2006, the bike sharing system is in operation with 11 stations and 125 bikes. The point-to-point bike sharing system targets employees and their short distance trips during work-hours, using a high-tech system with smart cards.

The focuses of the pilot scheme are 1) to market the system towards the companies located in the Lundby area to attract as many users as possible. 2) Ensure its implementation with an emphasis on evaluating the system in order to make the up-scaling of the system successful.

While the pilot was running, adequate areas for expansion were being assessed, including contacts with additional authorities and parties concerned.

The Implementation

The point-to-point bike sharing system is the first one in Göteborg. It targets employees and their short distance trips during work-hours, using a high-tech system with smart cards.

Göteborg is a spread out city and many areas lack good public transport connections. As a consequence half of all journeys undertaken in Göteborg are car journeys, 25% use public transport, 11% bicycles whilst the remaining 14% are pedestrians. Of the journeys made by bicycle in Göteborg almost 50 % are made between home and work and another 20 % between home and school.

The measure included the implementation of the bike sharing project and also an investigation of a possible expansion of the bike sharing system.

Before SPICYCLES, the total number of journeys undertaken in Göteborg was already constantly increasing. Thanks to the implementation of a number of traffic control measures both in the city centre and in residential areas, traffic distribution now shows an increase in the use of major roads and highways and a reduction in the use of smaller streets as well as traffic in the city centre.



Figure 4-6 Station in Göteborg

The following steps were taken:

1. Promotion of a pilot bike sharing system targeting companies (selection of new stakeholders)
2. Improvement of bike sharing technique
3. Minor follow-up of bike sharing system

4. Expansion of the system to private persons in the Lundby area
5. Expansion planning for city wide bike sharing system open for all
6. Investigate areas for expansion of bike sharing system
7. Evaluation pilot bike sharing system
8. Decision on possible expansion
9. Planning for (possible) procurement

During 2006, a dedicated sales person has marketed the bike sharing system towards potential users (companies in the Lundby area). In August and September she worked full-time engaging workplaces to participate in the system. Around 50 workplaces have been contacted by telephone or direct visit. Totally 60 workplaces have joined the cycle system and about 300 cards have been sold. The number of bicycles and the numbers of cycle stations are still as planned; 125 bicycles and 11 stations. A minor evaluation has been carried out by the sales person and the project manager. This was partly the basis for the full scale implementation in the entire city and for public use.

In September 2006, The Traffic & Public Transport Authority has, together with a contractor, started to investigate the pre-conditions for a full-scale cycle system in Göteborg. The pre-study report, for a full-scale bike sharing system in Göteborg was finished in December 2006 and decisions about how to continue the process were taken in January 2007.

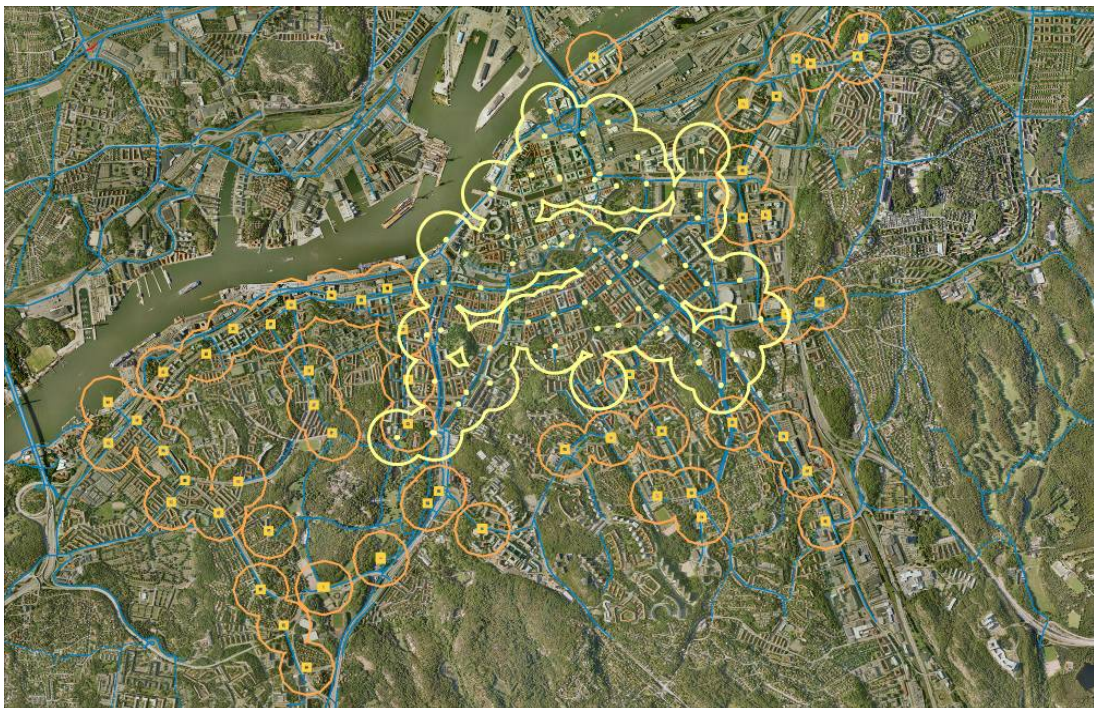


Figure 4-7 Map of Possible Stations in Göteborg (Roll-Out)

In 2007, the pilot was started in Lundby. During 2007, the project continued to attract existing and new companies to the bike sharing system. Until May 2007,

about 310 cards had been sold. The evaluation was finished in December.

During 2008, the project enhanced its effort to attract existing and new companies to the bike sharing system through marketing campaigns. It also improved its statistical report system which enables a closer and more accurate follow up and evaluation.

An investigation has been carried out to see if it is possible to expand the bike sharing system to private persons in the city district of Lundby. In the middle of May, the bike sharing system was opened up for private persons. A new website for private persons was online from May, with a public event in June.

A study about expanding the system was done. The report shows possible places for the station units. The expansion was initially planned to be carried out in 4 stages. A detailed study for stage 1 has been completed. Stage 1 to 3 contains 1000 – 2000 bicycles. Every station will contain 1 to 2 units and there will be 12 bicycles per unit.

The development of a full scale implementation of a bike sharing system in Göteborg has undergone a rigorous and lengthy legal investigation. During 2007 and 2008 intense discussions about the possibilities of a full scale roll-out took place within the city. The issue was transferred to the City Executive Board in order to investigate the legal possibilities and consequences of the full scale system. This caused serious delays in the initial time plan. The possibility for a full scale roll out of the bike sharing system is not expected to be done before the year 2011.

The Evaluation

The target groups are companies and private persons who take short trips during the daytime.

The parameters measured were utilization, number of users, trips, cards and use time. Additionally, questionnaire to users asking their opinions about the bike sharing system (Usability, safeness, smartcard system, and so on...) were used.

A pre-study for expansion to full scale was done. Once the planning of the bike sharing system became more concrete, the lessons learned in other European cities will be very useful for the implementation in Göteborg.

