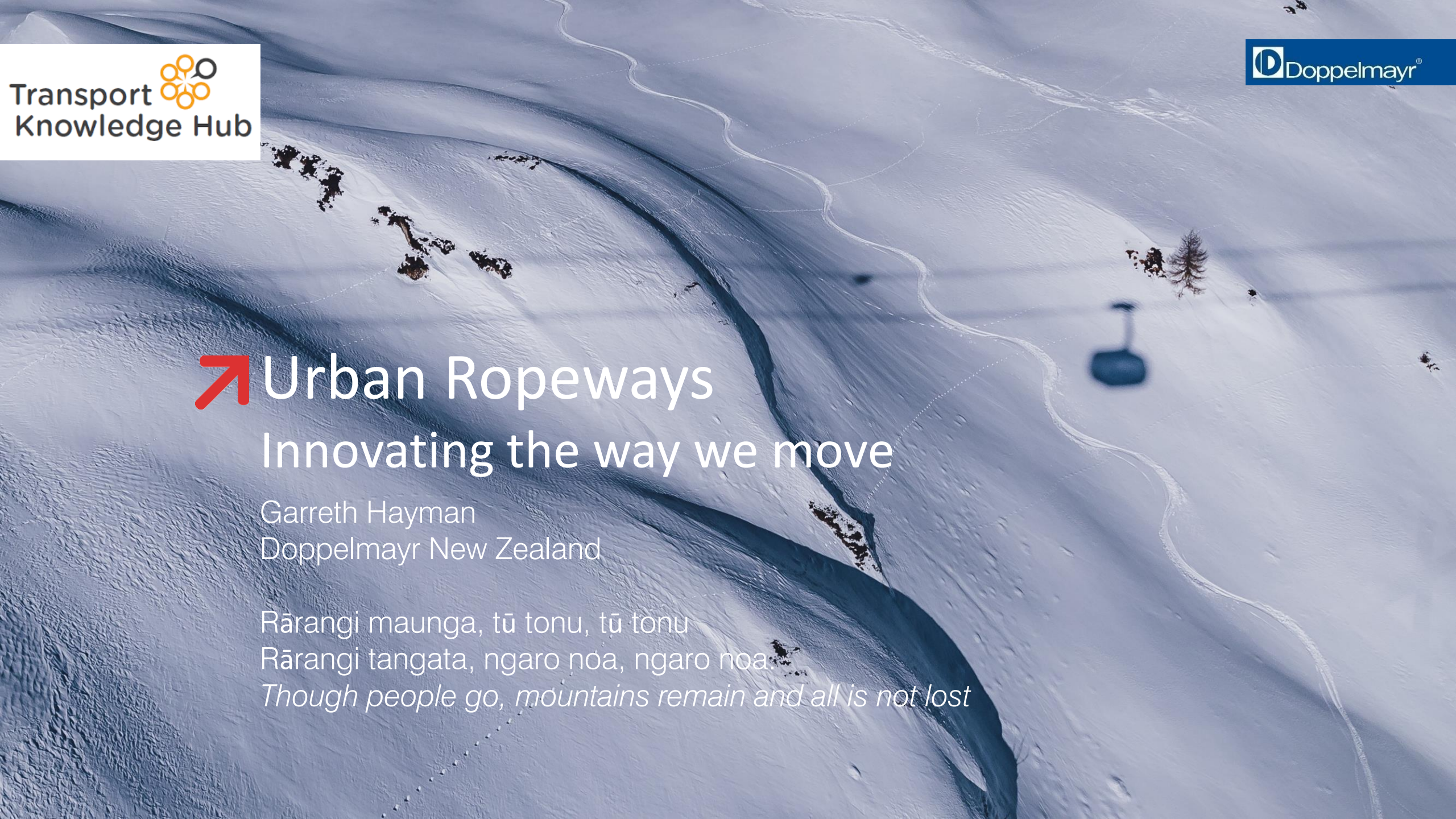


Urban Ropeways

Innovating the way we move

Garreth Hayman
Doppelmayr New Zealand

Rārangi maunga, tū tonu, tū tonu
Rārangi tangata, ngaro noa, ngaro noa.
Though people go, mountains remain and all is not lost

Next Level of Mobility

Integrated, Sustainable Mobility with Ropeways

WINTER

TOURISM

URBAN

MATERIALS

Breif History of Doppelmayr and Ropeways

- Founded in 1893,
- Doppelmayr builds Austria's first surface lift 1937’s
- Doppelmayr a key driver in the development of Ropeway technology
- Born and developed in the mountains, with challenging environments, high-capacity requirements, and ever-increasing safety and reliability demands
- For more than 20 years DM has been building urban systems.
- Doppelmayr New Zealand started in 1975, integral part of the NZ Ski Industry, and some of our countries largest tourism operators

Ropeway Systems

Urban Enviroments

Detachable Gondola's

Aerial Tramways

Tri-Cable Gondola's
(a.k.a 3S gondola)

Cable Cars,
Funicular Railways,
Cable liners

Advantages of Ropeways

Attraction

Connecting Lives

Cost-effective

Eco-friendly

Energy-efficient

Integrated

Mobility for all

Next Level

Proven Technology

Reliable

Construction time

Space-saving

Time Saving

Comfort

Digitalised

Advantages of Ropeways

Economic Outcomes

- Generally, 1/3rd Cost of Light rail
- Generally, 1/10th Cost of underground
- Modular construction
- Most projects less than 2 years
- Single or parallel construction sites

