Flying high in urban ropeways
Chances and obstacles of urban ropeway systems in Germany

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Outline

- Urban ropeways
  - Definitions
  - Characteristics

- Our research perspective

- Results (preliminary)
  - Established routines
  - Integration into urban landscape
  - Integration into public transport planning

- Outlook: Will we fly across German cities in the future?
Urban ropeways: definitions

- Urban ropeways use existing technology in a new context

- Wording: “cable cars”, “gondolas”, “ropeways”, “aerial tramways”

- Current applications mainly for tourist purposes, e.g. skiing

Wikimedia commons: Daniel Schwen, Opendrek
Urban ropeways: definitions

- Urban ropeways use existing technology in a new context

No pure tourist attractions in urban environments

No public transport ropeways outside urban environments

“Urban ropeways are ropeways that operate in an urban environment and serve public transport purposes”

Challenging insertion into urban landscape

Challenging operating conditions
Urban ropeways: characteristics

Two main technologies:

- Aerial tramways

  Big cabins, intermittent operation (timetable)

- Detachable gondolas

  Small cabins, continuous operation (cabins stop at stations)
Urban ropeways: characteristics

- Cross topographical barriers on the shortest route
- Connect major points of interest

Emirates Air Line, London (United Kingdom)

http://finchleyarrow.co.uk/News/east-london-to-get-cable-car
Urban ropeways: characteristics

- Cross topographical barriers on the shortest route
- Connect major points of interest

Portland Aerial Tramway
(Oregon, USA)
Urban ropeways: characteristics

- Connect peripheral areas
- Close public transport gaps

Teleférico do Alemão, Rio (Brazil)

http://metro.co.uk/2013/05/30/taking-to-the-skies-over-rios-favelas-before-the-forthcoming-world-cup-and-olympic-games-3814352
Urban ropeways: characteristics

- Connect peripheral areas
- Close public transport gaps

Metro Medellín (Colombia)

Urban ropeways: characteristics

- Relieve overloaded public transport

Şentepe / Yenimahalle ropeway, Ankara (Turkey)

Our research perspective

- Various urban ropeways worldwide – only few in Europe

- Not fully ‘urban’ – see definition (many more outside Europe)
Our research perspective

- Germany: No ‘real’ urban ropeway until today

- Operating ropeway
- Current studies (early stages)
- Former plans/ideas, currently not pursued
- Rejected (public vote)

own collection, projects in very early idea stages & old projects (> ~10 years) may be missing
Our research perspective

- Rather open approach to understand the specific characteristics of urban ropeways in public transport planning procedures

- Are ropeways only rarely implemented because of…
  
  - Established routines (and ideas) of public transport planners?
  
  - Established actors blocking innovative solutions?
  
  - Challenging integration into urban landscape?
  
  - Ropeway ideas not fitting to local transport needs?
Our research perspective

- Expert interviews with transport planning professionals
  (3 completed)

- Expert interviews with ropeway manufacturers
  (1 completed, 1 missing)

- Interviews with various actors in cities with ropeways / ropeway plans
  (2 cities completed, 1 city missing)
Results (preliminary)

- Established routines (and ideas) of public transport planners; established actors blocking innovative solutions

- Yes, this is a problem for ropeways…
  - Urban ropeways only rarely part of transport engineers’ education
  - Urban ropeways not mentioned in standard literature
  - General lack of literature, reference cases, standard values, etc.
  - Example: KIT library – search term “Seilbahn”…

Results 1 - 10 of 19 for All Locations Sorted by: Date-newest

- Stochastische Schwingungen an ausgedehnten Seilfeldern und ihre Anwendung zur Spurweitenberechnung
  Volmer, Marcel
  1999
  academic
  - Get It

- Bewegungen und Kräfte des Seilsystems und der Fahrzeuge von Seilschwebebahn im Fahrbetrieb / Stephan Liedl
  Materialfluß, Logistik, Technische Universität München]
  Liedl, Stephan
  1999
  academic
  - Get It
Results (preliminary)

