



CapaCity Workshop

Győr, Hungary

Workshop Report

26/27 September 2017

Győr, Hungary

Organisers
and partners



a format of



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1 Introduction

1.1 CapaCity – Urban Competences

The program **CapaCity – Urban Competences** funded and supported by the Municipal Department 27 – European Affairs by the City of Vienna pursues a more deepened international cooperation between the City of Vienna, its organizations and other cities. Several initiatives in the Danube region already have pushed forward cooperation and intensification of social and economic exchange between countries, regions and cities (e.g. the enlargement of the European Union in 2004 & 2007; the establishment of the European Strategy for the Danube Region), nevertheless the City of Vienna now focuses on the internationalization of organizations and companies in order to generate common project ideas. Integrated urban development as holistic smart city approach is the main aspect of activities within the program CapaCity. The Municipal Department for European Affairs (MA 27) of the City of Vienna as initiator of the CapaCity program pursues to both widen the range of topics for city cooperation's and to identify core topics of common interest.

Intensified European integration is one aspect of the program, additionally the City of Vienna has been visited by various delegations and municipal experts, who are interested in urban strategies and technologies applied in Vienna. CapaCity builds up on opportunities generated by this international interest and will strive after sustaining contacts and intensifying exchange with regard to urban technologies and strategies.

The following activities are designed within the project CapaCity in order to support Viennese companies and organizations to deepen internationalization and activities in Central and Eastern Europe:

- Organization of workshops in selected cities with participation of stakeholders from Vienna. The main aim of these workshops is follow-up activities.
- Coordination and collection of statistics of delegations, experts, organisations and companies visiting Vienna with particular interest in urban solutions.
- Representation at events, relevant for smart city expert networks & cooperation ideas.
- Research on and collection of relevant challenges for future urban development with regard to important cross-border and transnational projects and attractive co-financing instruments.
- Development of project ideas, triggered by municipal expert exchange on the basis of organized workshops in CapaCity partner cities.

Diverse sectors and topics are relevant for workshops within CapaCity which are based on issues of the Smart City Vienna framework strategy: radical resource preservation, innovations/new technologies, balanced quality of living. CapaCity is open for a variety of concrete topics, e.g. urban mobility and transport planning, strategies for tourism development or urban development visions. The ruling principle of workshops is the mutual benefit for both the host city and the City of Vienna and its organizations.

The CapaCity Workshop in Győr (HU) focusing on "Smart Mobility in the Cities and Regions of Centrepe" was organised through the **CapaCity** programme in close cooperation with the host city Győr, in 2017 holding the presidency of the Centrepe partnership. The workshop programme was developed by UIV Urban Innovation Vienna together with West Pannon Regional and Economic Development Public Nonprofit Ltd., and in coordination with the Municipal Department 18 (Urban Development and Planning) of the City of Vienna.

2 Executive Summary

Sustainability in cities is a major issue for the future. The infrastructure that we build today affects the way we plan, perceive and use cities for decades to come. In times of declining resources and climate change, sustainability in all its interpretations is a crucial topic in talking about implementing new technologies.

At the same time cities are heterogenous melting pots, where different worldviews, styles and cultures collide and connect in order to form the beautiful chaos we call city. New technology changes these interactions in many ways and therefore causes new social realities including different mobility behaviours in cities.

The two-day workshop "Smart Mobility in the Cities and Regions of Centrope" in Győr brought together experts from municipal and regional administration, planning, urban and regional development professionals, transport & mobility experts, etc. to discuss technological innovations and disruptions that go along with the trends towards autonomous/automotive-driving vehicles, e-mobility and new sharing models in the field of mobility. Questions how cities and regions actively adapt to the new trends and use innovations for their mobility policies were a main focus of the debate.

The workshop was not merely conceived as a seminar for the demonstration of Viennese know-how or as a platform for one-way knowledge transfer, but rather focused on a topic that is of high relevance for all cities of the Centrope area. At a wider, cross-border level, the debate at the workshop brought up again the issue of a better coordinated transport infrastructure and public transport policy. Given the increase in commuter traffic (often combined with an unfavourable modal split), the issue will need to be addressed with more energy in the future in order to ensure a sustainable development of the region.

Having in mind the above mentioned framework conditions, three main fields of possible joint activities in the Centrope region and beyond were identified:

- **Public Transport:** Invitation to all Centrope partners for a demonstration of the multimodal/intermodal routing system "AnachB" (www.anachb.at) implemented by ITS Vienna Region in order to understand the way of financing, processes, requirements, technologies, etc.
- **Smart Mobility:** In Hungary, smart mobility and sharing concepts in rural areas and urban areas are still a bit "science-fiction". Thus, this theme could be a topic of a future workshop to start with know-how transfer to better understand the processes, requirements, technologies, etc.
- **Cross-border connections – assessment of infrastructure implementation:** Cross-border road connections are still a key topic in Centrope. The status of the maturity and implementation of infrastructure projects in the Centrope region shall be periodically updated and visualised in the "INAT-map" as it was agreed by the political board in St. Pölten.

3 The study case

Even if not a fully functional region itself, the Centrope area can be described as a polycentric region in which functional urban agglomerations of different size play a growing role for regional development and thus for developments in the transport and mobility sector, too.

The pace and pattern of recent developments in this sector are triggering the need of improved infrastructure and the development of new strategies and services. Furthermore, most municipalities are growing. As a result, many cities have to cope with increasing commuter traffic, decreasing public funds and new mobility behaviour within and beyond the city boundaries. Therefore, it is essential to foster the strategies, governance and instruments that can manage these developments in a sustainable and effective way.

Amongst others the following aspects and questions are relevant for future developments in the Centrope region and beyond:

- How do cities/regions adapt to technological disruptions in the field of transport/mobility?
- Are there any local strategies building on an analysis of long-term implications of technical advancements like automoumous-driving vehicles, e-mobility etc.?
- What kind of public investment or partnerships are needed to support advantageous developments?
- What policies are required to prevent "unsustainable" developments?
- Are "shared mobility" and "mobility as a service" useful concepts for future sustainable mobility in our cities and regions – to provide for alternatives to individual car-ownership?
- Are there any successful/promising models e.g. in residential estates, either public projects or business models?

4 Workshop Program

Day 1 (26 September) - Smart Mobility in the Cities and Regions of centrope

**Venue: MOBILIS Interactive Exhibition Centre
Győr, Vásárhelyi Pál u. 66.**

10.00	CENTROPE Steering Committee Meeting (for members only)
12.00	Lunch Break and Start of Registration
13.00	Visit of the new, state-of-the-art labs at the University of Győr
14.00	Welcome Renata Shiraishi , Hungarian Ministry of Foreign Affairs – representing the Hungarian CENTROPE presidency
	Introduction & Moderation Johannes Lutter , UIV Urban Innovation Vienna
14.15	The EU Danube Region Strategy and its Priority Area: Energy Nikoletta Oláh , Ministry of Foreign Affairs and Trade
14.30	Keynote 1: The Future of Transport and Mobility - János Ungár , President of the Hungarian Electromobility Association
15.00	Keynote 2: Everything that moves will be self driving. Remarks on vehicle automation and the city – Mathias Mitteregger , Technical University Vienna, Coordinator of the project avenue21
15.30	Questions & Answers
16.00	Coffee Break
16.30	Smart Mobility in the Cities and Regions of centrope - Panel discussion & inputs; panellists may illustrate their inputs with 2-3 slides from local good practices on the following two topics during the debate: <ul style="list-style-type: none"> • Panel A: How do cities/regions adapt to technological disruptions in the field of transport/mobility? Are there any local strategies building on an analysis of long-term implications of technical advancements like self-driving vehicles, e-mobility etc.? What kind of public investment or partnerships are needed to support advantageous developments? What policies are required to prevent others? <ul style="list-style-type: none"> ○ Gregory Telepak, City of Vienna ○ Britta Fuchs, NÖ.Regional.GmbH ○ János Ungár, President of the Hungarian Electromobility Association • Panel B: Are “shared mobility” and “mobility as a service” useful concepts for future sustainable mobility in our cities and regions – to provide for alternatives to individual car-ownership? Are there any successful/promising models e.g. in residential estates? Either public projects or business models? <ul style="list-style-type: none"> ○ Zoltán Varga, associate professor, Széchenyi István University ○ Bertram Ludwig, upstream – next level mobility ○ Fabian Dorner, Technical University Vienna, Department of Spatial Planning
18.00	End of Working Day 1
19.00	Informal Dinner

**Day 2 (27 September) –
Centropo mobility management – working on the INAT agenda**

**Venue: MOBILIS Interactive Exhibition Centre
Győr, Vásárhelyi Pál u. 66.**

9.00	Visit of MOBILIS Győr
10.30	Centropo mobility management – working on the INAT agenda Moderation Johannes Lutter , UIV Urban Innovation Vienna Introduction Gregory Telepak , City of Vienna
	Open discussion on progress, and priorities along the INAT agenda and the survey conducted by the City of Vienna
13.00	Lunch break
14.00	Site Visit to Audi Győr
16.00	End of Meeting

5 Workshop Findings

The two-day workshop brought together experts from municipal and regional administration, planning, urban and regional development professionals, transport & mobility experts, etc. During the first day technological innovations and disruptions that go along with the trends towards autonomous/automotive-driving vehicles, e-mobility and new sharing models in the field of mobility were highlighted. The debate focussed on the question how cities and regions can actively adapt to the new trends and use innovations for their mobility policies.

The second day of the workshop focused on mobility management in the Centropo region concentrating on the INAT agenda.

5.1 Main Findings

The presentations/discussions during the workshop sessions were split in three main parts, i.e. keynotes, panel discussion and INAT session. The main findings of the presentations, the discussions and the two working groups that were held within the INAT session on the second day are summarized in the following subchapters.

5.1.1 Keynotes

One of the main trends in transport and mobility is the electrification of the entire sector. At the same time the way of energy production and the energy mix becomes more important. In Hungary, currently the share of renewable energy of the produced energy is 16%. In order to become more sustainable and to reach the objective of a zero emission mobility the generation of the electricity has to become sustainable, too.

The Hungarian Electromobility Association tries to promote electromobility in Hungary and at European level. The about 50 members of the association are the big players from the industry (car industry and electric energy e.g. eon and EDF) but also municipalities and universities. They provide assistance to Hungarian companies when it comes to e-mobility.

However, it is unclear when a break-through of e-mobility can be expected in Hungary as the country started later than others. Nevertheless, in Hungary there are various incentives like driving courses, grants of EUR 5,000 for buying e-cars, tax reductions, etc. in place that make e-mobility more attractive. The green licence plates for electric vehicles are some kind of an umbrella for that series of incentives. Also the public transport operator in Budapest invests in electric busses.

Nevertheless, there are barriers and obstacles in Hungary that are hindering a faster development:

- Traditionally, Hungary is a market for used conventional cars!
- The development is slower because of the human factor/behaviour. There is still a fear of e-mobility.
- There is a need for more testing opportunities.
- There is a need for more high capacity chargers.
- Inducted charging is not yet introduced.

In parallel to the development of the e-mobility sector the development of driverless vehicles is ongoing. There is much uncertainty in the scientific community as to when and

to what extent self-driving vehicles will change our cities. One assumption that current research efforts share, however, is that the technological advantages of autonomous vehicles may raise the travel demand of individuals. The ongoing dynamics of spatial development and traffic growth could be intensified, resulting in a significant and extensive increase of distances travelled. Longer distances travelled will, besides severe spatial effects, raise energy consumption, a consequence fundamentally at odds with leading political and planning principles for the twenty-first century which address the mitigation of climate change through more sustainable urban development and transport planning.

This development seems to be a realistic scenario, as long as the capability of all actors involved in shaping the cities of the future is ignored. It also ignores other positive and negative effects, as well as the dependencies of autonomous vehicles, while mainly considering passenger and not freight traffic. Thus, a main challenge for the future is to define the role of planning and urban governance in this process and how automated and autonomous mobility can support the efforts in creating sustainable cities.

In context with vehicle automation there are still open questions like the definition of framework conditions for connected and automated transport in cities and its contribution to major urban development goals or the issue of intelligent infrastructure versus intelligent vehicles. Technological changes create a scope for action, for planners and governments. Thus, electrification/automation of passenger car traffic is, in the current formation phase of these technologies, a window of opportunity to change mobility behaviour by setting framework conditions favouring sustainable and smart development. But when defining the conditions three central issues must be considered, i.e. social inclusion, resilient/sustainable development and livable urban space.

Social inclusion. Cities are heterogenous melting pots, where different worldviews, styles and cultures collide and connect in order to form the beautiful chaos we call city. New technology changes these interactions in many ways and therefore causes new social realities in cities. Thus, driverless technologies have to be considered in order to ensure a provision of major urban necessities and qualities, too.

Resilient/sustainable development. Beside the governance, the technical infrastructure that is built today affects the way we plan, perceive and use cities for decades to come, too. In times of declining resources and climate change, sustainability in all its interpretations is a crucial topic in talking about implementing new technologies. Looking at the past, it can be seen that transport innovations were key elements to shaping urban form and lifestyle. Their consequences were always pervasive and unforeseen – the bigger the time frame considered.

Liveable urban space. Industrialisation has changed the face of cities dramatically. The inflicted decline of living quality in cities was in consequence followed by a shift towards the question of liveability in urban spaces. The research and the movements that thus were formed, still affect planning today. The challenge of governments and planners is to approach the impacts of driverless technology without repeating the mistakes of the past.

5.1.2 Panel Discussion

During the panel discussion above mentioned challenges were further reconsidered and discussed by the panellists and the audience.

Setting of framework conditions. The current stage of newly emerging technologies opens a window of opportunity for public authorities to influence both the development of business models and of consumer behaviour through an active policy of pull and push measures. At the same time, this early stage of development, where the scope of influence is highest, goes along with a high amount of uncertainty about the direction of developments. In order to cope with this dilemma, it is recommended to work with scenarios which could be elaborated by public authorities together with experts from academia and the industries.

Flexibility vs. planning reliability. In order to influence consumer behaviour, cities have started to set up incentive policies. For example, in Budapest cars with an alternative power supply (marked with a green licence plate) are allowed to use bus lanes from 1st January 2018 on. For a start, this regulation is implemented on a temporary basis, thus allowing the municipality to react on further developments (e.g. to withdraw the regulation in order to favour public transport over individual traffic in case of a sharp increase of e-cars). The trade-off of this flexible policy design is that there is a lack of planning reliability, which might hamper further industrial development.