Cost-effective

Construction time

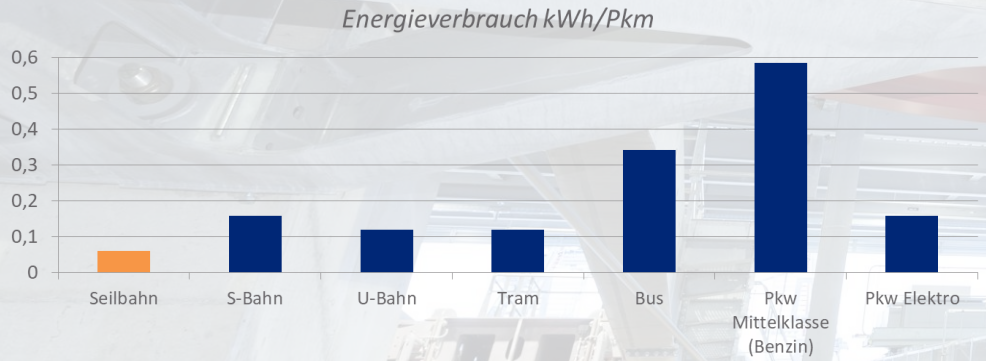
Advantages of Ropeways

Environmental Outcomes

- Efficient design and manufacturing
- Lightweight construction
- Quiet electric drives
- No direct GHG emissions
- Very low noise emissions
- Very low construction waste

Eco-friendly

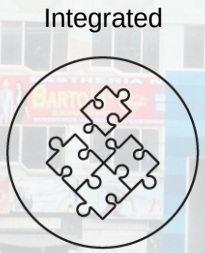
Energy-efficient

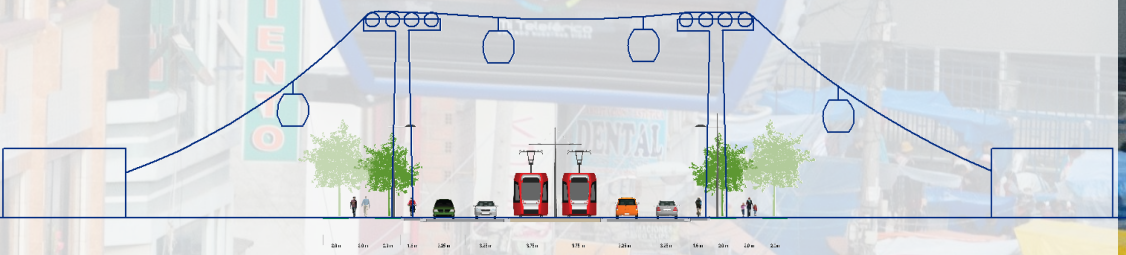


Advantages of Ropeways

Social Outcomes

- Fully integrated in any transport network and ticketing system
- Streets are kept clear
- No separation effect
- Short and isolated construction sites provide less disruption





