

Sustainable Mobility - The Public Transport System in Munich

Dipl.-Ing. Gunnar Heipp
Munich Transit Ltd. (MVG)
Director of Strategy and Planning





Outline

1. Münchner Verkehrsgesellschaft (MVG) – the company
2. Our principles of sustainability
 - Economic efficiency & attractiveness of location
 - Company & Employees
 - Environment & Climate Protection
3. Investment in the infrastructure of the future

1. MVG – Münchner Verkehrsgesellschaft mbH

MVG is a subsidiary of Stadtwerke München GmbH (SWM), the city-owned utility group for Munich.

MVG is responsible for the design and operation of underground, bus and tram services in Munich.

MVG orders transport services (planning, general and operating services) and the infrastructure from SWM.

About 3,000 SWM employees work for MVG.

MVG – today

Residents in the transport region in millions	Area of transport region in km²
~ 1.46	~ 412

Means of transport	Lines	Operated routes (km)
underground	7	95
tram	11	79
bus	66	454

Operating performance (seating capacity kilometres in millions)	
total	12.853
thereof underground	9.159
thereof tram	1.214
thereof bus	2.480

Transported persons in millions (2011)	
total	522
underground	368
tram	99,5
bus	178



Our principles of sustainability

**SWM
MVG**

We guarantee sustainable public mobility for Munich and link long-term economic planning with social and ecological commitment.

Economic efficiency & attractiveness of location

We plan with regard to the future and cost-effectively to secure economic company development and to finance a highly competitive local public transport service. Bus and train based public transport is a decisive factor for the business location of Munich.

Company & employees

We determine our potentials for improvement by means of continuous dialogue with employees, customers and the public. We actively include stakeholders in our decision-making.

Environment & climate protection

Using local public transport means acting in an eco-friendly and climate-compatible way. Therefore, we see our task in continuously developing networks and services in a sustainable way and continuing to improve our energy efficiency. As a result we make a decisive contribution to the quality of life in Munich.

The C-train – the modern underground line for Munich

Advantages:

- More space: 912 passengers (+ 5 %)
- More comfort for our costumers: broad doors for getting in and out faster, more space for buggies wheelchair user and bikes, optimized information system (visual and acoustic)



New low-floor buses

Advantages:

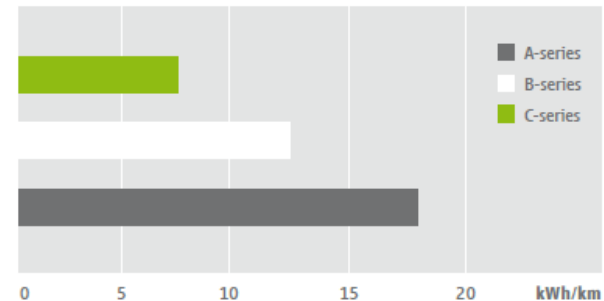
- ecological: all buses meet the so-called EEV Standard, Hybrid bus on test
- More comfort for our costumers: accessible for people with disabilities, all low-floor buses completely air-conditioned, optimized information system (flat screens)

The Variobahn – the new tram for Munich

Advantages:

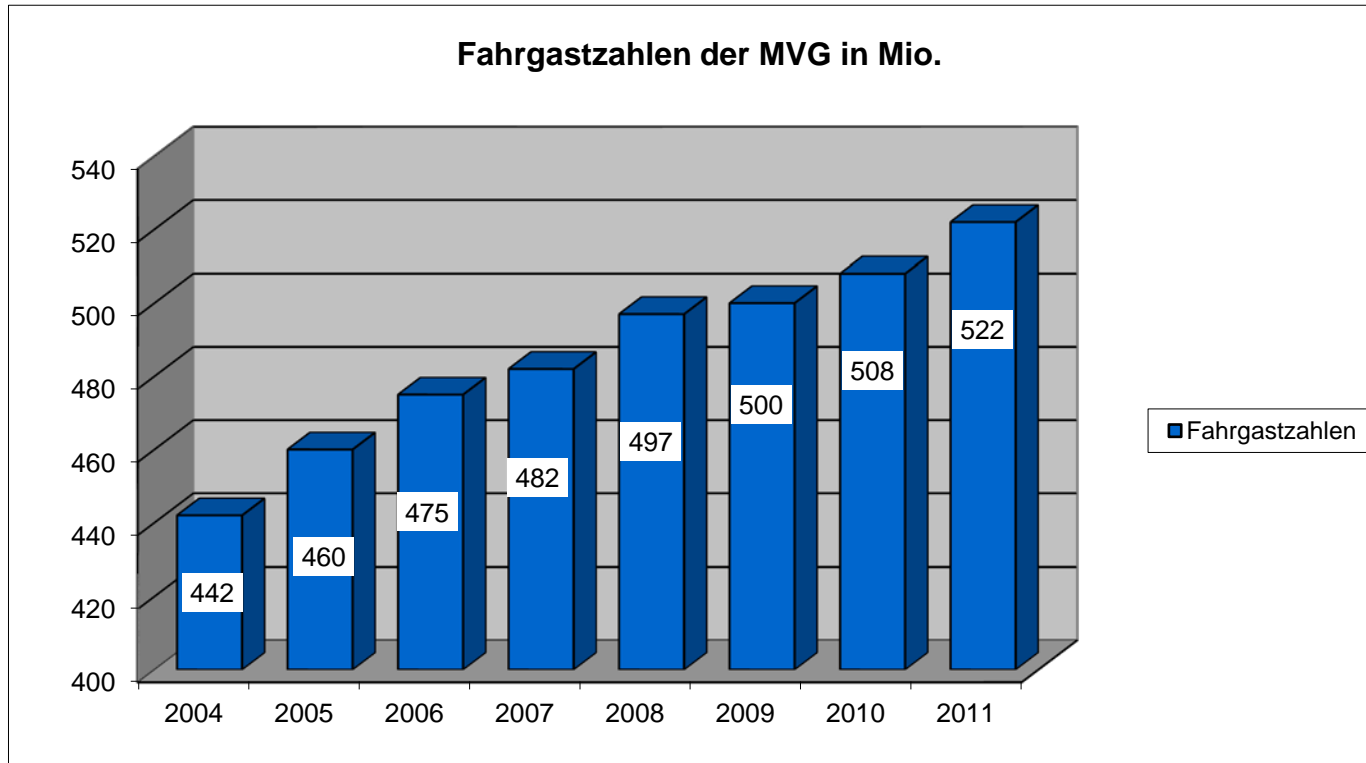
- More space for passengers (221)
- More comfort for our costumers: Scissor lift in all vehicles, low-floor tram, optimized ventilating and heating system, improved vibration isolation system and less noises
- Higher energetic recovery

Underground types in comparison
Specific consumption per kilometre per 6 carriage train (in kWh/km)



Economic efficiency & attractiveness of location

Trend in passenger numbers



The MVG passenger numbers rose to approx. 522 million passengers in 2011. This represents growth of almost 18% since 2004.

