BIKE. TRAIN. BIKE.

FASTER. EASIER. COOLER.
WHY BiTiBi?

COMBINING BIKES & TRAINS

The future of urban mobility is the revival of the tried and tested combination of bicycles and trains.

BiTiBi (Bike-Train-Bike) is an innovative, three-year project funded by the European Union aimed at improving the livability of European cities and improving the energy efficiency of our transport. Combining the two most energy efficient modes of transportation, the bicycle and the train, provides a seamless door-to-door transport connection. Faster, easier and cooler.

MODERN PARADIGM SHIFT

BiTiBi services used the Dutch model as inspiration to promote the bike-train-bike modal merger instead of cars and the combination of cars and trains. The project applied lessons learned from the Dutch approach and worked to solve typical issues such as lack of parking at stations; no last mile solution when taking the train; ineffective fare integration or worse, none at all; bike services not corresponding to user needs; no bicycle friendly access to train stations; lack of knowledge about the available services and cultural barriers.

BIODINO BLOCKS (BB) - STEP-BY-STEP APPROACH

BiTiBi created six building blocks to guide the development, implementation and evaluation of the pilot projects.

BB1 - Build safe, sheltered, and convenient bike parking
Location is an absolute priority. Racks and parking facilities at the wrong location won’t be used.

BB2 - Offer convenient public bikes
At railway stations a back-to-one bike rental system should be available. Users return their rented bikes to the station at the end of the rental period in this system.

BB3 - Unite the bike-train organisations
Having one integrated organisation is the best guarantee for a successful and intuitive door-to-door approach.

BB4 - Integrate payment systems of bike and rail services
Integrated payment of all rail and bicycle services adds convenience to users.

BB5 - Communicate positively
Build communication strategies around the keywords: easy, fast, affordable, convenient, cool…

BB6 - Bicycle Infrastructure
Develop safe bike infrastructure to reach the station.

PILOT PROJECT SUCCESS

Pilot projects were implemented in the regions of Barcelona, Milan, Liverpool and in Belgium with the help from ten partners. The goal was to demonstrate that bike-train-bike combinations work and to inspire all European cities to consider this modern, multi-modal approach to transport. BiTiBi successfully substituted trips made by cars with bike-train-bike transport in all pilot locations, effectively increasing the modal share of this transit combination by the end of the three-year project.
DUTCH APPROACH

CYCLING CULTURE
With 26% of all daily trips achieved by bike, cycling is an integral part of daily life for everyone in the Netherlands. The country leads the way when it comes to the bike-train-bike combination. This began in the late 1990’s when Dutch train officials noticed old bikes were being parked and left at destination stations by passengers who used them for semi-regular trips. In response, an investment plan to enlarge and renew all cycling facilities at railway stations was passed in 1999. By 2002, railway operator NS had already observed a 20% increase in passengers. Today nearly half of all train passengers take a bike to reach their station.

BICYCLE PARKING
In addition to offering a high level of services, safe bike parking for almost 500,000 bicycles is available at train stations and typically has direct connection to the platforms or the station hall. All these facilities make cycling to train stations an easy and attractive option. This shows us that increasing bicycle parking capacity at train stations leads to more passengers using trains.

If the bike parking facility cannot be built within the station, it is crucial to gain a solid understanding of the access routes and to position it in their “flow”. From the Dutch experience, we can recommend to install the first rack for smaller stations 10-20 meters from the station entrance. At larger stations, greater distances are acceptable.

OY-FIETS
Key to the success of the bike-train-bike combination is OV-fiets. Launched in 2003, the public bike – OV-fiets – is now available at 280 out of 410 stations across the country. OV-fiets allows train passengers to reach their final destination by bike after disembarking. These bicycles, in a classic Dutch design, are provided by the main railway operator NS. The same “OV-chipkaart” transit card that is used on trains, buses, metro and trams throughout the country is also used for renting an OV-fiets.

The fee includes a 24-hour period of use and the bike can be picked up and dropped off at the same station.

A highly valued service offered by the OV-fiets is the option to rent two bikes at one time. How does it work? With a single subscription, a member can rent two bikes at the same time and from the same station. The price of the second bike is the same as the first. Therefore, you can take a family member, a friend or a colleague with you.
BIKE & GO AND SECURED BIKE SHELTERS

Merseyrail operates the urban railways in the Liverpool area and provides Bike & Go rentals and secured bike shelters. Bike & Go is a Dutch-inspired nationwide A-to-A bicycle scheme available at 70 railway stations across the UK enabling the pilot project to have an impact across the country. The secured bike shelters are available at 90% of Liverpool's urban railway stations. Marketing activities created significant results at a majority of the participating stations and increased awareness of services.

