# Bike Sharing 4.0

Study

Hamburg, June 2016

# Bike sharing is predicted to grow at a very fast pace, opening up to its users a new means of urban transportation

## Management summary

> Major challenges and trends in personal mobility, e.g. enhanced interconnectedness, altered consumer behavior, etc. became the growth engine for bike sharing schemes. Today, ~1,000 bike sharing schemes with more than 1,200,000 bikes are already in operation worldwide and the market is expected to grow by 20% p.a. by 2020. Then, the size of the global market will be between EUR 3.6 and 5.3 bn

> Being low priced and covering short to middle distances, bike sharing closes an important gap between other modes of transportation by providing an easily available door-to-door solution. Depending on the density of the public transportation network, bike sharing can either extend or complement existing public transit systems

> Successful bike sharing schemes are mainly financed by a combination of usage fees and public funds or sometimes advertising. Leading European bike sharing schemes all involve public funding with different levels of private sector involvement

# Six factors on how to run bike sharing schemes sustainably and successfully

## Management summary

> Six success factors for bike sharing schemes have been identified in best practice examples:

(1) High density network: Highly concentrated networks of stations and bikes dramatically increase usage frequency

(2) Multimodal integration: Integration can be achieved through integrated infrastructure and operations, payment and information structure

(3) Simple handling: User-friendly schemes rely on automated rental processes, no obligatory advance registration but fast tracking for registered users

(4) Attractive pricing: An affordable and strategic pricing scale should be designed to promote both ridership and demand

(5) High-quality bike: Reliable bikes require low maintenance and are specially designed to prevent theft yet meet the user's needs

(6) Support of local authorities: Support is key to success due to the schemes' dependency on public funds, land use rights and agencies

> All of the main stakeholders in bike sharing concepts (governments, sponsors, manufacturers and operating companies) need to be aware of the growing market for "bike sharing" and should be supporting, investing in and continuously developing this opportunity

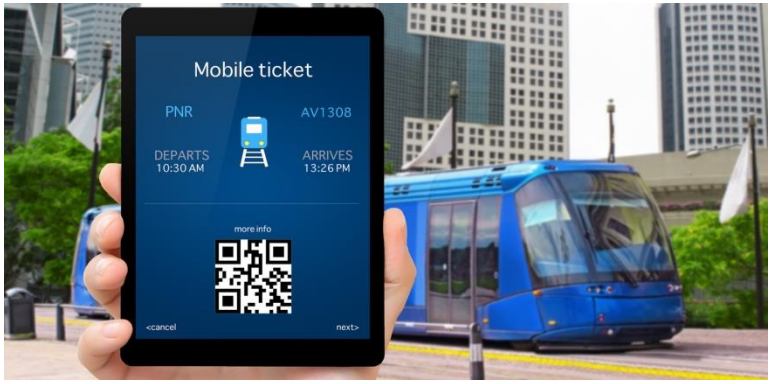
# Innovative mobility services change the existing way of passenger transport fundamentally and sustainably

## What is "innovative mobility"?

### Traditional transportation

- Conventional, rather asset-intensive transport modes and services
- Limited view on single element of travel chain – no focus on optimizing the entire customer journey
- Rather "passive administration" instead of "disruptive or continuous improvement"

### Innovative mobility



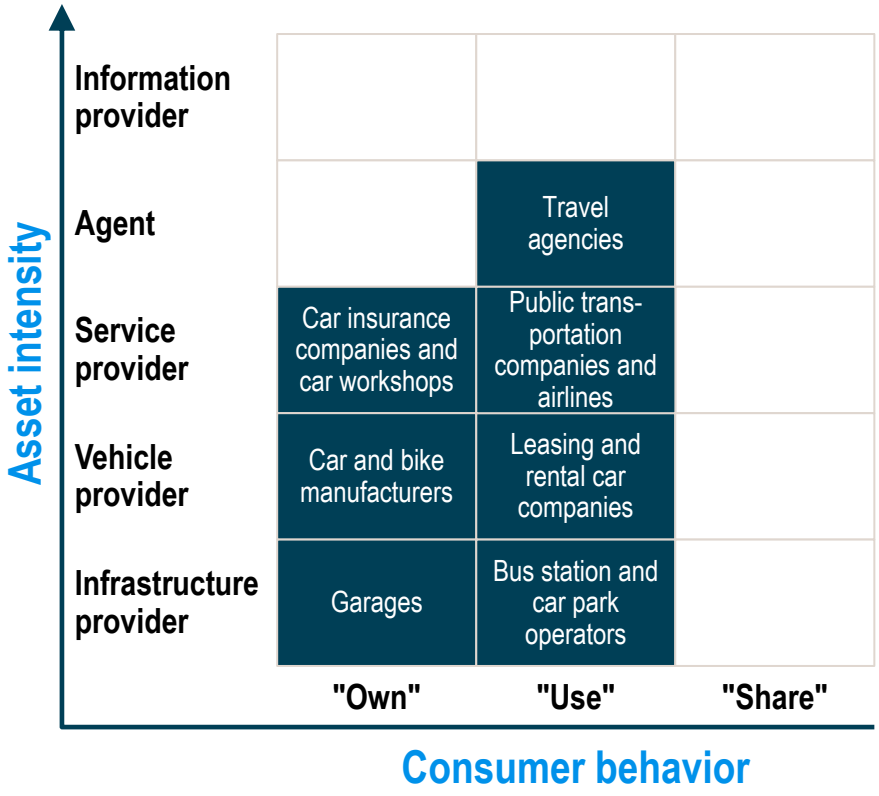

- Intelligent combination of several transport modes and concepts with improved interfaces between modes
- Leveraging new technological trends and possibilities from digitalization
- Shifting paradigms towards sustainability and flexibility of service offering

Source: Roland Berger

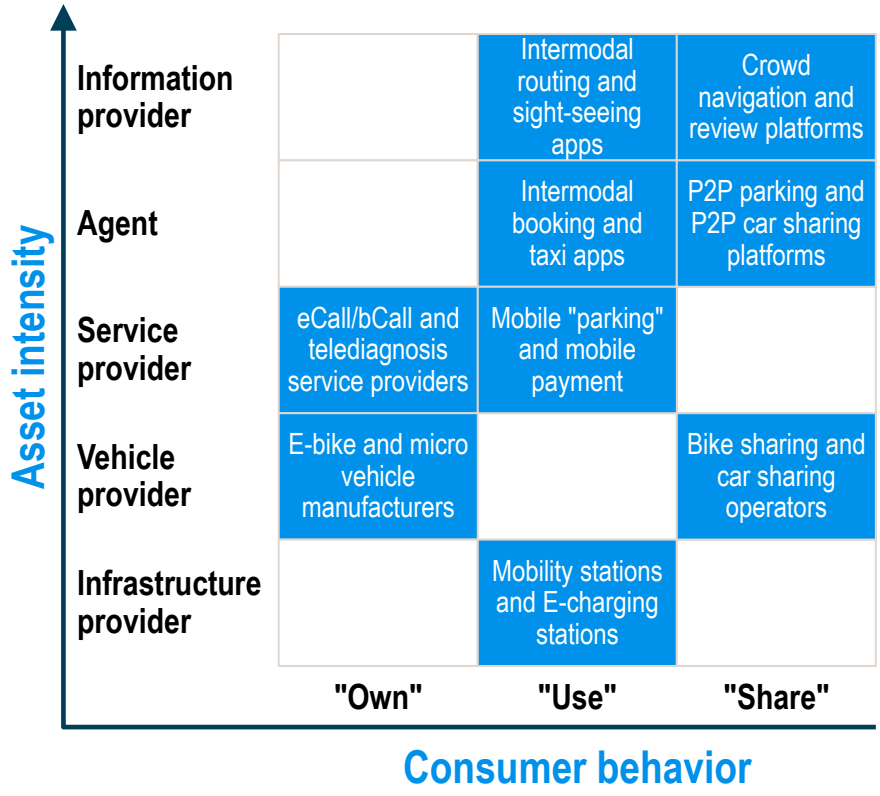
# Business models transform towards lower asset-intensity, whereas customers prefer "sharing" and "using" over "owning"