Municipal value of PT in Munich

Research question: who is paying for the PT and who benefits from it?

Costs and Benefits

Financing
„Direct Transactions and Hidden Costs“

Lost Profits
„Indirect Transactions“

Players

Fiscal Level
State Capital München

Corporate Level
PT Companies (SWM/MVG)

User Level
Private Households

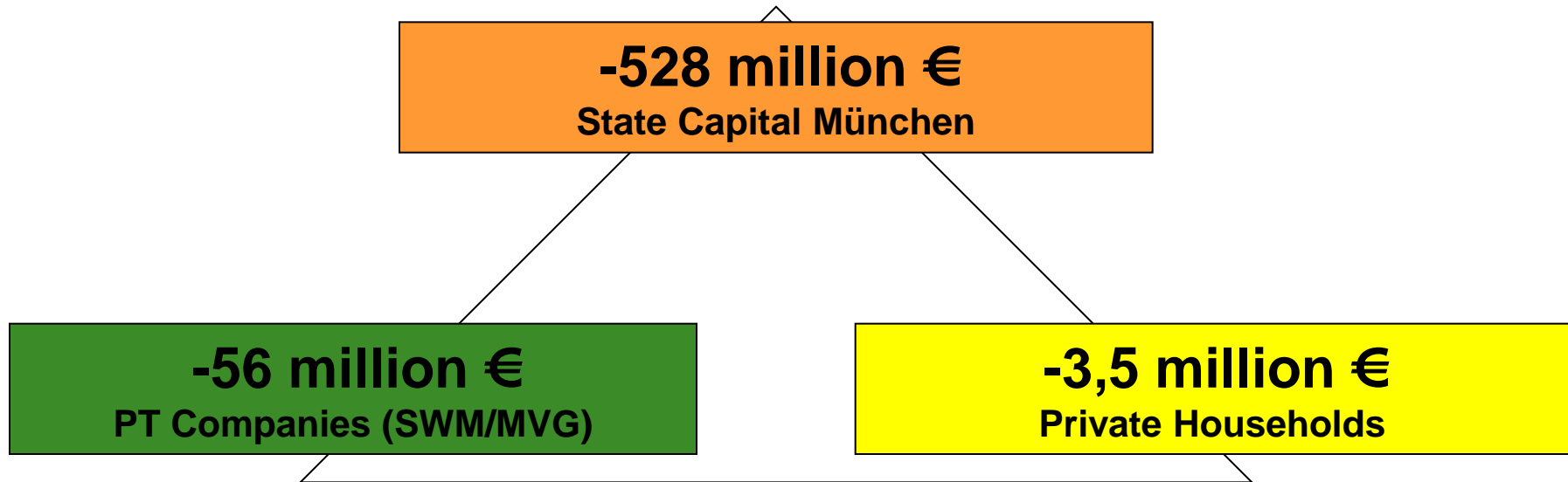
Modes of Transport

PT

MIV

Municipal value of PT in Munich

Financing: Who is paying how much for the PT?



MIV and PT:
approx. -4 billion € p.a.

Municipal value of PT in Munich

„Mobility Corporation“ - Financing

MIV is with 49 Cent/Pkm more than twice as expensive as the PT (20 Cent/Pkm).

Financing
Cent/ Passenger-Kilometres (Pkm)

The largest share of the expenditure is contributed by private households, in particular to finance their car use.

MIV 5,3 / PT 4,7
State Capital München

MIV 0,0 / PT 2,6
PT Companies (SWM/MVG)

MIV 43,2 / PT 13,0
Private Households

Municipal value of PT in Munich

„Mobility Corporation“ - Lost Profits

Concerning time-consuming and land consumption PT has with 52 Cent/Pkm a significant better benefit-efficiency as MIV (100 Cent/Pkm).

Lost Profits
Cent/ Passenger-Kilometres (Pkm)

MIV 30,4 / PT 9,7
State Capital München

MIV 0,0 / PT 0,0
PT Companies (SWM/MVG)

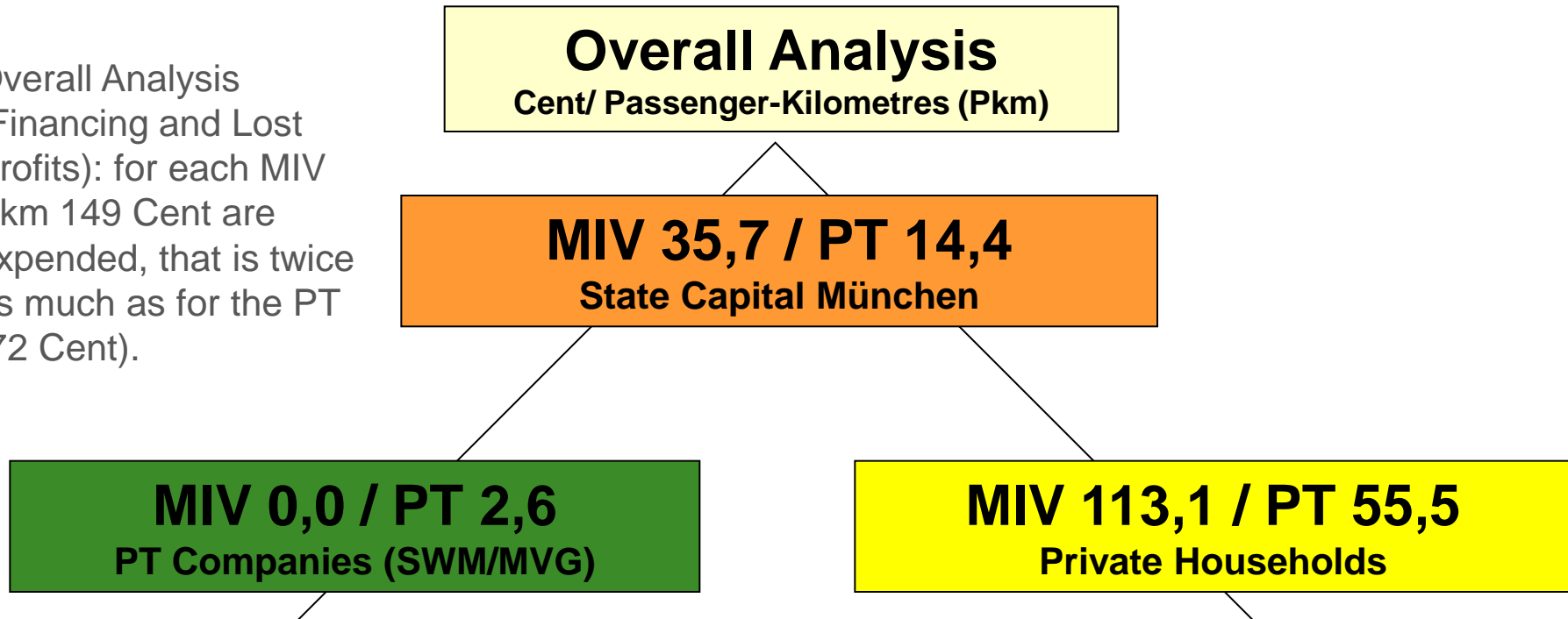
MIV 69,7 / PT 42,5
Private Households

Environmental costs and costs of accidents were not included. They would have further improved the benefit-efficiency of PT.