Status of technological development. When talking about new technologies it has always to be considered whether any new trend is just some kind of hype or a real sustainable development. In case of the electrification of transport (e-mobility) there is a quite stable development towards electric vehicles and alternative fuels, although the industry seems not to be ready yet, neither the energy providers nor the car industry. When focusing on self-driving vehicles two different developments can be observed: Automated driving assisting the car driver to a great extent has to be distinguished from autonomous driving, which today seems to be realistic rather for closed systems like motorways than for cities. However, for any of these developments it should be the task of the governance together with the industry to define needs of proper infrastructure and to set actions timely not only for passenger transport, but also for freight transport (e.g. freight delivery by drones).

Change of mobility behaviour and new forms of mobility services. The key factor of any future development is the consumer behaviour. In order to achieve strategic and political goals favouring environmental friendly modes of transport for both passenger and freight transport it is necessary to establish relevant framework conditions. At the same time new forms and services of mobility have to be offered. One example are various sharing concepts which are not a new invention, but organised in a new/different way. Even the car manufacturing industry that at the beginning seemed not very interested in car-sharing (as they still want to sell as many cars as possible) is now developing and selling mobility services instead of vehicles only (e.g. Volkswagen offers car-sharing solutions for companies).

For cities the driving force for future sharing concepts (car, motorbike and bicycle sharing) could be the "trinity" of combining sharing models, e-mobility and automation. Such services could be implemented at multimodal mobility points that are currently under discussion in various cities.

The potential of sharing systems in the Danube region is quite high as there are very few of them currently in place. One reason is a lack of success stories due to lacking statistical data.

Another idea might be the development of new new business models like licencing for urban traffic, similar to UMTS auctions. Such measures could have a positive effect on traffic volumes and are at the same time a new source of financing for the cities.

In general, for the establishment of new services and thus a change of mobility behaviour the key element is the human being. A big interest in new technologies can be observed, especially in the cities, which facilitates the implementation, e.g. there is a huge number of NISSAN Leafs running in Kiev, which nobody would expect.

Developments in rural areas versus urban areas. Compared with the urban area the development in rural areas is quite different. Thus, regional planning becomes more and more important. Strategies for regions (metropolitan areas) are urgently needed as commuter issues in metropolitan areas will increase due to high living costs in the cities (e.g. London, Randstad, Vienna). Thus, the focus for the implementation of new services should not only be on cities but also on rural areas, where the challenges are different due to different mobility behaviour, road network density, etc. Rural mobility has effects on urban mobility and vice-versa. Currently in the rural areas community based projects are very common. These projects are often bottom-up actions without an overall strategy.

New technologies and services generate a lot of data. Data analysis plays a fundamental role for increasing the efficiency of urban infrastructure. Likewise, it helps improving urban planning in a more precise and predictive way. However, many smart city projects developed by private companies lead to big data collection and the commercial use of such data to the detriment of citizens. On the contrary, the project Smarter Together (<http://smarter-together.eu/>) considers that a 'smart' project must provide safety, respect privacy and protect citizens from abuse of their data. The big issues in relation to data still raise a series of questions that can not be answered yet: is data something similar to transport infrastructure, who is the owner of data, how can data be used from the perspective of a city for spatial and mobility planning, will mobility policy in the future be controlled by those companies (e.g. Google and Apple) that are collecting the data, etc.

5.1.3 Mobilis

The second day of the workshop started with an introduction of Mobilis, the interactive mobility science center at the campus of Szechenyi University in Győr. Its vision: Through continuous development of its interactive exhibition instruments and widening the scope of science experiment presentations Mobilis maintains its national-level recognition and evolves into the „scientific community space” of Győr and its metropolitan region, which school pupils, families and university students and lecturers alike visiting it several times a year.

The activities of Mobilis support the STEM (Science, Technology, Engineering, and Mathematics) awareness and motivation of schoolchildren in Győr and its region, performs active career guidance activity in both primary and secondary schools, showcases the higher education opportunities as Széchenyi István University and provides space for the presentation of scientific and innovation results achieved at the University or in the region.

There is a strong link of Mobilis with the neighbouring university in terms of cooperation, branding, providing of staff (students) for lectures and exhibitions but there is still a limited interest by the majority of students. Mobilis is sponsored by Audi (for three years) but a

structured cooperation is yet to be established. In order to further attract visitors there is a cooperation in place with the railway service provider GYSEV (train tickets = entrance for Mobilis).

5.1.4 INAT Session

The main part of the second day was dedicated to the Centrope mobility management and the continuation of the work on the INAT (Infrastructure Needs Assessment Tool) agenda. Within two separate working groups (one Austrian, one Hungarian) the aspects of transport infrastructure, public transport systems and sharing systems, e-mobility and self-driving cars were discussed. The focus was on cooperation activities and the demand for coordination in the field of transport infrastructure and public transport.

In the session new project approaches were presented:

VitalNodes - Building a lasting expert network that delivers evidence-based recommendations for Vital Urban Nodes along TEN-T Corridors. The VitalNodes project, funded by Horizon2020, will build a lasting European network of key stakeholders based on existing European, national and regional networks. This is done by enriching and applying a proven approach for the optimisation of economic, social and environmental vitality of urban areas from the perspective of multimodal transport infrastructure and spatial development. VitalNodes will deliver evidence-based recommendations for more (cost) efficient and sustainable integration of all 88 urban nodes in the TEN-T network corridors, addressing specifically the multi- and intermodal connection between long-distance and last-mile freight logistics. These recommendations will be validated by applying an appraisal tool and involving experts from the growing VitalNodes network.

Challenges. Challenges in integrating freight logistics of urban nodes into network corridors have a multidimensional character: not only network issues of the (freight logistic) transport and mobility system have to be considered, also spatial issues related to urban vitality (socio-economic development, spatial and environmental quality and liveability) have to be addressed, as well as issues of short-term and long-term development, value creation and capturing issues, multi-level governance and institutional issues, and issues related to implementation. This calls for an integrated approach.

Objectives. To address this need for an integrated approach, VitalNodes project is designed to meet the following two main objectives:

- to deliver validated recommendations for a more effective and sustainable integration of all 88 urban nodes into the TEN-T corridors focusing on freight logistics.
- to establish a long-lasting European expert network based on existing (inter)national and regional networks for safeguarding long-term continuity in knowledge and implementation.

As the urban nodes are most of the time the start and/or end point of any transport chain the regions play a crucial role in this concept. Thus, also the Centrope region is invited to get involved in the project, e.g. at workshops that will take place in Vienna and Budapest.

Linking Danube – Linking transnational, multimodal traveller information and journey planners for environmentally-friendly mobility in the Danube Region. LinkingDanube, funded by the Danube Transnational Programme, tackles the problem of insufficient provision of cross-border traveller information on public transport, particularly

considering cross-border commuting and mobility in rural areas. The overall project objective is to foster environmentally-friendly mobility options and balanced accessibility in the Danube Region.

This should be fostered by the provision of transnational, interoperable and multimodal journey planners covering urban but also rural areas. Currently no suitable multimodal, transnational system for travellers exists anywhere in Europe. LinkingDanube will follow a decentralised approach where existing regional systems are connected by linking services.

LinkingDanube especially focuses on connecting less accessible areas in the Danube region by linking alternative public transport services and integrating demand transport data into the services. Therefore the integration of transport-on-demand service information is one of the core elements in the project.

One main output is the LinkingDanube Concept for transnational, multimodal journey planning services. The Concept shall serve as input both for the technical development work within LinkingDanube as well as for uptake by project externals. The LinkingDanube Service (Technical Tool) will build on existing systems and will be implemented in a decentralised way ensuring high-quality data. All decentralised journey planners can be addressed through an open interface, ensuring transnational routing via one central application operated by end-user service providers.

5.2 Recommendations and Further Steps

Based on the presentations and discussions during the workshop, four main fields of activities could be identified:

- **Public Transport:** Invitation to all Centrope partners for a demonstration of the routing system "AnachB" (www.AnachB.at) implemented by ITS Vienna Region in order to understand the way of financing, processes, requirements, technologies, etc.
- **Smart Mobility:** In Hungary, smart mobility and sharing concepts in rural areas and urban areas are still a bit "science-fiction". Thus, this theme could be a topic of a future workshop to start with know-how transfer to better understand the processes, requirements, technologies, etc.
- **Cross-border connections – assessment of infrastructure implementation:** Cross-border road connections are still a key topic in Centrope. The status of the maturity and implementation of infrastructure projects in the Centrope region shall be periodically updated and visualised in the "INAT-map" as it was agreed by the political board in St. Pölten.

Finally, it was concluded that INAT should continue to act as a platform for cross-regional exchange on all questions relating to infrastructure development and mobility in the Centrope region, but with a stronger focus on specific topics, e.g. dedicated workshops/events on one above listed focus theme including site visits.

6 Concluding Remarks

6.1 Tangible benefits for the City of Vienna

The workshop “Smart Mobility in the Cities and Regions of Centrope” was not merely conceived as a seminar for the demonstration of Viennese know-how or as a platform for one-way knowledge transfer, but rather focused on a range of topics that is of high relevance for all cities of the Centrope area, including Vienna. Technological developments in the field of urban and regional mobility – including e-mobility, autonomous/automated vehicles, but also new models for mobility services (mobility on demand, sharing models etc. – are likely to change mobility patterns to a large extent. Public authorities have their stake in influencing both, business cases and consumer behaviour, if they use the current window of opportunity.

Against this background, the CapaCity workshop in Győr provided representatives from the public administrations of Vienna and Lower Austria, but also experts from universities with insights into existing developments and cutting-edge research, thus serving as an inspiration to develop proactive approaches towards a forward-looking design of transport policy. At the same time the workshop provided a platform for good-practice exchange within the Centrope region.

At a wider, cross-border level, the workshop served as a platform to continue the debate about a better coordinated transport infrastructure and policy in the Centrope area. The workshop and the general debate about the Centrope Mobility Management (“INAT working group”) may serve as a starting point of an intensified exchange of know-how and concrete use cases in the broad field of sustainable, multimodal transport services, and it offered a number of opportunities for enhanced cooperation in the framework of concrete projects (like VitalNodes and Linking Danube).

7 Annex

7.1 List of participants and contact details



CapaCity Workshop

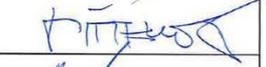
Smart Mobility in centropo – Expert Workshop and INAT Meeting

List of participants

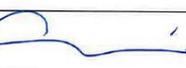
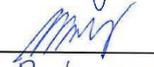
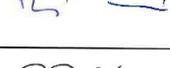
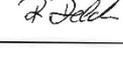
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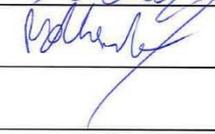
Nr.	Last Name	First Name	Organisation	email	Signature
1	Bara	Zoltan	Pons Danubii EGTC	Zoltan.bara@gmail.com	
2	BAURECHT	Dietmar	Regionalmanagement Burgenland GmbH	dietmar.baurecht@rmb.at	
3	Brummer	Krisztián	Mayor's office manager	brummer.krisztian@sopron-ph.hu	
4	Dorner	Fabian	Technische Universität Wien	fabian.dorner@tuwien.ac.at	
5	Encsy-Nánási	Ágnes	Győr-Moson-Sopron Megyei Önkormányzat	encsyne@gymsmo.hu	
6	Fuchs	Britta	NÖ.Regional.GmbH	britta.fuchs@noeregional.at	
7	Gulyás	Gustáv	Audi		
8	Halinka	Péter	Westpannon Nonprofit Ltd.	peter.halinka@westpannon.hu	
9	Hutter	Martin	City of Vienna	martin.hutter@wien.gv.at	

Nr.	Last Name	First Name	Organisation	email	Signature
10	Körmendy	Gál	West-Pannon Nonprofit Ltd	gal.kormendy@westpannon.hu	
11	Lakatos-Novák	Éva	Győr-Moson-Sopron Megyei Önkormányzat	enovak@gymso.hu	
12	Ludwig	Bertram	upstream – next level mobility	bertram.ludwig@upstream-mobility.at	
13	Lutter	Joahannes	UIV Urban Innovation Vienna	lutter@urbaninnovation.at	
14	Mitteregger	Mathias	Technische Universität Wien	mathias.mitteregger@tuwien.ac.at	
15	Mueller	Rainer	UIV Urban Innovation Vienna	mueller@urbaninnovation.at	
16	Németh	Béla	GYSEV/Raaberbahn	bnemeth@gysev.hu	
17	NOSKOVÁ	KLÁRA	SOUTH MORAVIAN REGION	NOSKOVA.KLARA@KR-JIHOMORAVSKY.CZ	
18	Oláh	Nikoletta	Ministry of Foreign Affairs and Trade	nikoletta.olah@mfa.gov.hu	

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Nr.	Last Name	First Name	Organisation	email	Signature
19	Pichler	Ulrike	Land Burgenland	ulrike.pichler@bgld.gv.at	
20	Popp	Christian	Amt der NÖ Landesregierung, Abteilung Gesamtverkehrsangelegenheiten	christian.popp@noel.gv.at	
21	Shiraishi	Renáta	Ministry of Foreign Affairs and Trade	renata.shiraishi@mfa.gov.hu	
22	Tefner	Nóra	Hungarian Embassy in Vienna	ntefner@mfa.gov.hu	
23	Telepak	Gregory	City of Vienna	gregory.telepal@wien.gv.at	
24	Ungár	János	Hungarian Electromobility Association		
25	Varga	Zoltán	SZE	vargaz@sze.hu	
26	PÁLFI	HÁNYA	GMS NÖK	mpalpi@gymso.hu	
27	DELDUM	RENATA	RMB	rdeldum@gmail.com	

4

Nr.	Last Name	First Name	Organisation	email	Signature
28	HANST	Hermann	NO-Regional-Forum	hermann.hansel@noe.gv.at	
29	ROTHENSTEINER	Markus	Land bgl., Abt. 2	markus.rothensteiner@land.gv.at	
30					
31					
32					
33					
34					
35					
36					

7.2 Presentations (ppts) of the workshop

- Nikoletta Oláh, Ministry of Foreign Affairs and Trade; The EU Danube Region Strategy and its Priority Area: Energy



EU STRATEGY FOR THE DANUBE REGION (EUSDR) AND ITS PRIORITY AREA: ENERGY

CENTROPE Steering Committee Meeting

Győr, 26 September 2017

Nikoletta Oláh

Nikoletta.Olah@mfa.gov.hu

Macro-regional strategies

Frameworks to address common challenges faced by a defined geographical area relating to EU Member States and third countries located in the same geographical area.