## Business models

### 1 Traditional transportation




### 2 Innovative mobility: Lower asset intensity




Source: Roland Berger

# Bike sharing addresses major challenges and trends in personal mobility

## Market and mega trends

### Market and customer trends

**Enhanced interconnectedness**

> People, vehicles and infrastructure are increasingly connected (e.g. by real-time data, smartphones)

**Altered consumer behavior**

> People use and share instead of own (share economy)

**Soaring individuality**

> Niche segments arise
> People strive for autonomy

**Increasing convenience**

> People face more time pressure, while increasing comfort expectations

**Diminishing boundaries**

> New players enter established markets
> Players increasingly tend to cooperate

**Challenges and opportunities addressed by bike sharing**

**Globalization** | **Urbanization and growth of megacities** | **Demographic change** | **Scarcity of resources and climate change** | **Technological progress**

### Mega trends

Source: Roland Berger

# Over time, bike sharing developed into a worldwide applied, highly technological and integrated mode of transport business

## Bike sharing development

**1.0**

**"White Bikes"**

- Invented in Amsterdam, Netherlands
- 50 white bicycles, permanently unlocked
- Often stolen/damaged

**1965**

**2.0**

**"Coin-deposit systems"**

- Founded in Copenhagen, Denmark
- Bicycles distinguished by color and design
- Designated locking stations
- Small deposits to unlock bicycles
- More reliable, but almost no information about customer

**1995**

**3.0**

**"IT-Systems"**

- First system founded in Rennes, France
- Bicycles distinguished by design or advertising display
- Designated fixed or flexible docking stations
- User interface necessary for check-ins/outs
- Advanced technology used for locating, reserving and accessing bicycles

**1998**

**4.0**

**"Multi-modal systems"**

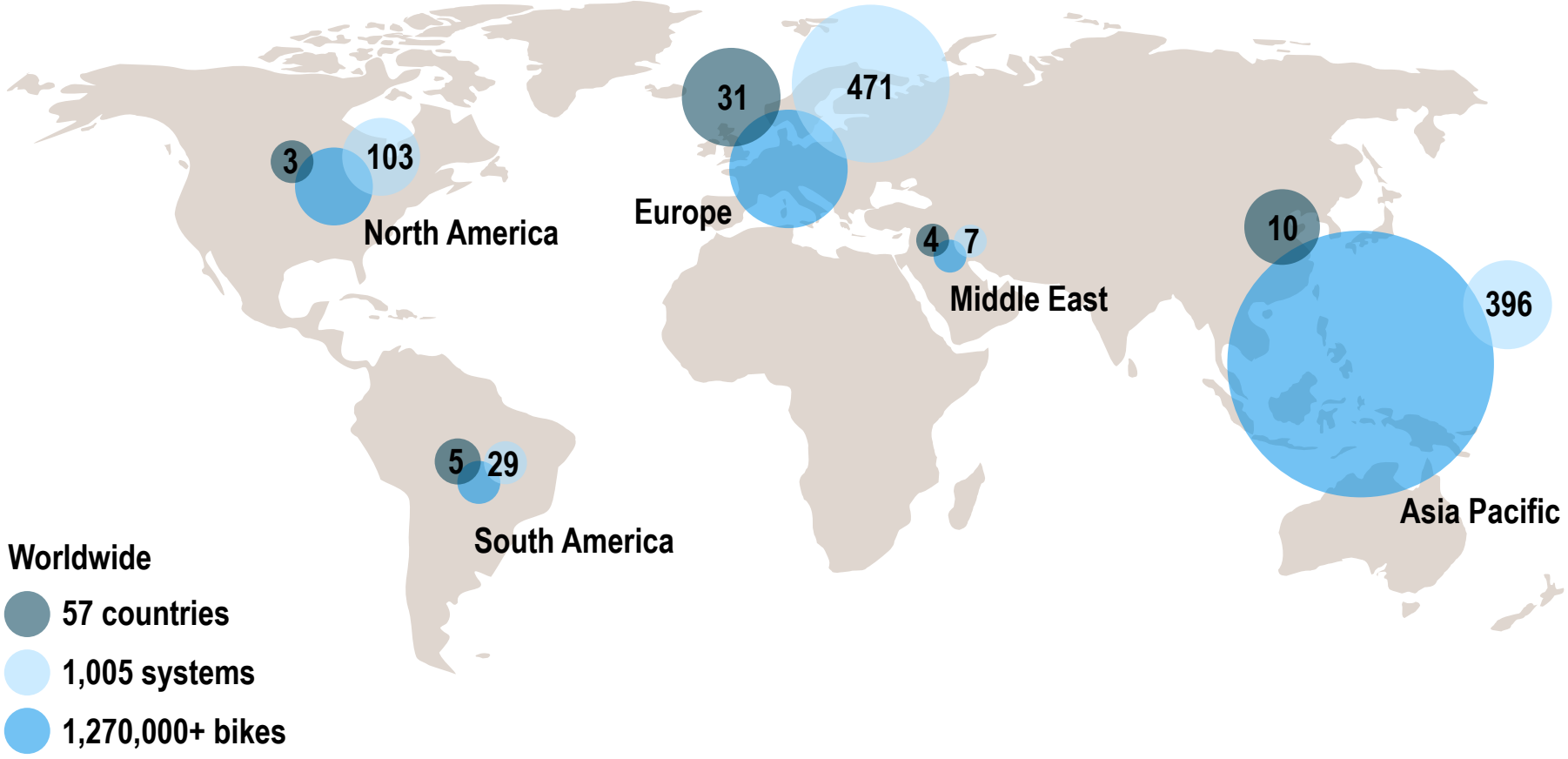
- Worldwide applied
- Bicycles distinguished by design or advertising display
- Designated fixed, flexible, mobile or virtual stations
- User interface necessary for check-ins/outs
- Advanced technology used for locating, reserving and accessing bicycles
- Linked with public transit (e.g. schedules, stations)
- Cleaner technologies (e.g. solar-powered stations, sustainable bicycle redistribution)

**2013 and onwards**

Source: Susan Shaheen, Roland Berger

# About 1,000 bike sharing systems with more than 1,270,000 bikes are already in operation all around the globe – Asia biggest market

## Global presence of bike sharing systems – December 2015



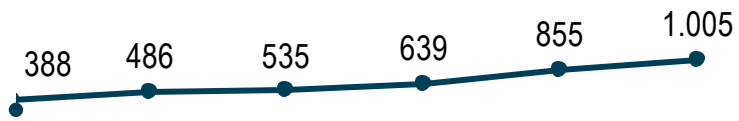

Source: Peter Midgley, press research, Roland Berger

# The number of bikes in bike sharing systems is still growing significantly – Biggest bike sharing systems implemented in China