Advantages of Ropeways

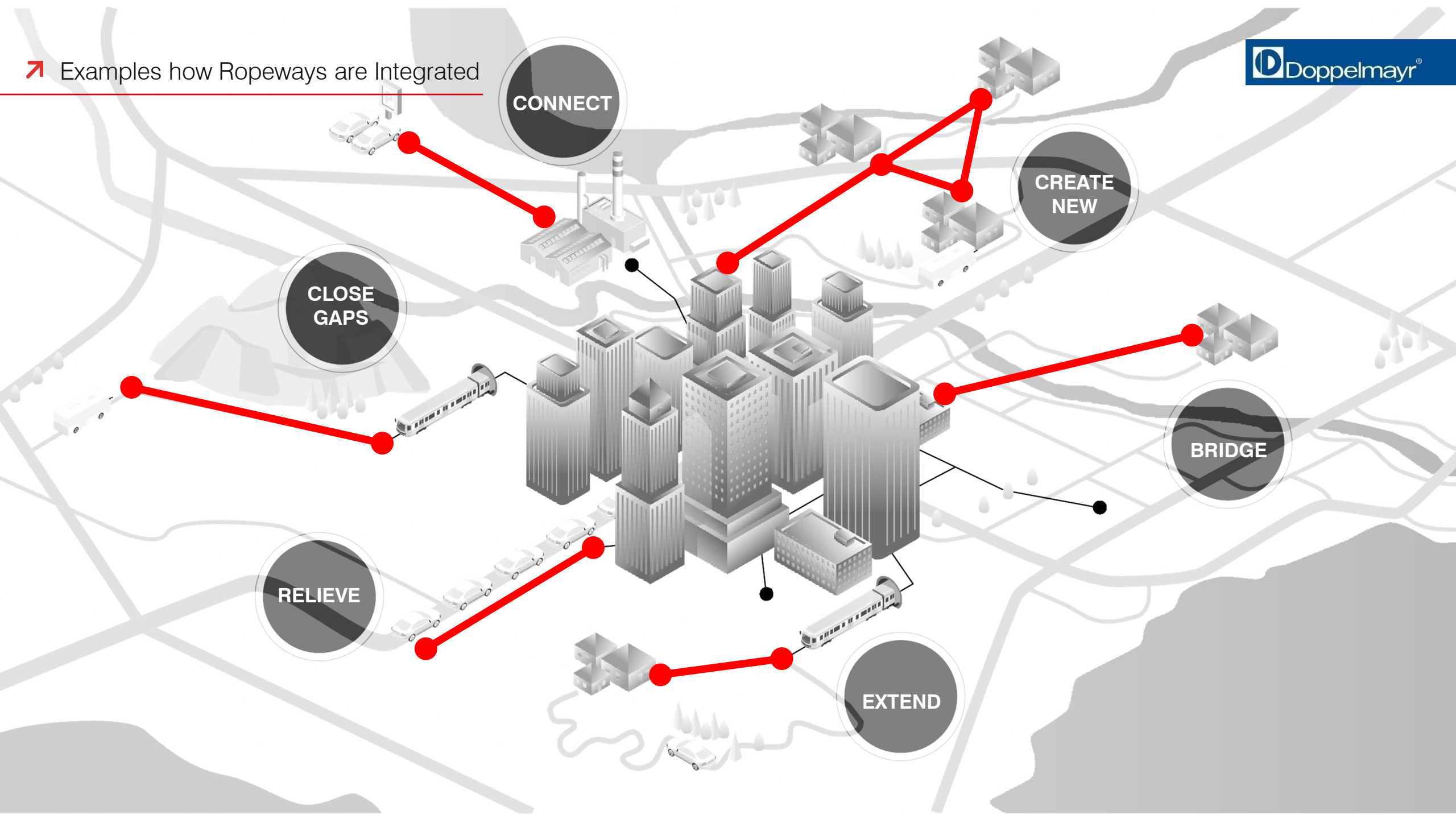
Human Outcomes

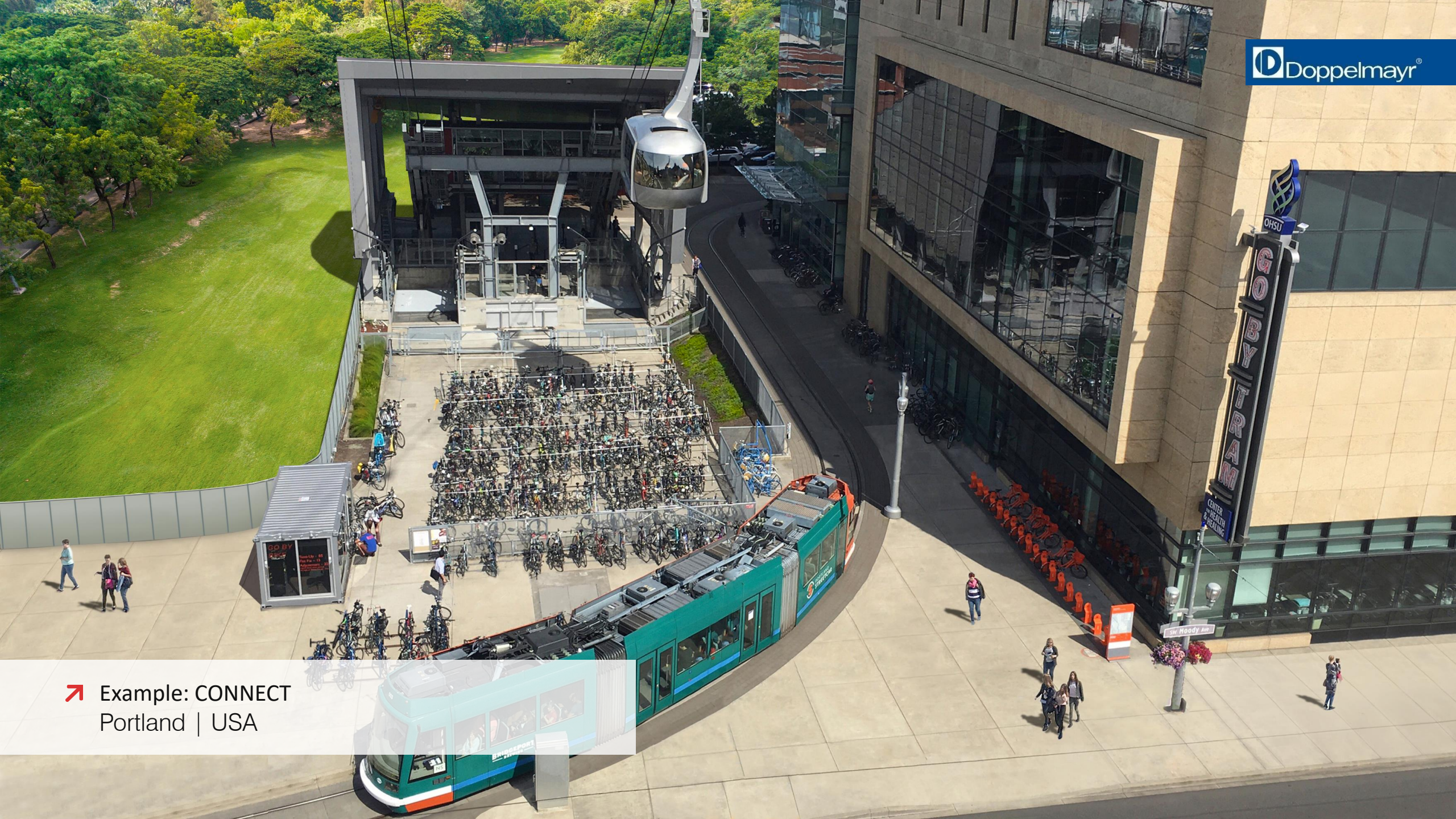
- Barrier-free boarding
- Travel independently and securely
- Comfortable and secure
- Separated entry and exits, avoiding crowds
- Inclusive with low fares