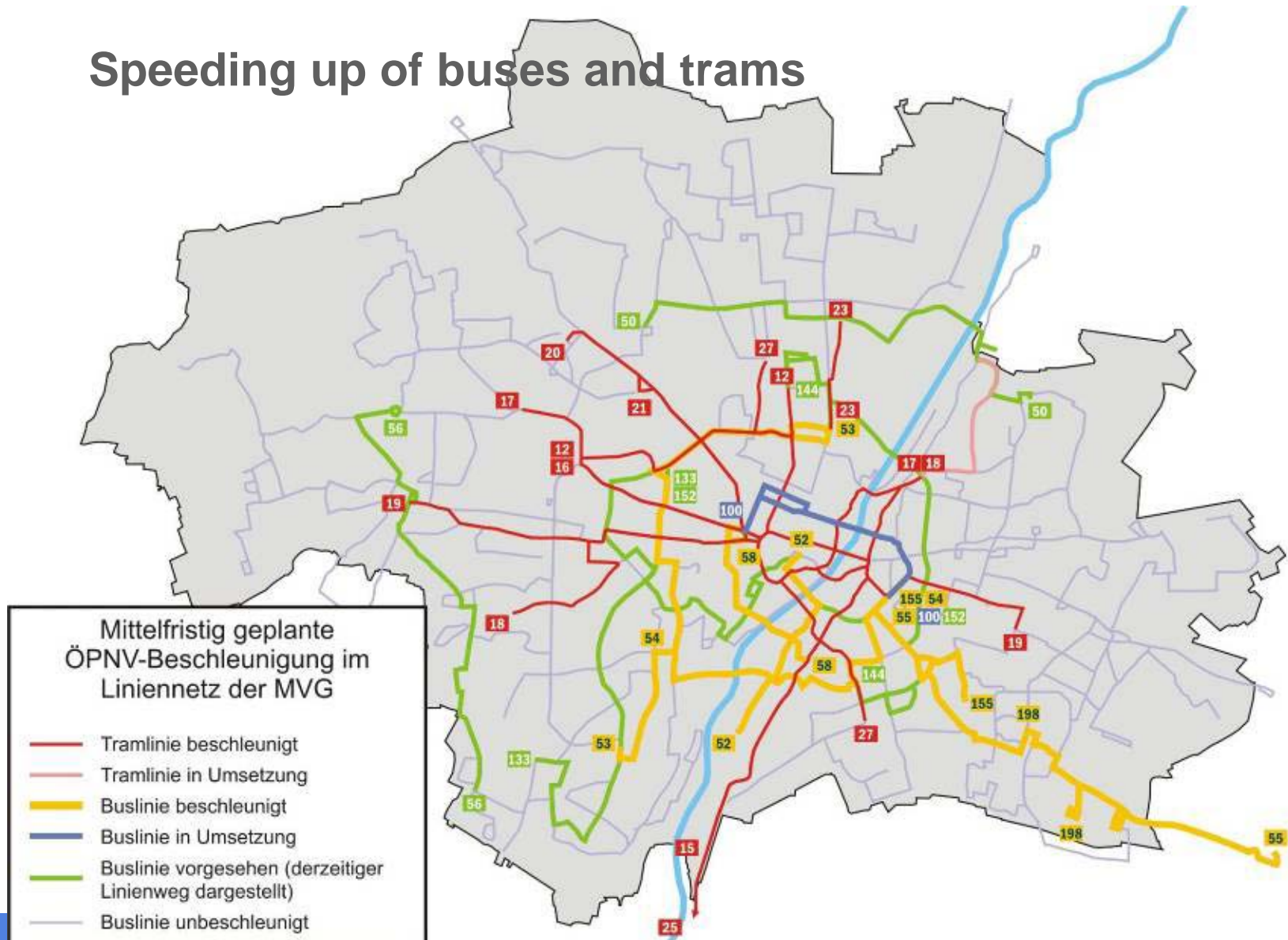
Municipal value of PT in Munich

„Mobility Corporation“ - Overall Analysis

Overall Analysis
(Financing and Lost Profits): for each MIV Pkm 149 Cent are expended, that is twice as much as for the PT (72 Cent).



Speeding up of buses and trams



Accelerated traffic lights

- Number of signal systems in Munich: approx. 1,100
- Total number of used signal systems: 887
 - of which accelerated: 375 (42%)
 - of which not accelerated: 512 (58%)
- Total number of used tram signal systems: 210
 - of which accelerated: 209 (99%)
 - of which not accelerated: 1 (1%)
- Total number of used bus signal systems: 755
 - of which accelerated: 225 (30%)
 - of which not accelerated: 530 (70%)



Tram St. Emmeram

Scope:

Around 4.3 km, 9 new stops

Objective/benefits:

- Growth in passenger numbers due to increase in population and jobs resulting redevelopment of barracks sites and new developments (result of the passenger counting in January 2012: 13.000 passengers, thus the prognosis for 2015 is already reached).
- Greater efficiency than bus

High aesthetic standards:

- Continuously grassed track with higher vegetation in the edge zone
- New discrete light and simple catenary system with underground supply cable in Munich
- Trees on platforms

Milestones:

- Planning process decision of 18 September 2009
- Ground breaking ceremony on 21 May 2010
- Commissioning in autumn 2011

Costs:

Approx. EUR 43 million



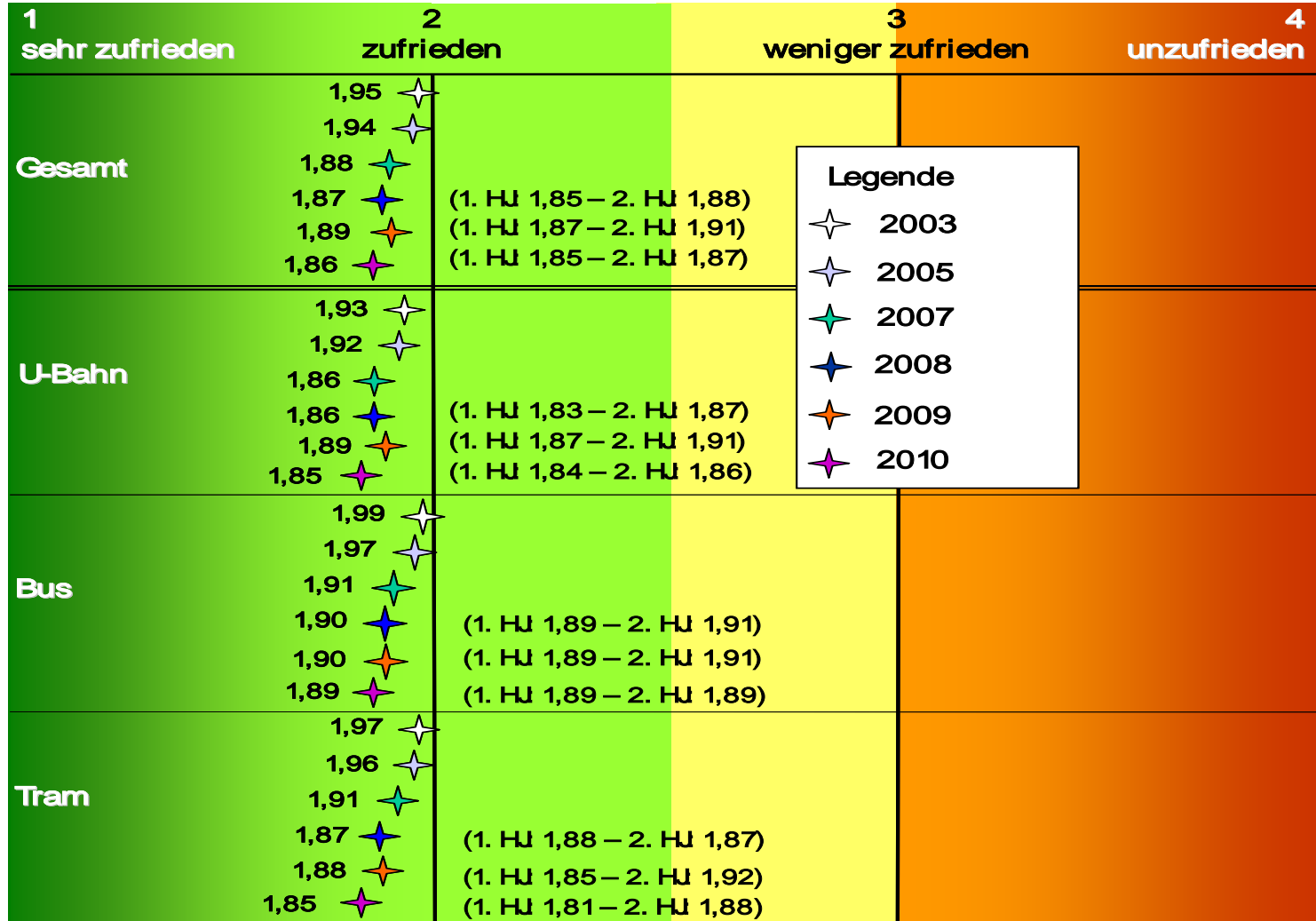
2. Our principles of sustainability - Company & Employees