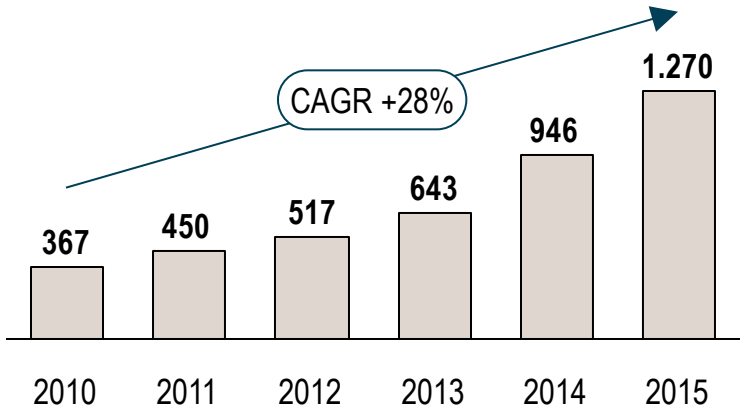
## Development and distribution of bike sharing systems

### Global development of bike sharing schemes

No. of bike sharing schemes

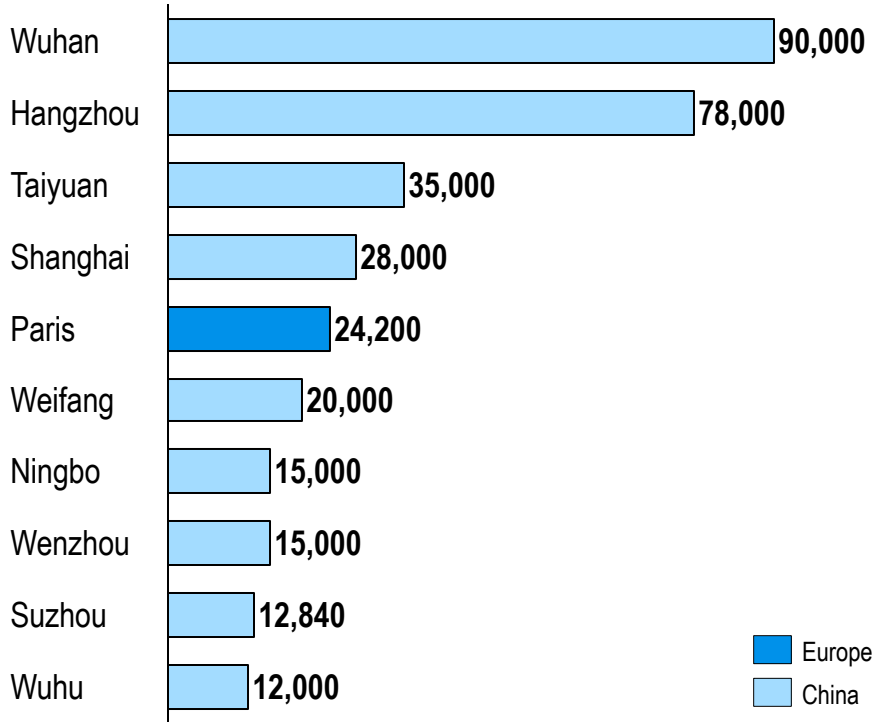



No. of bikes in bike sharing schemes ['000]




### Biggest bike sharing schemes worldwide[1)]

No. of bikes ['000]




1) As of 2014

Source: Earth Policy Institute, Peter Midgley, Roland Berger

# The market is expected to grow by 20% p.a. until 2020 – Then, the market will be between EUR 3.6 and 5.3 bn

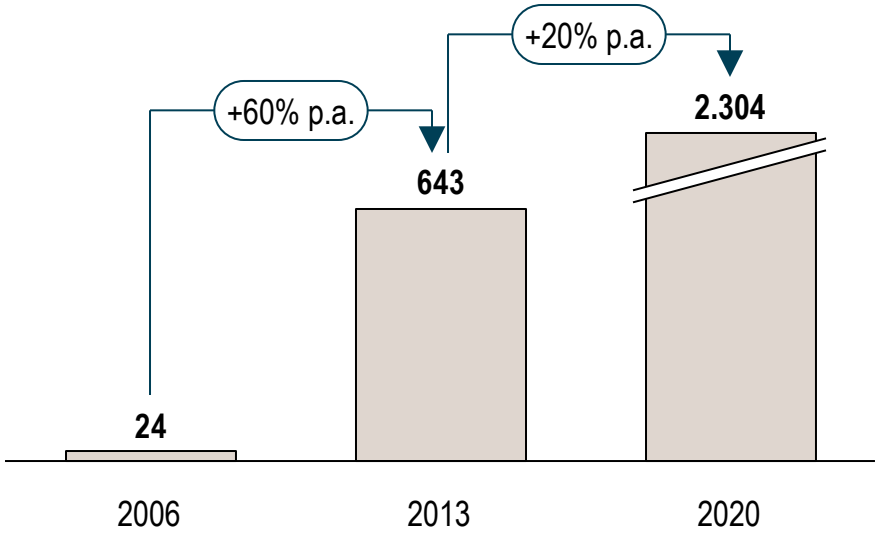
## Outlook

### Market development [2006-2020]

Market size [EUR m]

47 | 1,250 | 3,600-5,300

No. of bikes in bike sharing schemes ['000]




### Reasons for growth

- **Increasing urbanization**
  - Increasing traffic and lack of parking space in cities
- **Changing climate**
  - Increasing environmental awareness
  - Scarcity of resources
- **Changing buying behaviors**
  - Sharing rather than owning
- **Increasing political support**
  - Supporting the "bikeability" of a city (e.g. through dedicated bike lanes)
  - Supporting bike sharing schemes financially as sponsor or co-operator
  - Acknowledging bike sharing for fringe benefits
- **Enhanced interconnectedness**
  - Increasing inter-modal transportation

Source: Earth Policy Institute, Peter Midgley, bike sharing provider statistics, press research, Roland Berger

# Being low-priced and covering short to middle distances, bike sharing closes an important gap between other modes

## Transportation niche

**Bike sharing…**

… is faster than walking

… is cheaper than taking a taxi

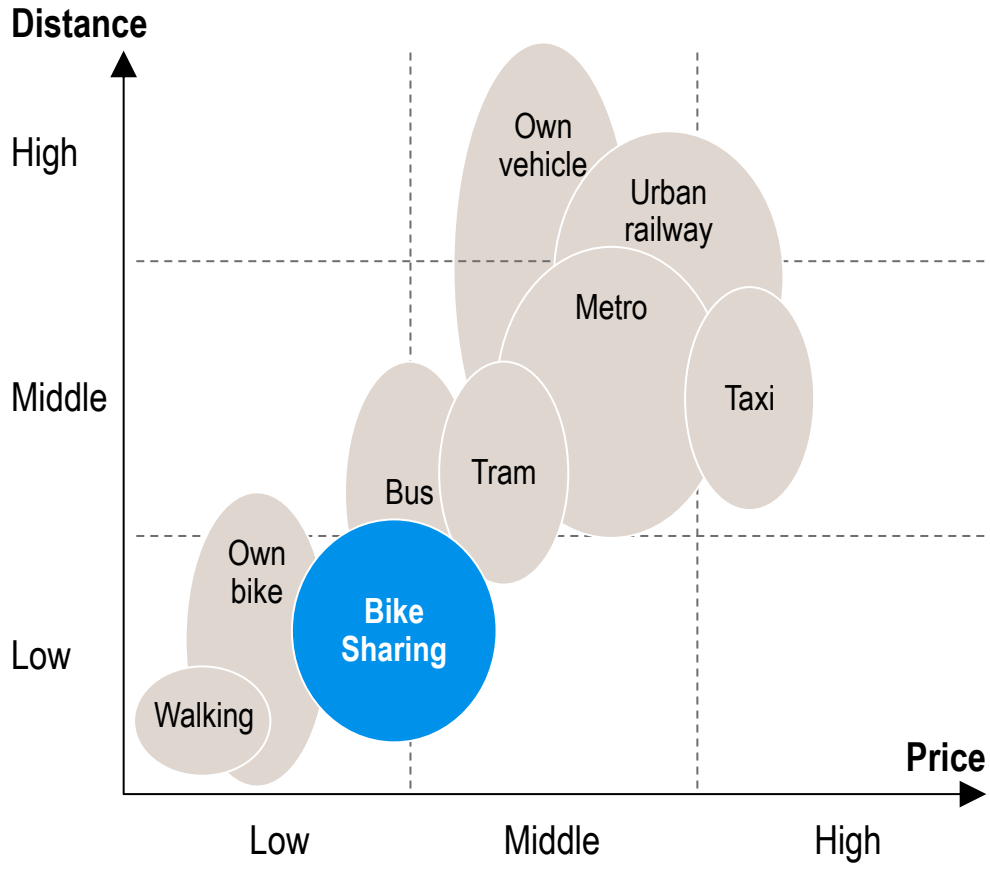
… is more closely meshed than bus and tram