Connecting Lives

Mobility for all

Examples how Ropeways are Integrated





Doppelmayr

↗ **Example: CONNECT**
Portland | USA

Example: CONNECT
Portland | USA

- Links Portland Tram with Oregon Health and Science Hospital
- Seamless integration with public transportation
- Led to increase in real estate values
- Reduction in greenhouse gas emissions of over 1,000t
- Station has become a mobility hub

Example: CREATING NEW TRANSPORT NETWORKS
Mi Teleférico | La Paz | Bolivia

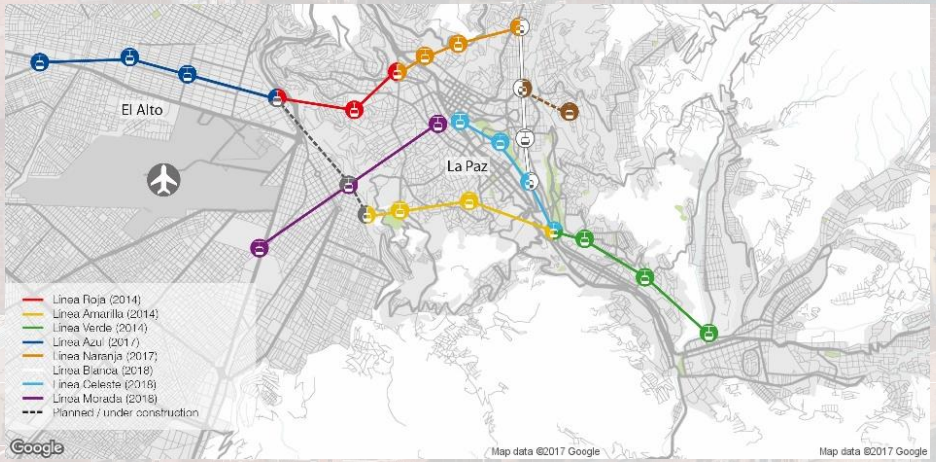
Example: CREATING NEW TRANSPORT NETWORKS
Mi Teleférico | La Paz | Bolivia

- Largest urban cable car network in the world
- Connects the two major cities of El Alto and La Paz
- Ropeway network changed the way the city moves
- Stations developed into social hubs

Mi Teleférico *(My Cable Car)*

Mission: *we transport lives with safety, efficiency, sustainability, warmth and social inclusion to live well*

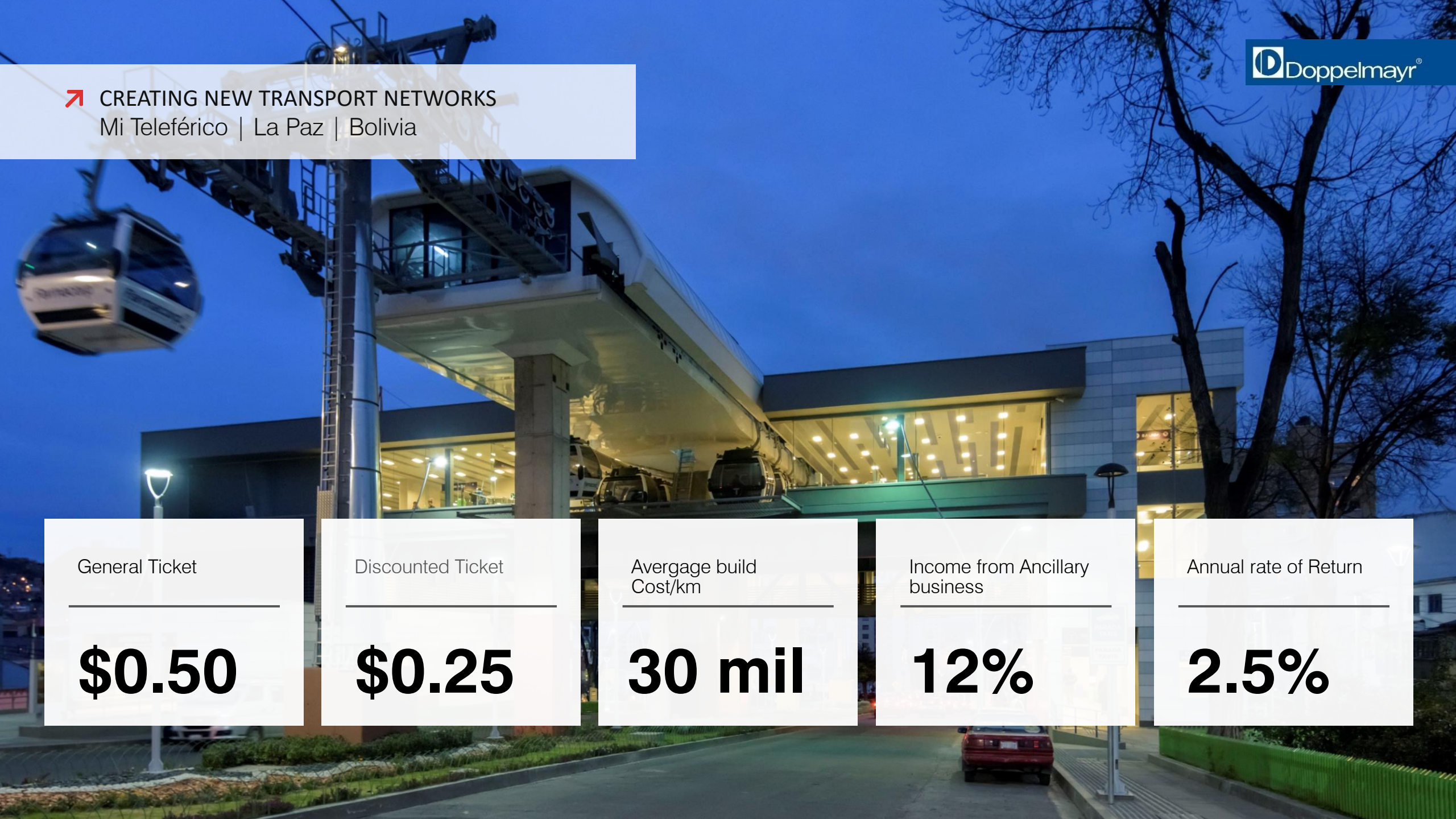
Vision: *be the world benchmark for urban transport, which transcends people's lives*