- They benefit from strengthened cooperation contributing to economic, social and territorial cohesion

Objectives:

- organise cooperation between countries or territories
- mobilizing local and regional actors to align policies and funding
- identify common issues, solutions and actions

- 2009: EU Strategy for the Baltic Sea Region
- 2011: EU Strategy for the Danube Region
- 2014: EU Strategy for the Adriatic and Ionian Region
- 2015: EU Strategy for the Alpine Region

Structure of the EUSDR

The area covered by the EU Strategy for the Danube Region stretches from the Black Forest (Germany) to the Black Sea (Romania-Ukraine-Moldova) and is home to 115 million inhabitants



EU Member States:

- Austria, Bulgaria, Croatia, Czech Republic, Germany, Hungary, Romania, Slovakia, Slovenia

Accession countries:

- Bosnia and Herzegovina, Montenegro, Serbia

Neighbourhood countries:

- Moldova, Ukraine

6TH ANNUAL FORUM
OF THE EU STRATEGY FOR THE DANUBE REGION

Why a macro-regional strategy in the Danube Region?

- A number of policy issues in the Danube Region requires working together, across borders and national interests
- Political commitment needs to be translated into action
- Actions need to be coordinated and carried out together



6TH ANNUAL FORUM
OF THE EU STRATEGY FOR THE DANUBE REGION

The structure of the Strategy

THE FOUR PILLARS



11 priority areas, coordinated by a priority area coordinator



- Each Priority Area (PA) is coordinated by 2 EU countries

Hungarian Coordination

- Hungary is involved in the coordination of 3 PAs:
 - Priority Area 2 (Sustainable Energy)
 - Priority Area 4 (Water Quality)
 - Priority Area 5 (Environmental Risks)



Priority Area 2: Sustainable Energy

- PA2 is coordinated by Hungary and the Czech Republic
- Major objectives
 - PA2 coordinates regional energy policies in various topics in order to exploit the full potential of an integrated energy market
 - PA2 supports the integration of the energy markets of the non-EU countries and supports them in the implementation of the EU energy acquis
 - PA2 is committed to launch cutting edge technology developments which will increase the energy efficiency of the region and enhance the use of renewable energy sources



Main topics of the next 3 years

2017	
GAS MARKET INTEGRATION	
2018	2019
ELECTRICITY MARKET/ SMART CITIES <ul style="list-style-type: none"> - Electricity market - Bioenergy/bio-economy Activities: Small studies/reports (different topics) Expert seminar on decentralization of electricity grid Project seminar on Smart cities, clean fuel,... Policy seminar on Smart DR	ENERGY POVERTY <ul style="list-style-type: none"> - Energy poverty - Financing (post 2020) Activities: Study, policy seminar and call for papers on energy poverty



Our activities in 2017

- I. Events
- II. Studies
- III. Project generation and management
- IV. Communication and promotion



- Events
 - Organization of project financing conference – 11 May Budapest
 - Organization of workshop on balancing bioenergy production and sustainable forest management in mountains areas – 17 May Sopron
 - Organization and participation at the conference „Future of macroregional strategies post 2020” - 23 May Brussels
 - Steering Group Meeting in Budapest and Brussels
 - Stakeholder Seminar on gas market integration in the Danube Region – 5 December Brussels
- Studies
 - Study on gas market integration in the Danube Region – post-2020 outlook for the Stakeholder Seminar
 - Study on clean transport – for the Annual Forum
 - Study on connectivity – traditional energy, transport, clean transport – for the Annual Forum
 - Study on challenges and opportunities of natural gas sector in the Danube Region – for the Stakeholder Seminar – to be presented later
- Project generation and management
 - Development: DSPF (REED, YourMobX), DTP 2nd Call: IEEDR, SpaReuse
 - Management: DARLINGe



The Hungarian Presidency of the EUSDR



The Hungarian Presidency of the EU Strategy for the Danube Region

- The Presidency of the EUSDR rotates every year between the participating countries
- Hungary took over the Presidency from Slovakia in November 2016
- Programme of the Hungarian Presidency:
 - Seminar organised in Brussels on the future of macro-regional strategies (May 2017)
 - Energy workshop in Budapest focusing on post 2020 challenges (March 2017)
 - Transportation workshop in Budapest focusing on the EUSDR and the Western Balkan (June 2017)
- **The most significant event: 6th Annual Forum of the EUSDR (October 2017)**

6TH ANNUAL FORUM OF THE EU STRATEGY FOR THE DANUBE REGION



6TH ANNUAL FORUM OF THE EU STRATEGY FOR THE DANUBE REGION



6TH ANNUAL FORUM OF THE EU STRATEGY FOR THE DANUBE REGION

General approach to the Annual Forum

- Give the possibility for successful and promising projects to introduce themselves during the Forum
- Create a stimulating networking platform where potential project partners can have an in-depth discussion
- Focus on presenting ways in which neighboring non-EU countries (Ukraine, Serbia, Moldova, Montenegro and Bosnia and Herzegovina) can better co-operate with the Strategy



Thematic construction of Annual Forum

- Pre2020 and Post2020 framework
- Three pillars:
 1. Energy security
 2. Infrastructure development
 3. Clean Connectivity
- Financing possibilities



1. Energy security



- Focus on the policy, regulatory and market aspects of gas and electricity

Questions to be answered:

- What opportunities can the new European-level energy regulations bring to deepening energy cooperation between EUSDR countries?
- What the future role of Ukraine as a gas transit country will look like and how does this affect the Danube Region?
- What are the most urgent tasks to increase regional energy security?



2. Infrastructure development



- 'Corridors Work Plan' prepared by the European Commission
- Correlation between European Union Transport Policy and National Transport Strategies

Two sub-topics:

- 1) long distance Corridors (TEN-T networks, core corridors crossing the Danube river Basin)
- 2) regional/local capillary networks to connect the region – including urban nodes, ports and airports - to these main corridors.



3. Clean connectivity



- 2030 Agenda for Sustainable Development and the Paris Agreement
- Current situation of clean transportation in the region

Questions to be answered:

- How can EUSDR countries contribute to reaching a more sustainable transport sector?
- Is there sufficient infrastructure that can cope with the shifts and changes?
- Are there any best practices that can be built upon?
- How to cope with differences between EU and non-EU countries, and how can such differences be identified?

6TH ANNUAL FORUM
OF THE EU STRATEGY FOR THE DANUBIA REGION

The Forum in numbers

- Opening Keynote by Prime Minister Viktor Orbán
- Two ministers of foreign affairs and one Deputy Minister for Energy in the Ministerial Panel
- Around 1000 confirmed participants
- Registration closed one month before scheduled as the maximum capacity of the venue was reached
- 95% of speakers confirmed

6TH ANNUAL FORUM
OF THE EU STRATEGY FOR THE DANUBIA REGION



The Hungarian Presidency of the
EU Strategy for the Danube Region

Nikoletta Oláh

Advisor – Priority Area 2 ,Sustainable Energy'

Department for Water Diplomacy and Tied
Aid Credits

Division for the Danube Region Strategy

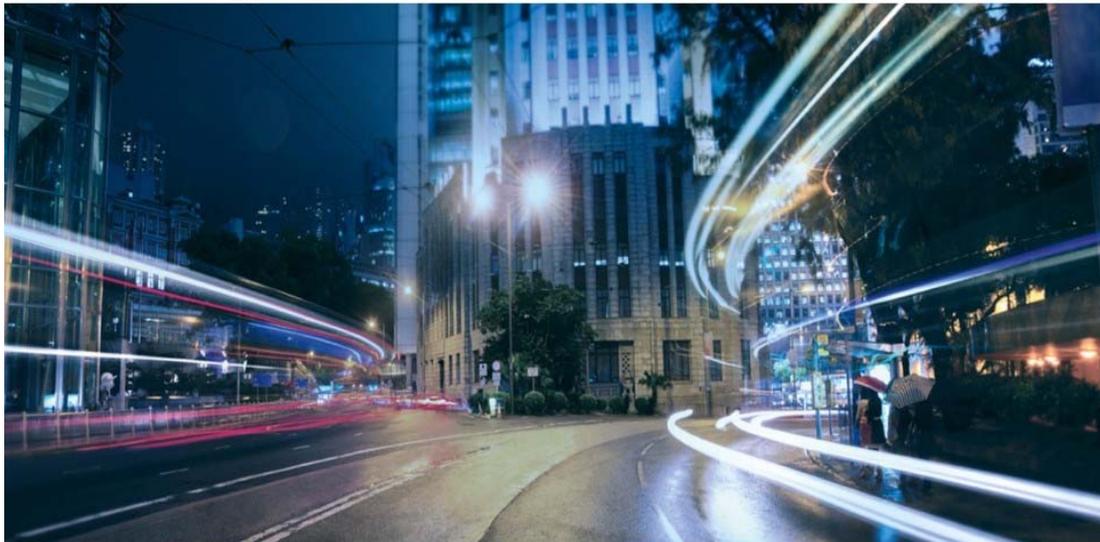
Ministry of Foreign Affairs and Trade of
Hungary

Nikoletta.Olah@mfa.gov.hu



- János Ungár, President of the Hungarian Electromobility Association; The Future of Transport and Mobility

FUTURE OF TRANSPORT AND MOBILITY



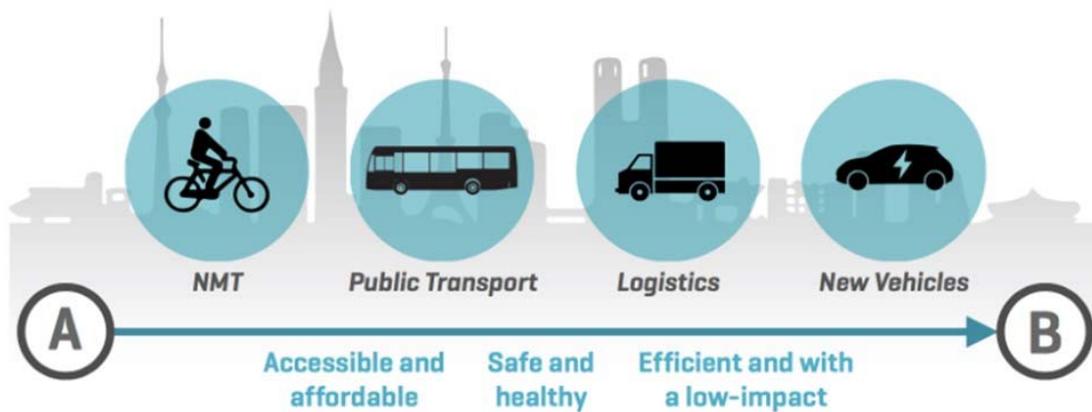
CapaCity Workshop, Győr

September 25, 2017

WHAT DRIVES THE MOBILITY SECTOR?



Urban Mobility & Sustainability



CapaCity Workshop, Győr

September 25, 2017

WHAT ARE THE EXPECTATIONS?



