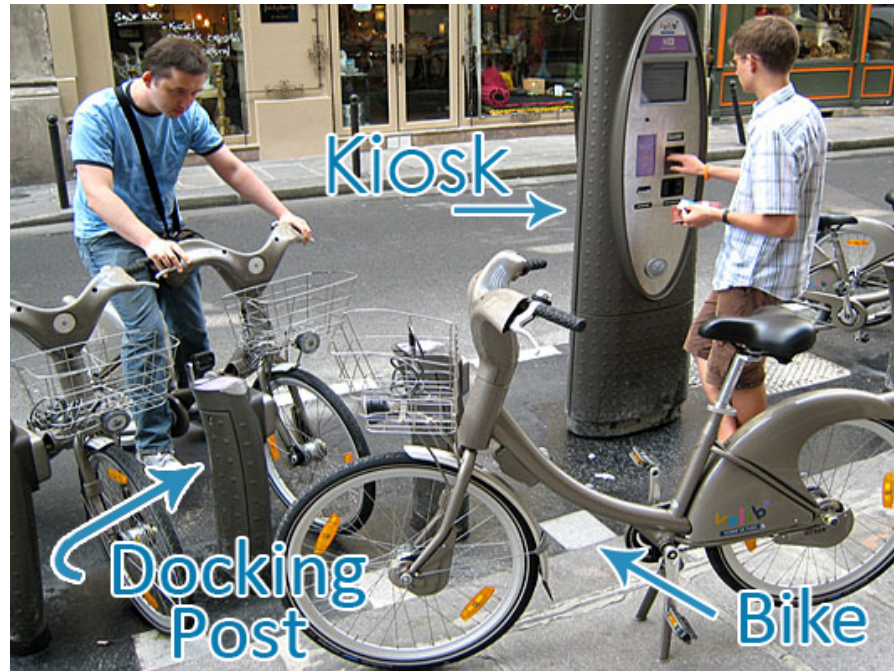




UNIVERSITY OF CALIFORNIA *Berkeley*
Transportation Sustainability
RESEARCH CENTER

What Makes Bikesharing Successful: Lessons Learned



Susan A. Shaheen, Ph.D.

Co-Director, Transportation Sustainability Research Center, UC Berkeley

LA Metro Bikesharing Workshop

December 5, 2011

Overview

1. Public Bikesharing Definition
2. Global Activity
3. Business Models/Funding
4. Pre-Launch Considerations
 - # of bicycles and stations
 - Marketing strategies
5. Bicycle Management
6. Bicycle Safety/Infrastructure
7. Technology



Public Bikesharing

- Short-term bicycle access
- Provides users with a sustainable and environmentally-friendly form of public transportation
- Targets daily mobility
- Bicycle reservations, pick-up, and drop-off are self-service



UNIVERSITY OF CALIFORNIA *Berkeley*
Transportation Sustainability
RESEARCH CENTER



Global Activity



As of Spring 2011:

- 136 bikesharing programs in approximately 160 cities around the world
- Over 236,700 bicycles and 13,500 stations on the roads worldwide
- 35 planned in 16 nations in 2011



UNIVERSITY OF CALIFORNIA *Berkeley*
Transportation Sustainability
RESEARCH CENTER

Business Models/Funding

- Providers range from local governments to transport agencies, advertising companies, for-profit, and non-profit groups
- Prominent funding sources are municipalities and advertising partnerships (e.g., bikesharing services in exchange for advertising rights on city street furniture and billboards)
- Programs must carefully evaluate all models to deploy a successful program:
 - 1) Public agency owns & operates
 - 2) Public agency owns but private company operates
 - 3) Private company owns & operates



UNIVERSITY OF CALIFORNIA *Berkeley*
Transportation Sustainability
RESEARCH CENTER



Provider	Standard Operating Model	Program Example
Advertising Company	Provide bikesharing services in exchange for rights to advertise on city street furniture and billboards	<ul style="list-style-type: none"> • SmartBike (U.S.) • Cyclocity (France)
Public Transport Agencies	Provide bikesharing services under the guidance of a public authority to enhance the public transportation system	<ul style="list-style-type: none"> • Hangzhou Public Bicycle (China) • Call a Bike (Germany)
Local Governments/Public Authority	Directly design and operate a bikesharing program for the well being of cities or a local government purchases bikesharing services that are provided by others	<ul style="list-style-type: none"> • City Bikes (Denmark) • Nubija (South Korea) • YouBike (Taiwan) • Shanghai Public Bicycle (China)
For-Profit	Provide profitable bikesharing services with minimal government involvement	<ul style="list-style-type: none"> • Nextbike (Germany)
Non-Profit	Provide bikesharing services under the support of public agencies or councils	<ul style="list-style-type: none"> • BIXI (Canada) • Hourbike (UK) • Wuhan Public Bicycle (China)