Bike Parking Spots at Stations

INSPIRING MARKETING STRATEGIES (BB5)

The BiTiBi UK pilot project was particularly effective in their marketing efforts. Successful actions included:

- Creating promotional materials to celebrate the second anniversary of Bike & Go at the Liverpool South Parkway train station with passengers and bike users.

- Developing Business-to-Business (B2B) marketing: Discounts for companies, welcome packs for employees, etc. Bike & Go was also promoted at a European employee benefits conference in London.

- Improving the registration process via mobile devices to offer on-the-spot registration. 50% of new Bike & Go members rent a bike the same day they register.

- Developing marketing tools, like member-get-member schemes, to encourage word-of-mouth promotion.

- Increasing Bike & Go visibility by parking a bike in visible places at stations with an attached flag reading: “want to hire me today?” Large banners were also placed all around the station. These visibility efforts contributed to bike rentals more than doubling during the BiTiBi project.

Transportation Modal Shift of Secure Bike Shelter Users and Bike & Go Members considering the same trip

Data based on a 284-participants online survey (June 2016)
The selected pilot projects were the railway stations of Bollate Nord, Bollate Centro, and Como Borghi located in the Milan area. All stations are served by the same railway infrastructure company known as Ferrovienord. Bollate Centro and Bollate Nord stations already had safe and sheltered pre-BiTiBi bike parking facilities, with 200 spaces in Bollate Centro and 100 spaces in Bollate Nord. Como Borghi train station had 20 non-sheltered bike parking spaces. Despite these existing parking facilities, there was no comprehensive strategy for bike parking. Thanks to BiTiBi, Ferrovienord worked on creating and implementing an effective bike parking strategy in the Milan area.

**BICYCLE PARKING (BB1)**

As part of the pilot project, a bike parking facility designed for 90 bicycles was opened at the Como Borghi station. The parking facility was built as close as possible to the train platforms so that cyclists can park a bike and get to their platform in just a few minutes. Arriving from the square in front of the station, cyclists have direct and easy access to the parking facility through a front entrance followed by direct access to train platforms through another door. Customers must be in possession of a swipe card, the same card used to get a train ticket, in order to access the bike parking facility. The card is programmed to allow the customer to access two bike parking facilities on the train network.

While Como Borghi is a rather small station, the opening of the bike parking facility demonstrates that bike parking strategies can be successfully implemented at any scale and have a positive impact.
In the Barcelona metropolitan area, two municipalities were involved in developing BiTiBi pilot projects: Sant Cugat del Vallès and Sant Boi de Llobregat. These two cities are strategically placed for first and last mile commuters and are located in the Ferrocarrils de la Generalitat de Catalunya (FGC) operational corridors. Large companies, hospitals, universities and industrial areas fall within a 3 km radius of each station, which means employees and students can benefit from the bike and train combination for their daily commute instead of driving a car.

BICYCLE PARKING (BB1)
In Sant Cugat and Sant Boi, safe and secure bike parking stations have been built by the entrances of the train stations. In Sant Cugat, the soon-to-open 120 space bike parking facility will be expanded to 300 as demand grows. In Sant Boi, a secure bike storage for company fleets was opened in October 2016.

Plenty of promotional efforts have been aimed at companies, some of them promoting cycling within their staff. For example, the bike operator organised “Try a Bike & Ride to the Station” events and invited several companies to participate.

COMPANY BIKE FLEET (BB2)
A Business-to-Business proposition for the last mile (including maintenance and insured electric bicycles) has been offered to companies in both cities. In total, 20 e-bikes are being provided to companies whose employees commute by train. Both Sant Cugat and Sant Boi are currently doing half-year pilot projects to make free rental bikes available for participating companies.
BELGIUM

GHENT & LIÈGE - BLUE-BIKE

Launched in 2011, the Blue-bike service is a back-to-one bicycle sharing system to enable railway passengers to cover the last mile of their journey. At the beginning of the BiTiBi in 2014, the project locations had 42 operational bike sharing stations known as Blue-bike. There are now 48 Blue-bike stations, with the goal of reaching 115 stations by the end of 2020.

Ghent and Liège were chosen for the BiTiBi pilot projects. Ghent is in the north of Belgium (Flanders) and is known for its bicycle culture. While Liège, in the south (Wallonia), is still developing bicycle transit.