The project is related to WP 5, Cycle centre.

Results

The pilot bike sharing system in Lundby has now been operating for several years and the City of Göteborg has been able to draw some definitive conclusions. The system has mainly been targeted towards companies in the area and they have mainly been positive in respect of the bike sharing scheme. The stations were considered to be functional and the bikes to be practical. The occasional technical problems as described in the earlier report do not appear to have had a detrimental influence on further companies' decisions to participate in the system. The companies' position in relation to the stations and the bikes' adaptness to them are decisive factors in the extent of how the bikes are utilised.

Generally, the companies have been positive to the active efforts of the Traffic &

Public Transport Authority and have welcomed the initiative regarding questions of current interest or information when a new service is created, as with the example of the bike sharing scheme. The bike sharing scheme is a service that suits certain companies extremely well whilst others due to their geographical location or the business activities of the company do not consider themselves to have any use for the bikes. The system works very well on a technical level and the bikes are well-liked.

The success of a bike sharing system depends to a significant degree on the needs of the individual companies and in particular the location of the company's premises in relation to the stations. In certain cases, for example the most active companies, an alternative might be to provide the employees with leasing bikes.

Areas that can be improved in the future are the coordination between the marketing activities of the Traffic & Public Transport Authority and the operating company. Sometimes those marketing activities have led to a demand that could not be met.

A general conclusion is also that there seems to be a limited potential for further growth of the system in Lundby. This is most likely because the companies not using the system have travel habits that are not suitable for the system. Also, because companies can not receive an unlimited amount of key cards employees may not be aware of the existence of the bike sharing system. If all employees at one company would receive their own cards, it is likely that the bikes would have been used to a higher degree.

The pilot in Lundby has provided valuable information and experience for the future roll out of a full scale system in Göteborg. Although plans have been delayed, there is a readiness within the city to continue the plans. Building on the experiences from other full scale bike sharing systems in European cities, the full roll out is expected to become a success and important part of a more sustainable mobility in Göteborg.

4.4 Berlin

Since Call a Bike was already implemented in Berlin in 2002, activities within SPICYCLES focussed on the further development and optimisation of bike sharing. The main actions were:

- Integration into location based services (LBS)

The combination of transport services with modern information and communication technologies allows alternative means of transport to compete with the private car. Since the "navi-revolution" of cars there is a need to better individualize public transport and to flexibilize its use. The integration of bike sharing into location-based mobile services is a logical way to implement this. In any situation, people can use their mobile phone to receive the best use of a bike sharing scheme and the best way to integrate bike sharing into public transport. This combination of public transport means gives public transport the same level of flexibility and even individuality as private cars.

- Profile of stolen bikes

Although problems of “privatisation of bikes” that bike sharing schemes of the second generation mostly faced are solved, stolen bikes are still an important issue. With a detailed analysis bike theft, it is possible to prepare solutions for cities that introduce bike sharing schemes and help them minimize theft.

Therefore, profiles of stolen bikes are developed. Facts and figures about stolen bikes are collected and analysed. The analysis includes the comparison with other specific fact (e.g. social demographic, rates of thefts etc.) The second part of the analysis is to compare Berlin to other cities. Are there common conditions, what is comparable or not? Is it possible to draw conclusion from that for the implementation of bicycle rental system in other cities, nationwide or in Europe?

- Integration of event platform

While bike sharing was getting more and more important during the last 10 years, big sports and show events were also increasing. Events are often connected to traffic, congestion etc. For the first time in Berlin bike sharing was connected to sport events to promote cycling as a green means of urban transport that alleviates problems of congestion.

- Concepts for hotels & companies

The collaboration with companies, hotels and others integrates more stakeholders into the bike sharing world. With more stakeholders, it should be possible to enlarge the acceptance, perhaps to improve economic efficiency of such schemes and to promote bike sharing target groups (tourists, commuters).



Figure 4-8 Tourists on CallBikes

- Specification of new locks

The new challenges required the specification of a new lock generation.

- Analysis of customer acceptance

After a first survey directly following the introduction of Call a Bike in 2002 it is the aim to get more information about the change of customer acceptance and user behaviour in long term. It was foreseen to identify the changes in the acceptance, satisfaction as well as in the requirements of the people.

The Implementation

- Profiles of stolen bikes

The analysis of stolen bikes was made by a manual data analysis of the data base. To get mid-term and relevant data several years, especially 2005-2007, were analysed. Due to a change of the background system there was a delay since the data sets from the old database had to be adjusted. The available information to each bike was analysed to identify possibly connections to other urban factors such as general theft rates, social index, city structural factors etc. Furthermore available tables and data of Berlin were taken into consideration.

- Integration of Call a Bike into location based services

As one of the first transport operators, Deutsche Bahn integrated location based services into their routing system. During 2006, a first prototype was installed and tested in collaboration with a telecommunications provider. Later, after the first positive results, the system was rolled-out including general information about Call a Bike customers. The services can provide viewers with information on a city or region, such as weather forecasts, film trailers and a teletext guide. With the integration of Call a Bike customers also can see where the next Call Bike is located.

- Integration of Call a Bike into event platform

One of the biggest sport events worldwide was the FIFA championship. In 2006, Berlin hosted that big event for about 4 weeks. Call a Bike took part in the initiative of promoting cycling as a favoured means of transport during that time. As a logistical consequence, the availability was increased especially around the fan mile, the busiest gathering point for sports fans, other spots of public viewing and in the inner-city generally.

In 2006 and 2007, more bicycles were placed at bigger sport events such as National Cup Finals (football) and during the opening of a new big sports arena.

At the moment, DB Rent is developing a connection to a platform for big events (e.g. FIFA Football World Cup or Olympia 2008 in Peking) where different personalized information will be made available for the customers, for instance how to get to or away from the event.

- Specification of new locks

DB Rent finished the specification of a new lock generation that should improve the access for customers and lead to a further decrease of vandalism and stolen bikes. A first prototype was expected by the end of the year.

- Analysis of customer acceptance

Because of the yearly season from spring to autumn such survey should be made in late autumn. Due to organisational problems it had to be postponed from 2007 into autumn 2008.

Results

- Profiles of stolen bikes

The analysis of stolen bikes has shown 3 main results.

- 1) There is a higher risk of bike loss if water (rivers, canals etc.) is near to the bikes. Around the river Spree and the inner city canal there is a slightly higher level of bike thefts than in general. The reasons are obvious. While bikes normally disappear temporarily it seems that some people enjoy throwing bikes into the water. Those bikes are mostly gone forever. Bikes that may be placed in backyards are likely to be found within days and will be reintegrated into the fleet. This effect is relevant for flexible and even station-based systems, as experiences have shown. As a consequence, the service level at these areas near the water has been increased. As first impressions show, the level bike theft was decreased furthermore.
- 2) There are no significant linkages to urban indicators such as employment rate, income demographic factors etc. Only trends can be recognized. There is one link to the overall social index. It seems that districts with a lower social index face a slightly higher theft rate. Furthermore, the bike theft rate seems to be linked to the overall theft rate. As a consequence, the service level for these areas was increased.
- 3) The experiences showed that there is normally a higher theft rate and even vandalism rate in the beginning. After about half a year the rate decreases and falls to a permanent level.