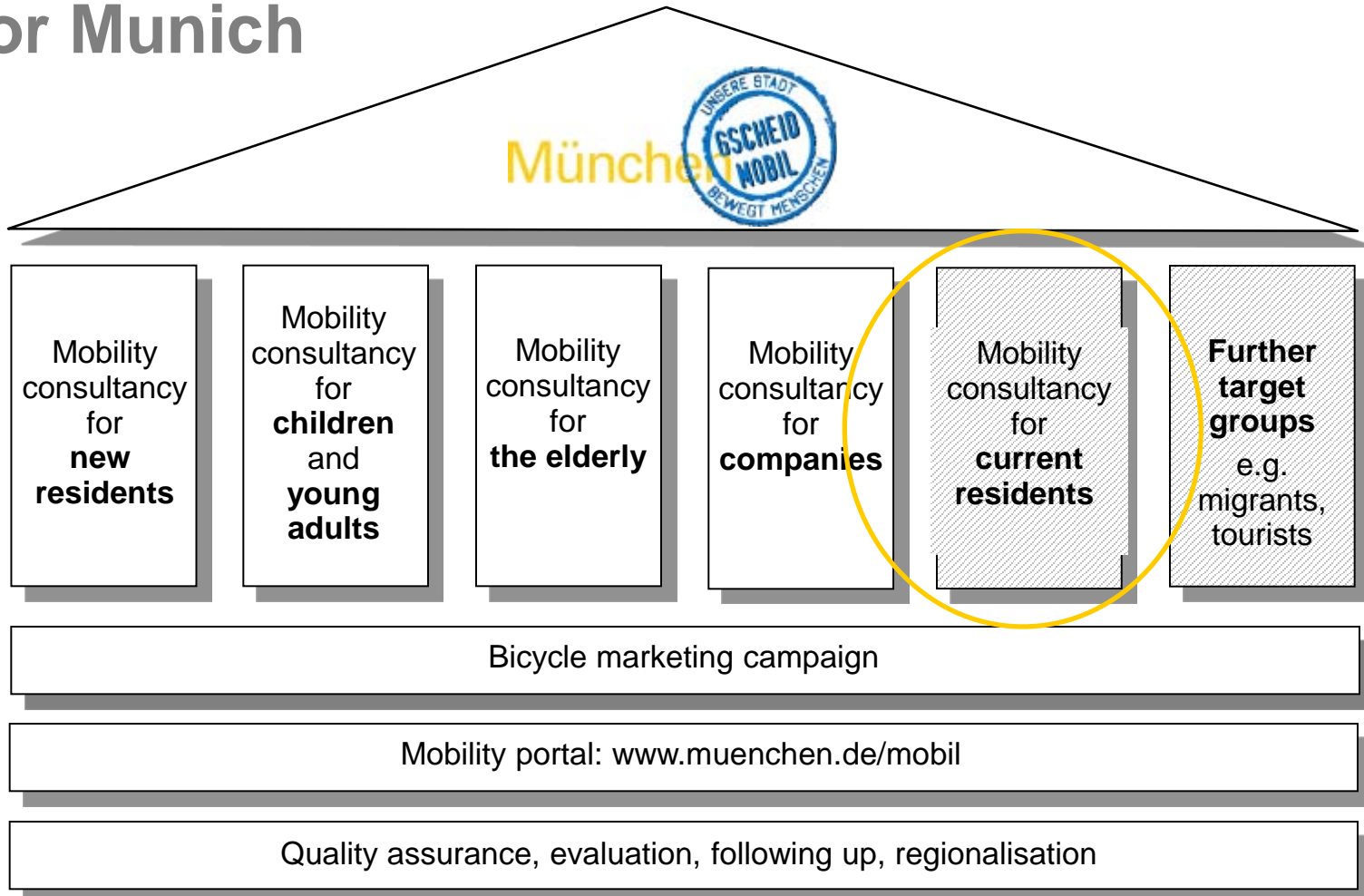
List of stakeholders

Stakeholders	Type of dialogue	Frequency
Customers	Customer information in 3 customer centres, 7 information points, "Infomobil"	long term
	Information service by telephone, Internet and mobile phone	long term
	Customer magazine "MVG Line 8"	4 x annually
	Mobility projects: New citizen project, Mobi-Race, AENEAS etc.	long term
	Customer complaint management	long term
Citizens	Information stands at public events, street festivals and trade fairs	as required
	Construction site notifications using leaflets, information containers, etc.	as required
	Participation in citizen meetings	as required
Owner /Politics	Supervisory board meetings	regularly
	Participation in committees and plenary assemblies of the city council	regularly
	Permanent contact partners for the district committees	long term
Associations and Alliances	Active participation and management: regional climate alliance "Munich for Climate Protection"	long term
	Continuous exchange with passenger and environment associations	regularly
	Alliances (Climate Protection, Inzell ...)	regularly
	Co-ordination with the passenger advisory board in the association area	long term
	Co-ordination with the authorised representatives of the disabled of the city with respect to vehicles, infrastructure and visibility of communication media	4 x annually
Business partners and suppliers	Meetings with suppliers and auditing	regularly
	Information events for manufacturers and suppliers	regularly
	Branch events: trade fairs, association events, forums	regularly
Science, Universities	Supervision of dissertation work	regularly
	Exchange with research groups	regularly
Media	Press office as contact partner	long term
	Press releases, press conferences, etc.	regularly
Employees	Current information through the Intranet	long term
	Employee newspapers "MVG Mobil" and "SWM intern"	regularly
	Ideas management "ISI" "Denk mit – Lenk mit" in driving service	long term
	Employee meetings	regularly
	Employee communications project in the departments rail and bus	regularly
	Works meetings	regularly
	Employee representation in internal committees and bodies	long term

Customer satisfaction

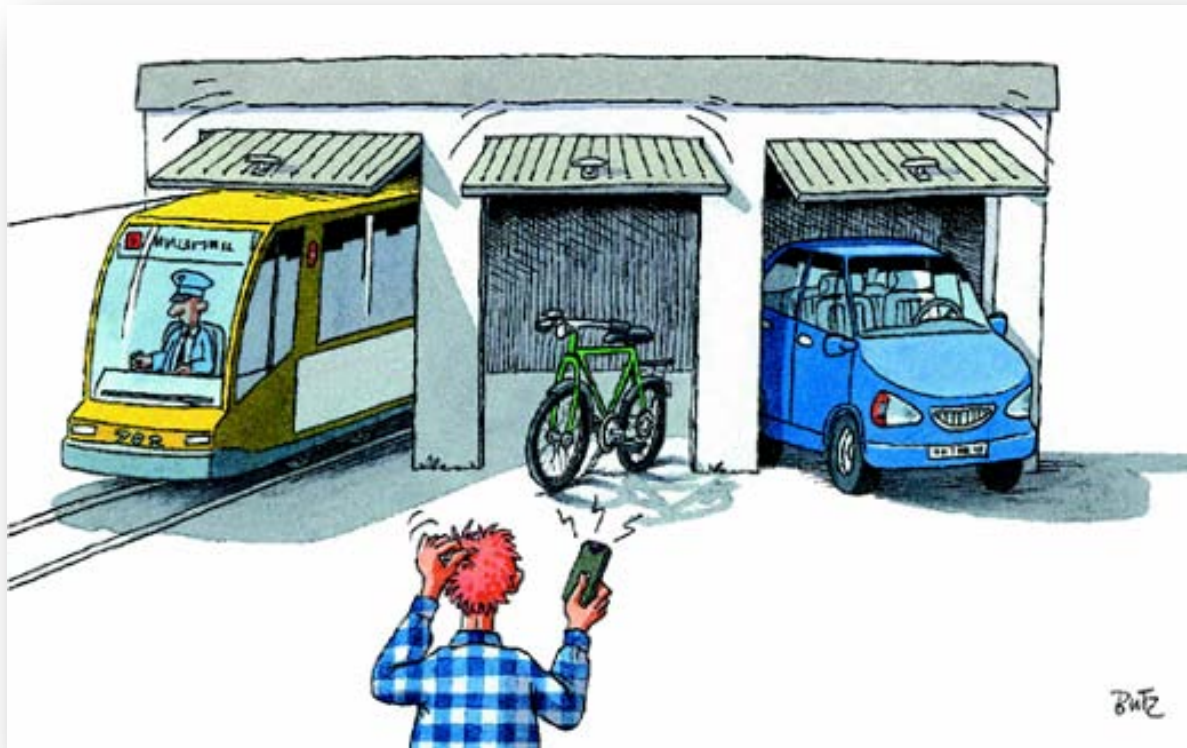


Overall mobility management concept for Munich



Mobility providers as comprehensive mobility service providers - The Munich new residents package

München



Effect on transportation (transport volume)

Effect of pilot project on 5,000 new residents

- Reduction in car km p.a.: 4.7 million
- Reduction in CO₂: 700 tonnes
- Saving of administrative costs (according to EWS): € 940,000

Effect when expanded to all 85,000 new residents

- Reduction in car km p.a.: 80 million
- Reduction in CO₂: 12,000 tonnes
- Saving of administrative costs (according to EWS): € 16 million

Calculation basis: 5,000 new residents; 3.8 routes per day and new residents; average route length by public transport: 11.4 km; average MIV route length: 27 km; modal split.

→ Very positive feedback to Mayor and MVG from thousands of new Munich citizens!

2. Our principles of sustainability - Company & Employees

Mobility management – education in school



Education in school: Mobi Race



- Mobi Race held annually by Green City e.V. on behalf of MVG since 2005.
- Sponsored by the local administrative council (KVR) of the City of Munich.
- Takes place in primary and secondary schools alike .
- Project taught by the Mobi Race teachers' team (Green City) and school teachers with the support of MVG bus drivers and Infomobil.
- The last project day is the rally day □ practical consolidation of material already learned as part of a city rally with public means of transport.
- Target group: pupils aged 10 and 11
- Duration: 2-3 school days



