

Promoting **clean** public transport

# Trolley

## TROLLEY – What was achieved by University of Gdansk

Ernest Czermanski,  
Marcin Wołek  
University of Gdansk

TROLLEY Final Conference

map by © (2010) data2map.at

- ▶ Established in 1970;
- ▶ 11 faculties, including Faculty of Economics;
- ▶ 30 000 students;
- ▶ almost 2000 researchers and lecturers;
- ▶ Strong transportation research component.



- ▶ TROLLEY as a first project dedicated precisely to underestimated mode of public transport;
- ▶ Interesting line-up of cities, NGO, academia and operators;
- ▶ UG as a Leader of WP5 „improved Image and Patronage” but also active in WP3 and WP4;
- ▶ Readiness to support trolleybus systems in CEE with its expertise and experience.

# 4.1.10 Transport Mode Efficiency Analysis

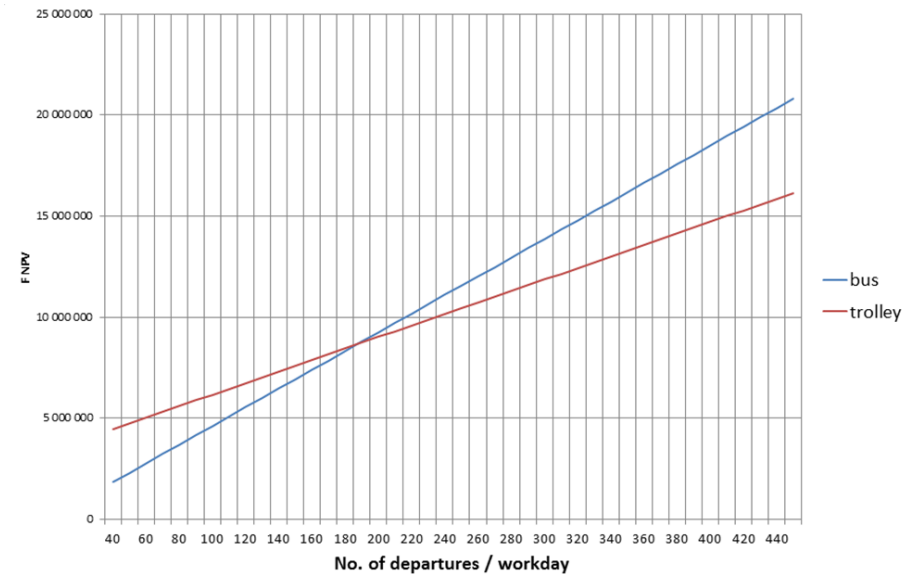
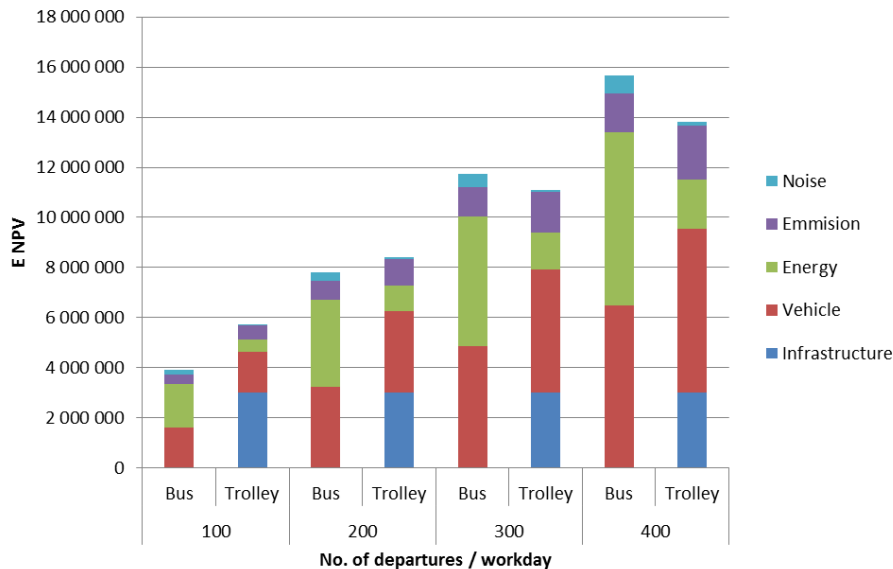
- ▶ to provide a model including a break-even point for trolleybus system, expressed as minimum traffic intensity,
- ▶ few assumptions, that can be easily change by a user, in order to fit the model to local conditions.
- ▶ The analysis was made using two concepts:
  - ▶ financial analysis – i.e. pure analysis of costs, including maintenance costs and costs of assets;
  - ▶ economic analysis – i.e. the analysis, when we include also valuation of externalities (such as noise and emission – called also social costs), on the top of financial analysis.

