BIKESHARING AND BUSINESS MODELS FROM ACROSS THE GLOBE

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Overview

- Definition
- History
- Current bikesharing activities
- Business models & vendors
- Fourth generation bikesharing
- Summary

Bikesharing Definition

- Flexible short-term usage scheme that targets daily mobility;

- Allows users to access public bicycles at unattended bike stations;

- Bicycle reservations, pick-up, and drop-off self-service;

- Multiple bike station locations enable users to pick up and return bicycles to different stations; and

- Typically covers bicycle purchase and maintenance costs, as well as storage and parking responsibilities

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Bikesharing History: Europe

White Bikes (or Free Bike Systems): First Bikesharing Generation

– Main component: Bicycle

– Bicycles usually painted one bright color, unlocked, and placed haphazardly throughout an area for free use

  • 1965: Amsterdam (White Bike Plan)

  • 1974: La Rochelle, France ("Vélos Jaunes" or Yellow Bikes), which continues to evolve

  • 1993: Cambridge, UK (Green Bike Schemes)

Bikesharing History: Europe

Coin-Deposit Systems: Second Bikesharing Generation

– Main components: Bicycle and docking stations

– Coin-deposit locks created much more reliable bikesharing system; dependable and more theft resistant

- 1995: Copenhagen, Denmark ("Bycyken" or City Bike)
- 1996: Sandnes, Norway (Bycykler)
- 2000: Helsinki, Finland (City Bikes)
- 2005: Arhus, Denmark (Bycykel)

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Bikesharing History: North America

First Bikesharing Generation

- Relative to the European experience, North American bikesharing history is limited

  • 1994: Portland, Oregon (Yellow Bikes)

  • 1995: Boulder, Colorado (Green Bike Program)

Second Bikesharing Generation

– Launch of multiple North American bikesharing systems employing "Coin Deposit" model

  • 1996: Twin Cities-Minneapolis and St. Paul (Yellow Bike Project)

  • 1996-2002: Madison, Wisconsin; Olympia, Washington; Austin, Texas; Princeton, New Jersey; Durham, New Hampshire; Decatur, Georgia

Bikesharing: The Present

- Expanded to include four continents: Europe, Asia, North America, and South America

- Approximately 100 bikesharing programs operating in estimated 125 cities around the world, with over 140,000 shared bicycles

- Another 45 planned in 22 nations in 2010

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Worldwide Bikesharing Programs

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Country	Programs	Bicycles	Stations
Austria	3	1,500	82
Belgium	1	1,000	100
Brazil	2	232	26
Canada	1	5,000	400
Chile	1	50	10
China	3	65,000	2,522
Czech Republic	3	51	16
Denmark	3	2,513	277
Finland	1	300	26
France	21	34,898	2,797
Germany	3	6,069	128
Italy	16	3,392	361
Ireland	1	450	40
Luxembourg	2	370	40
Mexico	1	—	12
Monaco	1	10	2
Netherlands	1	—	200
Norway	1	1,660	154
New Zealand	1	175	11
Poland	1	100	13
Romania	1	100	10
Spain	21	11,080	842
South Korea	1	430	20
Sweden	3	2,125	171
Switzerland	1	120	11
Taiwan	2	2,000	31
United States	1	120	10
United Kingdom	2	1,410	809
Total	99	140,155	9,121

Third Bikesharing Generation

- Gained worldwide popularity by incorporating advanced technologies for bicycle reservations, pick-up, drop-off, and information tracking

- Four main components:

  - Distinguishable bicycles (either by color, special design, or advertisement);

  - Docking stations;

  - Kiosk or user interface technology for check-in and checkout; and

  - Advanced technology (e.g., mobile phone, magnetic strip card, smartcards)

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Bikesharing Generations

First Generation: White Bikes (or Free Bikes) Systems

- **Components**
  - Bicycles
- **Characteristics**
  - Distinct bicycles (usually by color)
  - Located haphazardly throughout an area
  - Bicycles unlocked
  - Free of charge

Second Generation: Coin-Deposit Systems

- **Components**
  - Bicycles
  - Docking Stations
- **Characteristics**
  - Distinct bicycles (color or special design)
  - Located at specific docking stations
  - Bicycles have locks