Procedure - bus training & city excursion

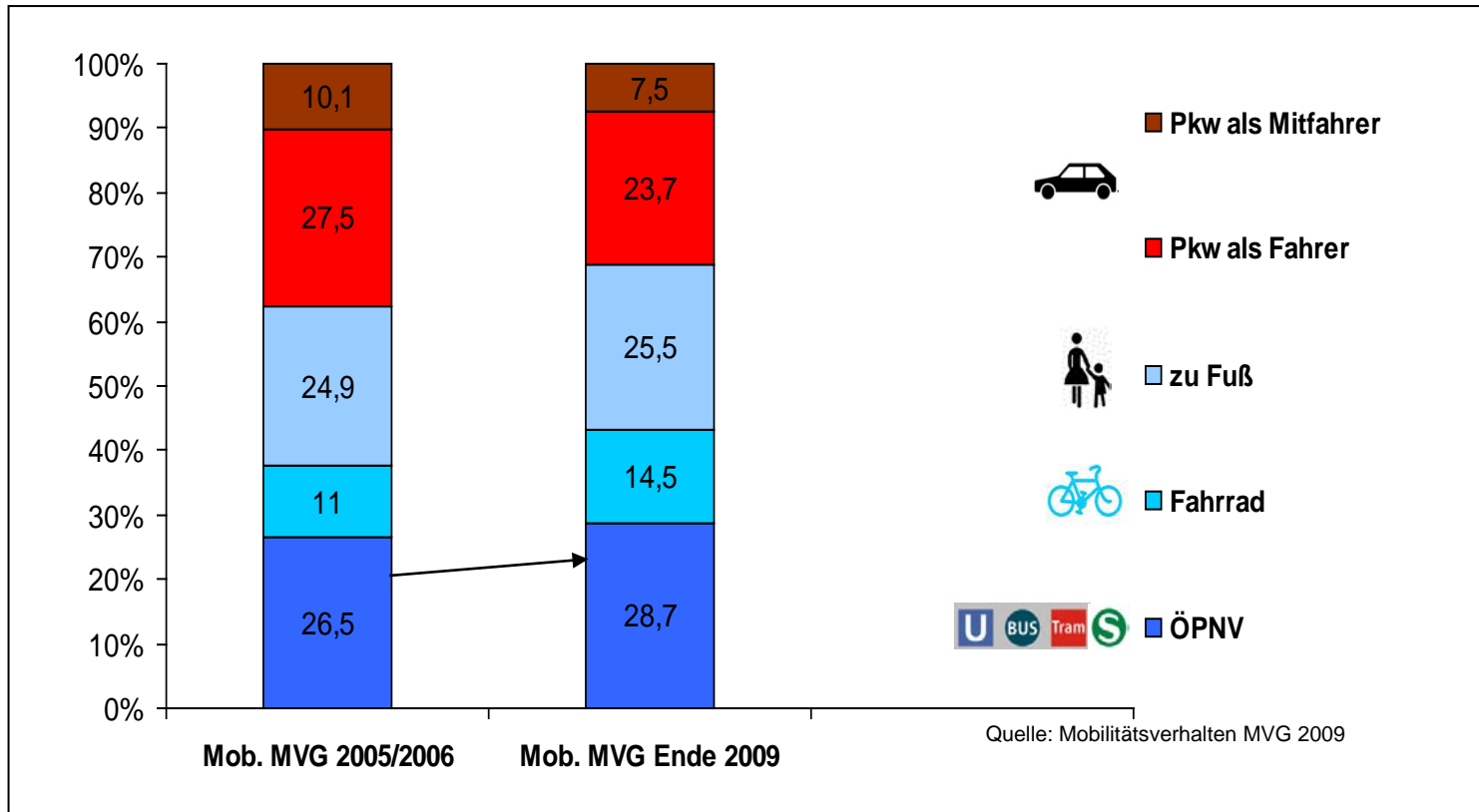


Summary prepared by supervisors and trainers

- A high degree of patience and empathy is necessary when dealing with the participants.
- Tried-and-tested training programme can only be performed well in very small groups.
- The participant group is very heterogeneous (age, mobility, experience).
- High social and operational skills guarantee the success of the project.
- Planning and preparing the training program requires knowledge of, and experience with, the elderly. Contact with facilities and associations for the elderly are very helpful.