CREATING NEW TRANSPORT NETWORKS

Mi Teleférico | La Paz | Bolivia

LINES	PASSENGER IN 6 YEARS	AVERAGE DAILY PASSENGERS	RECORD DAILY PASSENGERS	KM OF NETWORK
10	315 mi	265,300	583,841	31



CREATING NEW TRANSPORT NETWORKS
Mi Teleférico | La Paz | Bolivia

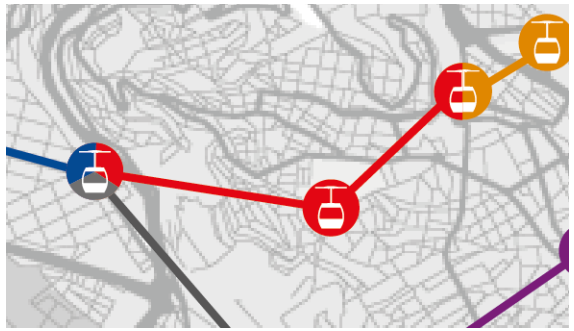
General Ticket	Discounted Ticket	Avergage build Cost/km	Income from Ancillary business	Annual rate of Return
$0.50	**$0.25**	**30 mil**	**12%**	**2.5%**

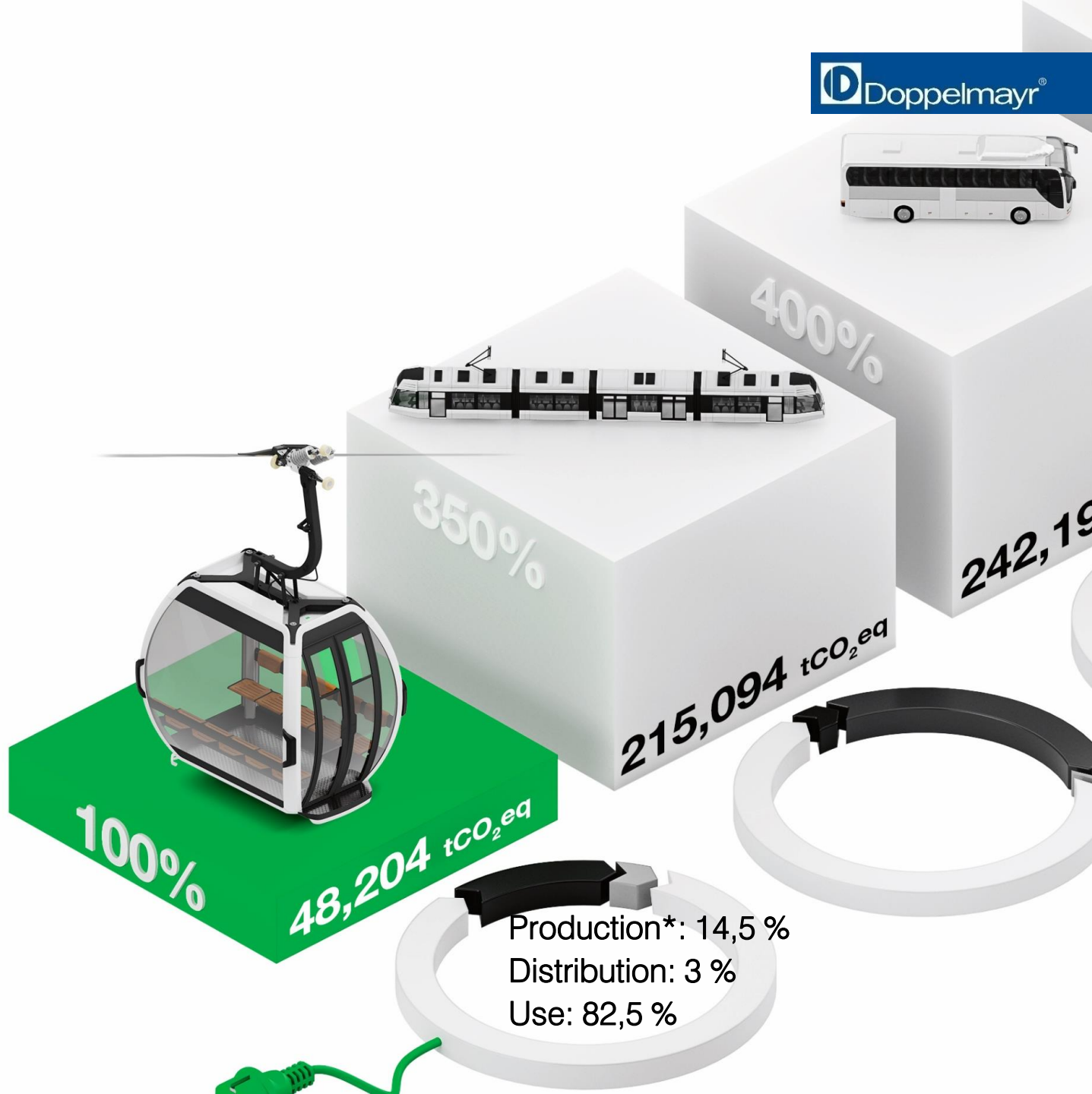
Life Cycle Anaylsis
Linea Roja, LaPaz, Boliva

