Bicycle Sharing

ー自転車共有化ー

Cases and the implications for the development process of green technologies

Presentation for International Workshop on Social Decision Making Process for Energy Technology Introduction,
Tokyo, December 13, 2003.

Masahiro Matsuura

Ph.D. Candidate

Department of Urban Studies and Planning

Massachusetts Institute of Technology

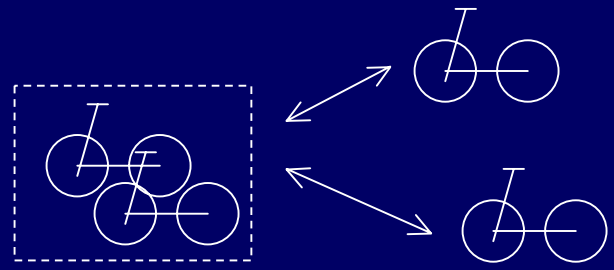
Today's Outline [15 min.]
(more case info. in the formal paper)

- What is bicycle sharing?
- Cases around the world
- Implications for the future development of "green" technologies
  (Discuss their applicability to other cases)
  - Second level network
  - Innovation center
  - Incentive framework (Stick/Carrot)
  - Stakeholder inclusion

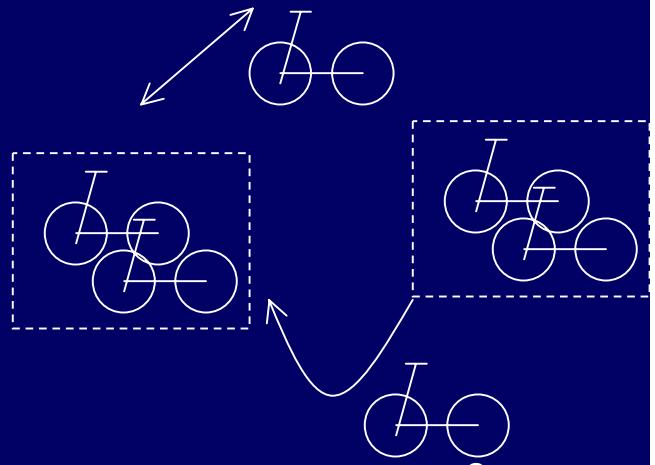
What is Bicycle Sharing?

My definition: “urban bicycle sharing” = those serving commuting, business, and shopping (as well as sightseeing) trips within urban areas, *exclude those franchising only tourists.*

- **Rental Cycle System (RCS)**
  - One location, many bicycles
  - Japanese cases since the 90s (Nerima)



- **Community Cycle System (CCS)**
  - Many locations, fewer bicycles per location
  - European cases (AMS -> CPH, OSL)



Rental Cycle System (RCS)

- In order to Relieve the problem of illegal bicycle parking on the sidewalks around commuter train stations *(anti-bike)*
- Requires two-way (return) trips
- Balance between inbound commuters and outbound reverse commuters (e.g. students) in order to reduce the storing capacity requirement
- Ageo, Hiratsuka, Nerima (suburbs around Tokyo)

Community Cycle System (CCS)

- In order to provide “green” transportation modes for intra-urban trips *(pro-bike)*
- Enables one-way trip
- Risk of thefts and vandalisms
- Requires monitoring system
- 60s – *witfiet* by Luud Schimmelpennink (AMS) – Provo party – Civic movement
- 90s~ CPH, AMS, OSL

Case Studies (so far)

- Nerima Town Cycle
- Taito CCS Social Experiment
- Cycle K (student group at Keio Univ.)
- (and the experts' network)
- Bicyklen (Copenhagen, Denmark)
- Witfiet (Amsterdam, Netherlands)
- Oslo Citybike (Oslo, Norway)
- CatCycle (Durham, NH)