… is easier available than owning a car

… can be combined with other means of transport

… requires less maintenance and is less expensive than owning a car

**… closes the transportation niche for inexpensive short to middle distance ways**

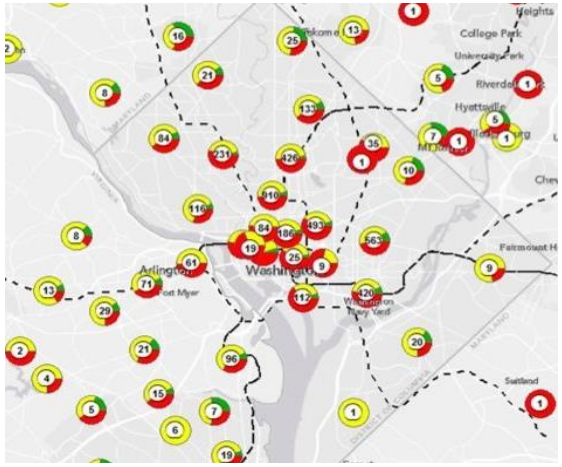



Source: DB Rent, Roland Berger

# Depending on the density of its environment, bike sharing can either extend or complement existing public transit systems

## Bike sharing's role in transit systems

"The denser the urban environment (particularly for rail), the more bike sharing provides new connections that substitute for existing ones."

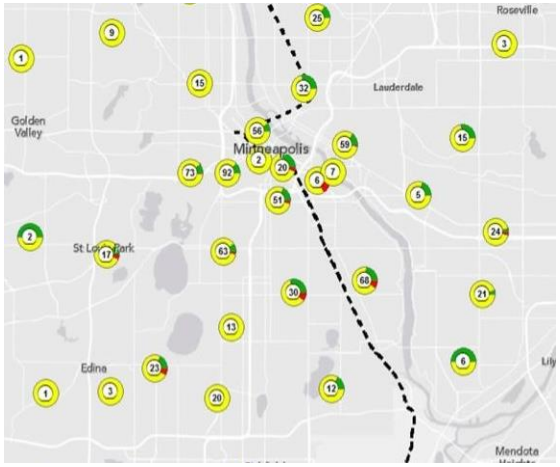



**Washington D.C.**

- 47% of members **decreased** rail use
- 39% of members **decreased** bus use

**Bike sharing relieves pressure from dense and busy public transport networks and offers an additional transport option**

"The less dense the environment, the more bike sharing establishes new connections to the existing public transit system."




**Minneapolis**

- 14% of members **increased** rail use
- 14% of members **increased** bus use

**Bike sharing casts the network denser and facilitates first and last mile but cannot compete with entire journey**

Share of people increasing rail/bus | Share of people not changing rail/bus | Share of people decreasing rail/bus

Source: Evaluating public transit modal shift dynamics in response to bike sharing: a tale o two U.S. cities, Roland Berger

# There are essentially two bike sharing models in the market: Free-floating and station-based bike sharing

## Bike sharing models

### BASIC MODELS

#### Free-floating bike sharing

- Inner-city rentals without any fixed pick-up points within a defined catchment area
- Bicycles can be picked up and dropped off at any intersection
- Transaction normally done by phone or app

#### Station-based bike sharing

- Inner-city rental of bicycles from specific pick-up points
- Bicycles are rented and returned at specific pick-up points
- Transaction normally done at a user terminal at the station or by app

### SPECIAL FORMATS

#### E-bike sharing

- Inner-city rental of e-bikes from specific charging stations
- Bikes must be plugged in when returned to recharge the battery
- Transaction normally done at a user terminal at the station or by app

#### Company bike sharing

- Company-specific rental of bicycles, e.g. as a service for company employees on site, for large events such as trade shows or for hotel guests
- Can either be connected to municipal systems or used for a limited time

Source: Roland Berger

# Bike sharing operators are differentiated by their goal of operation, financing sources as well as ownership and operations

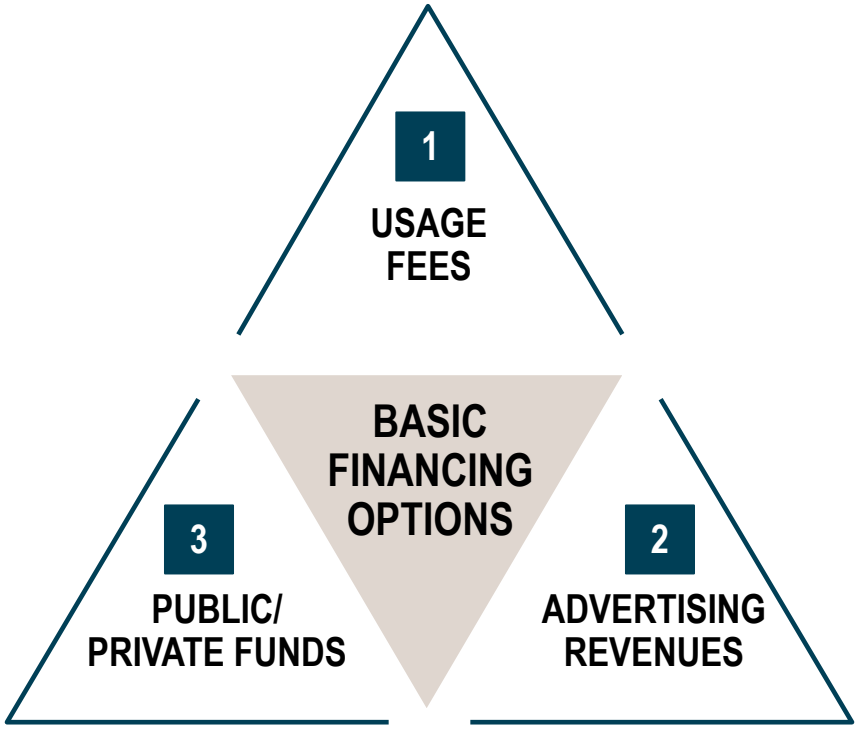
## Operator models

| | | | | |
|---|---|---|---|---|
| **Overall goals** | **For Profit** | | **Non-Profit** | |
| | > Owned and operated by a private company, responsible for fundraising & costs<br>> Quick raise of private investments | | > Owned and operated by an agency, responsible for fundraising & costs<br>> Flexible funding (govt. or local sources) | |
| **Financing** | **Private** | | | **Public** |
| | > Private loans<br>> Private grants<br>> Advertising | **and/or** | | > Federal grants<br>> State grants<br>> City funds |
| **Owner-ship & Operations** | **Ownership** | **Private** | **Public** | **Private** | **Public** |
| | **Operations** | **Private** | **Private** | **Public** | **Public** |
| | | > Privately owned and operated<br>> Street furniture contract<br>> Third-party operated<br>> Vendor operated | > Publicly Owned/ Contractor Operated | > N/A | > Publicly Owned and Operated |