- Based on Linea Roja (Red Line) in Bolivia
- Compared Detachable Gondola, light rail, bus and mini-vans
- Ropeway is the most Sustainable mode
- 82.5% of all emissions from the USE phase
  - Of this 92% was directly contributed to the electricity grid mix

Bolivia's electricity mix is approx. 60% fossil fuels, and 40% renewables. NZ (2021)19% Fossil, and 81% renewables .

- Life Cycle Assessment tool available for evaluation of carbon footprints of any projects



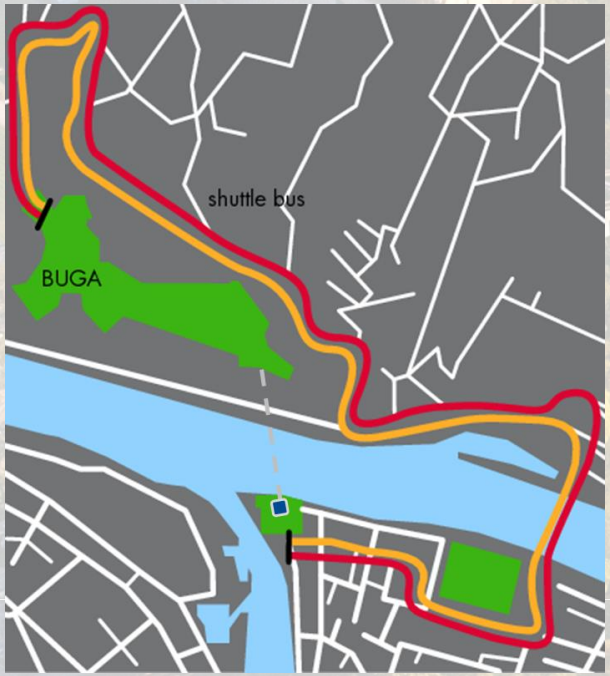


↗ Visit Colours of LaPaz for more information;
https://lapaz.doppelmayr.com/en/

Example: BRIDGE
Koblenz | Germany

Example: BRIDGE
Koblenz | Germany

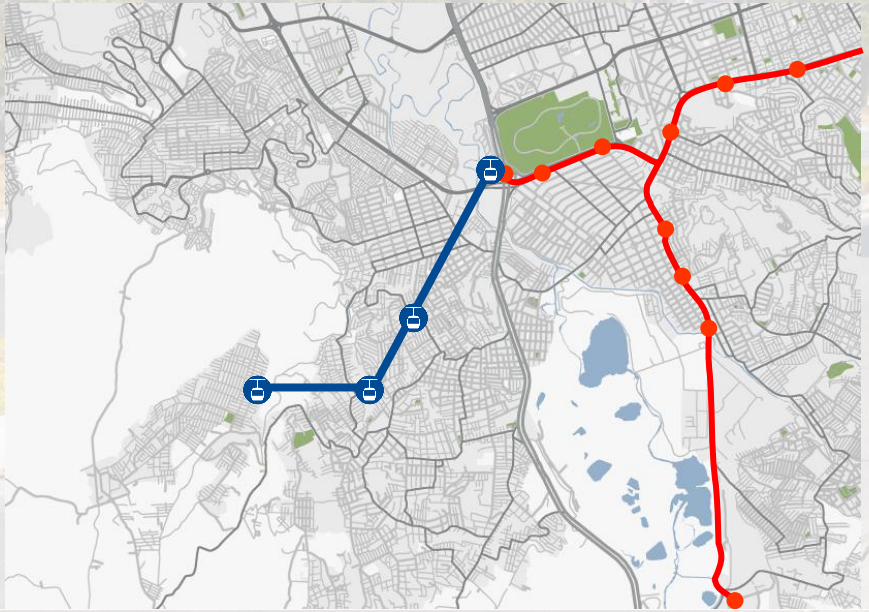
- Built for BUGA 2011
- Connection between Koblenz centre and Ehrenbreitstein Fortress
- Ropeway ride approx. 4 min, bus ride approx. 25 min.
- 5.7 mio passengers in 6 months (2011)