- Integration of Call a Bike into location based services

The frequency of using the location based service demonstrated that bike sharing is an attractive content most suitable to be integrated into LBS. While this innovative approach was introduced 2 years ago, it is now the base for further developments. As a consequence of the success of this integration, DB Rent will try to use this for all cities and all their bikes. Furthermore, it will invest further resources into integrated travel information for mobile devices including all means of public transport to cover travel chains from door to door.

While DB Rent was the first to test such connection, now a lot of other bike sharing schemes are connected to LBS, for instance as application for the iPhone, Android etc.



Figure 4-9 Phone with Call Bikes in Berlin

- Specification of new locks

Due to new innovative approaches (in collaboration with the City of Berlin) the specification will be revised and prototyped within the next months. Since no new bike generation could be tested DB Rent enlarged the fleet by further 200 Bikes in 2008. This, as first results show, led to an increase of more than 33 % in trips.

- Analysis of customer acceptance

As first results show, Call a Bike is well known (especially as a service of the Deutsche Bahn Group) and still has a positive image. Most of the users are between 19 and 39 years old. The tariff in combination with a rebate card from DB AG is favoured. Furthermore, new tariff options as bonus packages and flat-rate tariffs seem to be interesting, but need a better communication and promotion. A significant part of the customers also have a public transport subscription and use both the traditional means of public transport and Call a Bike. Call a Bike users are generally satisfied with the service, the availability of bikes and especially the quality of the bikes. Services like customer care are also evaluated positive. It became obvious that there is a need for a better communication strategy to inform customers and especially potential customers about all aspects of the service. Moreover, the requirements and expectations are increasing. For instance, many customers wish to enlarge the area and the size of the fleet. The detailed analysis will be finished by the end of the year.

Transfer of Knowledge

DB Rent started the exchange of bike sharing knowledge in 2006 through first dialogues with Ploesti and Rome. A structure for guidelines was outlined. The project meeting in Berlin in February 2007 was used to demonstrate the system in Berlin. Bike sharing schemes as well as the general situation and development for bike rental services were shown. Furthermore established standards were presented.

DB Rent collected information about the situation and development of bike sharing in 2007. For this, DB Rent used secondary sources available in the internet as well as secondary sources such as personal conversations. At the project meeting in Ploiesti DB Rent presented and visualised the spectacular success story of bike sharing to all participants including

- showing the geographical expansion,
- introducing the current flagship projects (Paris, Barcelona)
- describing the market development including the drivers DB Rent carried out
- presenting first trends and differences at a country level
- demonstrating the need of combining bike sharing with other measures of cycling policy
- raising first questions about the sustainability of bike sharing

First results and experiences showed that bike sharing is no fast-selling item. There are of course limitations (cycling traditions, financing) and problems to solve (full integration into public transport, long-term financing, efficiency etc.).

DB Rent furthermore informed the partners about the first (known) tender of bike sharing in the new European member states that could mark a real important milestone in the expansion of bike sharing: a system to be set up in Krakow.

Moreover, DB Rent presented the first expansion of bike sharing to Mediterranean Asia: the first tender in Israel was placed.

A first draft of a newsletter for bike sharing was prepared and finished in October. This newsletter visualised the enormous increase of bike sharing, described drivers for its success and furthermore marked first critical points in this success story to be monitored within the next years.

At the meeting in Göteborg it could be shown that there is a trend in interoperability which means an across-the-cities usage, for instance the Bicincitta schemes in about 20 towns in northern Italy, the nationwide system of OV Fiets in the Netherlands and recently the availability of Call a Bike in more than 100 cities at railway stations in Germany.

Because of the different levels of participating cities (Berlin already had a scheme without involvement of the city, Göteborg already had a pilot) it was very difficult to find a common platform for the exchange of knowledge and experiences. The presentation of the current situation, developments and trends in the bike sharing market as well as exchange within personal dialogues have been recognised as most suitable.



Figure 4-10 Call Bikes at the Brandenburg Gate

The transfer at this level, 4 cities with total different frameworks and conditions (city involvement, regulations, financing possibilities etc.), might not be the best way to go. There are obviously many different frameworks in the cities often caused by regional or national regulations, traditions and cultures. Therefore, it might be better in the future to look at common conditions and experiences at the country level since there are many schemes introduced. Only at the next level, experiences with other countries can be exchanged. Smaller aspects can be separated and checked for transferability. The Project OBIS within STEER will concentrate on bike sharing

and concern itself with an optimised transfer.

With SPICYCLES, DB Rent was able to make many little steps optimising the scheme with respect to customers, operations, involving further stake holders, introducing technological innovations. Probably the most important result was to raise the awareness for bike sharing in Berlin and to acknowledge that it is not an issue implemented quickly rather than a long-term arrangement between all stakeholders of public transport and the City of Berlin. The need to know and implement best practices in Europe was demonstrated. This led to an innovative approach for Berlin that is currently coordinated and will start by the end of the year.

4.5 New Developments

Two cities not participating in this work package are Barcelona and Bucharest. They are now actively involved in bike sharing. While probably nobody expected an implementation, they now have their own schemes and especially Barcelona now is the second benchmark of bike sharing in the world besides Vélib'. The current situation is here described briefly.

4.5.1 Barcelona

The implementation of Bicing was not foreseen when the SPICYCLES Work Programme was devised. This implementation was made in the first months of 2007 as part of the candidature of the Socialist Mayor, Jordi Hereu (Mobility & Safety Councillor of the Socialist Government led by Joan Clos).



It has focused attention on the central city area where the Bicing system was first implemented, although the Bicing scheme is being extended to all areas of the city except those having severe slopes (and the university area where the scheme could generate an over-concentration of cycles). Bicing is financed by the revenues of the Green Area on-street parking scheme.

The Bicing public bike scheme is conceived as a form of Individual Public Transport, designed to provide faster access to the train and metro network. There are stations every 300m., and some 400 bike stations have been implemented during 2007 and 2008.

Figure 4-11 Map for First Implementation Periods 2007

Results



Figure 4-12 Bicing Station

Within 11 months, political will, financial investment and technical cooperation enabled:

- A 200-bike pilot to become a city-wide service of 6,000 bikes, 400 stations
- With 135,000 subscribers
- 6 million journeys by bike
- (28% connecting with other modes)
- boost of cycle infrastructure planning

4.5.2 Bucharest

Because of the increasing pollution of the city of Bucharest and the resulting health problems of the population as well as the traffic congestion, the public initiative MaiMultVerde and the UniCredit Tiriace Bank opened the system Cicloteque on July 31st with 100 bikes. The University of Bucharest supports the project.