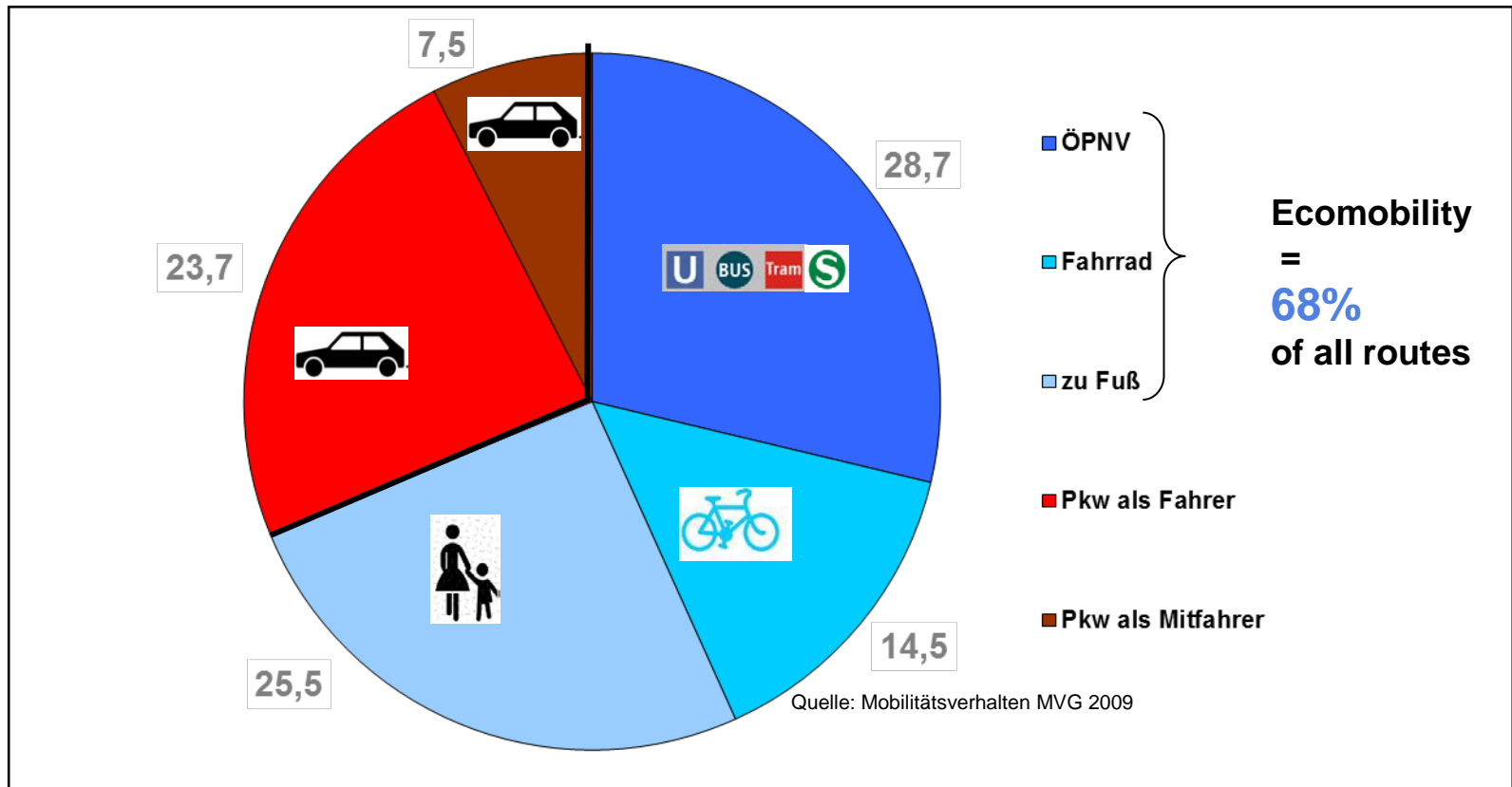
Environment & Climate Protection

Mobility behaviour of Munich's residents is changing



Use of local public transport has overtaken use of the car. Trend continuing – even showing increased bicycle use.

Mobility behaviour of Munich's residents is changing

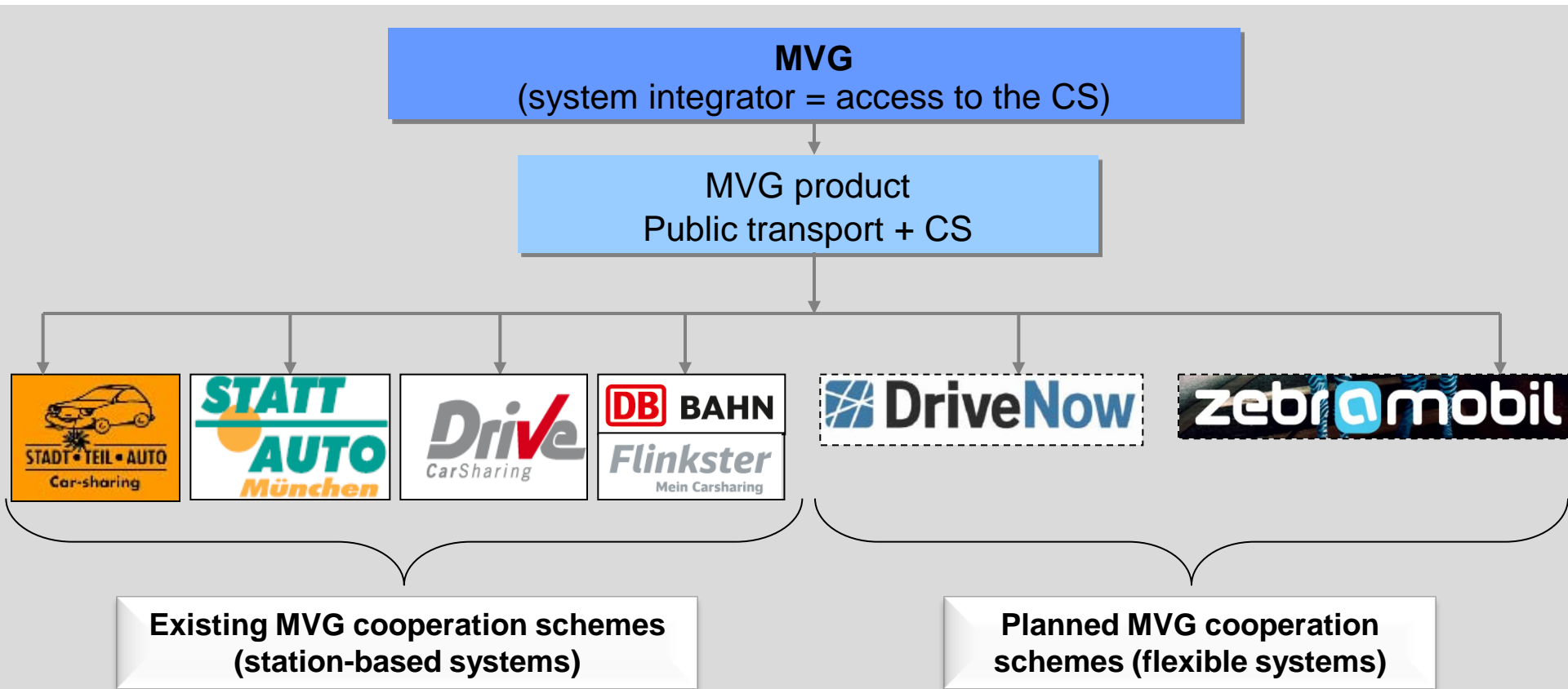


Ecomobility is being used much more heavily in 2009 than the car.