Source: Programs promote bikesharing in the US, Public Bikesharing in North America, Bike Share Opportunities in NYC, Roland Berger

# Successful bike sharing schemes are mainly financed by a combination of usage fees and public funds, sometimes even advertising

## Main financing models




**1 USAGE FEES**
**(collected by 95% of operators)**
- > Access fees
- > Rental fees
- > Season tickets

**2 ADVERTISING REVENUES**
**(collected by 68-89% of operators)**
- > Rental of advertising space on bikes and stations
- > Rental of external advertising space
- > Sponsorship

**3 PUBLIC/PRIVATE FUNDS**
**(collected by 16-32% of operators)**
- > Operating cost subsidies
- > Infrastructure subsidies
- > Research and development funds
- > Donations

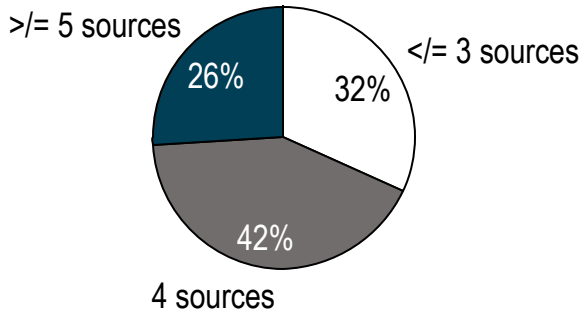
Source: Mineta Transportation Institute, Roland Berger

# Leading European bike sharing schemes all involve public funding on various different levels of independency

## Comparison of financing models

### Financing Models

> A combination of several financing sources is possible
> The majority makes use of 4 sources or more




> These multiple sources are usually a combination of fix sources (e.g. sponsorship) and variable sources (e.g. membership fees)

| Fund type | Advantages | Disadvantages | Example |
|---|---|---|---|
| **Public Private Partnership** | > All logistics handled by the private sector party | > Loss of revenues from advertising | > Paris |
| **Design, Build**[1)] | > Relieved of operating and performance risk for private sector party | > Competition for public funds<br>> Very little control for private sector party | > Munich<br>> Berlin<br>> Frankfurt |
| **Design, Build, Operate, Maintain**[2)] | > Relieved of performance risk for private sector party<br>> Reduced control for public party | > Competition for public funds<br>> Operating risk for private sector party | > Barcelona |
| **Design, Build, Operate, Maintain, Finance**[3)] | > Complete control for private sector party<br>> Assured performance standards | > Risk of disagreement about advert.<br>> Operating and performance risk for private sector party | |

1) Public owner and responsible for operations, maintenance and financing, private company designs and builds scheme 2) Public owner and responsible for financing, private company designs, builds, operates and maintains scheme 3) Public owner, private company responsible for design, building, operating, maintaining and financing

Source: Public bike sharing in North America: Early operator and understanding emerging trends; TransLink Public Bike System Feasibility Study, Roland Berger

# Endogenous (e.g. coverage) and exogenous factors (e.g. "bikeability") made Vélib to become Europe's largest bike sharing scheme

## Bike sharing examples: Good practice – Vélib Paris

### Key Facts

> Public-private partnership, station-based bike-sharing scheme operated by JCDecaux
> Largest bike-sharing scheme in Europe
> Rapidly launched in 2007, doubling the number of bikes within the first six months

| | |
|---|---|
| No. of bikes: | 24,200 |
| No. of stations: | 1,606 |
| Catchment area: | approx. 104 km$^2$ |
| No. of customers: | 286,000 |
| No. of trips per year: | 39,500,000 |
| Avg. trip duration: | 15 min. |

### Success Factors

**Extensive coverage**
> High bike-station density (17 per km²) and availability of bicycles

**Quick roll-out**
> Own internal momentum, program "buzz" after introduction

**Complementary transport mode**
> No subway operations after 1 am

**Easy intermodality**
> Connection to public transport and car-sharing schemes

**Robust yet modern bicycle design**
> Heavy to prevent theft, no exposable cables for more robustness

**High acceptance rate**
> 70% increase in bicycle use, 5% reduction in car use after launch

**Strong city support**
> Paris-initiatives to promote the "bikeability" of the town

Source: Peter Midgley, press research

# Though emerged as an awarded bike sharing scheme, Bixi Montréal became eventually insolvent due to the inability to create profits

## Bike sharing examples: Bad practice – Bixi Montréal

### Key Facts

- City-financed (formerly private-financed), non-station-based bike-sharing scheme operated by the city of Montréal
- Launched in 2007 and initially acknowledged for its techno-logical innovations
- Filed for insolvency in January 2014

| | |
|---|---|
| No. of bikes: | 5,220 |
| No. of stations: | 452 |
| Catchment area: | approx. 82 km$^2$ |
| No. of customers: | 35,000 |
| No. of trips per year: | 3,500,000 |
| Avg. trip duration: | 13 min. |

### Reasons for Failure

**Strong seasonality**
> Operations from April 15 to November 15 (high costs, low loyalty)

**Highly technologized**
> Reduced target group to tech-savvy customers with resp. equipment

**Lack of major sponsorship**
> E.g. London: Santander, Barcelona: Vodafone, Paris: JCDecaux

**Poor management and intransparency**
> Decision towards restructuring rather issuance of new debt in 2014

**Dispersed coverage**
> Low bike-station density (6 per km²) and availability of bicycles

**Broad international orientation**
> Intl. claims for compensation due to delayed delivery of bikes

Source: Peter Midgley, press research

# Bike sharing systems need to be simple, multimodally integrated and low priced offering high-quality bikes in a dense network