The bikes fulfil European standards and the city has created modern cycle routes along the main streets of the city. The rental stations are located near the university, at Cărturești and close to the main building of UniCredit.

Rental is possible for everyone who registers. Costs are 2 LEI per hour, 10 LEI for 12 hours, 20 LEI for 24 hours, 60 LEI for six months and 100 LEI per year. Students, pupils and seniors pay half the price for all but the hourly rate.



Figure 4-13 Cicloteque Bicycles

5 Key Findings

During the SPICYCLES project a lot of interesting processes and progress could be noticed in all participating cities and even more Europe-wide. In the following we will outline some key findings.

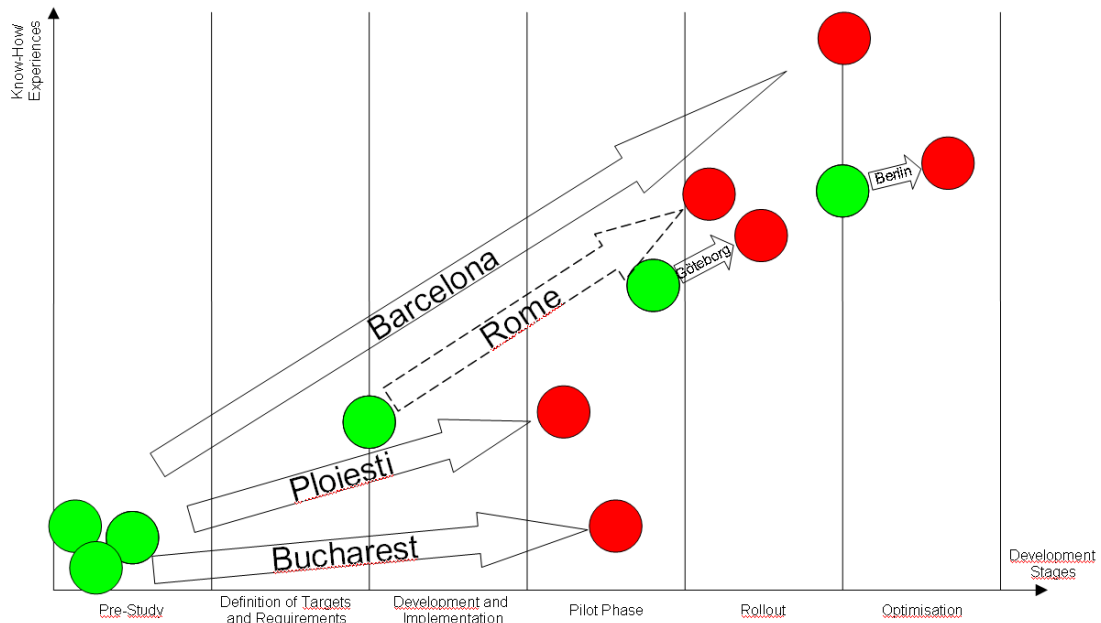


Figure 5-1 Results of Bike Sharing Activities

As the figure above demonstrates, all SPICYCLES cities made a lot of progress concerning bike sharing. Especially the cities that started on a very early level made great progress. All cities moved on and jumped and partly overshot their goals. It is now obvious that there was no consistent development from one level to the next stage. Some cities jump ahead due to some external effects outlined later in the key findings. Even cities not involved in the work package 3 now join the field of bike sharing - an effect probably nobody expected at the start of the project. This is of course due to bike sharing boom that raised much awareness, active support and positive decisions.

5.1 Established standards

Europe-wide some standards, elements the schemes have in common, seem to be established concerning bike sharing such as:

- Automated processes for rental and return

High technology allows fast, comfortable and secure processes to use the bike sharing schemes. No personal is needed.

- Easy and fast access

Due the use of innovative technology customers can use bikes within seconds, and even registration is mostly possible within minutes

- Fixed stations

Customers can rent and have to return the bikes to fixed places.

- Smart Card based

A Smart Card is used in many traditional public transport systems as the access medium. It also became the medium for bike sharing schemes.

- Registration of customer using cautions or deposits, no anonymous use

Different from earlier generations of schemes, an anonymous use is generally not possible. The customers have to register once. For security, users usually have to deposit money or give the permission to debit sums.

- One way capability

Due to the net density such schemes allow one-way trips. For instance the Velib allows (1400 stations) about 2 million different routes, while Call a Bike in Berlin even make about 10 million routes possible (> crossroads as drop-off-location)

- High net density

Most schemes introduced in the last two years provide a high density of bikes and stations. The standard for density of stations has been established between 300 and 400 metres. This does suit to the fact that people accept trips no longer than 400 metres if they use the public transport.

- Tariff model including the first 30 minutes of each trip free of charge

Usually, customers buy base tariffs allowing daily, weekly, monthly or yearly use of the bike sharing scheme. The prices differ. Owning a ticket usually allows the customer to use the first 30 minutes of each trip cost-free.

Exception 1: Germany

In Germany, the DB Rent operated scheme Call a Bike is the market leader. This system is mostly working without bike stations and especially without the use of a Smart Card. This is due to at least 3 reasons:

a) Limited public support

Because the general modal split of cycling in urban areas is approximately 9-10 % – and increasing since 10 years – there was no need for any public authority to financially support bike sharing. In fact, the responsibility was shifted to the market. That is why examples or show cases with high financial investment were not possible. Operators even more concentrate on an organic development with a very critical view towards the costs. Since many German cities saw the success of big

schemes like in Paris or Barcelona, cities now prepare for an integration of such schemes into their local urban transport strategy. It is like the pendulum is swinging back. As the first German city, Hamburg published a tender for a bike sharing scheme – albeit smaller than the Velib' or Bicing-scheme.

b) No smart card systems in traditional public transport

While in most metropolitan areas of Europe closed Smart Card systems for the traditional modes of public transport (e.g. subway, urban railway, tram, bus) are common, no German city uses such a system. There was a great discussion between different transport operators (local, regional, national rail) on the general e-ticketing topic. It became obvious that no provider will implement such a closed Smart Card system within the next years. The result is that a Smart Card as access medium is not established. Due to that, there was of course no economic interest for operators such as DB Rent and *nextbike* to develop a smart card solution.

c) Critics on combination of contracts

While the combination of bike sharing and advertisement rights in one contract is common, this has not been done in Germany. Initially Karlsruhe and Stuttgart tried to set up contracts like these. During the tender for outdoor advertisement in Hamburg, bike sharing was a part. Within the bidding process, it was cancelled because the antitrust agency created doubts on the legality of the mix of two performance packages (advertisement and bike sharing). German cities would not take the chance to implement bike sharing for seemingly “no costs” by that contract mix. Instead, they have acted in a very transparent and efficient way through separated tenders for bike sharing and street furniture.

