Successful PT and E-mobility – Holistic Approach of LINZ AG LINIEN

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LINZ – Capital of Upper Austria

- 204,000 inhabitants, 130,000 daily commuters
- Linz area is the 2nd largest economic area in Austria, > 350,000 people
- Topography: located in a basin
- Rivers Danube and Traun splitting Linz into 3 parts (few bridges)
- Individual mobility and freight traffic increasing
- 300,000 PT-passengers daily
- LINZ AG / LINZ LINIEN = 100 % town-property
LINZ – Long term tram history

1897

1985
LINZ – Long term tram history

1897

1985

Conference Pilsen 2017
LINZ AG LINIEN – today

25 x p.a. = 9 mio. km

110 million passengers p.a.
Success Factors - Survey

- planning & projects
- transport fleet
- sales channels
- passenger information
- tickets
- multimodal mobility
- people

quality management
QM-System – Basic Structure

Customer Monitoring

Quality/Cost Relation

Determination of quality goals

Quality Benchmarking

Strategic Basics

Intended market-relevant quality

Quality goals

Quality Management / Controlling

Detailed Measurement of quality criteria
PT-network Planning

Philosophy:

- Walking distances to PT max. 500 m or 10 min.
- Not more than one switch in PT
- Regular interval timetables 7,5 / 15 / 30 / 60 min.
- 24/7 PT-supply (peak/off-peak, AST)
- Maximum customer benefit
- Profitability

Transport network Linz

- Length of routes: 210 km
- Service area: app. 232,000 inhabitants, 120 km²
### Traffic Projects – L2 solarCity

<table>
<thead>
<tr>
<th>Metric</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Route extension</td>
<td>4.2 km</td>
</tr>
<tr>
<td>Number of inhabitants</td>
<td>6,870</td>
</tr>
<tr>
<td>Number of new stops</td>
<td>13</td>
</tr>
<tr>
<td>Places of employment</td>
<td>920</td>
</tr>
</tbody>
</table>
Traffic Projects – L2 solarCity

**Motivation for the project:** to open up new residential areas and workplaces in the South of Linz

**Interval of service:** since 2005, tram every 7,5 minutes

→ app. 16 million passengers p.a., reduction of Southern bound individual traffic
Traffic Projects – L3/4 Traun

Route extension: 4,5 km  
Number of new stops: 8  
Number of inhabitants: 6,675  
Place of employment: 5,726
Traffic Projects – L3/4 Traun

- **Motivation for the project:** open up new residential developments and workplaces in the Western area of Linz

- **PlusCity:** sales area of app. 70,000 m², largest shopping center in Upper Austria, 220 companies and 3,500 employees, average 20,000 customers per day.

- **Traun:** app. 24,100 inhabitants, fifth largest city in Upper Austria.

→ L3/4 (new section): 5,8 mio. passengers in 2016
Modal Split Linz

Traffic Shares (week days)
- 42.5% Motorised private traffic
- 23.6% PT
- 26.1% Pedestrians
- 7.8% Biker

Approx. 24% PT-share
Trend to reduction in car ownership

2016: 505 vehicles / 1000 inhabitants
transport fleet
Transport fleet - History

1914
1950
1985
1970
2002
2011
Transport fleet

Philosophy: Environmentally friendly vehicles, equipped according to the customer needs (interiors selected together with passenger representative groups).

- 62 cityrunner trams (900 mm narrow gauge)
- 74 articulated buses 18 m (natural gas)
- 14 solo buses 12 m (natural gas)
- 19 trolley buses 18 m
- 4 mountain trams (new)
- 3 mountain trams (revitalised)
- 9 midi buses 7m (outsourced)
Trams

- Wheelchair accessible (100% low floor)
- Air conditioning
- Passenger infotainment
- Free WiFi
- LiSA-service for visually impaired and blind people

Berlin, 11. Juni 2010 – The tram for Linz was awarded the prestigious red dot Design Award „honourable mention“ in the category Automobile & Transportation awarded. The award was presented to the designer Peter Döllmann from Linz.
Innovative vehicles

• The world 's first operator with **full-service-contracts** for tram and bus (e.g. Innsbruck, Basel and Vienna followed)

• Environmentally friendly fleet (electric and bio-gas drive)

• Entire fleet **100% low floor**

• **Free WiFi** / Hotspot in all trams
Innovative vehicles

• “M2M” – “The intelligent Tram”, world-wide unique telemetry solution for passenger traffic

• **Air condition** in all trams and CNG-buses

• Voice announcements “LiSA” for blind people (vehicle to station)
Benchmark trams

Average Age Trams

Source: Benchmarking Survey of Bremer Straßenbahn AG (BSAG) 2013
Benchmark trams

Share of Low Floor Trams

Source: Benchmarking Survey of Bremer Straßenbahn AG (BSAG) 2013
Buses

• Wheelchair accessible (100 % low floor)
• LiSA-Service for visually impaired
• Passenger air conditioning (CNG-buses)
• Passenger infotainment
• EEV-engines (EU-standard “enhanced environmentally friendly vehicles”)
Double articulated trolleys
Double articulated trolleys

**Philosophy:** Expansion of high-quality PT especially in residential areas by using new hybrid double articulated trolleys.

