

PUBLIC BIKESHARING SYSTEM IN WARSAW – A CASE STUDY

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ABSTRACT

Public bikesharing system is a type of urban transport in which bicycles are available for hire by the general public. Systems consist of several elements: terminals, docking stations, bicycles, hotline customer service, service center and logistics system. The purpose of the article was to assess Veturilo, a new public bikesharing system in Warsaw, the biggest of such systems in Poland. The research is based on industry reports, press releases and two in-depth interviews with Veturilo representative and Vice-president of the European Cyclists' Federation.

The Veturilo, Warsaw public bikesharing system has been operating since August 2012. It represents third generation of systems using electronic communications for bicycle pickup, drop-off and tracking. The Veturilo is based on business model assuming municipal and private units involved in running the system. Some of the tasks are provided by Public Transport Unit in Warsaw, some – by private operator.

The scale of the system has been dynamically growing, currently it consists of 2,666 bicycles and 174 terminals (2014). The system has achieved a scale that might be compared with advanced West-European systems (during two years of existence). It has been becoming quite popular among citizens, so far, 180 thousand of users have already used the public bikesharing, renting bicycles almost 3 million times. It seems that Veturilo system helps to popularize the idea of a public bikesharing in Poland.

Keywords: public bikesharing system, public transport, recreational cycling.

INTRODUCTION

Over the past several years, public bikesharing has been introduced in many countries. Nowadays unattended bicycle rental systems operate in more than 600 cities [4, p. 23] worldwide. In Europe, public bikesharing is offered in about 25 countries [3, p. 11].

Public bikesharing is so popular due to a number of benefits. In particular, they are: easy and convenient access to a bicycle and its parking, no problems with bicycle repairs, information about the availability of bicycles in real time. Not without significance is the availability of services around the clock thanks to the automated

rentals. For many citizens a good motivation for the use of the public bikesharing is a concern for a healthy lifestyle.

In Poland, the first public bikesharing system was introduced in 2008 in Cracow. Currently, this service is offered in Warsaw, Cracow, Poznań, Wrocław, Opole, Sopot, Rzeszów [4, p. 23]. Next cities are preparing to install unattended bicycle rental systems, i.e.: Łódź, Lublin, Bielsko-Biala, Szczecin, Bydgoszcz, Toruń. The largest system of a public bikesharing in Poland has been operating in Warsaw.

The purpose of the article was to assess Veturilo, a new public bikesharing system in Warsaw. The research is based on industry reports, press releases and two in-depth interviews conducted with Mr. Piotr Kuropatwiński, Vice-president of the European Cyclists' Federation and Mr. Tomasz Wojtkiewicz, President of Nextbike Poland, unattended bicycle rental operator in Warszawa.

1. HISTORY OF PUBLIC BICYCLE

Public bikesharing system is a type of urban transport in which bicycles are available for hire by general public. There are varied types of public bikesharing systems, depending on the technical solutions [1, p.7]. Systems consist of several elements: terminals, docking (base) stations, bicycles, hotline customer service, service center and logistics system [15]. In most systems users are able to rent a bicycle without assistance of operator's employee – those are unattended bicycle rental systems.

Bicycle rental systems have evolved over time, there has been four generations of systems:

- First generation: "white bikes" (free bikes),
- Second generation: coin-deposit systems,
- Third generation: IT – based system,
- Fourth generation: demand-responsive, muliti - modal systems (the next generation of IT-based bikesharing) [3, p. 9].

The first public bikesharing system was established in 1965 in Amsterdam. Bicycles in this system – called "white bikes" – were free of charge for users. Similar systems were created in France - Velos Janues in La Rochelle in 1974 and in the UK - Green Bike in Cambridge - in 1993. All these systems were closed due to the acts of vandalism and theft. For this reason, next systems were paid (coins) and they were equipped with docking stations. Such systems developed, among others, in Copenhagen in 1995, in Sandnes, Norway in 1996, in Helsinki in 2000, and in Aarhus in Denmark in 2005. The first system using IT solutions in docking stations was Velo a la Carte system, which was launched in Rennes, France in 1998 [3, p. 10–11].