Exception 2: New EU member states

Due to the different preconditions (role of cycling, limited financial options etc.) so far no big bike sharing scheme known from Paris or Barcelona has been introduced in new European member states. To establish such schemes and promote the idea there the trend is to implement schemes that are more “low tech”. These schemes usually do not provide that common level of automated processes we know from other European cities. Besides the described preconditions there is also the fact that the market for advertisement is not big enough to make schemes possible. Furthermore, there are great concerns in those countries about thefts and vandalism in a bike sharing scheme. To introduce bike sharing, it seems necessary to involve stakeholders from other branches and to use patronage for the initial introduction.

Nevertheless, the process has been started and bike sharing will spread in those countries within the next years. So far small schemes in Romania, initiatives in Poland and the Czech Republic are known. Since autumn 2008, Minsk the capital of Belarus is also interested in introducing a bike sharing scheme.

5.2 Cycling traditions

Bike sharing has been existing in various forms for much over 30 years, but in the last few years – especially in 2007 – it has developed enormously as a new means of (public) transport, at least in Western European cities (e.g. Paris, Lyon, Barcelona). Thus, a raising awareness concerning the ecological possibilities of bike

sharing can be observed. However, both the development and the acceptance of bike sharing as a crucial part of the transportation system differ significantly among European countries. Looking at the different rates of spread-out of bike sharing schemes we have to notice that there is not a guarantee or even the same level for a successful implementation of that scheme. Obviously, we have to consider the different cycling cultures and traditions.

We can identify three types of cycling traditions, which directly influence the challenges facing bike sharing systems in different countries:

(1) *Established cyclists*: Countries with an old and entrenched cycling tradition: In these countries private bicycles are spread widely; the acceptance of bike sharing is moderate. These are countries like Norway, Sweden, Germany or the Netherlands.

(2) *Cycling newcomers*: Countries without cycling tradition: In these countries private bikes are rarely used, they currently show impressive acceptance rates of bike sharing offers. Examples here are France, Spain or Italy.

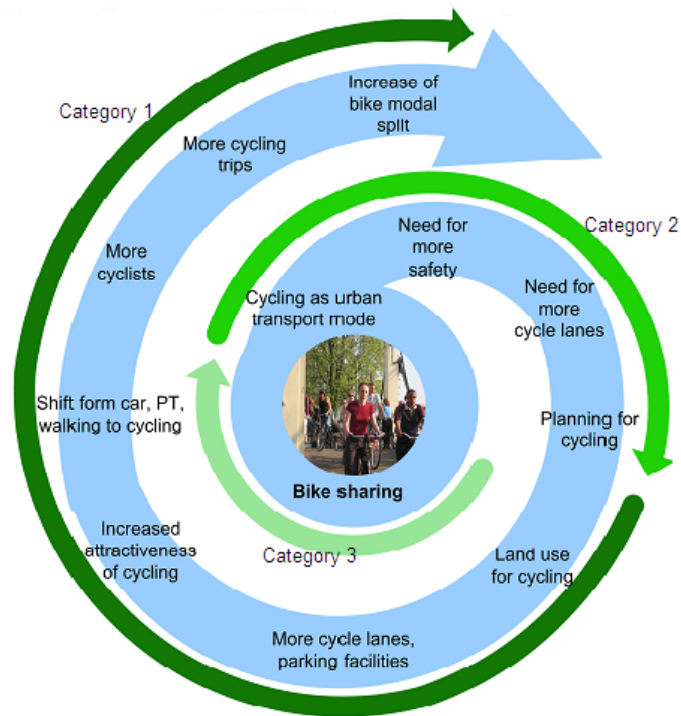


Figure 5-2 Bike Sharing Spiral

(3) *New European partners*: Countries where bicycles are used from necessity, car are seen as symbols of progress, for instance in Poland, Romania, Czech etc. There are no or very few bike sharing systems.

Despite the different starting points, bike sharing systems can lead to an overall improvement in the modal split of cycling as shown in the cycling spiral.

While cities with a low cycling modal split can enormously increase it by introducing such scheme like Paris and Barcelona proved countries with an established cycling culture can support the growth of cycling by adding a useful new means of transport into the traditional urban mobility portfolio. But these should be a part of the long-term cycling strategy. Cities in new EU member states have at first to ensure the extensive allocation of financial resources.

Therefore, our question is: How should a system be designed in order to be ecologically and financially sustainable in respect to the cycling tradition?

The comparison of different countries shows that the development of bike sharing offers in Europe depends on the existence of political support programmes for the promotion of bike traffic as alternative means of transport (e.g. investments into cycling infrastructure), including the supply of finances. The sustainability of this development still is to be verified.

5.2.1 Countries with an established role of cycling

The typical “bicycle-countries” are faced with difficulties. Complex regulations limit potential contract ranges. For example, a contract with a combination of bike sharing and advertisement rights is not allowed in Germany. After an announcement by the anti-trust office, such combinations were immediately stopped.

Further restrictions concern the limited willingness to spend a lot of public money, partly prejudices towards advertisement spots and doubts about the sustainability of bike sharing. Furthermore, decentralised administrative structures limit a simple contract solution. In such a case, city departments have to coordinate such initiatives with a lot of boroughs, which of course follow their own interests. In these cities it is also common that there is a high demand to spend money for other useful projects. A high level of private bikes and the climatic situation with a necessary winter break and a lower acceptance during the winter also constrain the system. Cities with this background will increasingly try to strengthen the public transport as a complete solution, promote co-modality and even focus on commuters and tourists.

5.2.2 Countries with a low level of cycling

During the implementation and the operation of bike sharing a feedback system between the results and the emerging needs is necessary. Possible results of bike sharing can be the increased bike use and thereby an increased share of cycling within the modal split. Further very desirable issues are reduced emissions and pollution and thereby a higher quality of life, which also results into better health, also through getting exercise by cycling. Also, the attractiveness of the city, not only for tourists and pedestrians, will rise with the success of cycling.

Another critical question about bike sharing is the sustainability of these schemes. It still remains to be seen whether bike traffic grows sustainable or whether it is an artificial increase due to the systems. Would the development of bike traffic still be that strong if bike sharing schemes ceased?

It is further possible to establish cycling as an urban transport mode. With this, the needs for more safety and more cycle lanes will make a sophisticated planning of the land use necessary. More cycle lanes and more parking spots for bikes have to be integrated into the cityscape. This will make cycling even more attractive. Parking and riding the bike will become more safe and convenient. This induces a shift from cars, public transportation and pedestrians to cycling. More cycle trips increase the share of cycling within the modal split.

5.2.3 New EU Member States

Finally, countries like Lithuania, Poland, the Czech Republic and Romania have a low level of cycling and limited financial opportunities to support it. Large

investments are necessary to develop a good bike sharing infrastructure. Since these countries do not have great financial opportunities they tend towards more simple schemes on a lower technological level. There are no experiences about the acceptance of bike sharing. One can assume that residents would be shocked since they are not used to cycling. The financing of bike sharing systems does not seem to be very attractive for street furniture companies like JCDecaux or Cemusa. The assignment is to define other opportunities. Krakow has lately announced a tender for a bike sharing scheme in February as the first city of a new European member state. In 2008, two Romanian cities (Bucharest, Ploiesti) opened small schemes that are similar to western European schemes. They introduced such schemes mostly by providing fleets of about 100 Bikes at several rental stations.