Better living standards

Integrated mobility concepts



CapaCity Workshop, Győr September 25, 2017

DEVELOPMENTS IN ELECTRIC MOBILITY



Increased driving range

Decreased charging time



CapaCity Workshop, Győr September 25, 2017

DEVELOPMENTS IN ELECTRIC MOBILITY



E-Truck solution

Inductive charging on roads



CapaCity Workshop, Győr

September 25, 2017

DEVELOPMENTS IN ELECTRIC MOBILITY



Autonomous driving

Sharing systems



CapaCity Workshop, Győr

September 25, 2017

DEVELOPMENTS IN ELECTRIC MOBILITY



Electric bus charging

Electric bike sharing system



CapaCity Workshop, Győr

September 25, 2017

DEVELOPMENTS IN ELECTRIC MOBILITY



Electric plane

Electric ferry



CapaCity Workshop, Győr

September 25, 2017

ZERO EMISSION IN MOBILITY



CapaCity Workshop, Győr

September 25, 2017

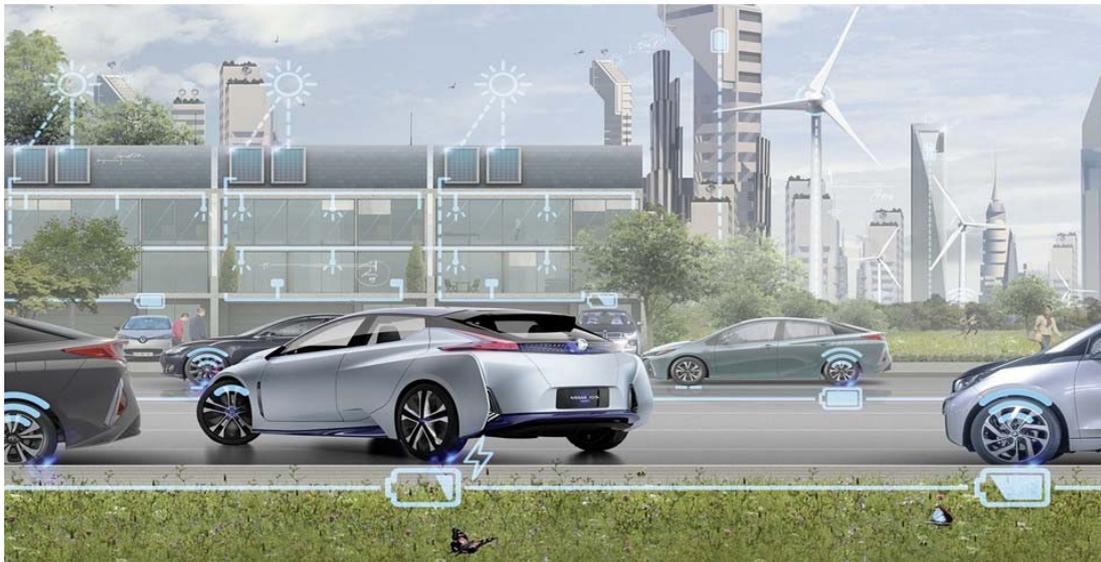
SUSTAINABLE HOUSEHOLDS



CapaCity Workshop, Győr

September 25, 2017

FUTURE OF ELECTRIC MOBILITY



CapaCity Workshop, Győr

September 25, 2017

TIME FOR QUESTIONS & COMMENTS



Janos UNGAR
President

Hungarian Electromobility Association
ungar@elektromobilitas.hu
+36 20 366 8805

CapaCity Workshop, Győr

September 25, 2017

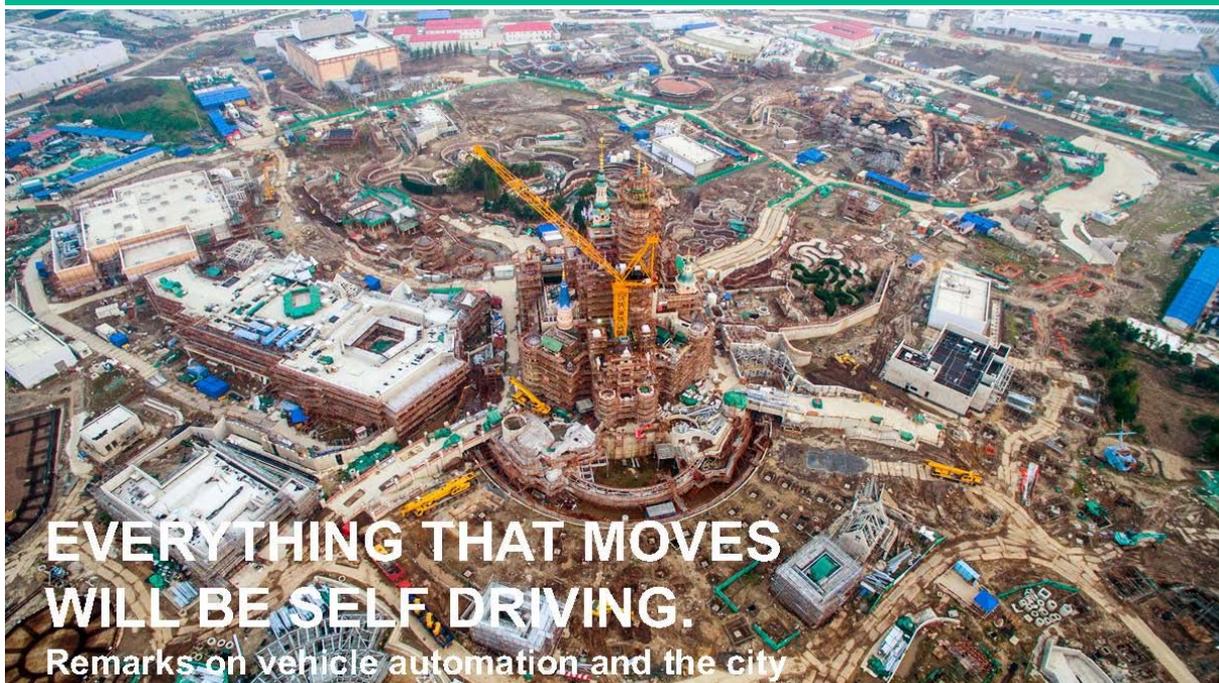
Smart Mobility in the Cities and Regions of centrop -

- Mathias Mitteregger, Technical University Vienna, Coordinator of the project avenue21; Everything that moves will be self driving. Remarks on vehicle automation and the city

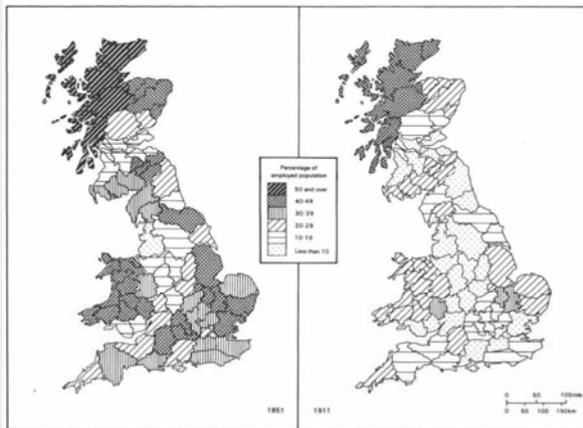
AVENUE21



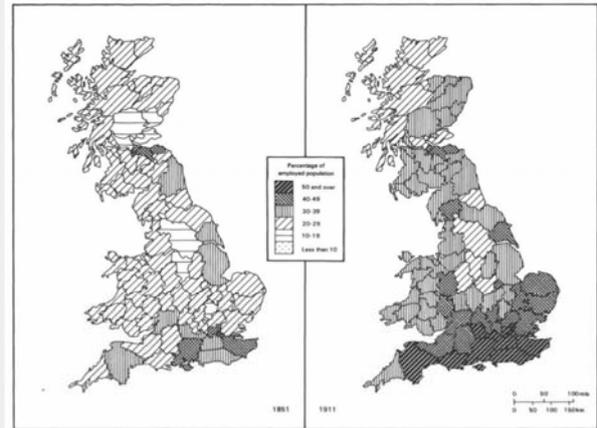
Daimler und
Benz Stiftung



**EVERYTHING THAT MOVES
WILL BE SELF DRIVING.**
Remarks on vehicle automation and the city



3.1-2 Employment in agriculture, 1851 and 1911



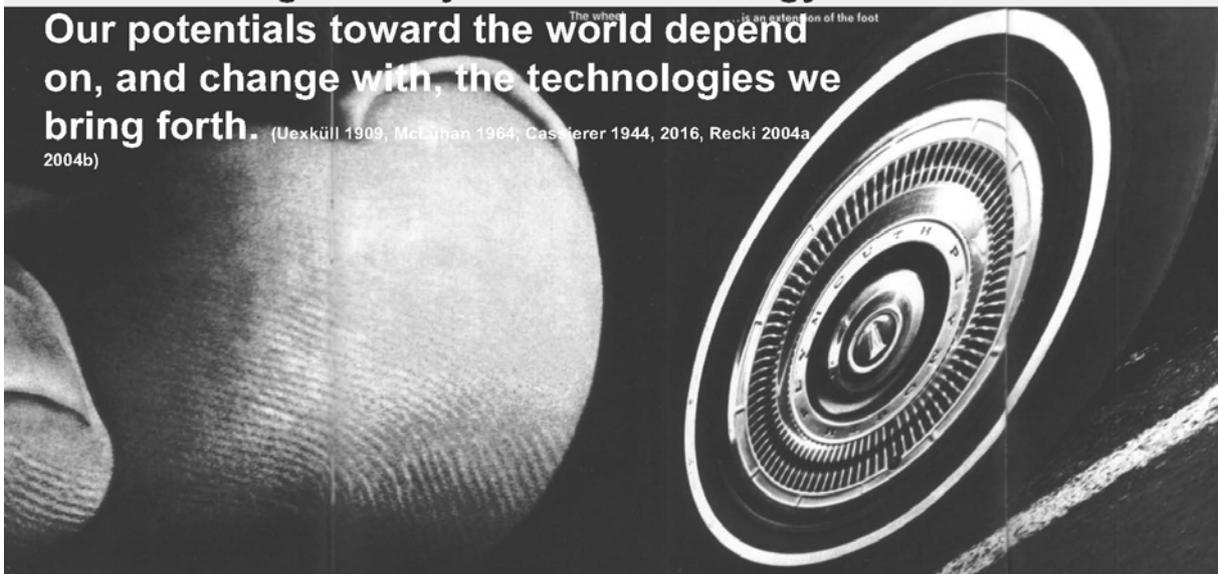
3.5-6 Employment in services, 1851 and 1911

It took Britain a mere 60 years to move from a society with 50% working in agriculture – to one with regions where 50% of the people are employed in services.

Human beings don't just use technology.

Our potentials toward the world depend on, and change with, the technologies we bring forth.

(Uexküll 1909, McLuhan 1964, Cassirer 1944, 2016, Recki 2004a 2004b)

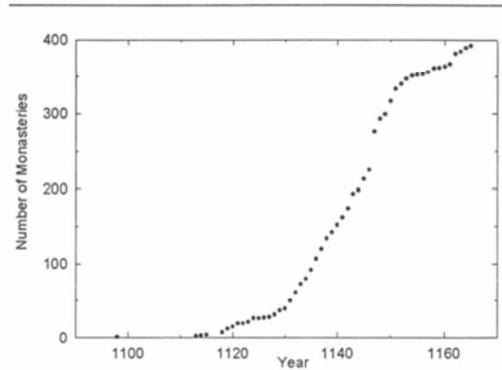


THE DIFFUSION OF INNOVATIONS

- How can we understand the process of how new technologies become part of the lives of a great number of people?
- The theory of the “Diffusion of Innovations” (Rogers [1962] 2003) looks at this process, focusing on the communication amongst participants in a given social system.
- This focus on communication connects it to one of the important qualities that have been attributed to cities.

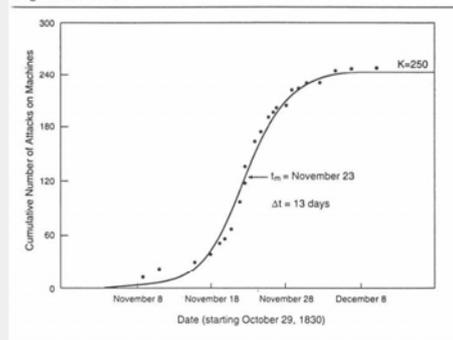
THE DIFFUSION OF INNOVATIONS

Figure 1. The Initial Diffusion of Cistercian Monasteries in Europe.



Data Source: P. L. Janaschek, *Originum Cisterciensium*, Tomus I (Vienna: A. Hoeler, 1877).

Figure 2. Resistance to Technology as a Diffusion Process: Number of Threshing Machines Attacked during the Captain Swing Movement in England in 1830.



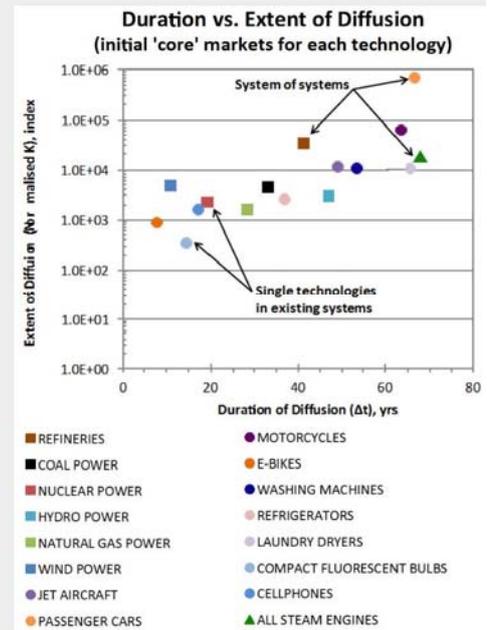
Note: Actual data and a fitted three-parameter logistic curve. See endnote 13.
Data Source: E. J. Hobsbawm and George Rudé, *Captain Swing* (New York: Pantheon Books, 1968).

Source: Grübler 1997 p. 20, 24

DIFFUSION OF INNOVATIONS

- One of the first insights we can get by looking at historical predecessors is, that it takes time for new technologies to arrive in societies.
- No surprising fact, but sometimes overlooked in the age of “disruptive innovations” (Christensen 1997, King & Baatartogtokh 2015)

Source: Grübler 2016 p. 13



Two important questions for CAVs and the city:

WHAT IS THE GRADIENT OF IT?

WHERE ARE WE ON THIS CURVE?

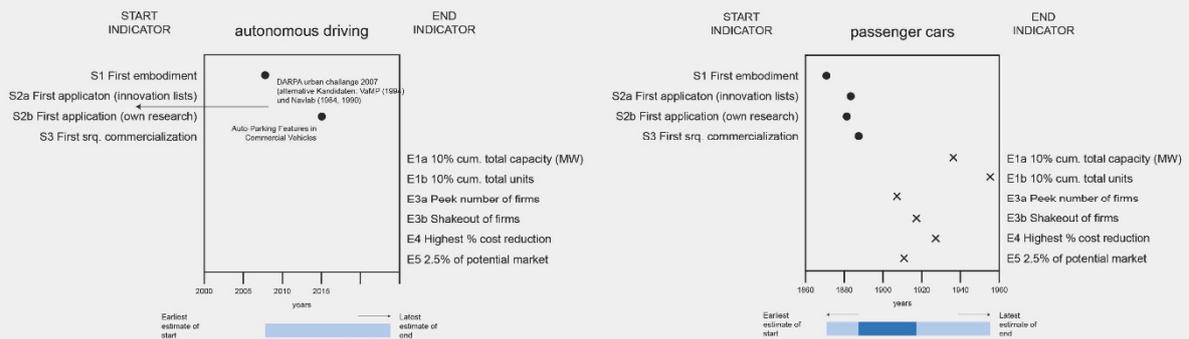
WHERE ARE WE ON THIS CURVE? / DIFFUSION OF AVs

We are at the start of the “formative phase” or “era of ferment” (Markard et al. 2015; Bergek et al. 2015, Abernathy and Clark 1985)

This is when:

- expectations for a technology’s future diffusion trajectory are built
- means of “articulating” the designs, markets, policies, and end-user demands of a technology are provided (Kemp et al. 1998)
- It is “an iterative process of understanding what doesn’t work and what does” (Thomke 2003)
- A “dominant design” emerges

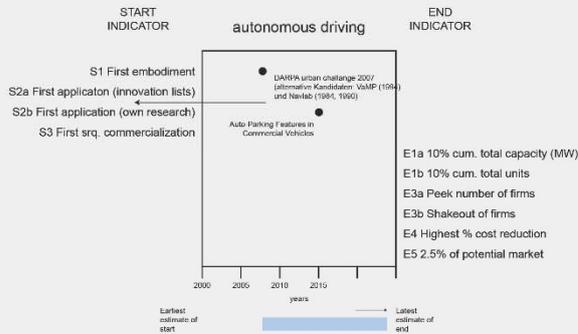
WHERE ARE WE ON THIS CURVE? / DIFFUSION OF AVs



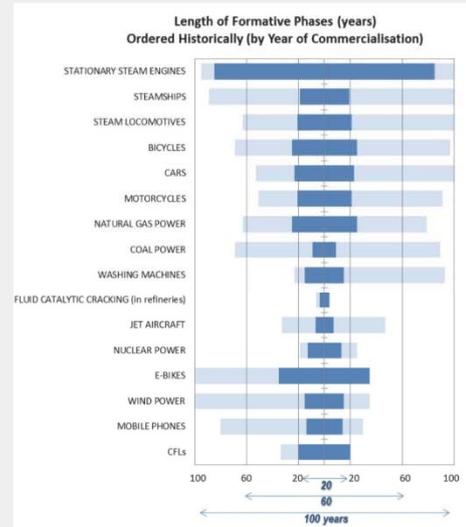
Formative phase AVs. Own representation based on: Bento & Wilson 2016