Example: EXTEND
Bogotá | Colombia

Eample: EXTEND
Bogotá | Colombia

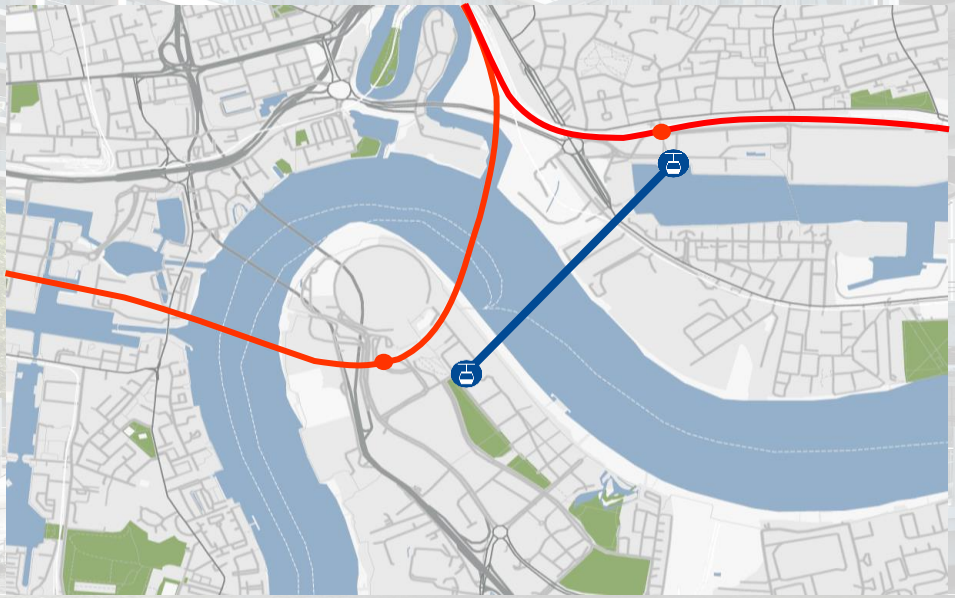
- Connects Ciudad Bolívar with Transmilenio BRT network
- Serves as extension of BRT network
- Integrated into existing fare system
- Commuting times reduced by up to 2 hours



Example: BRIDGE
London, UK

Example: BRIDGE
London, UK

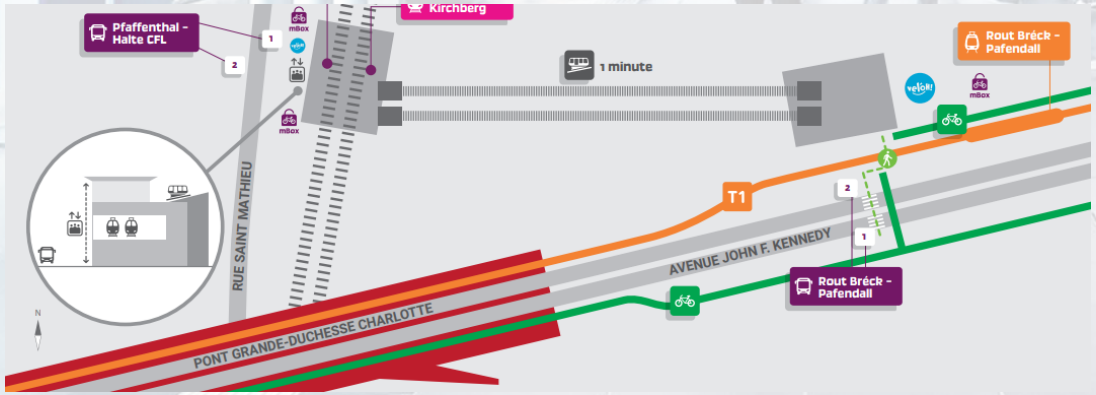
- UK’s First Detachable Gondola
- Fully integrated in public Transport
- Bridges the Thames
- New landmark of the city



Example: CLOSE GAPS
Luxembourg

CLOSE GAPS
Luxembourg

- Closes a gap between heavy rail and light rail
- Significant reduction in travel time, 20min for the average user
- Reduction of congestion at the main station
- Achieved 3-year mode share goal within 6 months