# 4.1.10 Transport Mode Efficiency Analysis

## ► Few scenarios examined:

- „realistic scenario for Poland“;
- „Zero-emission energy model for Poland“;
- „High-diesel prices“;
- „No-infrastructure-costs“;

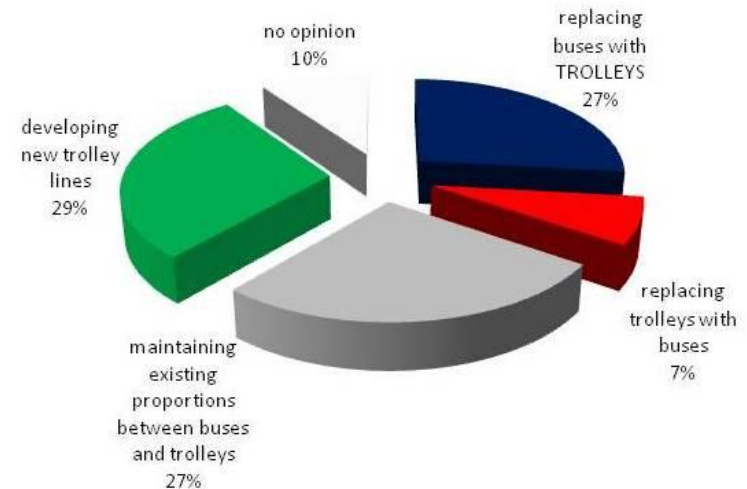
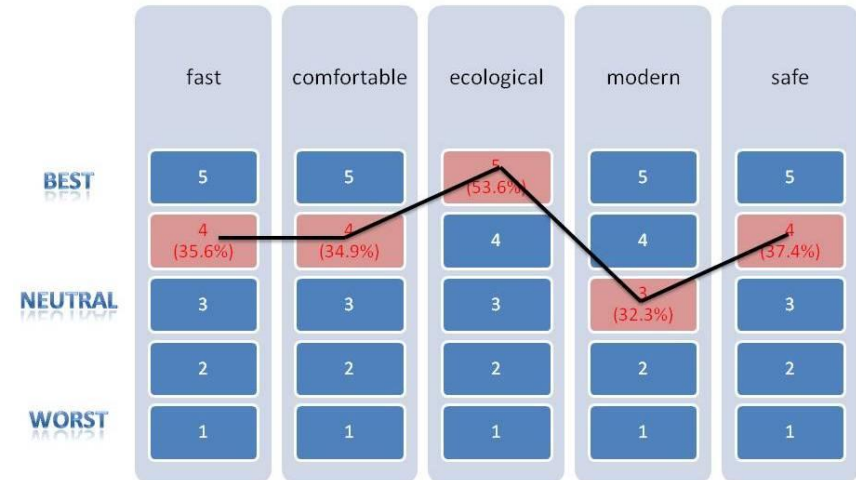
	A	B
1	r - financial	5%
2	r - economic	8%
3	av. speed [km/h]	18
4	share of rides in peak h [%]	10%
5	workdays equiv. / year	295





## 5.2.4. Local Trolley Guides

- ▶ „A passenger questionnaire carried out by local TROLLEY guides will help to analyse potentials and room for improvements of the local trolleybus system in each city“.
- ▶ Research carried out in Brno, Eberswalde, Gdynia, Parma, Salzburg and Szeged in 2010;
- ▶ Strong cooperation, good coordination, interesting results...



# 5.1.4. Survey on Perception of Trolleybuses

- ▶ „Survey on the actual and desired position of trolleybuses exemplary in Gdynia among different groups of citizens“;
- ▶ public perception of trolleybus transportation by citizens of Gdynia based on semantic profile analysis;
- ▶ Valuable set of information extended by additional research on perception of particular types of trolleybuses in Gdynia.