Examples of Operating Models and Providers



UNIVERSITY OF CALIFORNIA *Berkeley*
Transportation Sustainability
 RESEARCH CENTER

Business Models/Funding (cont'd)

- Bikesharing market includes a growing number of vendors, providers, service models, and technologies
- Many successful programs now consider various (private and public) funding options:
 - Denver B-cycle is funded through:
 - Individual foundation and government grants
 - Corporate sponsorships
 - User memberships and transaction fees
 - In Barcelona, Bicing funds bikesharing through advertising, but it also uses revenue from parking fees (i.e., parking meters)
 - A program planned in Montgomery County, MD is considering grants, funds from parking districts, tax credits, advertising, state fund bonds, etc.

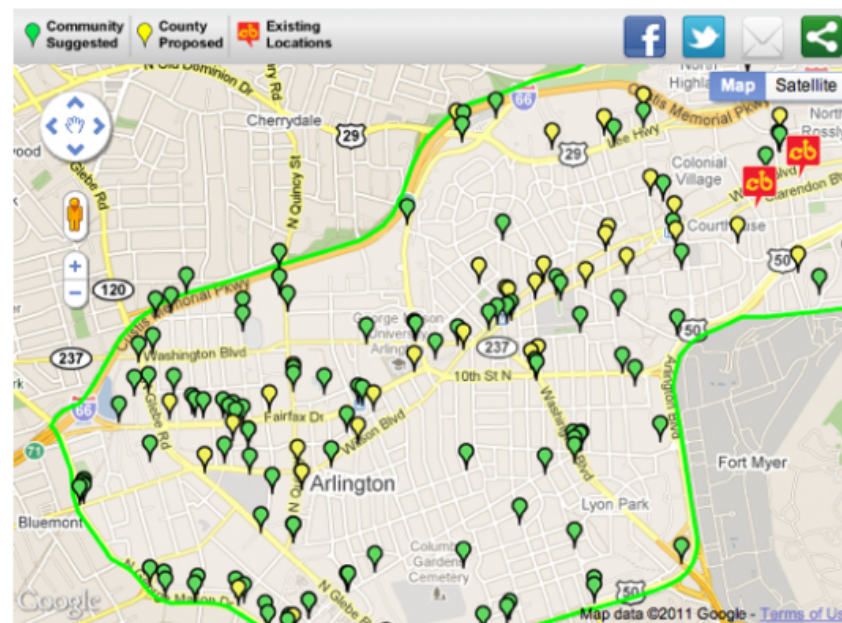


UNIVERSITY OF CALIFORNIA *Berkeley*
Transportation Sustainability
RESEARCH CENTER



Pre-Launch Considerations

- Number of bicycles and stations
- Marketing strategies



Determining # of Bicycles & Stations

- Most successful programs have deployed stations within 300 meters of each other to facilitate availability
 - Lyon - Velo'v: stations are 250 to 550 meters apart
 - Paris - Vélib: 250 to 350 meters
 - Barcelona- Bicing: 250 to 350 meters
 - Hangzhou Public Bicycle: about 300 meters
- How does a city determine appropriate number of stations/bicycles?



...# of Bicycles/Stations

- Cities should first establish a primary geographic market and estimate program demand to deploy appropriate number of stations and bicycles
 - A program that is too small, or does not meet demand, will have a difficult time succeeding.
- Mathematical tools and models have been created that allow cities to evaluate various bikesharing scenarios to assess program viability before launch and during operation



UNIVERSITY OF CALIFORNIA *Berkeley*
Transportation Sustainability
RESEARCH CENTER

Marketing Strategies

- Pre-launch marketing strategies for bikesharing are becoming increasingly popular
- Media outlets and social media have played key roles in raising awareness and generating program support



Marketing Strategies: Examples

- Alta Bikeshare employs logo development, websites, public relations, social media, and marketing materials to gain exposure and membership prior to system launch.
- London's Barclay system pre-launch PR campaign generated more than 1,200 print and online articles, with 90% of coverage positive or balanced. Awareness rose from 37% in March 2010 to 82% post-launch.
- BIXI Toronto was required to secure 1,000 year-long membership pledges and 3 years of annual sponsorship pledges from private organizations before deployment. To meet this target and gather support, they employed social media and held public demonstrations.