## Key success factors

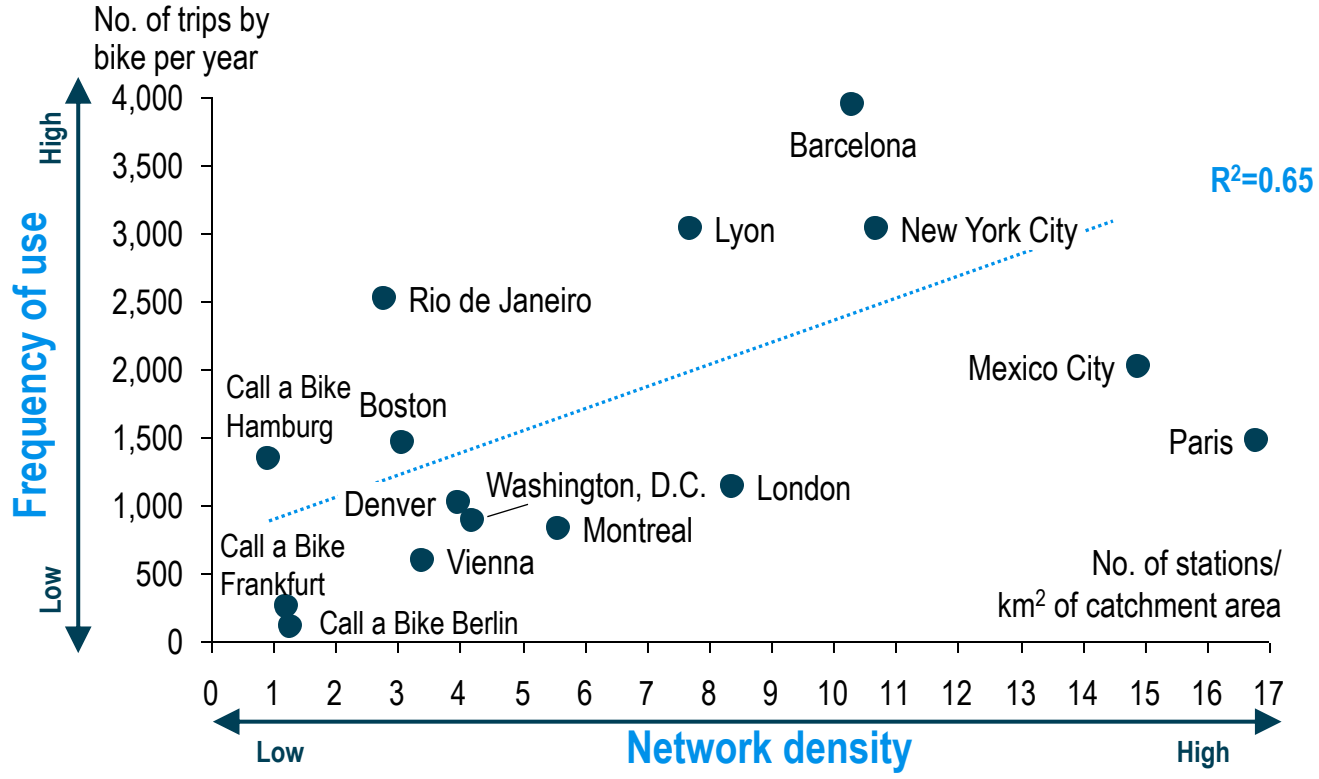
| | |
|---|---|
| **A. High-density network** | Highly concentrated and comprehensive network of stations and bikes and widespread program coverage ensure high accessibility |
| **B. Multimodal integration** | Integrated infrastructure, info-structure and payment with other mobility services enable convenient transfers |
| **C. Simple handling** | User-friendly, automated rental processes and no advance registration increase usability and reduce entry barriers for new users |
| **D. Attractive pricing** | Minutes for free and low priced, competitive fares increase acceptance and usage intensity of bike-sharing offerings |
| **E. High-quality bike** | Easy-to ride but also sturdy and weatherproof bikes ensure a comfortable driving experience and reduce maintenance costs |
| **F. Support of local authorities** | Support of local authorities e.g. in terms of bike lanes, accessibility of public spaces and link to public transport can boost success |

Source: Roland Berger

# Highly concentrated networks of stations and bikes drastically increase usage frequency – Market benchmarks show correlation

## Key success factors – High density network (2012-2013)

### Correlation between network density and frequency of use




> Correlation evident between network density and frequency of use

> However, high network density does not always trigger high usage frequency (e.g. London) – the city itself and the schemes need to provide incentives to increase bike sharing

> Vélib Paris is at the European forefront with 17 stations per km² of catchment area and approx. 1,460 trips per bike per year

Source: ITDP, providers, press research, Roland Berger

# Multimodal integration can be achieved through integrated infrastructure and operations, payment and info structure

## Key success factors – Multimodal integration

### Infrastructure and operations

> Link bike sharing and other modes of transport through multimodal hubs
> Secure easy transfer between modes through bike sharing spots at public transit stations
> Install bike racks on busses to easily transport bicycles

### Payment technology

> Integrate bike sharing into public transport tickets
> Develop comprehensive smart payment card for all services
> Offer one public transportation pricing scheme, including bike sharing

### Information structure

> Integrate bike sharing into public transport control system
> Provide bike sharing user information on public transport interfaces (e.g. availability of bikes at stations)
> Combine traditional public transport and bike sharing for routing options[1)]

1) E.g. HVV; Hamburg, Germany

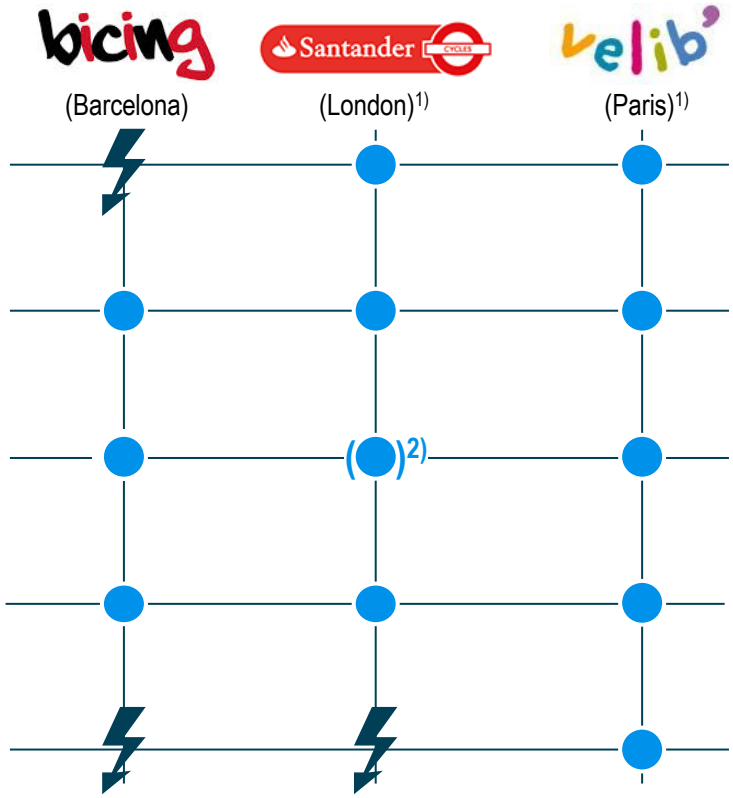
Source: Roland Berger

# User-friendly schemes rely on automated rental processes, no obligatory advance registration but fast tracks for registered users

## Key success factors – Simple handling

| | |
|---|---|
| **No advance registration** | Bikes can be loan out on the spot, usually with a credit card or ID |
| **"Fast track" access for registered users** | Registered users receive a membership card and simply swipe the card over the card reader to unlock a bike |
| **Automatic bike unlocking** | Bikes are secured by locks that open automatically when bike rent starts |
| **Automatic bike return** | Rent is automatically completed when bikes are returned or locked |
| **Payment with public transit customer card** | Bike rent can be billed automatically to the public transit customer card |

**SELECTED EXAMPLES**




1) Operators of bike sharing: Santander Cycle Hire, Vélib (JV by JCDecaux) 2) Only with quick access for registered users

Source: Providers, press research, Roland Berger

# Affordable and strategic pricing scale should be designed to promote both, ridership and demand

## Key success factors – Attractive pricing

### Prerequisites

- Gather knowledge of **habits** and **average routes** of the target group, the city's criteria, policies and objectives
  - E.g.: New York City decided initially to keep fees for bike sharing lower than those for public transit
- Analyze **price-elasticity** first (only little re-search available)
- Make sure to set prices for the medium-/long term – fast **post implementation price changes** will most likely lead to public backlashes

### Implementation

- **Incentivize short trips** in order to maximize the turnover of bikes
  - E.g.: Offering first increment of time for free (usually between 30-45 minutes)
- **Balance subscription fees** and **usage fees**
  - Subscription fees guarantee for stable revenues and give insights into customer data – also interesting for potential sponsorships – through registration
  - Anonymous usage fees have the potential for higher revenue creation
- Attract both **long-term users** and **casual users**
  - Long-term users account for the majority of trips and deter theft, but are responsible for more wear-and-tear on system
  - Causal users account for 2/3 of revenue, as most are not aware of the free first increment