Formative phase passenger cars (US). Source: Bento & Wilson 2016

WHERE ARE WE ON THIS CURVE? / DIFFUSION OF AVs

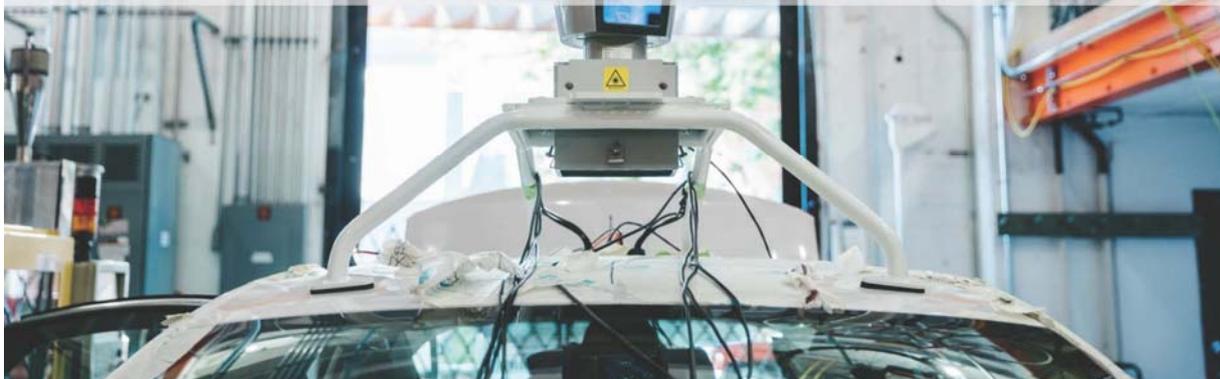


Formative phase AVs. Own representation based on based on: Bento & Wilson 2016



Bento & Wilson 2016
Mean: 22 years (central estimate)

PEOPLE GO THROUGH THE EFFORT OF ENGAGING WITH NEW TECHNOLOGY, "ONLY IF THE OFFERED IS PROFOUNDLY DIFFERENT IN AN UNEXPECTED WAY." (Wu 2017) (see also: Gates 1996, McLuhan 1976)



The formative Phase = Time for eclecticism



THE IMPORTANCE OF THE FORMATIVE PHASE – The electric truck vs. the universal truck

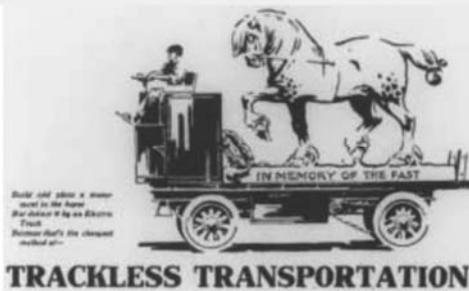


FIG. 1 Advertisement promoting the use of electric trucks to replace horses. (Electrical World 58 [16 December 1911], 1495.)



...bestehen, und
 ...erhalten. Die
 ...haben sich mit
 ...die ich im Gebiete
 ...produzieren und
 ...Lagern, wenn
 ...alten Majors
 ...7.100.000

**Ein Antrag auf ausschließliche
 Zulassung von Elektromobilen
 in Wien.**

**Ausschaltung der Benzinautos aus dem städtischen
 Verkehr.**

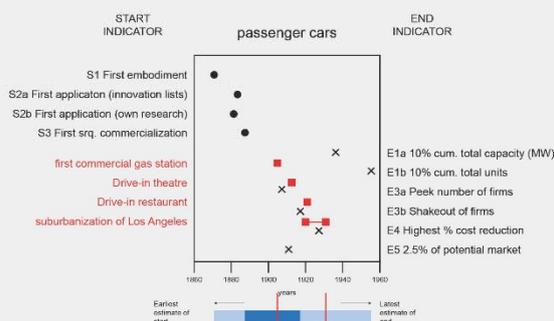
Originaltext des „Neues Wiener Journal“:
 „In der letzten Stadtratssitzung stellte Stadtrat O r a f
 nachstehenden Antrag: Der Verkehr, der in so vielen Wohnungen
 eine Unruhe in der Gegend des Wagens und
 herbeigeführt, soll und kann auch auf dem Gebiete des Wasser-
 mobilverkehrs im Bereiche der Stadt eine weitestgehende Um-
 gestaltung herbeiführen. Dergestalt sind die Autos, die seit der
 Erfindung des Benzinautos zur Kriegsverweigerung ungenutz-
 t in den Kriegsjahren in Verwendung, so die der Kriegs-
 verweigerung im Jahre 1914 erspielte Erlöse zu verwenden;
 aber für den Wiener Stadtbereich sollen diese Erlöse in ihrer
 Gänze in Wien verschwendet und ausgeteilt werden, so der
 nötige Vermögensaufbau durch Abgabe von Wasserwerken voran-
 geschoben werden kann.“

Electric World. December 1911, Neues Wiener Journal. March 10th 1916

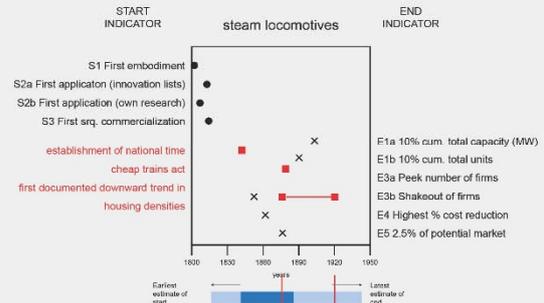
WHERE ARE WE ON THIS CURVE? – HOW DOES IT RELATE TO SECOND AND THIRD ORDER EFFECTS (Spatial effects)

- The important question here is, how does this relate to the second or third order effects (location choices and land use and transport infrastructure ... energy consumption, safety, social equity, economy) (Milakis et. al. 2017)
- These are relevant when discussing effects of AVs on European cities.

WHERE ARE WE ON THIS CURVE? – HOW DOES IT RELATE TO SECOND AND THIRD ORDER EFFECTS

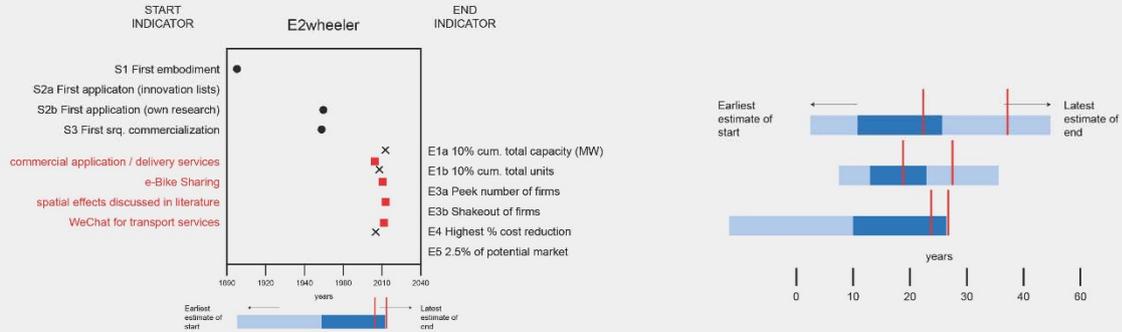


Formative phase and effects: passenger cars
US. Based on: Bento & Wilson 2016



Formative phase and effects: steam locomotives
UK. Based on: Bento & Wilson 2016

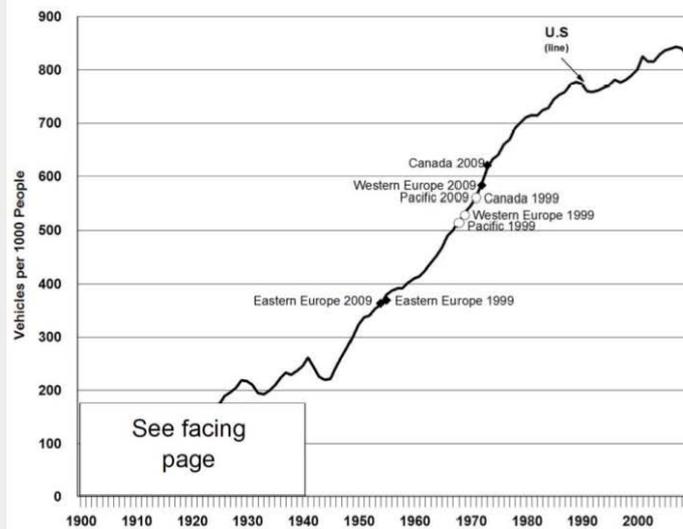
WHERE ON THIS CURVE? – HOW DOES IT RELATE TO SECOND AND THIRD ORDER EFFECTS



Formative phase and effects: electric two-wheelers (E2W). Based on: Weinert 2007

"Lag" of higher order (spatial) effects.
steam locomotives (UK), passenger cars (US),
E2W (CHN)

CONTEXT AND TECHNOLOGY DIFFUSION – Technological "Locked-in"



Davis & Diegel (2015) p. 3-8

CONTEXT AND TECHNOLOGY DIFFUSION – Technological "Locked-in"

Davis & Diegel (2015) p. 3-9

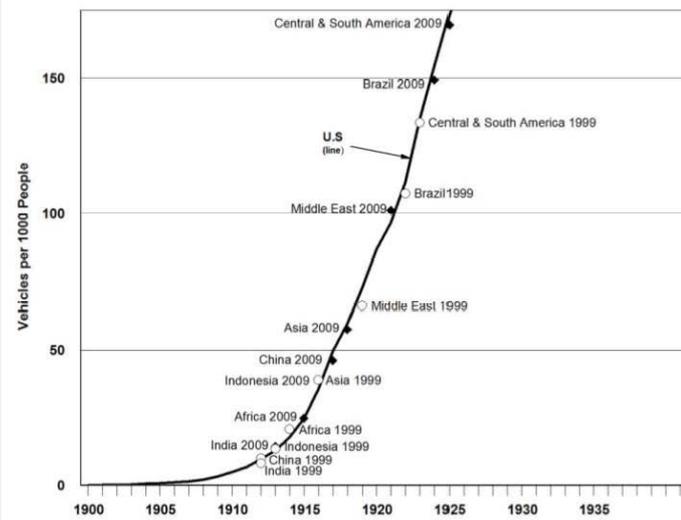
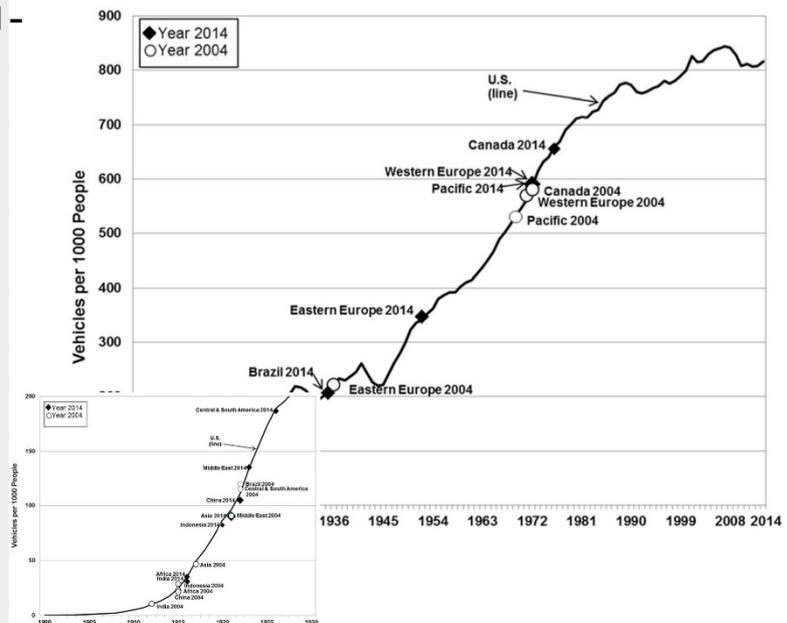


Figure 3.3. Vehicles per Thousand People: U.S. (Over Time) Compared to Other Countries (in 2004 and 2014)

CONTEXT AND TECHNOLOGY DIFFUSION – Technological "Locked-in"

"If it's possible that a low-carbon economy and a low-carbon society could develop, than it will have to happen in China." Urry (2014)

Davis & Diegel (2015) p. 3-8, 3-9



CONTEXT AND TECHNOLOGY DIFFUSION – FURTHER EFFECTS

- It is very likely, that the **kilometers/miles per person is going to raise** (continuing or increasing a current trend)
- New technologies are **creating demands** “perceived needs” (a weekend trip to Alicante) that previously didn’t exist. This is true for users AND suppliers including institutional bodies (Rogers, 2003)
- This tendency is at odds with one of the central challenges for European cities: to take part in mitigating climate change

CONTEXT AND TECHNOLOGY DIFFUSION – FURTHER EFFECTS

- Transport technologies accelerate urbanization. (Berry 1990)
- They increase the “spatial divide of labor,” that is, ever decreasing the number of workers needed on site

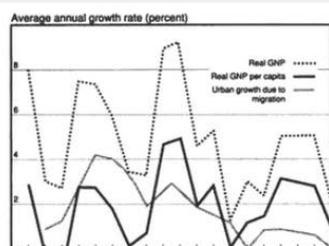


Figure 7.4 Long waves of economic growth and urbanward migration in the United States, 1790–1980.

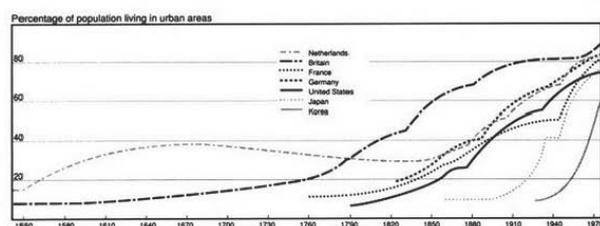


Figure 7.2 Changing levels of urbanization, 1550–1980: The Netherlands, Britain, the United States, France, Germany, Japan, and Korea.

Berry (1990)

Most of the time, studies on the urban scale

**ESTIMATE
POSSIBLE
EFFECTS**

reducing the city a passive entity

=

Practically non-existent, is a discourse on the

**NEEDS AND
PROBLEMS
&
OPPORTUNITIES**

on the next scale of society - the city

“Rather than addressing real problems (like lack of housing, health resources, care workers schools etc), exhibitors [at the CES] still seem convinced they can change the world one connected hairbrush at a time, or by adding voice controls to absolutely everything.”