UNIVERSITY OF CALIFORNIA *Berkeley*
Transportation Sustainability
RESEARCH CENTER



Bicycle Management

To run efficiently, bicycles must be redistributed to key demand locations frequently after use:

- Vélib ‘ uses natural gas powered vehicles to transport bikes from one station to another
- Hangzhou also employ trucks to redistribute bicycles
- BIXI uses redistribution trucks and on-board computers to provide drivers with real-time information on bicycle stations to facilitate a speedier and more efficient response to bicycle shortages and station overcrowding
- Capital Bikeshare has groups of “rebalancers” who drive SUVs or vans to relocate bicycles



UNIVERSITY OF CALIFORNIA *Berkeley*
Transportation Sustainability
RESEARCH CENTER



Bicycle Management (cont'd)

- It is important that new systems incorporate improvements for bicycle redistribution that are more sustainable and efficient
- Future models should also consider ways to incentivize user-based redistribution (i.e., where the rider performs bicycle redistribution)
 - Employing demand-based pricing in which members receive a price reduction or credit for parking bicycles at empty docking locations



UNIVERSITY OF CALIFORNIA *Berkeley*
Transportation Sustainability
RESEARCH CENTER



Safety



- Larger numbers of cyclists can make motorists more aware and less likely to collide with them
- A large cycling presence may not solve safety issues; however, if bikesharing attracts a large influx of newer cyclists
- To date, no bikesharing program requires a cycling educational program as a prerequisite to subscription
 - Safety information tends to be displayed on handlebars of shared bicycles, on kiosk panels, and/or on pamphlets distributed with subscription cards.
- Implementation of laws and legal measures in support of cycling can help mitigate safety concerns
 - Prior to Vélib' s launch, the city' s mayor lowered vehicle speed limits, built more bike paths, and changed street directions by creating more one-way streets. This helped reduce private vehicle traffic by 20%.



Safety (cont'd)

- Bikesharing helmet usage has sparked great debate within the cycling community
- At present, bikesharing programs where helmet use is *optional* (for non-minors) have experienced the most success and usage
- Programs with mandatory helmet laws have experienced lowest usage rates (e.g., Melbourne)
- Engineers have created and are proposing the first fully-integrated helmet dispensing system where helmets are sanitized. While still optional, this approach would allow riders to either drop off used helmet or purchase it.



UNIVERSITY OF CALIFORNIA *Berkeley*
Transportation Sustainability
RESEARCH CENTER



Bicycle Paths

Cities that have successfully implemented bikesharing programs have also expanded cycling infrastructure

- Bike lanes in Paris expanded from 122 km in 1998 to 399 km in 2007
- Barcelona had less than 10 km of bike lanes in 1990, but increased to 155 km of bike paths by 2008
- In Germany, cycling networks increased from 12,911 km in 1976 to 31,236 km in 1996
- Between 2000 and 2007, NYCDOT built over 200 miles of bike lanes and saw commuter cycling grow by 77%
- Prior to Ecobici's launch (Mexico City), city officials committed to build 186 miles of bike lanes by 2012 to encourage cycling



UNIVERSITY OF CALIFORNIA *Berkeley*
Transportation Sustainability
RESEARCH CENTER



Technology

- Incorporation of real-time information has offered a notable improvement in bikesharing
- Allowing users to check bicycle or parking availability via text message, website, or Smartphone application has greatly facilitated multi-modal connections
- While data for bikesharing are still limited, technology has also made it possible for programs (such as B-Cycle) to document distance traveled and more accurately estimate carbon emission impacts



Conclusion

- As bikesharing continues to expand, lessons from previous and current bikesharing programs has led to a greater understanding of implementation and operational procedures
- Obstacles such as short usage periods (revenue), helmet use, lack of cargo space, exposure to weather conditions, funding/business models still raise questions



Acknowledgements

- California Department of Transportation
- Honda Endowment for New Mobility Studies, UC Davis
- Mineta Transportation Institute
- Stacey Guzman and Dr. Hua Zhang, TSRC



UNIVERSITY OF CALIFORNIA *Berkeley*
Transportation Sustainability
RESEARCH CENTER



www.tsrc.berkeley.edu