Cooperation between MVG, old and new providers of car sharing services in Munich

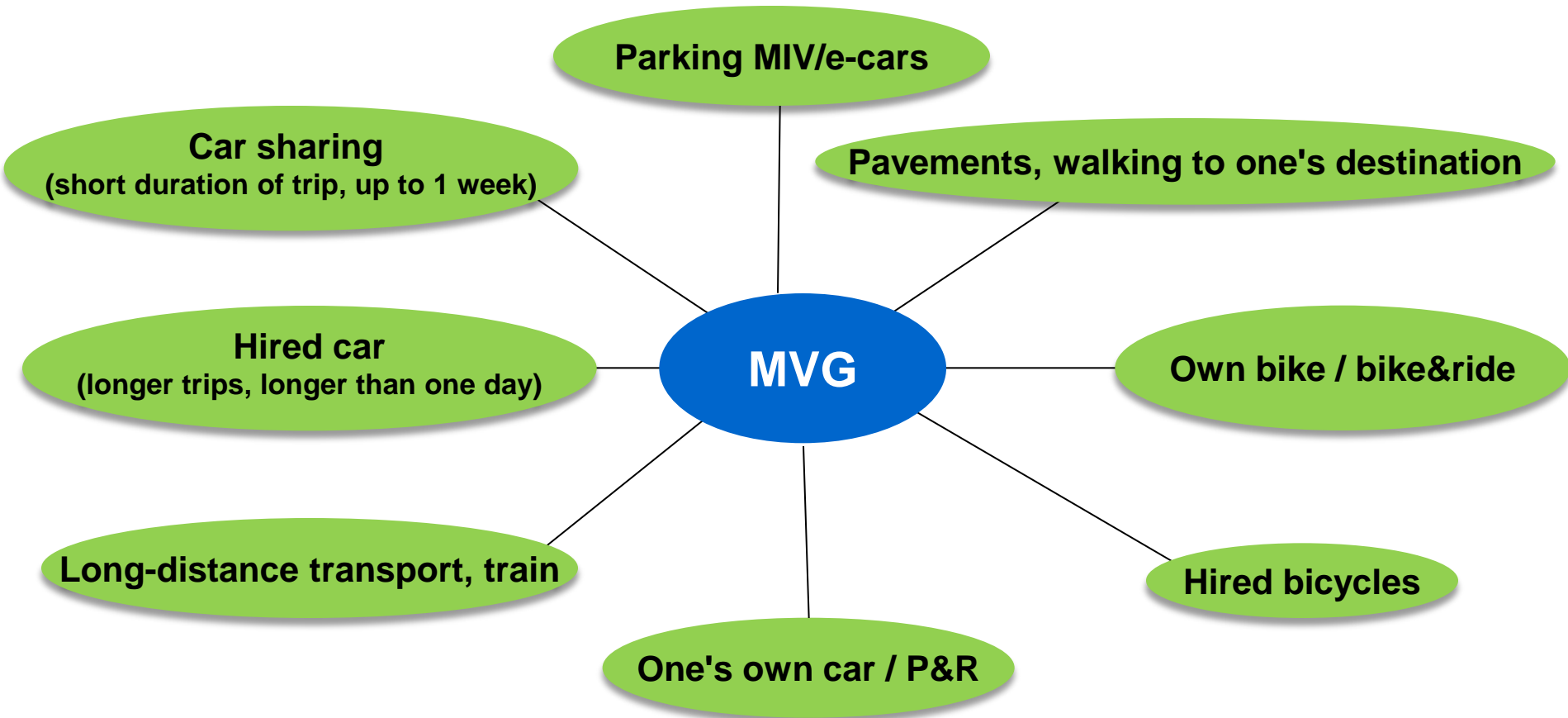


Current market situation for car sharing in Munich



Positioning of the MVG as a multimodal mobility service provider

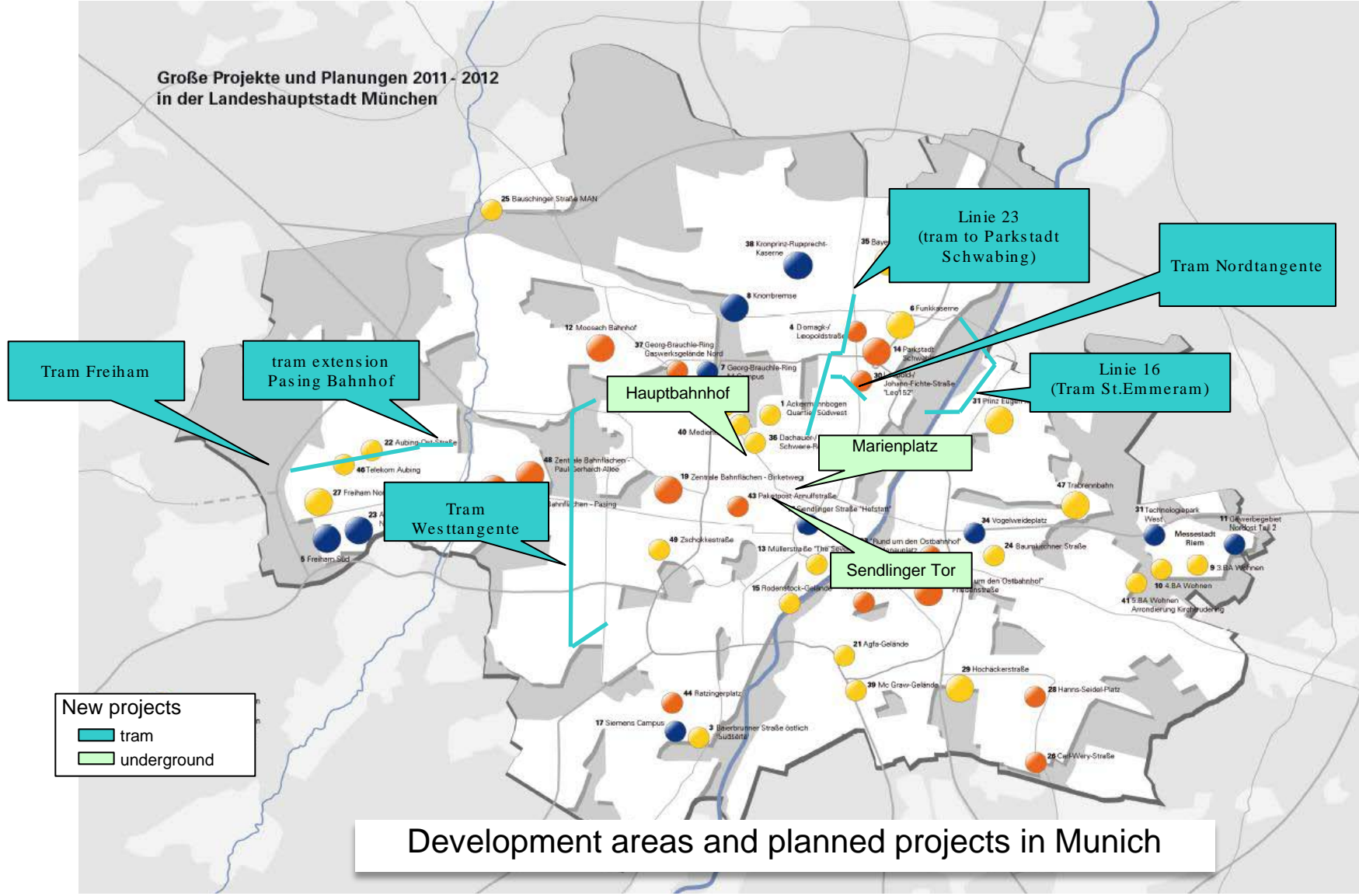
"The MVG as the backbone of urban mobility"



3. Investment in the infrastructure of the future



Große Projekte und Planungen 2011 - 2012
in der Landeshauptstadt München



Development areas and planned projects in Munich

Refurbishment and modernisation of mezzanine at Marienplatz underground station



Refurbishment and Modernisation of Sendlinger Tor underground station



Further expansion of the public transport system is necessary

Meeting the rising need for mobility in a sustainable, long-term manner:

1. **environmentally-friendly** (50% reduction in CO₂ emissions by 2030)
2. **social responsibility** (demographic development)
3. **economical** (rising energy costs)

In order to achieve this,

- the quality of local public transport must be further increased,
- more people must switch to using the local public transport system.

MVG in 2030...

- 1) MVG wants to become the integrated mobility provider information and ticketing for all modes of transport.
- 2) MVG has to cope with less public spending, higher infrastructure costs, rising of costs for staff and energy.
- 3) Financing sources will have to be diversified and extra funding has to be found.
- 4) Staff has to be educated even more carefully.
- 5) MVG is the backbone of the development of the growing city of Munich.

Thank you for your attention!



Ökologischer Antrieb.



U BUS U-Bahn für München

Ihr Partner im MIV