Table 3. Evaluation of buses and trolleybuses in chosen trolleybus districts of Gdynia in 2010

feature	Cisowa			Dąbrowa			Grabówek		
	bus	troll.	%	bus	troll.	%	bus	troll.	%
cheap ticket	3,36	3,36	-0,16	3,02	3,10	-2,58	3,19	3,19	-0,11
fast	4,02	3,85	4,30	3,49	3,17	10,04	3,52	3,55	-0,81
comfortable	4,10	4,13	-0,57	3,97	3,74	6,10	3,76	3,66	2,70
clean	4,06	4,06	0,05	3,94	3,85	2,39	3,50	3,49	0,27
punctual	4,04	4,14	-2,41	3,82	3,78	1,01	3,69	3,68	0,16
safe	4,10	4,13	-0,80	3,96	3,89	1,78	3,63	3,62	0,19

Source: own study in the framework of TROLLEY project based on results of marketing research conducted by ZKM Gdynia in 2010

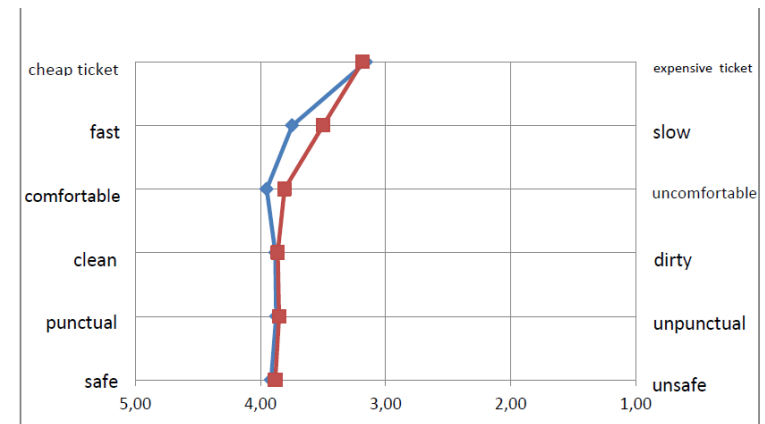


Fig. 6. Semantic profile of bus and trolleybus (all inhabitants) [blue – bus, red – trolleybus]

# What has changed through TROLLEY

- ▶ Improved expertise in electric public transport in international dimension;
- ▶ Increased awareness through publications, seminars and close cooperation with Project Partners among students;
- ▶ Precise identification of further scientific research on electromobility in Central Eastern Europe;
- ▶ Improved potential for sustainable urban mobility planning.

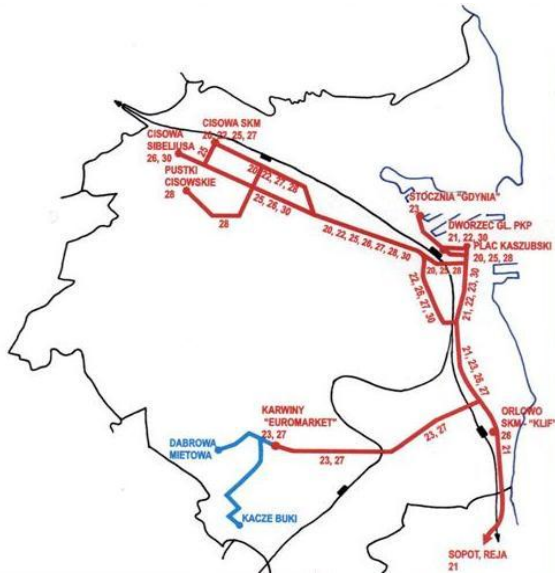


# How can others benefit?

- ▶ Solid data base on transport behavior related to trolleybuses;
- ▶ Efficiency model ready to use for any city;
- ▶ More case studies from Project Partners opened for students and transport professionals;
- ▶ Dissemination of results via seminars, conferences, articles, papers, chapters in books;
- ▶ Separate output: e-book on trolleybuses to be published in March 2013.

# What is the way forward after TROLLEY in ...

- ▶ Further studies on organisation and management of trolleybus operations in CEE cities;
- ▶ Economic evaluation (including external effects) of existing and potential trolleybus systems;
- ▶ Trolleybus systems and marketing information system of public transport;
- ▶ Next project focused on detailed aspects of electromobility matters (i.e. positioning, promoting its eco- advantages, economic methods of its evaluation adjustable to different organisational and economic models)



## Thank you for your attention!

Dr Ernest Czermanski, [e.czermanski@gmail.com](mailto:e.czermanski@gmail.com)

Dr Marcin Wołek, [mwol@wp.pl](mailto:mwol@wp.pl)