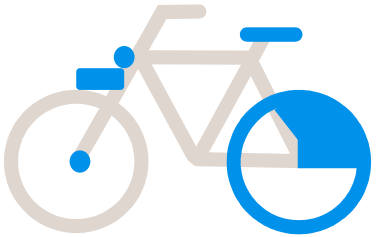
Source: Cohen, 2013, ITDP The Bike-share Planning Guide, Roland Berger

# Reliable bikes require low maintenance, are specially designed to prevent theft, yet fulfill the user's needs

## Key success factors – High-quality bike

**General bike requirements**

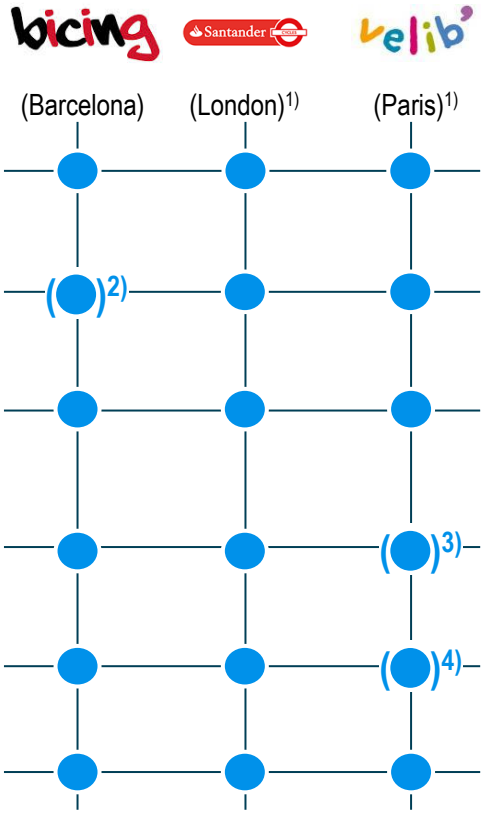
> Attractive, yet robust
> Overall appearance as sleek and modern
> Size aligned with average user height
> Robustness allows for min. 6 uses a day
> Tires, chains and breaks designed for low maintenance efforts
> Special parts, proprietary tooling, non-common sizes to deter theft
> Weight ranges between 14.3 kg and 22 kg



**Part-specific requirements**

> Easily adjustable seat post, as only one size of bike available
> Light and reflectors for increased safety
> Front basket for personal items – to prevent over-load of rears
> Mud and chain guards to increase robustness and protect user from dirt
> Durable tires to keep maintenance low
> Drum brakes to keep maintenance low

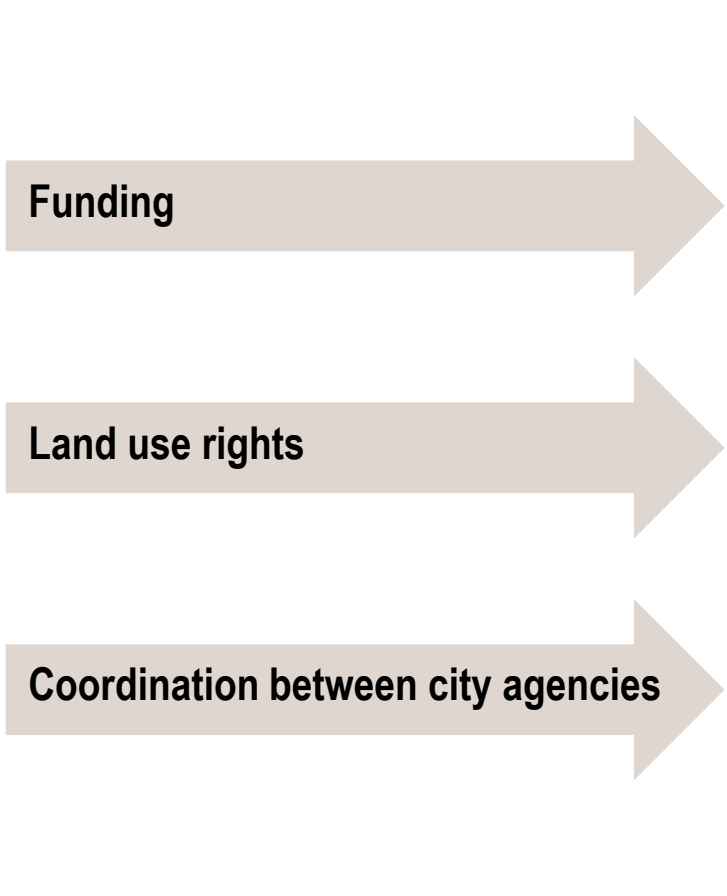
**SELECTED EXAMPLES**




1) Operators of bike sharing: Santander Cycle Hire, Vélib (JV by JCDecaux) 2) No reflectors 3) Parts installed, however chain guard catching the crank 2nd most common problem 4) Tires intended to be durable, however, flat tires is the most common problem in the Vélib bike sharing scheme
Source: ITDP The Bike-share Planning Guide, Providers, press research, Roland Berger

# The support of local authorities is key to success, due to the schemes' dependency on public funds, land use rights and agencies

## Key success factors – Support of local authorities




> **Who to ask for support?**
Authoritative support should be sought at multiple parties to ensure for ongoing support over several years and election cycles

> **How to involve them?**
Throughout the different stages of the venture
- Educating authoritative representatives about bike sharing benefits
- Travelling to other bike sharing cities along with decision-makers to see a program in place
- Talking to other implementers

> **What are the authorities' benefits?**
Decision-makers will then become champions for the new system in their cities (e.g. London Mayor Boris Johnson's support led to the system's nickname "Boris Bikes")

Depending on the density of the environment, bike sharing will either relieve the existing public transport system or complement it to establish new connections

Source: ITDP The Bike Share Planning Guide, Roland Berger

# The exemplary business case shows that the business model can be operated profitably, with an EBIT margin approximately 10%

## Exemplary and rough business case[1] [EUR m]

**ASSUMPTIONS**

Business model:
Station-based bike sharing system with regular bikes

KPI's

| | |
|---|---|
| # Cities | 1 |
| # Inhab. | 500,000 |
| # Bikes | 600 |

**REVENUES**

| | |
|---|---|
| **Rental revenues** | **1** |
| Number of rentals p.a. [# m] | 1 |
| Ø length of rentals [min] | 30 |
| Ø return per rental [EUR] | 1 |
| **Advertising revenues** | **0.4** |
| Number of bikes [#] | 600 |
| Number of stations [#] | 60 |
| Ø return per bike p.a. [EUR] | 160 |
| Ø return per station p.a. [EUR] | 6,000 |

**EXPENDITURES**

| | |
|---|---|
| **Op. expenditures** | **0.5** |
| Rent for private/public space | 0.1 |
| Repair and distribution of bikes | 0.3 |
| Insurance, power and other | 0.1 |
| **Personnel expenses** | **0.1** |
| **Marketing and sales expenses** | **0.2** |

**DEPRECIATIONS [EUR m]** **0.5**

| | | | | | |
|---|---|---|---|---|---|
| Bikes and components | 0.2 | Stations | 0.2 | IT | 0.1 |

**RESULTS**

| | |
|---|---|
| Revenues | 1.4 |
| Expenses | 0.8 |
| **EBITDA** | **0.6** |
| Depreciat. | 0.5 |
| **EBIT** | **0.1** |
| **EBIT margin [%]** | **10-15** |