Third Generation: IT-Based Systems

- **Components**
  - Bicycles
  - Docking Stations
  - Kiosks or User Interface Technology
- **Characteristics**
  - Distinct bicycles (color, special design, or advertisements)
  - Located at specific docking stations
  - Bicycles have locks
  - Smart technology is used for bicycle check-in/checkout (mobile phones, mag-stripe card, smartcards)
  - Theft deterrents (program specific; members are required to provide ID, bankcard, or mobile phone number to identify users). Failure to return bicycle incurs charges to recov[er] bicycle cost and may also include high punitive costs. Non-members are generally requir[ed] pay a large deposit to ensure bike return, under risk of losing their deposit.
  - Programs paid for as a membership service, typically free for the first specified time inte[rval] with gradually increasing costs enforced.

Fourth Generation: Demand Responsive, Multi-Modal Systems

- **Components**
  - Bicycles
  - Docking Stations
  - Kiosks/User Interface
  - Bicycle Distribution System
- **Characteristics**
  - Distinct bicycles
  - Programs may include electric bicycles
  - Specific docking stations that are more efficient (mobile, solar powered, etc.)
  - Improved locking mechanism to deter bicycle theft
  - Touch screen kiosks/user interface
  - Bicycle redistribution system
  - Linked to public transit smartcard

Bikesharing Present: Europe

- Relative to other countries, bikesharing programs in Europe large scale, operate through public-private partnerships, and feature advanced technologies

- As of Fall 2009, there were approximately 19 European nations operating bikesharing programs
  - 1998: Rennes, France (SmartBike, Clear Channel)
  - 2005: Lyon, France (Velo'v, JCDecaux)
  - 2007: Paris, France (Vélib', JCDecaux)

Bikesharing Present: Americas

- Bikesharing in North American:
  - SmartBike in Washington, DC proved 3rd gen. bikesharing feasible
  - BIXI in Montreal, Canada now largest IT-based system in North America; 5,000 bikes, 400 stns, 11,000 members
- Bikesharing in South America:
  - Bikesharing activity began in 2008 with "UseBike" in São Paulo and "Samba" in Rio de Janiero, Brazil
  - Chile also has an operating program, while Argentina and Colombia are in the process of planning bikesharing systems

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Bikesharing Present: Asia

- Asia's bikesharing history limited to third generation
- Asia fastest growing market for bikesharing activity today
- Bikesharing programs operating in South Korea, Taiwan, and Mainland China
  - Largest and most famous program in Asia: Hangzhou "Public Bicycle" system
  - Surpassed Vélib as the largest bikesharing program in the world with 50,000 bicycles and 2,000 stations (Vélib: 20,000 and 1,650)

Business Models and Vendors

Third-generation successes led to a growing number of bikesharing vendors, providers, service models, and technologies

- Providers range from local governments (27%) to transport agencies, universities, advertising companies, for-profit, and non-profit groups
- Funded through municipalities, advertising, self funding, user fees, and public-private partnerships
- Major vendors: Clear Channel Adshel (16%), BIXI, Veoila Transportation, Cemusa, JCDecaux (23%), and B-Cycle
- Major systems: SmartBike by Clear Channel Outdoor in U.S., Bicincittà by Comunicare in Italy, Cyclocity by JCDecaux in France

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Lessons Learned

- Bicycle theft and vandalism
- Bicycle redistribution (trucks, mobile stations)
- Information systems (real-time information)
- *Insurance and liability considerations* (helmets)
- *Pre-Launch considerations* (marketing, incremental pricing, mobile bike stations)

Fourth Generation Bikesharing: Demand-Responsive, Multi-Modal Systems

- Build upon third generation systems and emphasize:
  - Flexible, clean docking stations
  - Bicycle redistribution innovations
  - Smartcard integration with other transportation modes (i.e., public transit and carsharing)
  - Technological advances including GPS tracking, touchscreen kiosks, and electric bikes

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Summary

- Bikesharing potential to reduce GHGs and fuel consumption by discouraging personal vehicle use

- Current worldwide developments suggest ongoing growth

- Could alter travel patterns across globe

- More in-depth research on bikesharing's social/environmental benefits, business models, operational understanding, advanced technology applications, and public policy role needed

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