Figure 5-3 Bike sharing Initiative Maimultverde (Bucharest)
(Source:<http://maimultverde.ro/cicloteque/de-ce-cicloteque>)

5.3 Driving powers on the bike sharing market

The bike sharing market is influenced by several driving powers. Figure 6 shows the different aspects, which influence the extent of the competition in bike sharing and public bicycles.

Sustainability demands

The growing sustainability and environmental demands lead also to a growing importance of bike sharing, which influences the municipalities and urban areas on several levels. There are international, European and national guidelines to be observed. Local and nationwide authorities are in the position to support 'green' solutions for sustainable traffic.

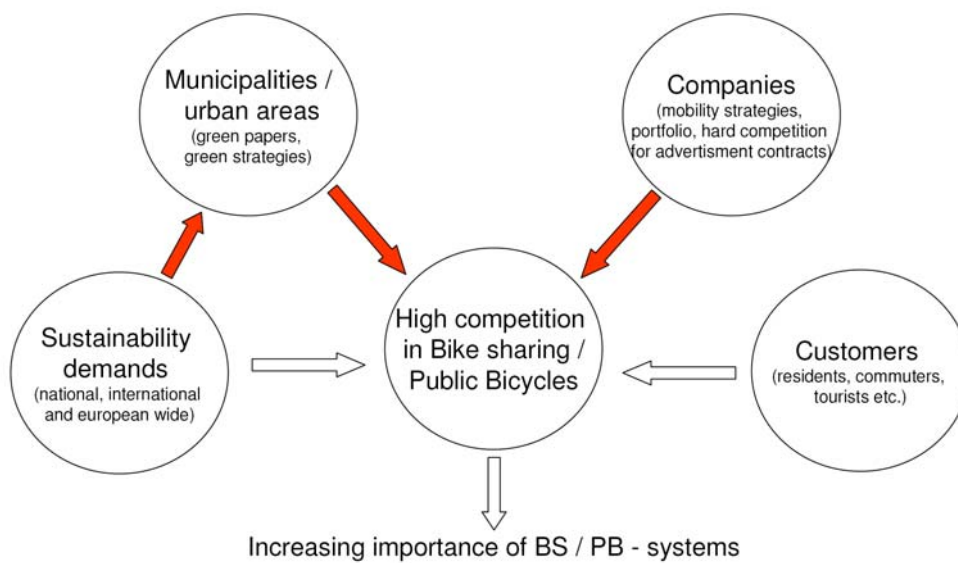


Figure 5-4 Driving Powers of Bike Sharing
(Source: own illustration)

Municipalities / urban areas

To serve the different guidelines on several political levels, the municipalities start out with green papers and compose green strategies, which lead to bike sharing and public bicycles. Cities such as Paris, London or Hamburg for instance have integrated the set-up of a bike sharing scheme as one of the measures into their long-term transport plans. The support of bicycle traffic is attractive since it is inexpensive in comparison to other public transport modes. Additionally, it stimulates pollution free, low-noise traffic. More cyclists in cities also lead to safer traffic since car drivers become more aware of pedestrians and cyclists. The quality of life improves.

Companies

Companies like street furniture companies or public transport aspire to improve their portfolio. About 10 years ago, street furniture companies started to develop the market by introducing this service as an attractive urban solution in order to attain valuable contracts for advertisement rights in cities. While establishing their bike sharing solution within the first years, the competition for advertisement contracts by offering bike sharing solutions got more and more intensive in the last three years. The strongest market players at the moment are:



Figure 5-5 Bike Sharing Operators in Outdoor Advertising



Figure 5-6 Bike Sharing Operators from the Public Transport Branch

A further branch engaged in bike sharing is of course public transport. Deutsche Bahn for example presents itself not only as a railway company but as a mobility provider offering mobility chains from door to door. While Deutsche Bahn started its engagement in 2001, other public transport operators enter the market for bike sharing. The Société Nationale des Chemins de Fer Français (SNCF – the French railway operator) with its subsidiary EFFIA, Véolia through the take over of Movimento and Oybike, Transdev by cooperating with DB Rent and the Nederlandse Spoorwegen (railway operator in the Netherlands) by the take over of OV Fiets are examples for railway companies now competing on the bike sharing market. It seems possible that due to the inclusion of bike sharing into advertisement contracts such services will be introduced into tenders for integrated mobility, probably in the connection with urban or regional mobility. However, as argued above, this might not be in the best interest of cities.

Customers

The part of the customer in this context is also very important. Without people who are interested in using the new schemes, bike sharing cannot and does not work. Especially young, highly mobile urban users are a main target group for innovative high-tech services. But also commuters and tourists are an interesting potential customer group to play a multiplication role to promote bike sharing schemes. They often have an important part by introducing the idea of urban mobility into city councils.

Competition level

Looking at the market in the last 12 months, it can be seen that there has been a development to establish two different levels of strong competition for bike sharing. Of course due to the climate situation, green strategies and the increasing demand for urban solutions, bike sharing came into the focus of political competition, mainly on the municipality level, where questions like “Which city is bicycle friendly?” and “Which city is the first?” are important. Surely, several elections have supported the fast installation of bike sharing schemes and the decision in favour of bike sharing in general. That is of course a driving force to introduce such schemes into countries where it has not been started before. In the same way, it could stop the interest of other cities. What can they win on the political level? Is it enough for deciders just to be second?

At the level of the operator, winning the contract for advertisement rights was the main focus. Another strong competition takes place between the three street furniture companies: JC Decaux (Paris), Clear Channel (Barcelona) and Cemusa (Rome). By integrating bike sharing into general contracts about advertisement rights on public spaces, the value of these contracts demonstrates the attraction of

the market. As experiences in several cities demonstrate, bike sharing schemes are established as a success factor for winning tenders for outdoor advertisement contracts. There is a very intense and strong competition for such contracts.

Barcelona is a very good example where the competition on both levels together led to a very fast introduction of bike sharing. While a candidate for a mayor election utilised the topic, the outdoor company Clear Channel intensively engaged more and more intensively in setting-up a large scheme as they lost the tender in Paris after a long and hard fight with their biggest competitor.

In the same way, Rome is an example where the political will to set-up a watchtower project for Italy combined with interest of an operator (Cemusa) to set a national standard can overcome barriers that existed before.

In the context of bike sharing it is very interesting that there is no single forerunner city or country. Since the beginning the leadership changed from Netherlands to Denmark to France to Austria to Spain back to France and so on. It seems that there is a pendulum always swinging back. Leading cities were outperformed and eventually try to improve their approach. So the general development of that branch will remain interesting. Bike sharing generally will be established as a mean of public transport. But it still needs many improvements and developments to increase efficiency.