Doppelmayr®

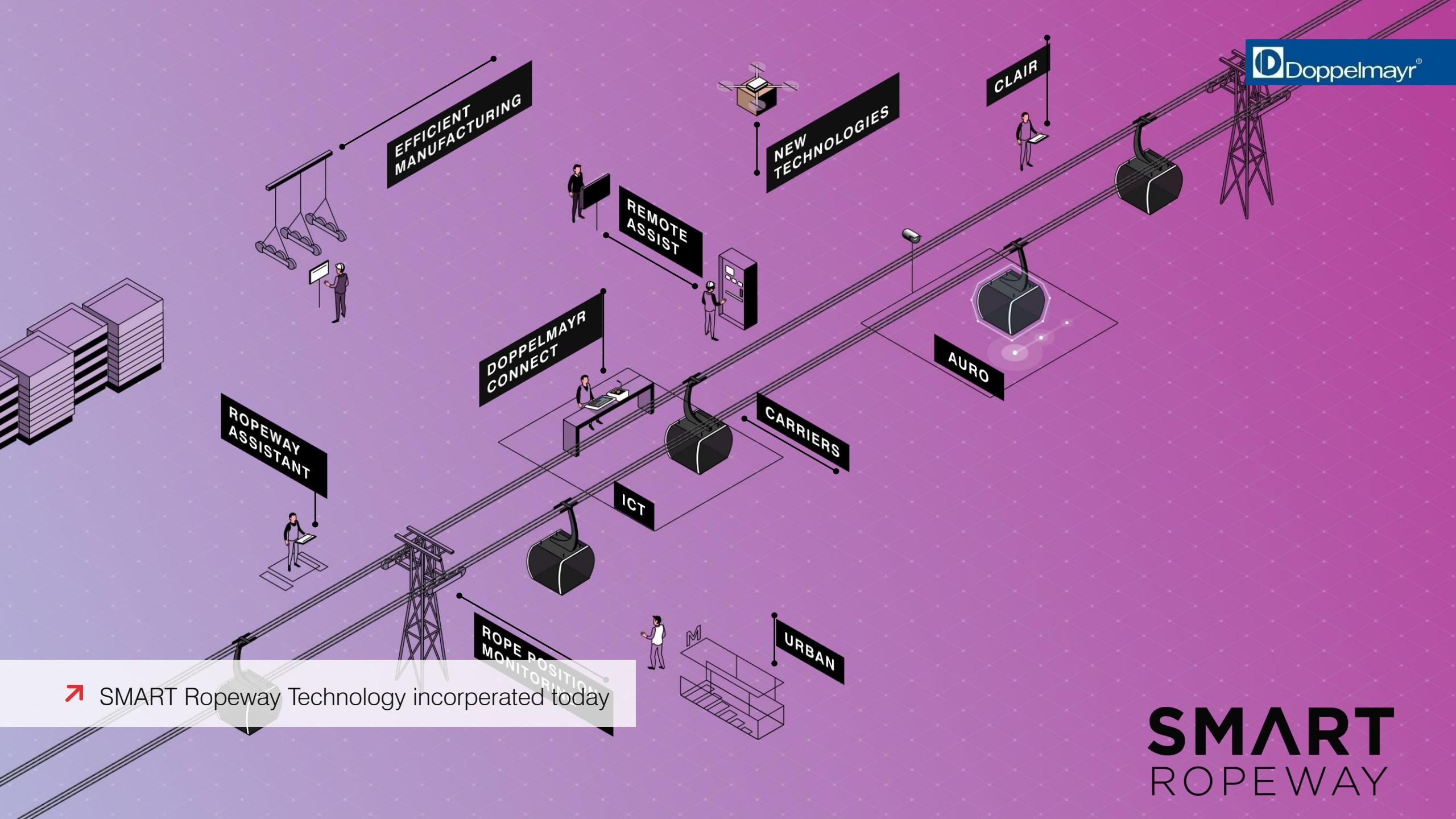
Doppelmayr®

the journey of connection

- Service & Applications
- Mobility & Experience
- Advanced Connectivity
- Relations & Reliability
- Technology & Innovation

↗ FUTURE of Ropeways

SMART ROPEWAY



SMART Ropeway Technology incorperated today

SMART ROPEWAY

AURO

Autonomous **R**opeway **O**peration

What is AURO?

AURO stands for **Autonomous Ropeway Operation** and refers to the passenger operations of a ropeway installation without station personnel. AURO will provide huge benefits both in tourist areas and in the urban environment.

- Passenger operations of a ropeway without station personnel
- Unmanned stations are monitored by technical systems (cameras und sensors)
- One or more ropeways with unmanned stations are operated and monitored from a central point, the Ropeway Operation Center (ROC)

Advantages

- **Cost savings**: no personnel required in the stations for passenger operations
- **Top safety** ensured by cutting-edge safety equipment
- **Perfect overview** in the ROC (Ropeway Operation Center) with the video system in the stations
- **Top availability** thanks to fast response – elimination of shutdowns in the ROC
- **Enhanced boarding comfort** through additional cabin stabilization and gap-free cabin step geometry
- **AURO operating concept can be extended** to include several installations (only one ROC required)

AURO – Overview

10-MGD AURO Detachable Gondola

Zermatt, Switzerland

AURO urban vision

Fully intergrated into all modes of transport

FUTURE CONCEPT – URBAN

https://youtu.be/bUKgkLSsAWI


Doppelmayr
Next Level of Mobility
Integrated, Sustainable Mobility with Ropeways
visit www.doppelmayr.nz/urban
Email us at: urban@doppelmayr.nz