(Kaminska 2017)

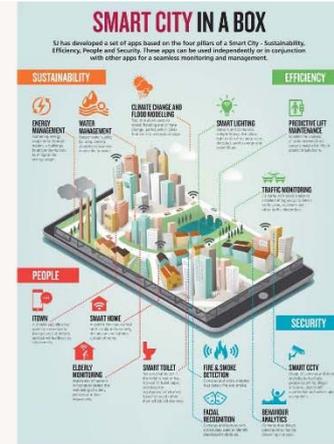


IN ALL STATISTICAL PROBABILITY
YOU WILL NEVER OWN A HOME

Home Economics #2, OK-RM and Matthieu Lavanchy, 2016

We are wrong assuming CAVs - just because – will change cities for the better.

But technological change creates scope for action. For planners and governments too.



IN ALL STATISTICAL PROBABILITY YOU WILL NEVER OWN A HOME

CENTRAL ISSUES (considering technological change, urban development and -society)



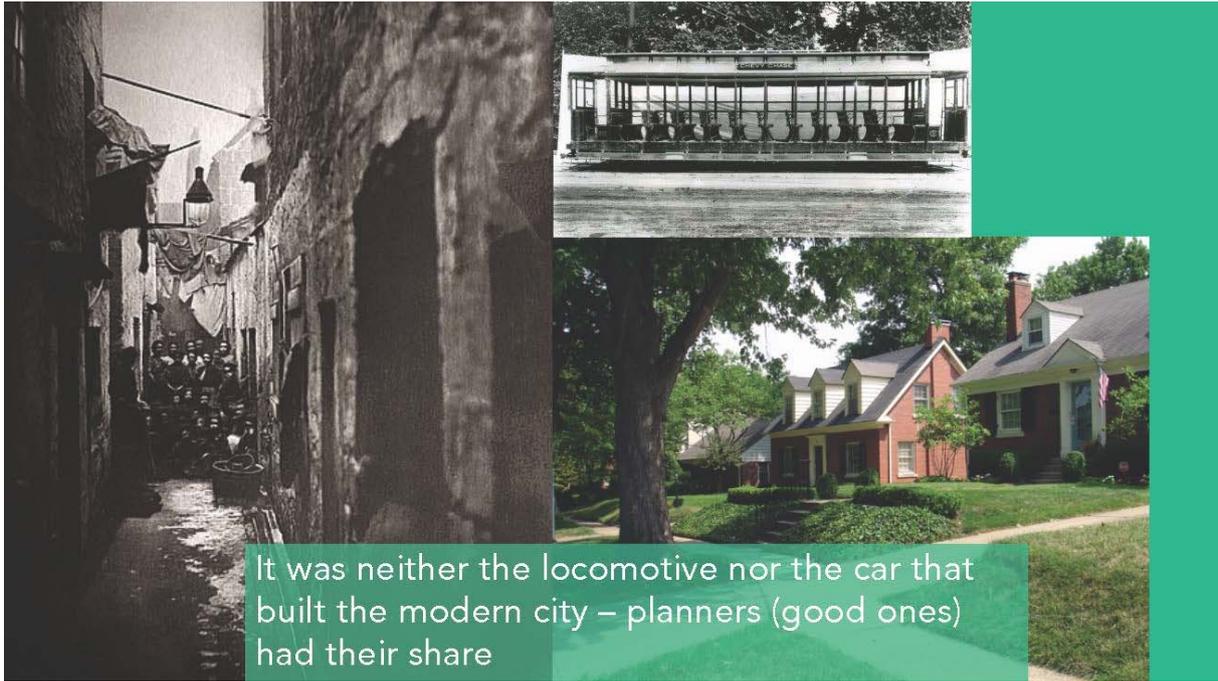
SOCIAL INCLUSION



RESILIENT DEVELOPMENT

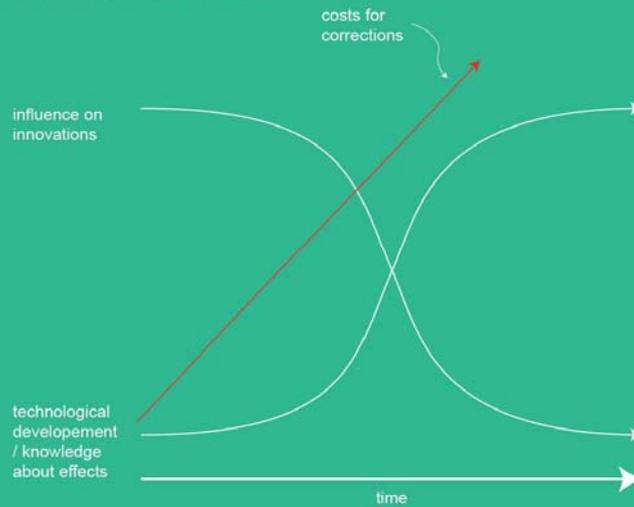


LIVABLE URBAN SPACE



It was neither the locomotive nor the car that built the modern city – planners (good ones) had their share

Collingridge Dilemma: Is there one?



Own representation.

REVENUE CHANGES (first order effects)



Reduction tax revenue	One-time revenues	revenue savings	(possible) additional revenues
fuel taxes			tolls, badges
license fees		Road infrastructure spending	
parking fees	Property sales		Letting spaces
traffic penalties		Police costs	
personal property taxes			Personal property taxes
		Healthcare savings	



Own representation. Sources: Clark, Larco, Mann 2017, Transport Systems Catapult (2017), Morgan Stanley (2017)

REVENUE CHANGES (secondary effects)

	Costs	Revenues
Public transport	↑ ↓ ↔	
Digital (smart) infrastructure	↑	
Date trade		↑
(land) development costs	↑↓	↑↓
Cyber security	↑	
Environmental cost	↑↓	
Tax losses e-commerce		↓
unemployment benefits, social subsidies	↑	

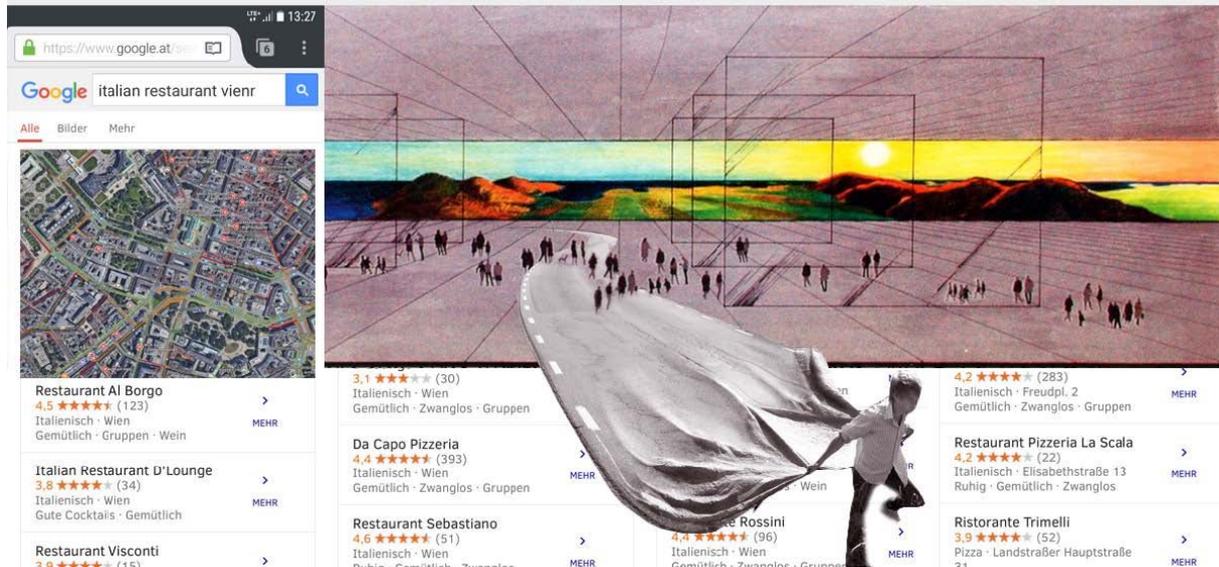
Own representation. Sources: Clark, Larco, Mann 2017, Transport Systems Catapult (2017), Morgan Stanley (2017)

SCENARIO: LIQUID SCHEDULING

SCENARIO: LIQUID SCHEDULING



SCENARIO: LIQUID SCHEDULING



**WE HAVE TO START ASKING
QUESTIONS AND TEST
ANSWERS – FACING THE
PROBLEMS AND
OPPORTUNITIES FOR CITIES**

We cannot blame it on the cars if we don't

AVENUE21

contact:

mathias.mitteregger@tuwien.ac.at

<http://avenue21.city>



Daimler und
Benz Stiftung

- Britta Fuchs, NÖ.Regional.GmbH



noe^N regional
Die Kraft der Gemeinsamkeit

E-CARSHARING BUCKLIGE WELT/WECHSELLAND



Cooperative project between 11 municipalities (8 in 2018, plus 3 in 2017)
Supported by Climate and Energy Model Region Bucklige Welt/Wechselnd and NÖ.Regional.GmbH

0 4 / 1 2 / 1 7



Objective 1:
5% e-cars of the total motor vehicle population

Objective 2:
Reduction of individual motor car traffic of 25.000 people through e-mobility

Objective 3:
Above-average increase of value added and employment through e-mobility



0 4 / 1 2 / 1 7



SURVEY ON THE IMPLEMENTATION OF E-BUSES IN PUBLIC TRANSPORTSYSTEMS OF LOWER AUSTRIA



0 4 / 1 2 / 1 7



- Zoltán Varga, associate professor, Széchenyi István University

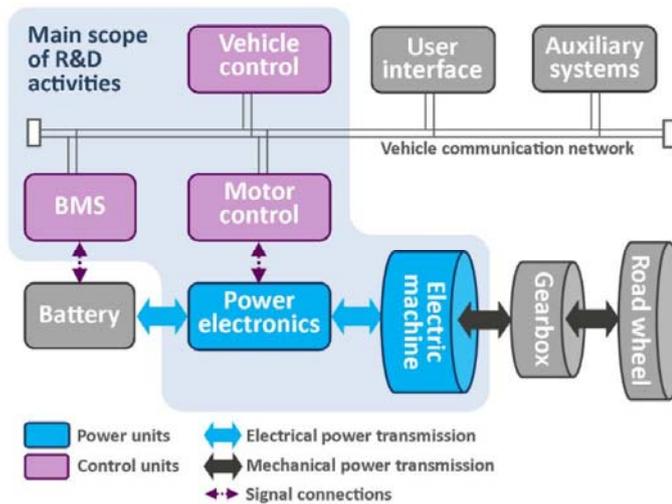
JÁRMŰIPARI KUTATÓKÖZPONT
RESEARCH CENTER OF VEHICLE INDUSTRY

Activities of Research Centre of Vehicle Industry, Széchenyi István University

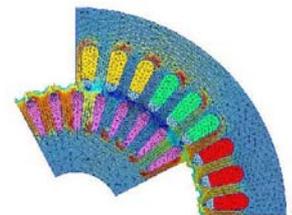
Mission Statement

Research Center of Vehicle Industry is committed to improve sustainable mobility, focusing on hybrid and electric vehicles and intelligent transport systems.

R&D activities



› Electric motor R&D



› Embedded system development



Research and Development Strategy at the Institution

- Special vehicle for special function - *shearing of always moving vehicles (instead of universal limousine)*
- Supporting student's racing team to develop e and autonomous vehicles participating at lowest energy concept vehicle's competition
- Realisation of special e vehicles/drives for smart mobility



3

Research and Development Concept for smart mobility

- Development of specific driving cycles for different traffic conditions (*measurements, evaluation with statistical methods*)
- Optimizing electric drives using specific driving cycles for the lowest energy consumption (*motor and driver simulation, modelling of battery system*)
- Realisation of drives (*CAD, manufacturing*)
- Measurements of electric drives on test benches (*static, dynamic, HIL tests*)
- Iteration of the optimization and the measurements
- Application of developed e drives in vehicles

4

Optimization of e drives for smart mobility

- Optimization of motor and motor control for the lowest cumulated losses and weight
- Optimization of vehicle control for specified driving conditions (*hill, city, closed areas etc.*)
- Optimization of battery system (*low voltage, capacity and duration, home charging, battery exchange, battery shearing*) and BMS (*temperature control, distance forecast, etc.*)

5

**Thank you for your
attention!**

Contact:
Varga, Zoltán
head of R&D area E-drives
vargaz@sze.hu



- Bertram Ludwig, upstream – next level mobility



Smart Mobility

Upstream – next level mobility

Bertram Ludwig (bertram.ludwig@upstream-mobility.at)
<https://www.upstream-mobility.at>