Currently there are over 140 public bikesharing systems worldwide starting from Berlin with the system “call e bike”, the London “Barclays Cycle Hire”, Washington with “SmartBike”, Mexico “EcoBici” and Hangzhou system in China with 60,000 bikes [17]. One of the largest unattended bicycle rental systems in Europe is Paris Velib system with 20,000 bicycles and average 80 000 to 120 000 trips each day [3, p. 9]

The public bikesharing systems in Western Europe, in most cases offer the cyclists only the rental service. The exception is a bicycle rental in Amsterdam, where you can rent bicycles and child seats, tandems, bicycles for transporting a luggage, or electric bicycles [13]. Moreover, a bicycle rental shop in Amsterdam offers its customers the possibility of buying an organized bicycle tour of the city or the surrounding area [14].

2. VETURILO - PUBLIC BIKESHARING SYSTEM IN WARSAW

The Veturilo, Warsaw public bikesharing system has been operating since August 2012. The system name was selected by users in an online vote, it means in Esperanto: vehicle, means of transport.

The Veturilo represents third generation of systems, using electronic communication for bicycle pickup, drop-off and tracking. Citizens are able to rent bicycles using smartcards and smartphones. The IT system enables the operator complex information about users and bicycles. The Veturilo does not have such features of fourth generation models as: “dockless” bicycles, GPS tracking, billing integration (e.g., sharing smartcards with public transport). The scope of the service includes:

- ability to check the availability of bicycles through the Internet,
- access to a bicycle in base stations around the clock,
- customer service through the call center [15].

In contrast to other systems, for example “Roweres” in Rzeszów, users of Veturilo do not have the option to rent bicycle helmets or bicycle safety seats for children [16].

Veturilo is unattended bicycle rental system. Using public bikesharing consists of several stages. Firstly, a user has to register, then logs into the system via the Internet or mobile phone, then pays the required amount of money. The user's account is automatically credited which allows the user hiring a bicycle (using the control panel or proximity card reader). After driving a bicycle on the chosen route, the cyclist gives the bicycle back to the selected dock.

The system operates through nine months of the year, from March to November, due to climatic conditions. Off-season bicycles are serviced and stored by the operator.

Veturilo system is compatible with other, smaller public bikesharing system in Warsaw-Bemowo Bike, that works in the district Bemowo. Users are able to rent a bicycle in one system and leave it in the second base station. Renting a bicycle in the other system does not require re-registration. Bemowo Bike and Veturilo systems have the same operator – the company Nextbike Poland [19].

Scale of the system has been dynamically growing. At the beginning of the operations in 2012, the number of base stations was 57, at the beginning of the next year it increased to 125 stations, in 2014 amounted 174 stations. In the first year of operation of the system Veturilo 1,000 bikes were presented, while in 2014 this number increased to 2,666 bicycles. In accordance with the adopted policy of development, the system will gradually increase. Since August 2014, the number of base stations will increase to 195 with 2,897 bicycles [15].

So far, 180 thousand people in Warsaw have already used the public bicycle, renting bicycles almost 3 million times. All income generated by Veturilo for the City - more than 2 million PLN per year – is spent on a cycling infrastructure [15].

Table 1. Veturilo and other public bikesharing systems in selected European cities

City and the name of the system	The system		The city	
	Number of bicycles	Number of docking stations	Population (thousands)	Area (km ²)
Paris – Velib	20 600	1 451	2 244	105
Barcelona – Bicing	6 000	420	1 621	100
Brussels Cyklocity	5 000	360	1 148	161
Lyon Velo'v	4 000	340	472	48
Warszawa – Veturilo	2 666	174	1 724	517
Amsterdam Mac Bike, Mike's Bike	2 300	Over a dozen traditional, non-automated rentals	801	219
Copenhagen – Bycyklen	2 000	110	519	88
Vienna City Bike	1 200	60	1 731	415
Stockholm, CityBikes	1 000	80	872	188
Frankfurt /Berlin Call e Bike	700	No docking stations, the system of Deutsche Bahn, bicycles mostly parked at railway stations	4 099	1 140
Luksembourg Veli'oh	250	32	94	51

Sources: [2, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 18].

