

BUSINESS MODEL INNOVATION AND SOCIO-TECHNICAL TRANSITIONS. A NEW PROSPECTIVE FRAMEWORK WITH AN APPLICATION TO BIKE SHARING.

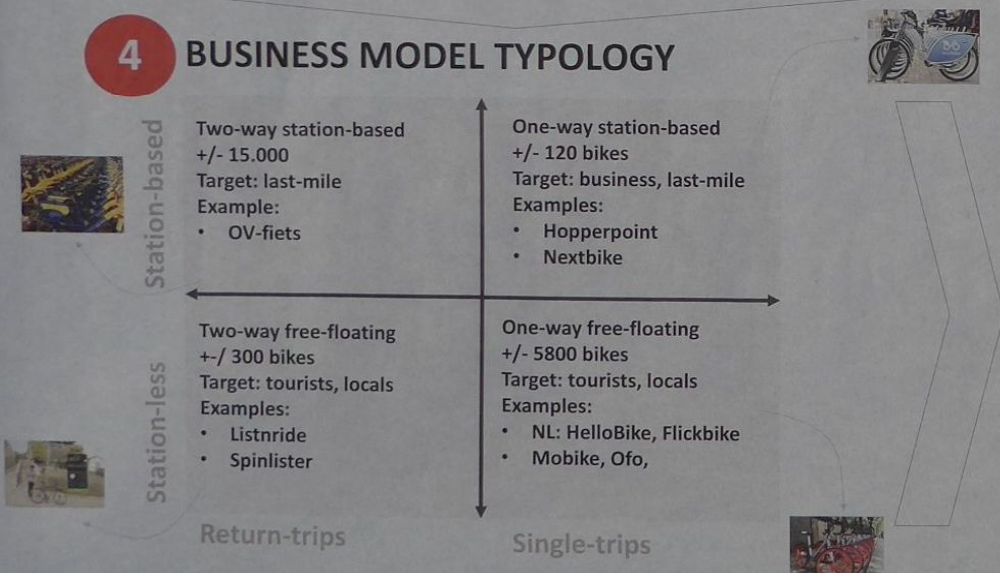
3 CASE: EMERGENCE OF BIKE SHARING SYSTEMS IN NL



KEY ELEMENTS OF A BUSINESS MODEL

- Customer value proposition: *What value is delivered and to what customers?*
- Profit formula: *How does the company create value for itself while providing value for the customer?*
- Key processes: *Processes, rules and norms needed to deliver value*
- Key resources: *People, technology, information channels, partnerships and brands needed to deliver value.*

4 BUSINESS MODEL TYPOLOGY



1 ABSTRACT

In this paper we develop and apply a new prospective transition framework that revolves around business models. Using specific insights on the dynamics of increasing returns, industry structure and the role of institutions, we analyze the upscaling potential of innovative bike sharing business models as introduced in Dutch cities over the past ten years.

We find that compared to traditional business models, innovative business models face different challenges. While traditional business models are typically hampered by 'usual suspect' enablers of entrepreneurial success (resources, partners and investments), innovative business models also have to deal with challenges related to broader institutional factors such as conflicting legislation or bike-ownership.

We conclude that innovative business models and institutions co-shape the urban mobility system. For bike services to scale up, and socio-technical transition to be accomplished both business model innovation and institutional change will be needed.

2 RESEARCH QUESTION

What is the potential of current business models for bike service innovations to shape urban mobility transitions?

5 A NEW PROSPECTIVE TRANSITIONS FRAMEWORK

- Business model: *Technical characteristics favouring or impeding technology adoption*
- Industry structure: *Industry structure and composition favouring or impeding upscaling*
- Institutions: *Institutions in the current market that support or hinder the innovation*

6 UPSCALING POTENTIAL

Business model	Business model	Industry structure	Institutions
2-way station-based	<ul style="list-style-type: none"> • Embedded in public transport • Dependent on infrastructure 	<ul style="list-style-type: none"> • Dominant model • Large public transport firms • Strategic positions at hubs • Bike sharing = not core business but complementary service 	<ul style="list-style-type: none"> • No friction with formal and informal institutions • Bike as part of mobility chain.
1-way station-based	<ul style="list-style-type: none"> • Dependent on infrastructure 	<ul style="list-style-type: none"> • Small in NL (NL & German actors) • Successful abroad 	<ul style="list-style-type: none"> • No friction with formal and informal institutions • Supported by local authorities
1-way free floating	<ul style="list-style-type: none"> • Independent from infrastructure • Some providers work with geo-fenced zones 	<ul style="list-style-type: none"> • Entrants • Global & local actors • Private venture capital investments • Public investments 	<ul style="list-style-type: none"> • Mismatch with formal institutions • Bike parking unregulated • Some providers that use geo-fencing technology supported by local authorities • Some providers lack public support & legitimacy due to impact on public space • Material mismatch: design and quality of bikes does not meet local standards
Two-way free floating (peer to peer)	<ul style="list-style-type: none"> • Few users from both demand and supply side • Scalable: independent from infrastructure and based on existing capacity 	<ul style="list-style-type: none"> • Digital platform 	<ul style="list-style-type: none"> • Interacts with bike ownership which may be a barrier

Traditional models:

- Business model challenge
- Barriers to upscaling relate to resources

Innovative models:

- Institutional challenge
- Conflicting legislation
- Bike ownership