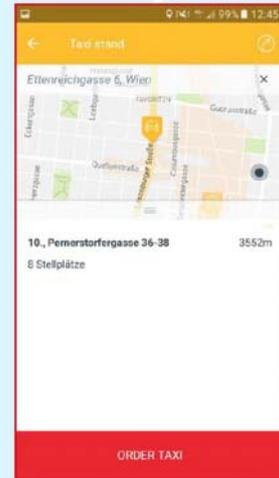
Upstream – Owner



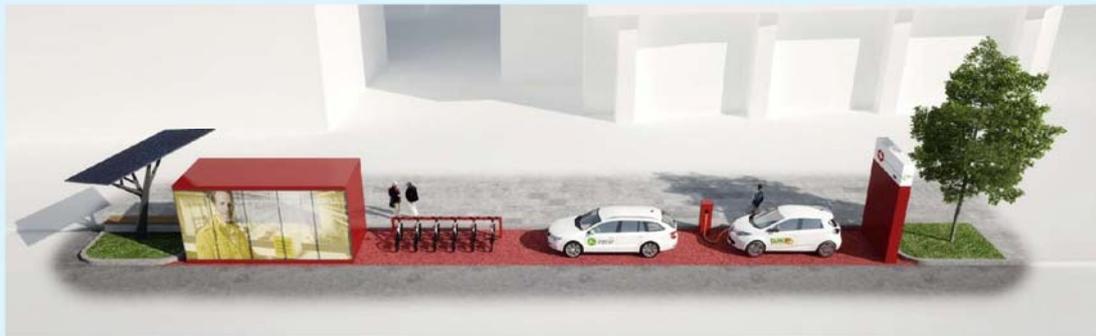
Platform functionality



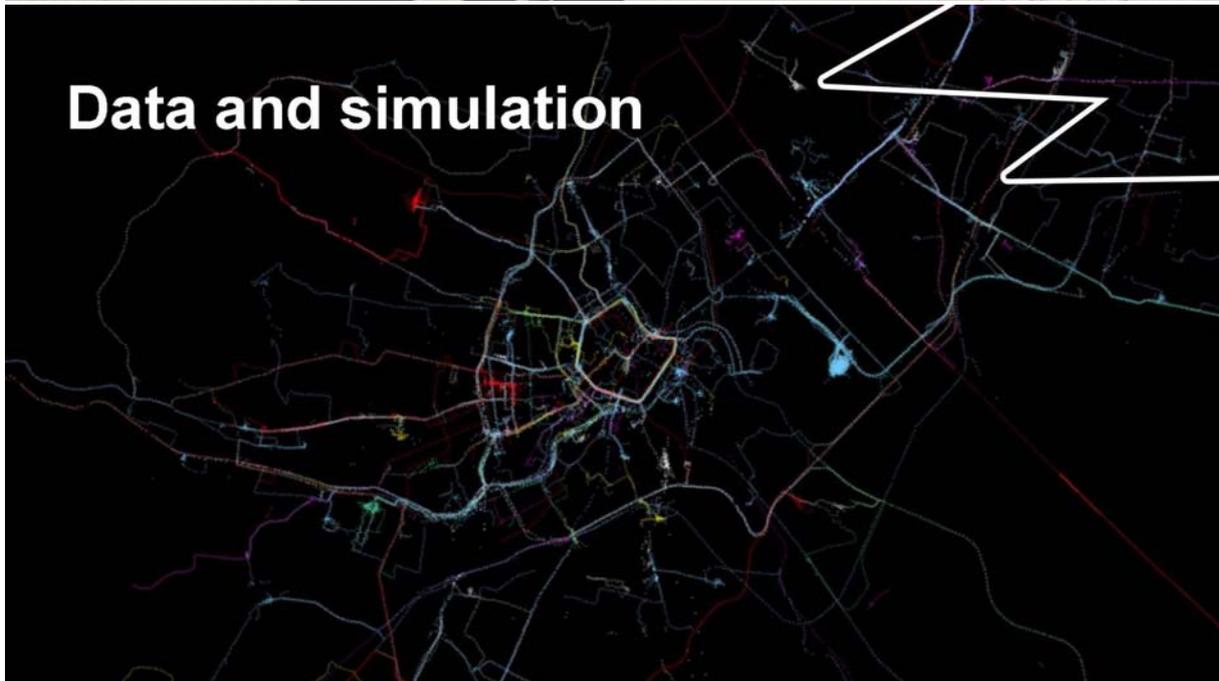
Products and examples



Mobility Point



<http://smarter-together.eu>



- Fabian Dorner, Technical University Vienna, Department of Spatial Planning

Mobility Sharing

CapaCity Workshop
Győr, 26 September 2017



Sharing is not new, but done in a new way

Traditional Sharing



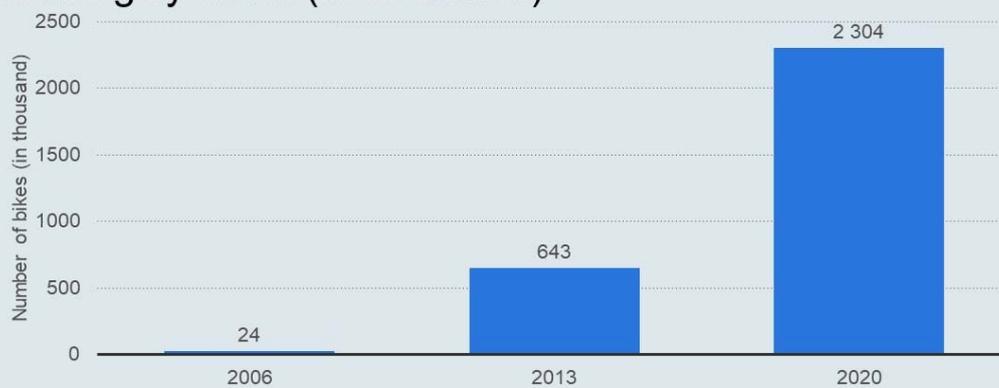
Digital-driven diffusion



The world of mobility sharing is complex

Feature	Characteristics						
Form of organisation	P2P	G2C			B2C		B2B
Type of sharing	Trading		Goods Sharing			Service Sharing	
Flexibility	station-based				free-floating		
Transport modes	Car	Bicycle	Scooter	Locomotive	Container	Boat	Airplane
Functions	passenger				freight		
Spatial type	rural		suburban		urban		
Initiative	Bottom-up				top-down		
Integration	modal	spatial	organisational	temporal	technological		
Area of service	Region		City		Municipality		City quarter
Target groups			

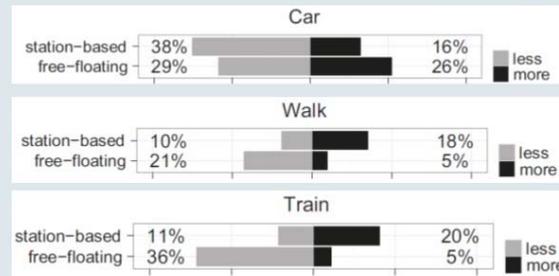
Rapid diffusion: world-wide number of bikes in bike-sharing systems (in thousand)



statista.de

free-floating vs. station-based

- commercial free-floating sharing in **dense areas of big cities**
- environmental effects** remain **unclear**
- To be found in all types of cities and regions
- Positive environmental effects** through a more conscious multimodal **travel behaviour**



Becker et al. 2017

Mobility Sharing: Urban - Rural

Urban

- Cities as **experimental ground** for mobility sharing (density, good public transport, user groups)
- Great **diversity** of offers
- Enabling **multimodal lifestyles** without private car – **mobility as a service**

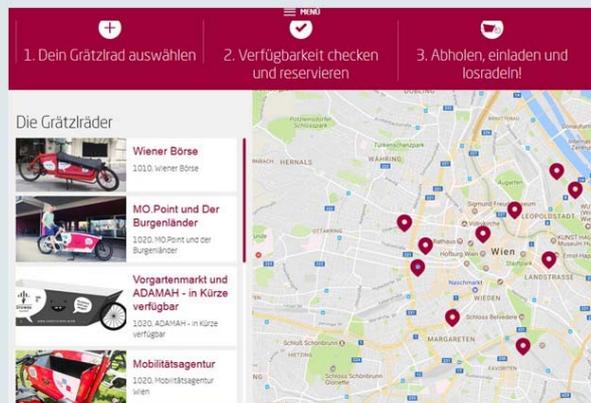
Rural

- Different challenges – different forms of sharing
- Non-commercial forms of sharing: Wide range of **peer-to-peer** and **community-based** solutions
- Replacing second or third vehicle

Rural Good Practice: Community-based e-Carsharing



Urban Good Practice: Cargo Bike Sharing

1. Dein Grätzlrad auswählen 2. Verfügbarkeit checken und reservieren 3. Abholen, einladen und losradeln!

Die Grätzlräder

- Wiener Börse**
1.010, wiener Börse
- MO Point und Der Burgenländer**
1.020, MO Point und der Burgenländer
- Vorgartenmarkt und ADAMAH - in Kürze verfügbar**
1.030, ADAMAH - in Kürze verfügbar
- Mobilitätsagentur**
1.020, Mobilitätsagentur wien

Future?

Mobility Sharing as part of integrated mobility offers

Modal integration



Integration in housing, office, tourism etc.



- Mobilis



Welcome to Mobilis!



mobilis Interaktív kiállítási központ

- Nyitás: 2012. március 15. (5+ év)
- Kiállítási terület 1200 m²-en
- 74 interaktív eszköz
- Naponta kísérleti bemutatók
- Évente 30-40 külső helyszíni bemutató
- Tudományos játékbolt
- 16 munkatárs
- 50-60 demonstrátor „pool” (diákmunkás)



2 – 2017. 12. 04



FŐSPONZOROK:
Audi
Hungaria



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mobilis The future: Science and career guidance centre

Vision

Through continuous development of its interactive exhibition instruments and widening the scope of science experiment presentations Mobilis maintains its national-level recognition and evolves into the „**scientific community space**” of Győr and its metropolitan region, which school pupils, families and university students and lecturers alike visiting it several times a year.

Mission

The activities of Mobilis supports the STEM awareness and motivation of schoolchildren in Győr and its region, performs active career guidance activity in both primary and secondary schools, showcases the higher education opportunities as Széchenyi István University and provides space for the presentation of scientific and innovation results achieved at the University or in the region.

3 – 2017. 12. 04



FŐSPONZOROK:
Audi
Hungaria

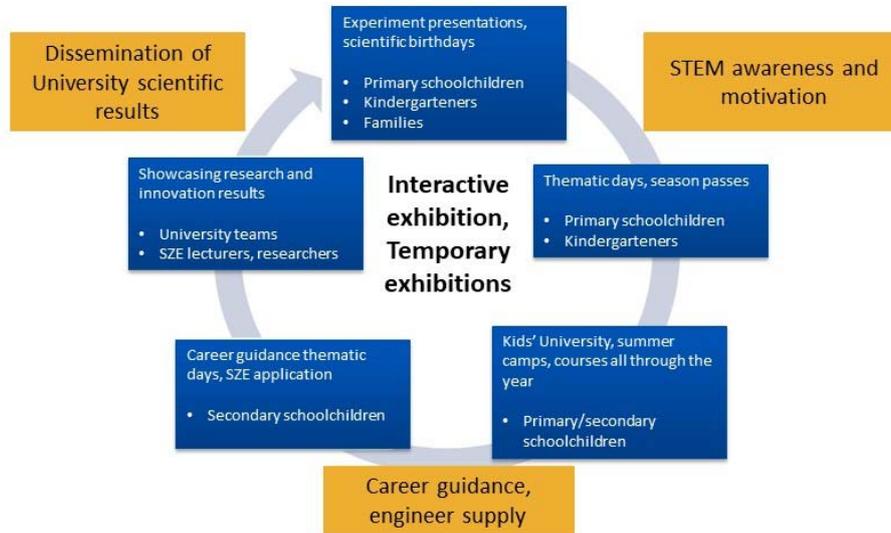


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mobilis

Functions and key activities



4 – 2017. 12. 04



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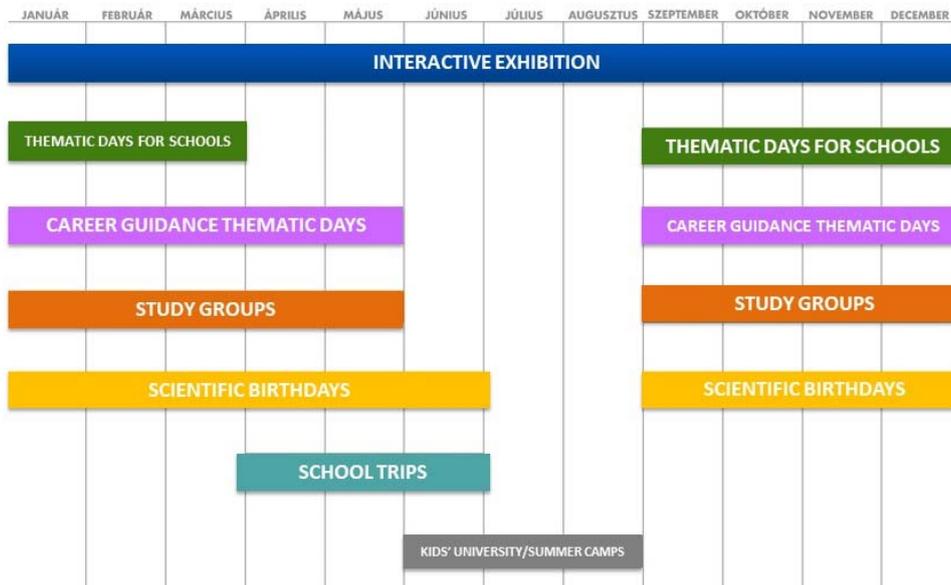


SZÉCHENYI EGYETEM

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Annual programme calendar of mobilis



5 – 2017. 12. 04



FŐSPONZOROK
Audi Hungary



SZÉCHENYI EGYETEM

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WEEKEND EVENTS:

- Thematic Fun Science Saturday (2016: World of Robots, 2017: Sports and science)
- Make it and take it home! – scientific DIY
- **Introduction of vocations (planned)**

GREAT ANNUAL EVENTS:

- Experiment Bazaar – Science Festival (April) →
- Night of Museums (June)
- Night of Research (September)
- First Lego League (December)

Science Festival



CORPORATE EVENTS:

- At company sites (1-2/month)

EVENT VENUE:

- Conferences, contests (SZE, companies)
- Team-building for enterprises

CAREER GUIDANCE CONSULTATION AND EDUCATION POINT



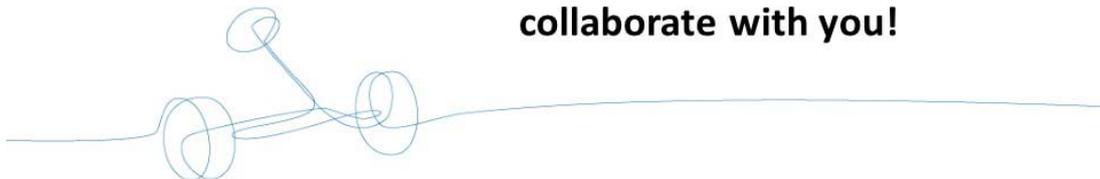
6 – 2017. 12. 04.



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We look forward to collaborate with you!