- **Established routines (and ideas) of public transport planners; established actors blocking innovative solutions**

- **Yes**, this is a problem for ropeways…
  - Public transport operators are often skeptical about new kinds of infrastructure – like urban ropeways
  - Planners often have ‘conventional’ ideas already in mind when looking at a transport problem (buses, trams, subways…)
  - **Example**: Trier – connecting the train station with university campus; operator favoured bus extension, nothing was built in the end

Results (preliminary)

- Established routines (and ideas) of public transport planners; established actors blocking innovative solutions

- …and No, this is (mostly) not ropeway-specific!
  - Actors (and planners) need to learn about every innovation in early years – like prioritization of trams / light rail systems, good cycling infrastructure, etc.
  - Not every plan is implemented – be it a tram, a road or a ropeway (e.g. for financial reasons)
  - Big infrastructure investments always face resistance from some actors
  - Quite the contrary: Great openness among our interviewees – despite lacking experience
    - fascinating transport method
    - great views
    - additional tourist potential
    - …
Results (preliminary)

- **Challenging integration into urban landscape**

- **Yes**, this is a problem for ropeways.
  - Urban ropeways offer direct links and require few infrastructure on the ground – but still cross this ground!
  - Conflicts with:
    - Private property owners (viewing into backyards)
    - Cultural heritage, landscape (e.g. München Thalkirchen)
  - Conflicts are often smaller compared with alternative transport solutions, but still relevant – and different from those in mountains
  - **Example**: Wuppertal – house owners protest against ropeway line
Results (preliminary)

- **Ropeway ideas not fitting to local transport needs?**

- **Yes**, this is sometimes a problem for ropeways.
  - Ropeway ideas often ‘pop up’ erratically (e.g. for exhibitions, major sport events)
  - Some do not fit into wider transport planning
  - Transport operators are sometimes not asked or included in the process
  - Some miss real needs for improved public transport
  - **Example**: Hamburg – first plans could have been public transport, later plans (dismissed) would have resulted in just one more tourist attraction

http://www.ndr.de/nachrichten/hamburg/Hamburger-gaben-Seilbahn-keine-Chance,seilbahn270.html
Results – excursus: Koblenz

- Ropeway connecting the city centre with the Ehrenbreitstein fortress (crossing the river Rhine)
- Built for the “Bundesgartenschau” 2011 (BUGA, gardening exhibition)
- Great success since then – initially planned closure was cancelled

The current question:

*Should the ropeway be integrated into public transport?*

Idea is regularly coming up – but integration cannot be expected in the near future

- High cost of integration (extension of operating hours and months; compensation for current operator)
- Connection to public transport network is not optimal
- Not first priority of improving public transport in Koblenz:

  "Das nahverkehrliche Leistungsangebot […] innerhalb der Stadt […] bekommt von mir die Note ‘erbärmlich’."  
  (Interview with regional public transport association)

- Lack of political vision (regarding public transport in general)
Will we fly across German cities in the future?

- Current kind of most planning processes is criticised by experts:
  
  “[Ein] Strich, zwei Punkte und alles ist schon fertig”
  (Interview with transport planning expert)

- Drawing just one line into a plan is insufficient

- Ropeway plans should be derived from a structured search for improvement needs in a city’s public transport network – considering all types of public transport

- Taken seriously, ropeways should become one option among others

- Ropeways will not solve every transport problem – but if considered in early stages, they may sometimes be the best solution
Will we fly across German cities in the future?

- There are signs that things are about to change:
  - Some public transport laws explicitly consider ropeways
  - Planners start to consider ropeways as serious alternatives
  - More ideas are brought up, often by politicians or city officials themselves

- Example 1: München – connecting airport to trade fair

Will we fly across German cities in the future?

- There are signs that things are about to change:
  - Some public transport laws explicitly consider ropeways
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  - More ideas are brought up, often by politicians or city officials themselves

- Example 2: Zürich – ropeway links included in land utilization plan

Discussion

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  http://www.itas.kit.edu/english/index.php
  http://www.itas.kit.edu/english/projects_puhe16_hohibawu.php