Cases outside Japan

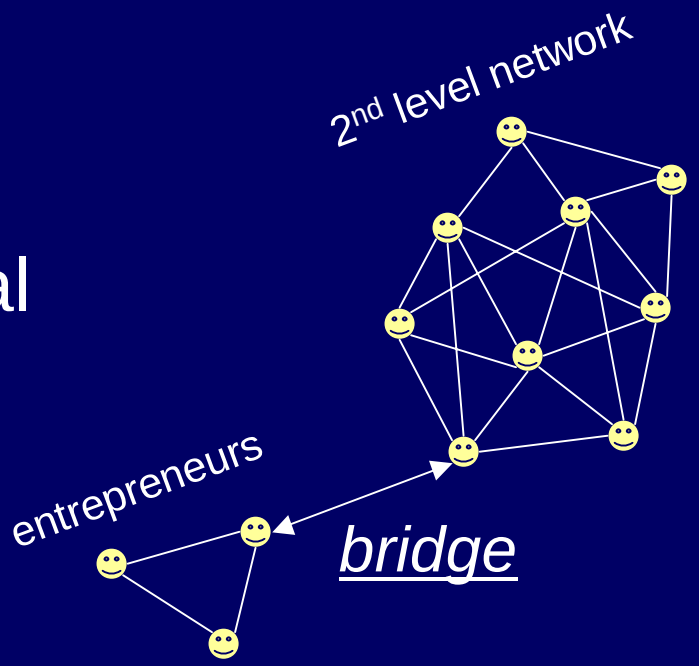
Bicyklen

Witfiet

Oslo Citybike

Implication #1: Second Level Network

- Need for “in-person” expertise
- Masters forming a social capital of professional expertise
- Even one connection to the second level network leads entrepreneurs to the vast amount of knowledge.



- Japanese cases: friends-of-friends’ social network centered around Prof. Watanabe
- Oslo case: director transferred to Oslo from another experiment in France

Implication #2: Innovation Center

- Risk of incremental changes – predominance of available technologies – lock-in effect that minimize technodiversity
  (Japanese CCS examples–Lack of innovations) (analogy to biodiversity)
- "Technological entrepreneurs" waiting for "technology window"
  - Like *agenda setting* in policy making, in which *policy entrepreneurs muddle through…*
- Need for queer eye – disentangle organizational lock-in through *Deweyan inquiry: someone has to question the current system!*
- Luud Schimmelpennink: the father of bike sharing
- Cycle K: experiments by student's group
- CPH, OSL: role of industrial designers

Luud Schimmelpennink, Ytech Innovatiecentrum.

Witkar in 1970s (electric car sharing around Amsterdam)

If it were not for him, who else would have invented the idea of bicycle sharing, and even car sharing?

Implication #3: Incentive (Stick and Carrot) Framework

- Even a costly green technology can be delivered by creating incentives for its undertakers (= advertisement agencies).
- Oslo case:
  - Outdoor advertisement is fundamentally not allowed on streets (regulation – “stick”)
  - Advertisements can be installed only when integrated with bike racks and bus shelters (exception – “carrot”)
  - Advertisement agencies (ClearChannel and JCDecaux) competing for the right to operate bike sharing – in return for prospective income from selling the advertisement spaces.

Implication #4: Inclusion of Stakeholders

- Nerima-case: oppositions from local bike shops -> gov. agency invited the trade assoc. into the planning process.
- Bikes are purchased from the local shops (but now it is a normal course of business: no explicit need of involvement any more).

Last-minutes thoughts…

- Political culture (*or ex-ante institutions)* matters once we compare cases internationally/regionally. Political culture is an independent variable in explaining the effectiveness of processes (three implications). (2nd level network might be more effective in Japan, where bureaucrats' consultation with experts occurs frequently thru informal measures or formal *shingikai* system.)
- We need to figure out a rationale for technodiversity (Why there's a mild consensus toward biodiversity? Can we use the rationale for biodiversity in arguing for technodiversity?)

- Do you want a web page?
- http://web.mit.edu/masam/e/bicycle/