Light rail implementation: Succes and failure aspects of Dutch projects

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Research Motivation

- Light rail has been successfully implemented in many urban regions worldwide.
- There is much debate on the (societal) cost-benefit ratio of these systems.
- Several light rail projects were not that successful or even failed.
- In recent years, many light rail plans have been cancelled in The Netherlands
  - after many years of planning
  - after the start of the tendering process
  - during trial operation.
- 1997: the Dutch government noted about 30 light rail initiatives.
- 2014: only one of them is actually in operation, being the RandstadRail line in The Hague and Rotterdam.
Research objective

- We want to know why this happened, so we will be able to support future design and decision making.

- What are the success and failure factors of light rail planning based on the Dutch experiences?
Research approach

- Survey of 4 light rail projects in the Netherlands (success or failure)
- The fifth case is the light rail project in the French city of Strasbourg that proved to be very successful.

- Literature research on
  - case specific (policy) documents
  - generic transport related papers

- Interviews with stakeholders
  - (external) experts
  - project managers
  - former aldermen
  - policy advisors
Light rail

TRB 1978:

“Light rail transit is a metropolitan electric railway system characterized by its ability to operate single cars or short trains along exclusive rights-of-way at ground level, on aerial structures, in subways or, occasionally, in streets, and to board and discharge passengers at track or car-floor level.”
Light rail: hybrid appearance

<table>
<thead>
<tr>
<th>Lightrail</th>
<th>Non-lightrail</th>
</tr>
</thead>
<tbody>
<tr>
<td>1  (Regional) tram</td>
<td>6  Train</td>
</tr>
<tr>
<td>2  TramTrain</td>
<td>7  Metro</td>
</tr>
<tr>
<td>3  TrainTram</td>
<td>8  MetroTrain</td>
</tr>
<tr>
<td>4  TramMetro</td>
<td>9  TrainMetro</td>
</tr>
<tr>
<td>5  MetroTram</td>
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Challenge the future
The projects (1/5)

**Uithoflijn Utrecht**

- Currently being built
- Operations will start in 2018
The projects (2/5)

Regiotram Groningen
- Cancelled in 2012
The projects (3/5)

RijnGouweLijn Leiden
- Cancelled in 2012
- Trial (mixed) operations in 2003
The projects (4/5)

RandstadRail The Hague/Rotterdam
- In operation since 2006 (2007)
The projects (5/5)

Light rail Strasbourg
- Designed and constructed in early ‘90’s
- First operation in 1995
Findings (1/5)

Uithoflijn Utrecht

- Highly desired capacity and reliability improvement;
- One strong and powerful project organization (3 governmental structures in one project);
- Transparency in the decision making process.
Findings (2/5)

Regiotram Groningen

- The project continued to lose support in the municipality;
- Very innovative form of public tendering;
- During tendering stage, limited provision of information to other stakeholders (e.g. local politicians) -> negative image;
- Successive scope enlargements;
- Underestimation of governmental decision making processes;
- Technocratic attitude towards other stakeholders.
Findings (3/5)
RijnGouwelijn Leiden

- From 2003, first expressions of resistance occurred among residents and shop holders;
- Growing resistance forced the municipality of Leiden to organize a referendum in 2007;
- The referendum was not organized properly: No alternative, only yes or no;
- Justification of the project was unclear;
- Bicycles not taken into account.
Findings (4/5)

RandstadRail The Hague/Rotterdam

- Every governmental organization made their own plans. No consensus with regard to system choice;
- Eventually, a hybrid system variant was developed;

- Until 2006, the project seemed to proceed quite smoothly;
- During the first weeks of operation, severe technical problems arose, leading to several derailments;
- As soon as the system came to a stable and reliable operational stage, passenger numbers started to increase.
Findings (5/5)
Light rail Strasbourg

- Additional objectives next to increasing numbers of passengers and increasing accessibility for city centers.
- Goal: enhancing public realm, as well as the economic and social fabric of the city:

More space for cyclists and pedestrians, more public urban green, clean and fast transport modes and the exclusion of (polluting) motorized traffic from the inner urban center.
General findings: succes (1/3)

Project conception
- Define the basic project as small as possible
- Conceive project’s long term and context as comprehensively as possible, hence, elaborate its economic, social and environmental value;
- Focus on ‘why’ the project (short term and long term);
- Elaborate and manage project ‘rind’ (context, future).

Project organization
- A strong independent project organization;
- Different organizations for different stages of the projects;
- One part of the organization is continuously focusing on safeguarding the project as such.
General findings succes (2/3)

**Politics**

- Enhance and safeguard political decision making by chopping the project into smaller pieces;
- Accept and apply incremental planning;
- Transparency during all decision making processes;
- All decisions made should be supported by a major political support;
- The timeframe of contracts for the project must be consistent with political timeframes;
- Aim at creating “faits accomplis”. Do not allow (new generation) politics to question again the value and progress of the project at stake.
General findings succes (3/3)

*Communication*
- Residents and citizens must be involved in the project;
- Every available form of communication must be used;
- Stakeholders must be personally involved.
General findings: failure (1/2)

*Project conception*
- Changing the scope and thus the targets;
- Interfaces with related projects or between components of the project itself;
- Too few project variants or alternatives. Solutions for a good project are often found in the combination of different alternatives.

*Project organization*
- Innovative public tendering (e.g. DBFMO and alike) comes with risks;
- Focus on costs is important, but costs are not the most important part of the project.
General findings failure (2/2)

**Politics**
- Uncertainty in relations between different governmental layers;
- Changing political climate;
- Approaching the project as a development on its own;
- Only focusing on the most desired alternative leads to the displacements of other feasible alternatives;

**Communication**
- A technocratic attitude jeopardizes the project;
- Neglecting citizens’ involvement is dangerous.
Future work

• Sharing international experiences

• Extending the Dutch survey to other countries

• Designing a checklist
  • Justification;
  • Technology;
  • Financing;
  • Etc.

• Preparing a book: sharing LRT knowledge and experiences

• Presentation Wednesday at LRT committee
Light rail book

Investing in the City
Lessons from 47 light rail projects

Rob van der Bijl, Bert Bukman & Niels van Oort

Dutch version launched this month
English one expected within a year
Questions?

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Research papers:
http://nielsvanoort.weblog.tudelft.nl/

Light rail:
www.lightrail.nl

EMTA report: Light rail explained
www.emta.com -> Publications -> Surveys