Obviously, it is difficult to compare a scale of Veturilo to the biggest systems such as in Paris, Barcelona or Brussels. But even though the Warsaw's system might be compared with advanced West-European systems – for example it is twice as big as a system in Vienna, city of the population and area comparable with Warsaw.

3. VETURILO – BUSINESS MODEL

There are several business models used in a public bikesharing, depending on units type which are involved in running a system:

- Model 1 – transportation unit of the city,
- Model 2 – municipal unit,
- Model 3 – municipal and private unit,
- Model 4 – private unit [1, p. 104].

In Warsaw, a public bikesharing is contracted by the municipality from a private operator, but some of the tasks associated with the management system are provided by a Public Transport Unit in Warsaw. The Veturilo represents third business model - municipal and private units are involved in running the system. System's operator, selected in the tender resolved in April 2012, is a consortium of Nextbike Poland Sp. z oo, Nextbike GmbH and Mifa Mitteldeutsche Fahrradwerke AG. The agreement with the consortium in the amount of approximately 19 million PLN, was concluded by a November 2016 [20].

The adopted model assumes that the municipality provides free land for docking stations, while the private operator provides the infrastructure and its service. In particular, the company is responsible for:

- providing a docking station with a computer system,
- providing bicycles,
- bicycle service,
- reallocation of the bicycles between base stations,
- running a call center,
- providing payment for the rental service.

The operator receives remuneration for running the system (monthly flat rate) paid by the city. Fees paid by users and incomes coming from advertisements placed on bicycles and base stations are a source of income of the city.

Along with the popularization of a public bikesharing, new base stations were funded in 2013 from the budgets of the selected districts in Warsaw (Targówek, Żoliborz, Białołęka, Wola, Włochy, Ochota, Ursynów). There are also examples of private companies financing new base stations, e.g.: Arkadia shopping center, Galeria Mokotów, Poleczki Business Park, LOT Polish Airlines [19].

Using public bikesharing requires pre-payment (10 PLN) and regular fees based on rental time. The first period of the use is free, the fee is not charged for the first 20 minutes. Another 40 minutes costs 1 PLN, then the fee shall be charged for another hour (3 PLN for the second hour, 5 PLN for the third hour, 7 PLN for the fourth and the following hours. Bicycle cannot be borrowed for a period longer than 12 hours [15].

In most European systems the first 30 minutes or even an hour of a bicycle ride are free (Brussels, Lyon, Paris, Vienna, Luxembourg) [9, 10, 11, 12, 18]. The next time

of bicycle use is paid, there are progressive tariffs, promoting short trips. In some cities subscriptions are used for system users. Subscription price is varied because of the duration of the subscription (the longer the subscription the lower price for rides), age of the users of the system (there are discounts for students) [6, 7, 8, 10, 11, 12]. In Brussels, the users of the system, registered with the rental to 30 September 2014 can enjoy free cycling for six months [18].

4. CONCLUSIONS

Public bikesharing is a new phenomenon in Poland, the oldest system – in Cracow – was introduced a few years ago, in 2008.

Veturilo system in Warsaw is the largest public bikesharing system in Poland. It represents third generation of systems using electronic communication for bicycle pickup, drop-off and tracking. This is the most popular generation of systems nowadays. It does not offer newest innovations (e.g. systems without docking stations) but provides reasonable quality / cost ratio.

Despite the very short period of existence (only 2 years) it has already achieved a large scale – 2666 bicycles and the plans are very ambitious. The scale might be compared with advanced West-European systems.

Members of the system have accepted public bikesharing as a new product. This is confirmed by statistics; 180 thousand of users have already used the public bicycle. Moreover, private companies appreciate bikesharing system as well. There are several examples of companies funding base stations for bicycles.

The Veturilo is based on a business model assuming municipal and private units involved in running the system. Some of tasks are provided by Public Transport Unit in Warsaw, some – by private operator. The authorities chose experienced company, an entity belonging to a global company in this field. It resulted with using the best international practices while building Veturilo system.

It seems that Veturilo system helps to popularize the idea of a public bikesharing in Poland. The owners of the existing systems have announced development plans and there is an increasing number of cities declaring the intention to introduce new systems.

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