5.4 Rate of spread

After a long history of now more than 40 years and several steps in the development (1st, 2nd, 3rd generation), bike sharing became a booming topic in 2007 that raised a lot of dust concerning urban cycling and urban development. The number of bike sharing schemes probably doubled in 2007 and it seems only a matter of time the next city will open its programme. But since 2008 it is obvious that the rate of spread slowed down a little bit especially in central Europe. What are the reasons?

The political competition was won by Paris and Barcelona. These are the schemes people and cities talk most about. It seems that now cities that follow cannot reach that success and awareness and so they change their requirements, for instance they try to intensively reduce the costs for bike sharing, they try to develop individualised solutions to their problems (e.g. focused more on commuters or tourists). Also the political competition leads to the question: what can we do better than the other cities? This is an important question city councils think of and discuss which finally leads to a slower decision making process we have often seen in 2007. Furthermore, it seems that the issue of reliable and long-term financing is often a crucial point.

5.5 Integration into planning for cycling

Implementation of a bike sharing scheme should as far as it is organised by the municipality fit with the general traffic planning for cycling. Experiences within SPICYCLES have demonstrated that there is an important link between bike sharing and planning for cycling in general. There are several possibilities:

a) Supporting the extension of the cycling infrastructure

Cities can use bike sharing schemes to support and underline their engagements for cycle path networks for main routes as well as for networks in several districts. By implementing rental stations near to new cycle lanes, bike sharing can support the fast use and acceptance of this new infrastructure.

b) Preparing extension

In the same line, bike sharing can raise at least the pressure for the responsible authorities to begin or to finish the set-up of cycle path networks and other cycling related necessities. Once the people are on the bike they need to be treated like traffic participants regarding safety, good infrastructure, legal rights etc.

c) Integration into the mid- and/or long-term urban transport strategy

Paris, London and Hamburg for instance already did it and strongly advise that cities include bike sharing as a measure into their traffic strategies. Once this measure is taken, an efficient preparation by the city is possible and providers can prepare for such arrangements. They can check their general interest and think about city-specific solutions. The city can work together with well prepared partners and will get an efficient solution for their urban transport mix.

d) Integration into public transport

Due to the pressure to reduce emissions, cities have to acknowledge the need for the integration of bike sharing into public transport. The aim should be to raise the attraction of the public transport system at large and in the end the creation of a better alternative to the private car. Positioning bike sharing infrastructure near to the traditional public transport infrastructure can be one effective measure. Another one is to give out a general access medium to all means of transport. Customers then have one medium they can use for all, traditional means of mass transport and individual means of public transport like bike sharing.

5.6 Clear implementation plan

For the successful implantation it is also important to set milestones in the process of set-up or extension of a system. In the last years, some cities suffered due to forgetting this. For instance, if cities implement a pilot for prove a concept, they have to define in the beginning what is success to reach the next level of implementation or even to stop the project.

Realistic aims for modal split

Schemes like the Vélib' or Bicing changed the feeling in their cities generally. Cycling has probably doubled in both cities and even both schemes itself reached a modal split of at least more than one percent. But it is necessary to be aware of two facts: first, the modal split of cycling was very low in both cities at the starting point of the projects in 2007. An absolute increase of 1 % of the modal split can already mean to relatively double it. Second, the financing in both cities was huge.

In some requests of cities one was able to read that cities want to implement a bike sharing scheme and reach similar successes like Barcelona or Paris. But then they have to use the same characteristics of the scheme, same size, number of stations, bikes, climate conditions, density etc. For instance, given the conditions of Paris and Barcelona (high density of population, moderate climate) 6-8 trips per bike and day are possible. This raised the modal split 1 %, doubling it from before 2007.

Following mobility science, everyone makes 3-3.5 trips per day on average. A city with 1 Mio inhabitants (plus tourists and commuters) therefore has at least 3.5 million trips a day. This means: to reach a modal split of 1 % one needs at least 5 bikes per 1000 inhabitants, but this will only work to the conditions of Barcelona and Paris, which are:

- Compact and dense city
- Low level of cycling before
- Great financial support

Cities should be aware of their real aims or at least know what is the minimum invest needed to reach those goals.

5.7 Financing possibilities

Cities have to be aware of the costs of such projects. Because all relevant bike sharing schemes are not self-funding, cities have to find a solution for at least mid-term financing. Regarding the financing, cities often face with problems along the following lines:

a) Existing contract for advertisement

Many cities interested in bike sharing would like to finance such schemes by using an advertisement contract like Paris did. But generally, cities already have such contracts. New York for instance just signed a big contract for street furniture 2 years ago. They have to find other options now.

b) Decentralised allocation of advertisement rights

Not all cities can generally decide about public spaces. There are a lot of cities where each borough is responsible for that. As a result, it is very complicated to bring all borough authorities to one table and define a scenario for contracts to finance bike sharing schemes.

c) Legality of contractual combination of different services

In some countries the anti-trust office raises doubts about the combination of advertisement rights and bike sharing, for instance in Germany. After that, a tender process was stopped and split into two different tenders, one for street furniture and another one for bike sharing. These will lead to two different but more efficient contracts and finally in a better solution for the city. Cities should divide these contracts.

d) Direct financing

Barcelona established another financing model, where revenues from an urban parking programme are used partly to finance Bicing. Due to the connection with revenues from car use, it acknowledges a green idea behind bike sharing. This seems to be a consistent concept.

e) Subsidy

Generally, since Bike sharing schemes are not self-funding and need external financing there will often be a discussion about subsidies, typically about: Does a subsidised bike sharing scheme eliminate traditional bike rental shops? Could the money not be used for other cycling measures? It is usually an interesting discussion that very much depends on the power of cycling stakeholders in the cities such as cycling associations, retailers etc. There is no ideal solution but it seems necessary that all stakeholders should be involved as soon as possible.

5.8 Integration into innovative ICT-Technology

The public transport system needs an answer to the revolution sparked by introducing navigation systems into cars in the last years. Public transport should provide similar routing assistance for public transport to give it a similar attraction. The initiative to combine bike sharing and location based services has especially demonstrated that such integration is possible and useful. These applications on mobile devices will be improved and will probably be established as future access technologies to inform about and to use public transport on a very comfortable level. Finally, mobile devices including such applications can revolutionize public transport like "Tomtom" did for cars.

5.9 Linkage to marketing activities

As the results of the SPICYCLES activities have demonstrated there is a strong link of bike sharing to marketing activities. It is important to provide customers and potential users with information about use, costs, access etc. Barcelona has shown that in combination with a coordinated marketing campaign the success of bike sharing can be maximized. Furthermore, due to the online habits of people in general, internet platforms, viral marketing etc. are also very useful possibilities to promote such schemes. Think of the micro movies about Vélib' and Bicing.

5.10 Limited transferability

It was thought that bike sharing could be implemented in every city with more than 100.000 inhabitants. But during the last two years, it became obvious that this transferability is limited.

