

УДК 811.111:656.183.076.3

M. Marchuk, A. Shkompletova, A. Boyarskaya

Bicycle sharing system

Belarusian National Technical University

Minsk, Belarus

It's no surprise that city bike sharing programs have exploded in popularity the last decade. Accessibility and affordability have helped to promote the concept of a short-term bike rental system as a win-win for just about anyone who is willing to ditch the use of a car for a bike

Bicycle sharing system - rental system that is usually established on a commercial basis, which allows rent a bike at one of the automated stations to travel and return the bike to any rental, set in the same city.

The purpose of the program - to provide residents and tourists a free or very cheap access to a bicycle for short-term (no more than 3 hours), travel around the city, as an alternative to motorized public transport and car, thereby improve the environment.

Sharing bikes appeared as a non-governmental initiative, created by several independent organizations such as the attempt to transplant motorists on bicycles to reduce pollution and improve the population. Since 1974, many city governments and non-governmental organizations attended the creation of a bike sharing systems and began to consider it as part of the public transport system.

Types

Unresolved use: One of the species, in which bicycles are freely available for anyone wishing to travel on a limited area (e.g. campus). It does not require identification card, credit card or membership card. After use, the bicycle remains are not

locked up, so anyone can pick up the bike, and for the return journey, you may have to look for another.

Deposit: In this form, you can rent a bike after making a small deposit. The deposit is refunded when you return the bike.

Membership: In this version of the system, bicycles are kept either at volunteer-run hubs or at self-service terminals throughout the city. Individuals registered with the program identify themselves with their membership card (or by a smart card, via cell phone, or other methods) at any of the hubs to check out a bicycle for a short period of time, usually three hours or less. In many schemes the first half-hour is free.

Long-term checkout: Sometimes known as bike library systems, these bicycles may be lent free of charge, for a refundable deposit, or for a small fee. A bicycle is checked out to one person who will typically keep the bike for several months, and is encouraged or obliged to lock it between uses

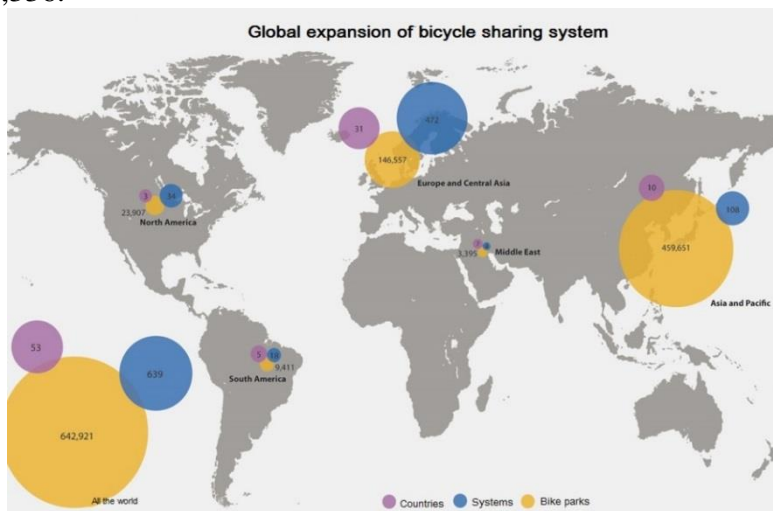
Partnership with public transport sector: In a national-level program a passenger railway operator or infrastructure manager partners with a national cycling organization and others to create a system closely connected with public transport. These programs usually allow for a longer rental time of up to 24 or 48 hours, as well as tourists and round trips.

In May 2011, there were around 375 bike-sharing systems comprising 236,000 bicycles, and by April 2013 there were around 535 schemes around the world, made of an estimated fleet of 517,000 bicycles. As of June 2014, public bike-sharing systems were operating in 50 countries on five continents, including 712 cities, operating approximately 806,200 bicycles at 37,500 stations.

In 2012 the Wuhan and Hangzhou Public Bicycle programs in China are the largest in the world, with around 90,000 and 60,000 bicycles respectively. In Hangzhou

there are over 2,400 stations. The Vélib' in Paris, which comprises around 18,000 bicycles and 1,230 bicycle stations, is the largest outside of China. Santander Cycles in London has about 8,000 bikes, and New York City's has about 6,000. As of May 2011, the countries with the most programs are France with 29, Spain (25), Italy (19), and China (19).

As of July 2013, the systems with the higher market penetration are Velib' in Paris with 1 bike per 97 inhabitants, Vélo'v in Lyon with 1 bike per 121 residents, and Hangzhou in China with 1 per 145. Barcelona's Bicing has 1 per 270, Montreal's Bixi has 1 per 300, London's Santander Cycles has 1 per 984, and New York City's City Bike has 1 per 8,336.



Bicycle sharing system in London

How it works: urban bike rental network earned in London in the summer of 2010. In its development and launch, as well as 140 million pounds has been spent the first six years of operation, 25 of which provide a bank Barclays network, which became the sole sponsor of the project, and received in return the right to place on vehicles of your logo. As in the first

months after the launch, and now the London bike rental does not bring substantial income. Typically, the length of free travel does not exceed half an hour. So income is provided only through fee subscriptions, the cost of which ranges from 2 to 90 pounds. Rent launched with the aim to solve, at least partially, the problem of urban congestion; however, this problem was never solved. Even though in recent years the Londoners increasingly began to use bikes, this is not enough to relieve the road. Before you rent a bike, you need to buy a special dongle (3 pounds). Then, the client is invited to choose one of three possible rates: daily, weekly or yearly. Criticism is not only relatively high price of bicycles, but also their device. In particular, users complain about the lack of baskets and locks on the bikes. The main fan hire London is the Mayor Boris Johnson of the British capital. Each year he personally opens bike season in Hyde Park, but other than that almost always goes to work by bicycle.

Unfortunately, there is no bicycle sharing system in Belarus.

Advantages of bicycle sharing system

Plans flexibility

Public rental involves a combination of different ways to get to a place. It is impossible with a personal bike.

Security

No need to worry about parking and secure bicycle: leave it at the station, it is a public property.

Disadvantages of bike sharing system

Irresponsibility

Intensive use of bicycles by people who are not responsible for their condition affects the copies.

Pre-planned route

With the help of bicycle sharing system you cannot always reach from point A to point B. So you have to plan your route, taking into account the available stations.