**Project Plan:**
- Delivery start in autumn 2017,
- 20 pieces until 2018

Product specific presentation on the road incl. bus stops in special design

**Prototyping stations (in progress):**
- Option 1
- Option 2
Double articulated trolleys

Advantages:

• **Time of travel:** Reduction of travel time by 10%
• **Passengers:** Increasing number of passengers
• **Environmentally beneficial:** Due to hybrid e-drive
• **Barrier-free:** Easy access for disabled people

→ 94% customer satisfaction with vehicle fleet
Pöstlingbergbahn

Type „Mountainrunner“:
- 4 low-floor vehicles
- 3 revitalized vehicles

Characteristics:
- Wheelchair accessible (100 % low floor)
- Passenger air conditioning (CNG-buses)
- Passenger-Infotainment
(E-)Mobility in Linz

Mission e-mobility

LINZ AG offers intelligent and economically viable infrastructure for simple, user- and environmentally friendly e-mobility (in addition to PT).

Strategy e-mobility

• **Image**: LINZ AG perceived as the most important contact for e-mobility solutions in public

• **Infrastructure**: LINZ AG operates a sufficiently developed charging infrastructure incl. billing.

• **Products**: LINZ AG offers full-service PT and commercially attractive e-fleet solutions for business customers and communities.
(E-)Mobility in Linz

Charging stations:

- 30 stations, 100 loading-spots (Type 2 car-sockets)
- Background-system for accounting, remote control

E-mobility in PT:

- 73% PT-passengers transported with e-mobility (trams + trolleys)
AST is passenger transportation

- Specifically marked vehicles
- Departure from PT-stations
- Fixed departure time table
- Booking by telephone appointment

AST-traffic offers

- Quickest route
- Short travel times
- Secure transport (station-to-door)
- Attractive prices (co-financed by PT)
- On-Call Shared Taxi Linz

- Since 30 years
- Average 125,000 passengers p.a.
- Linz + 12 surrounding communities
- Low system costs compared to bus / tram
sales channels

SUCCESS
Sales channels

Ticket App

Linz AG Linien

Sobeh ne Ticket App? Mit der neuen Ticket App ist der Fahrkartenkauf jetzt noch komfortabler.

Ticket für Android und iOS-Geräte überladens und bis gelten. Infos auf www.linzag.at/ticketapp
Sales channels

Philosophy: Open access to tickets and services for every customer, wherever and whenever. User friendly interfaces. Purchase completed before entering the vehicles.

Various sales channels:

• 450 ticket machines at the tram/bus stop at 355 stations
• Pre sales tickets at app. 100 selected kiosks
• LINZ AG LINIEN costumer center at the main square
• Online shop and mobile ticket app.
Ticket machines – selection

User interface elaborated in several field tests together with customers
Flexible payment modes und barcode-scanning for re-buyers.
Ticket app – selection

→ Minimized clicks in the purchase process
Ticket app - payment

→ Simple and quick payment process
Sales channels

- Transfer 30% of purchases from pre-sales to ticket machines
- 90% customer satisfaction with sales channels
passenger information

SUCCESS
Passenger information
**Passenger information**

**Philosophy:** Inform customers as detailed and as fast as possible, wherever and whenever. Using customers’ devices if possible.

**Various information channels:**

- **On-board:** Infoscreens
- **Tram/bus-stops:** DFI, display-material
- **Print:** Customer-journal, newspaper,…
- **Online / mobile:** qando, EFA, website, facebook, twitter
Double infoscreens

**Philosophy:** On-board passenger information mixed with news and entertainment. Financed by advertisement partner company.

→ 3 double-info screens per 29 new Cityrunner trams
→ Profits from ads reinvested in new monitors
**Philosophy:** Fast and easy passenger information wherever and whenever, directly at the customers device or via desktop/internet.
Journey planner / qando-App

**Philosophy:** Fast and easy passenger information wherever and whenever, directly at the customers device or via desktop/internet.

**Advantages:**
- Real-time information
- Integrated route-planner
- Using contacts from address book for route requests
- Short-term disruption information
- Network maps and points of interest
- Consistent GUI in all big Austrian cities
Passenger information

• User requests EFA (web-journey-planner) = 11,6 mio. p.a.
• User requests and hits qando → 6,7 mio. p.a.
• 96 % customer satisfaction with passenger information
**Philosophy:** Customer oriented tariffs and services. Market research as a basis of product development.

- Tickets for all target groups
  - Regular customers
  - Occasional users
  - Companies
- Specific discounts
- Subsidies from authorities
Jobticket

Philosophy: Reducing traffic and parking problems of companies. Attractive product for working people and commuters.

Statistics:

- Released in 2007
- about 250 companies
- about 3,000 issued annual passes
- about 15,000 potential users
- + 10% increase of earnings for personalized annual pass (co-financed by companies)
people

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- Service staff trainings periodically
- Annual driver trainings
- Mystery shopping in 2 years’ interval

→ 90% customer satisfaction with customer center and support staff
multimodal mobility

SUCCESS
Multimodal Mobility

**Philosophy:** Preparing for MMM as a forthcoming trend, PT as the backbone, multimodal services as an add-on for customer-oriented flexible mobility.

**LINZ AG LINIEN strategy:**

- Co-operative development of apps and services (e.g. VAO, MPO)
- Inclusion of MMM-goals in the traffic plan of Linz
- Co-operations with car-sharing or bike-sharing-providers
- Step-by-step development of multimodal products (e.g. MEGA-ticket)

→ Increase MEGA-ticket sales + 32% (2010 – 2016)
Success Factors - Survey

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- passenger information
- tickets
- multimodal mobility
- people

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quality management
Thank you for your attention!

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