1) Exemplary business case, actual figures highly depend, amongst other things, on actual business model, company assets and geographical focus

Source: Roland Berger

# Operating system trends focus on digitalization, flexibility, collaboration as well as taxation

## Current Innovations: What's hot, what's next? (1/2)

**Digitilization**

> Integrating a GPS-system for guidance
> Allowing for real-time information via built-in tablets (e.g. stations' location and availability, transit schedules and ticket purchase facilities) and advanced booking
> Example: Cykel DK in Copenhagen

**Stations on trailer**

> Installation of bike stations on movable trailers
> Moving the trailers around the city depending on availability
> Optimizing supply and demand by reacting on customers' needs
> Example: Velo Share in Singapore

**Partnerships**

> Expanding bike sharing operations through partnerships
> Integrating bike sharing into existing public transportation systems through integrated ticketing and pricing
> Collaborating with other shared mobility companies (e.g. Uber) via an integrated mobile app

**Tax break**

> Making bike sharing eligible for fringe benefits
> Receiving the same tax treatment as company cars and other public transportation systems
> Example: Bike Sharing in New York City

Source: Press research, Shared-use mobility summit 2013, Roland Berger

# Electrification, security, safety as well as family-friendliness are new trends among bike sharing equipment

## Current Innovations: What's hot, what's next? (2/2)

**E-bike sharing**

- E-Bikes: Using electric bikes for bike sharing; e.g. in Madrid
- Portable motor
  - Electrifying both: personal and shared bikes
  - Originating from bike sharing systems in US, CAN, UK

**Virtual station**

- No physical stations required; parking is only allowed in a certain geographic area; location identification via GPS (as car2go system)
- Unlocking via bluetooth (mobile app), member cards, credit cards or PIN codes
- Increased flexibility: Less frustration finding an empty station when renting a bike, or finding a full station when wanting to return a bike

**Reusable helmets**

- Reusable helmets especially interesting for countries with specific helmet laws
- Helmet vending machines: Renting and returning at stations; incl. cleaning process before next usage
- Disposable paper pulp helmets: Renting and returning at stations; cheap and disposable (no need for sanitizing)

**Family bike sharing**

- Include kids bikes, balance bikes and bikes with stabilizers into bike sharing concept
- Goal: Make bike sharing more family-friendly
- Allowing urban children to learn how to cycle without owning a bike
- Example: P'tit Vélib, Paris

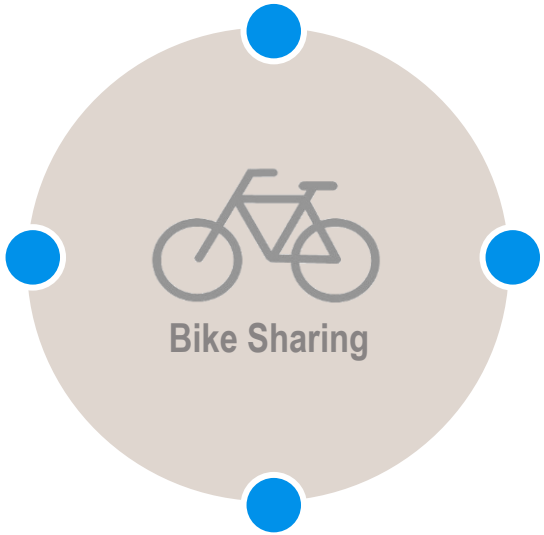
Source: Press research, Shared-use mobility summit 2013, Roland Berger

# Four main stakeholders in bike sharing concepts involved: Governments, sponsors, manufacturers and operating companies

## Main stakeholders

### National and local governments

> Support bike sharing via politics and policies
> (Sometimes) operate bike sharing business (e.g. Montréal)




### Operating companies

> Operate the bike sharing business along the entire value chain for profit
> Selling business ideas to local authorities

### Sponsors/Investors

> Sponsor/invest into bike sharing operators
> Become advertised on bike equipment

### Bike and component manufacturers

> Sell high quality bikes and their (individualized) components
> Deliver bikes/components on time for launch/further expansion[1)]

1) Major US supplier for bike sharing programs (Public Bike Systems & Co.) went bankrupt in January 2014 and thus stopped the growth resp. launch plans of many cities

Source: marketplace.org; Roland Berger

# These four stakeholders should support, invest in and continuously develop the opportunity "bike sharing"

## Recommendations for stakeholders

### National and local governments

**Be supportive!**

> Define clear goals for the modal share of bikes
> Support the bikeability of cities (e.g. bike lanes, inexpensive land use rights, public transport integration, etc.)

**Facilitate the bike share expansion by political power**

### Sponsors/Investors

**Be aware!**

> Recognize the financial potential of bike sharing
> Test bike sharing schemes for operability and financials
> Align incentives for sustainability and practicality
> Enforce the positive connection to the brand "bike"

**Anticipate investment opportunity "bike sharing"**

### Bike and component manufacturers

**Be proactive!**

> (Co-)Develop bikes for bike sharing schemes
> Develop e-bikes for bike sharing schemes to push e-bikes into the market and make the public used to it
> Involve with bike sharing to increase modal share of bikes overall

**Use opportunity to expand market share and reach new customers**

### Operating companies

**Be a pioneer!**

> Develop the product on a constant basis to be always up-to-date
> Seek for partner- and sponsorships
> Develop new client bases (e.g. families, e-bikes, company bikes)
> Diversify supplier base to reduce dependency

**Do not stop to further develop the product along market trends**

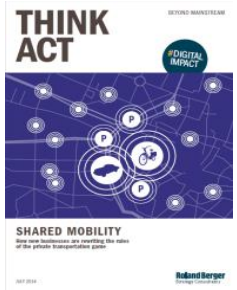
Source: Roland Berger


Roland
Berger

# We are thought leaders in innovative urban mobility

## Mobility thought leadership

### Shared Mobility study




> Evaluation of different shared mobility services and their consequences on the individual mobility of tomorrow
  - Carsharing
  - Bike sharing
  - Shared Parking
  - Ridesharing
> Ten golden management rules and detailed descriptions

### Paris Mobility study


> Study on innovative mobility, the rise of mega cities and concrete solutions for the city of Paris
> Insights on how to change the modal share, incl. impact of car-sharing
> New city governance models for new mobility solutions in cities such as Paris

### Connected Mobility study


> Outlook on passenger transportation in 2025
> Impact of connected mobility on traditional business models
> Potential players to become the "Mobility Manager" of the future
> Success factors to recognize and master the change

### China Car-sharing study


> Industry insight study on car-sharing in China
> Detailed analyses on market dynamics, player landscape and trends
> Customer purchasing and perception insights
> Clear recommendations for business model adaption to local requirements

Source: Roland Berger

# Roland Berger hosted the Mobility Convention 2014 in partnership with the DLR[1)] which focused on smarter intermodality

## Mobility Convention 2014 – November 6/7 in Cologne, Germany


- Two-day symposium hosted by Roland Berger in cooperation with the Deutsche Zentrum für Luft- und Raumfahrt (DLR)[1)]
- Intermodality as the main theme to sustainable passenger mobility in urban areas
- Participants from global key clients, i.e. Deutsche Bahn, Daimler, Deutsche Post DHL, Europcar, Google, as well as start-ups
- Top-level experts representing industry, research, and the users discuss about new business models, technologies and cooperation forms evolving around multi-modal transportation – Sharing the latest developments, insights and challenges

1) German national aeronautics and space research center

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