- National regulation

Antitrust agencies may not allow the combination of advertisement rights and bike sharing within one tender. In this case the traditional model of JC Decaux cannot be

used so the cities have to check for other possibilities of financing and furthermore coordinate these options with possible providers.

- Allocation of city tasks and contracts

Similar to regulation difficulties on a national level there are problems possible on city level. In some cities, for instance Berlin, the responsibility for the allocation of advertisement rights is decentralised, which means each district is responsible for giving out its own advertisement rights. That is why a combined contract (advertisement rights and bike sharing) is very difficult to organise, especially if existing contracts have a different running time.

To enlarge existing contracts is also quite difficult to organise. For instance the mayor of New York realized that due a contract for advertisement rights signed in 2006 by Cemusa it seems not possible to arrange a contract similar to Paris within the next years.

Cities have to be aware of the current situation of contracts and duration times. New tenders for such contracts mean opportunities – otherwise, cities have to look for different solutions.

- Administrative structure of cities

Within city districts, different departments are involved in the decision-making process. While the “French way” seems to be more centralistic or “top-down” the decision process in other cities is quite different. For instance, the civil engineering office, the department for historical monuments and for urban development often have to be involved in the decision-making when it concerns public spaces. Furthermore, once a proposal is made it has to be confirmed by the head of the city council and sometimes even the city parliament. So the implementation processes vary and have to be carefully kept in mind.

Furthermore, if there is a situation of strong districts, there can be conflicts between inner-city and suburban ones since the whole city pays for a scheme that is only available in the inner city. The experience from DB Rent and the cities of Paris and Barcelona shows that there is rapid demand to implement such scheme in the whole city. But of course, an expansion like that has to be financed and organised. Once a system is established an enlargement usually cannot be tendered.

- Different goals of cities

Cities usually have the same overall goal: reduce car traffic and stimulate cycling. To break down this goal into specific means to achieve it is usually what causes conflicts. Some cities develop long term plans, others plan for 5 years. While some face traffic problems because of commuters others rather want to concentrate on getting tourists on the bike. The attitudes differ vastly. It is therefore important to clearly define goals and steps to achieve them in the beginning together with the prospective operator(s).

- Different interests of operators

In the bike sharing market the operator sometimes has more interests than “just to make profits”. Since it is an innovation and has a positive connotation it is often a

means to promote such schemes, to set standards, to be the first and most innovative operator etc. Another reason that influences operators is of course the existing interest in that market. For instance a street furniture company that is not active in one country usually only has a low interest to open a scheme this country since it is not a key market. The same is true for public transport operators. If bike sharing does not fit the overall strategy of the company, sometimes providers will not engage.

- Different role of cycling and established cycling associations

The introduction of bike sharing schemes is sometimes under higher suspicion by already established cycling associations that fight for their interests concerning their views on infrastructure, safety regulations and other cycling patterns. That is why implementation of bike sharing and even the costs are intensively watched by those groups. They tend to be a conservative factor in the debates on cycling.

6 Recommendations

This Chapter intends to derive recommendations for bike sharing to support further implementations, developments and to thereby stimulate cycling overall.

- Integration into long-term transport plans

As cities like Paris, London or Hamburg have demonstrated it is an important support to integrate the introduction of a bike sharing scheme into the long-term transport plan. This provides transparency about the overall aim and encourages people who are involved in the implementation process.

- Integration into traditional public transport

Bike sharing is most suitable to be integrated into the traditional public transport. The use of all means of public transport by one access medium for instance will establish the cycling module as part of the mobility behaviour of the people. In addition, the use of traditional public transport tickets also for bike sharing seems to be an ambitious but realistic goal. Co-modality will be strengthened while the use of both bike sharing and traditional public transport will be easier.

- Integrating bike sharing into revenue sharing agreement of public transport

Once bike sharing can be used with existing public transport tickets it should be integrated in agreements concerning revenue sharing. As a – then – established mode of public transport, it has to be treated like one and therefore receive a share from the overall public transport revenues. This is a chance to establish a valid financing model that is not used now but can solve the problem of long-term financing.

- No tender with a combination of different services

As is obvious that a combination of very different modules within one tender leads to sub-optimal results. The efficiency of two different tenders will be higher than the efficiency of one for different services. Bike sharing should be tendered as stand-alone service or at the most combined with other mobility related services like an integrated public transport tender. By combining bike sharing and other sources of revenue for cities, the public can lose control over substantial amount for many years.

- Carefully prepare tenders

Cities have to prepare tenders carefully including:

- Definition of real goals
- Clear steps of implementation
- Attracting and inviting as many operators as possible

Therefore, cities should use the possibility to talk with potential operators to get informed about realistic conditions and publish an attractive tender

- Clear milestones if several implementation steps are intended

Some cities use a pilot phase to test the system. After the test cities often get in troubles when implementing the next step since there are no criteria defined on how to go on. Real indicators are needed to test acceptance, user behaviour, performance, robustness etc. Otherwise, the status and efficiency of the project might be doubtful and there is a threat of stagnation. Here, transparency is especially important.

- Interoperability

While activities to enlarge the level of intermodal usage were increased, cities should furthermore work together to allow cross-usage of their bike sharing schemes. This can help to establish cycling as a part of the travel chain and even help to change mobility habits in the long run.

- Regulations about allocation of public spaces

Due to the upcoming competition for public spaces it seems necessary that cities should arrange a general agreement about the use and allocation of public spaces. As car sharing initiatives also need public spaces, the lack of space will probably become the biggest bottleneck. An overall agreement seems useful to avoid a blockade caused by uncoordinated pushing and shoving.

- Setting of incentives for more efficiency

Like other means of public transport, bike sharing is so far not self-funding. Nevertheless, cities should use incentives to encourage efficiency by rewarding operators if they reach set goals like self-sufficiency or at least an annual decrease of subsidies necessary.

- Using innovative communication technologies

Since Internet, Smartphone etc. are established media for people cities should use them as information platforms and to promote bike sharing schemes (and of course public transport over all). As experiences have shown LBS-providers often search for valuable content to promote their new developments. Bike sharing is known to be one of the most valuable contents for such services. To use this potential also means to involve more stakeholders in bike sharing.

- Linkage to marketing campaigns

As cities also compete it is very important to integrate services like bike sharing into the destination marketing of the city. Furthermore, cities should use their “customer contact” to promote it permanently. Cities for instance can provide mobility packages to their citizens including other services. New citizens could receive a “Welcome Package” including a bike sharing voucher.

- Using image effects

The big success of bike sharing also created a big image effect. Some cities have established themselves as national frontrunners and showcases for modern cycling policy; as did the operators. Countries with no or very little bike sharing schemes should use these possible image effects to find financial support or a kind of patronage. Examples of Nokia in Vienna and Tiriatic Bank in Romania showed that it is perhaps interesting for not mobility-related companies to engage in that field.