Bike Parking Spots at Stations

Bike Rentals per Month

INSPIRING COMMUNICATIONS STRATEGIES (BB5)

One of the primary objectives of the Belgian pilot project was to focus on a marketing and communication strategy and to strengthen the Blue-bike brand in Belgium. BiTiBi and Blue-Bike achieved this through a variety of actions which include:

- Development of social media communications (facebook, twitter, instagram) and creation of a community of users to share a positive image of the service. Blue-bike also organised photo contests, set up Facebook targeted advertising, and used these forms of media to get user feedback. The train company SNCB/NMBS also promoted the bike rental service on social media.

- Creation of a three-party payment partnership to launch the Blue-bike service in new cities: one euro is paid for by the city, one euro by the Flemish Government and one euro by the user. When a city financially commits to this partnership, it also invests in communication campaigns to promote it.

- Put in place local marketing and commercial actions: flyers available on distributors, smartphone holder offered to new users, free train cards for B2B clients, and free coffee in some cafés for Blue-bike users.

- Blue-bike joined Mobib, the national smart card for transit to create a user-friendly integrated payment system.
Global Results of the Pilot Projects: 2015-2016, Two Years of Increase

**PROJECT RESULTS**

More BiTiBi services users in Europe

**BIKE SHARES INCREASED**

The development of several bike share systems in the BiTiBi pilot projects all demonstrated how cycling can be the fastest and easiest way for a passenger to reach their final destination. Imagine the final destination is 3km from a railway station:

- Walking takes nearly 45 mins.
- Public transport takes 15 mins due to traffic and detours. Waiting time before catching the bus is 10 mins or more. That’s at least 25 mins total.
- A taxi takes only 10 mins, but can be quite expensive.
- A bicycle takes 15 mins from start to finish... bike share schemes at the train station make this possible!

**BIKE PARKING INCREASED**

Safe and secure bike parking facilities are key to encouraging passengers to ride to the train station. In every pilot location, the opening of new parking facilities and an increase in available parking options led to a rise in cycling.

Consider the dilemma of parking cars in a city. When there aren’t places to park a car, there are fewer drivers. The very same is true for cycling. A destination, especially a train station, without safe and sheltered bicycle parking means there will be fewer cyclists.

**CAR DRIVING DECREASED**

The behavioural change in car use is affected by a couple factors. For the whole trip, car use decreases when bike share schemes are implemented. Secure bike parking facilities encourage more passengers to bike to the station, further decreasing the dependence on cars for the first leg of their trip.
ENVIRONMENTAL & SOCIETAL IMPACTS

To demonstrate the large potential societal gains BiTiBi can bring to Europe, the BITibi team developed a scenario for 2030 in which 20% of EU railway users ride a bike to the train station. 20% represents less than half the share of Dutch railways users currently riding a bike to the train station and five times more than the estimated 4% for all European railway users. 4% of railway users riding to the train station was also the BiTiBi average when the pilot projects began.

Results

If 20% of EU railway users arrive at the train station by bike, in 2030 there will be:

- 250 million more railway users
- 5 billion fewer km driven by cars
- Reduction of 800 ktons of CO₂, 55 tons of PM and 250 tons of NOx emitted
- Reduction in energy use from 200,000 toe/km or 2500 Mwh
- 1200 lives saved each year because of the increase in physical activity. This is equivalent to €3 billion in savings in health expenses when a train passenger rides to the station at least three times a week (according to HEAT tool).
- 400% rate of return on investments in bicycle parking
- Healthier and more livable cities

Investment Costs vs. Social Benefits (2030 - whole EU)

Bike parking - Bike to the station

Investment costs in bike parking

Social Benefits (Health)

- 745 million € / year
- 3,076 million € / year

Bike shared scheme - Bike from the station

Investment & maintenance costs in bike shared scheme

Social Benefits (Health & Environment)

- 118 million €*/year

*Calculation assumptions: 123 annual rentals/bike; 16 million rentals in EU; 130 700 bikes needed; last of bike parking: 20 years; maintenance cost: 200€/year/rack.

400% RATE OF RETURN

Considering the basic expense of installing bike parking facilities and the different benefits they provide, there is a 400% societal return on investment. In other words, society benefits four times as much as the cost of the bike parking facilities. Annually they provide €3 billion in benefits (mainly related to health) and cost €750 million for maintenance, etc.

Using our results of modal shift and average trip distances for different modes from the BiTiBi project, we calculated the car and bus pkms that will be avoided and future cycling and train pkms.
IF YOU RODE A BIKE, YOU’D BE ON THE PLATFORM ALREADY