7 – 2017. 12. 0



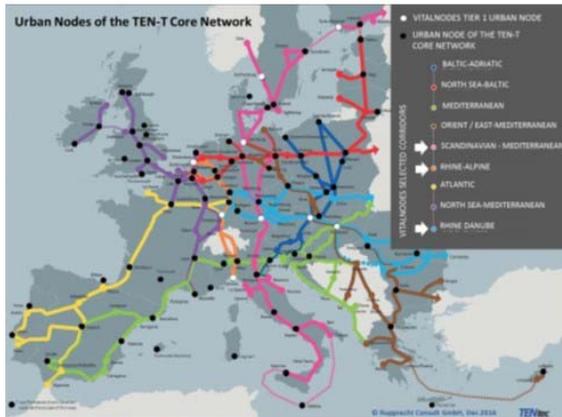
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- Rainer Müller, UIV Urban Innovation Vienna

VitalNodes



Building a lasting network delivering evidence-based recommendations for Vital Urban Nodes along TEN-T Corridors



Presentation CSA H2020 MG 4.3-2017 for DG MOVE, EC
Brussels, 5 September 2017

- Sjaak van der Werf (Rijkswaterstaat NL), Coordinator – Project manager
- Jos Arts (Rijkswaterstaat NL), Innovation manager
- Ivo Cré (Polis), WP-leader Dissemination



Key elements of VitalNodes CSA

Total costs
- 2M€

EC contribution
- 2M€

Start date
- 1/11/2017

Duration
- 24 months

Consortium:
- different governance levels
- public, private, platforms
- both infra, logistics and urban planning



Challenges

EC H2020 CALL - MG4.3-2017

Innovative approaches for integrating urban nodes in the TEN-T core network corridors

- Integrating freight logistics of urban nodes into network corridors, last-mile and long-distance freight logistics and interaction with passenger transport a complex issue with a multi-dimensional character
- Need for more (cost-)efficient and sustainable integration addressing network issues of the (freight logistic) transport and mobility system but also spatial issues related to urban vitality (socio-economic development, spatial and environmental quality and liveability)
- Need to address multi-dimensional character when integrating:
 - short-term and long-term development,
 - value creation and value capturing,
 - multi-level governance and institutional issues
 - Implementation issues.

Objectives

VitalNodes had two key objectives:

- 1) Deliver validated recommendations for a more effective and sustainable integration of all 88 urban nodes on the TEN-T corridors (focusing on freight logistics);
- 2) To establish a long-lasting European expert network based on existing (inter-) national and regional networks for safeguarding long- term continuity in knowledge and implementation.

This will pave the way towards an integrated planning approach for urban nodes and TEN-T corridors focusing on freight delivery while taking into account passenger transport as well.

Focus and topics

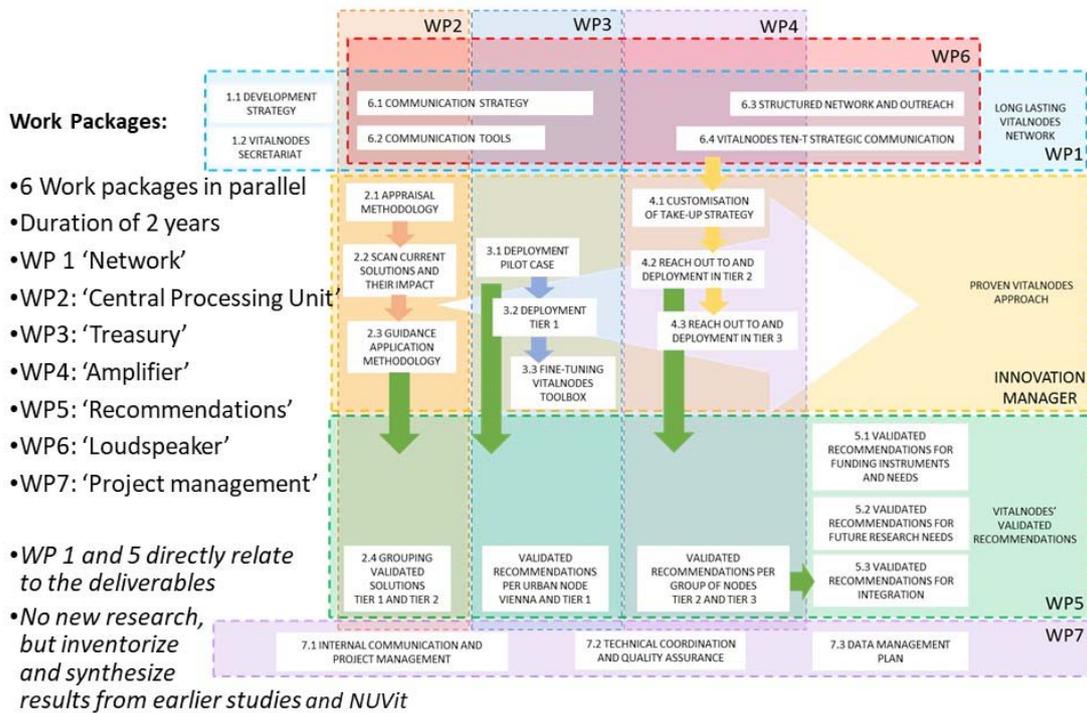
- Integration at different levels due to high level of interaction:
 - freight logistics and passenger flows
 - urban nodes and network corridors
- Urban nodes and network issues of the transport system in combination with urban vitality (socio-economic development, spatial and environmental quality and liveability)
- Multimodal and intermodal connection of long distance and last-mile freight logistics
- Building a network that links up with existing networks (a network of networks)

Expected impacts

<p>Long lasting VitalNodes Network</p>	<p>Expert network that develops current practices and opportunities and produces recommendations and facilities deployment.</p>
<p>VitalNodes' validated recommendations</p>	<p>Validated recommendations for wide-scale deployment of research and innovation solutions covering all 88 urban nodes along the TEN-T corridors</p> <p>Recommendations funding needs and instruments for creating synergies and take into account socio-economic aspects of deployment of innovations</p> <p>Overview of grouped solutions for an efficient and effective integration of urban nodes into corridors</p>
<p>Proven VitalNodes approach for Future Cases</p>	<p>Assessment and validation methodology for recommendations resulting from applying the VitalNodes approach</p> <p>An enriched toolbox based on the experiences and findings coming from the applications in the urban node and group workshops.</p>

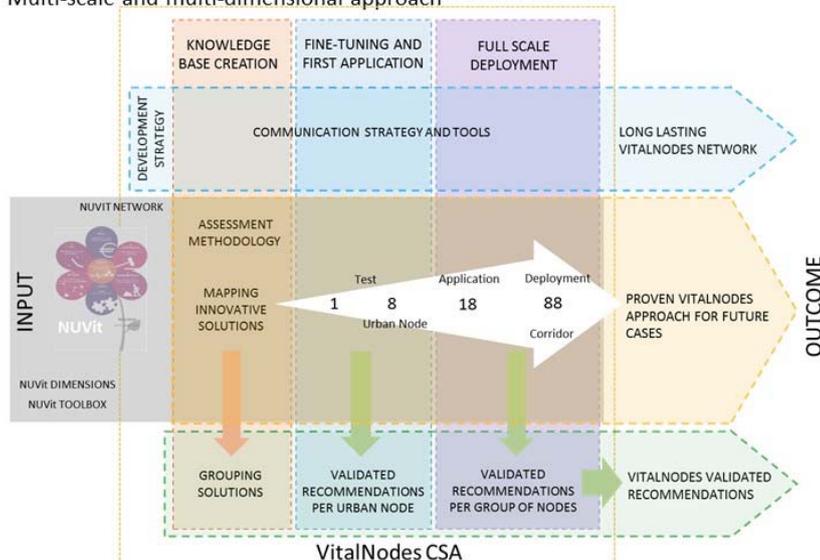
Users: urban planners, infrastructure developers and operators, financiers, local policy makers, regional policy makers, national policy makers, European policy makers from several disciplines (economy, mobility, infrastructure planning and spatial planning)

Implementation: work package structure



Approach (1): Overall Concept

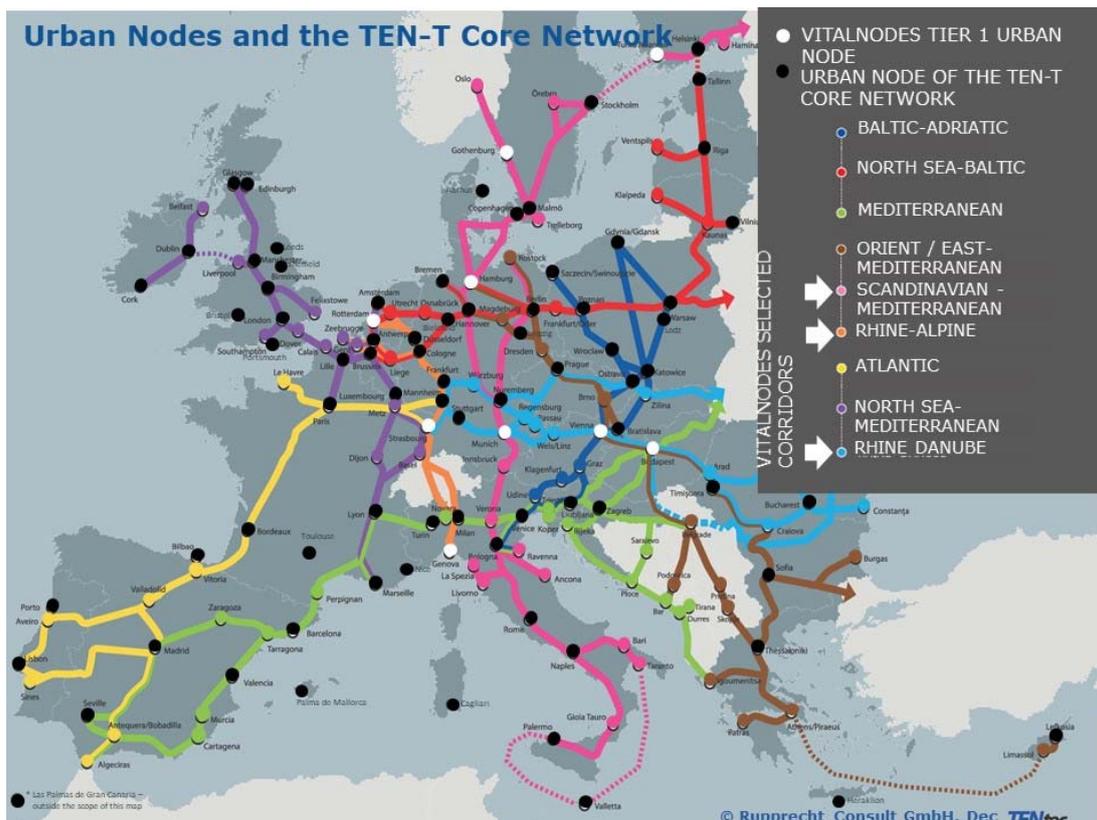
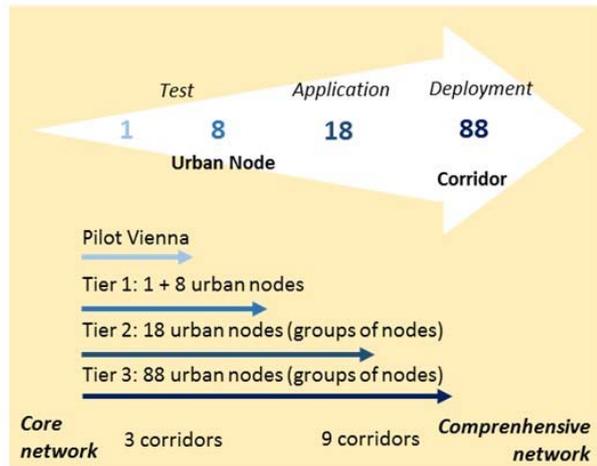
- Use of proven NUVit concept and toolbox + international network of professionals and experts => head start
- Knowledge base creation – fine tuning/first application – full-scale deployment
- Stepwise approach 1-8-18-88
- Multi-scale and multi-dimensional approach



Approach (2): Stepwise approach

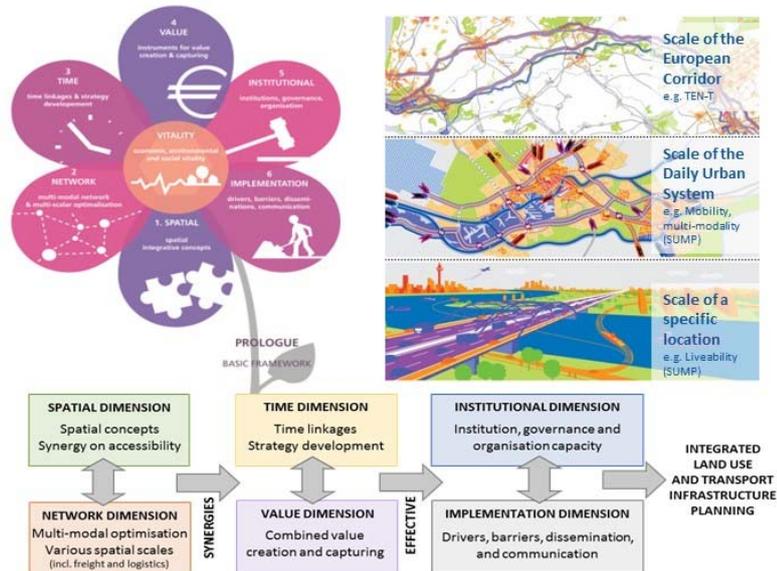
Selecting specific urban nodes within corridors, and then scaling up:

1. Head start with the pilot case Vienna. Serves as a pilot for enriching and fine-tuning the NUVit toolbox into the VitalNodes toolbox
2. Further applied and fine-tuned for 8 other urban nodes focusing on 3 corridors (Tier 1)
3. Extending to in total 18 urban nodes (Tier 2)
4. Finally, by covering all 88 Urban Nodes for all 9 corridors (Tier 3)



Approach (3): Building VitalNodes on NUVit approach

- Multidimensional approach: integration of six dimensions of mobility, land-use and infrastructure planning to create synergies
- Relevance of different scale levels and their interaction
- Specific attention to the freight logistic aspects



Outputs

- VitalNodes Network: strategy, database and work programme until 2022
- VitalNodes toolbox: Urban Nodes solutions (based on the experience gained with tier 1, 2, 3 nodes)
- Recommendations (with intermediary (M12) and validated (M24) versions)
 - on the integration of urban nodes in the TEN-T network (for 8 – 18 – 88 urban nodes)
 - for CEF/TEN-T guidelines
 - on funding needs and instruments
 - on future research needs and funding

Milestones

- | | |
|--|----------------------|
| • Vienna pilot case workshops | January 2018 |
| • 8 Tier 1 (8 urban nodes) workshops by | August 2018 |
| • 3 Tier 2 (18 urban nodes) workshops by | December 2018 |
| • Tier 3 (88 urban nodes) workshops by | June 2019 |
| | |
| • Advisory board installed | April 2018 |
| • VitalNodes urban session at TEN-T days | TEN-T days 2018/2019 |
| • Policy dialogues (Brussels based) | 2018 and 2019 |

7.3 Photo documentary of the workshop

