EPOMM
European Platform on Mobility Management

Mobility innovations and the future of sustainable mobility: Insights on the STRIA Roadmap ‚Smart Mobility Systems and Services 2019'

EPOMM - Managing mobility for a better future

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Dear reader,

All indicators are trending towards continued growth in the global demand for mobility. The UN anticipates that the world population will increase from 7.8 billion to 9.7 billion in 2050. Urbanisation is expected to reach 68 percent by 2050 vs. 55 percent today. Consequently, it is paramount to transform how we move people and goods in order to offer more mobility with less impact.

In order to address this existential challenge, this edition of the EPOMM e-update throws a spotlight on mobility innovations and the future of sustainable mobility and provides insights on the Strategic Transport Research and Innovation Agenda (STRIA) Roadmap - Smart Mobility Systems and Services 2019.

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Innovation, noun [ˌɪnəʊˈveɪʃən]

Source: Freepik

According to the Cambridge dictionary, innovation stands for *‚a new idea, design, product, etc. or for the development of new products, designs, or ideas'*.

Decarbonising transport and the sustainable transformation of mobility systems is a pressing challenge for global and European climate change mitigation. Understanding and differentiating the performance and potential of emerging new and potentially ‚smart' transport and mobility systems will be fundamental in implementing successful and sustainable transformation paths. So far, policy and innovation efforts remain overwhelmingly focused on incrementally optimising existing individual motorisation modes (‚**default car**') and automobile technologies rather than on leveraging integrated transport and mobility strategies. **Breaking this path-dependency is a key innovation challenge.**

Business as usual is not an option

Source: Freepik

While interest in smart mobility technologies and services has been very strong, and significant progress has been made in their initial implementation and deployment in European cities, it is important to note that to date smart mobility services remain an insignificant element of overall European transport and mobility supply.

Despite their high and disruptive profile neither on-demand, shared, autonomous nor electric mobility systems have yet had any notable impact on overall transport demand, modal split and related emissions in Europe to date, nor has their potential contribution to decarbonisation been sufficiently validated, in particular in the case of smart and automated mobility.

New service models and innovation can strongly support a shift to transport decarbonisation, or further lock in unsustainable travel behaviour.

A key task will be to **establish empirical validation of the sectoral and systemic decarbonisation impacts of such technology, systems and services innovation**, and ensure that technologies and service innovations are not taken forward for their own sake, but in view of achieving a transition to a low-carbon, efficient and accessible transport system.

„I want Europe to strive for more by being the first climate-neutral continent" – Ursula von der Leyen, President of the European Commission

Photo: APA/dpa/Daniel Karmann;
Source: www.derstandard.at

The 2011 Transport White Paperof the European Commission formulates ambitious urban mobility policy objectives, following on the established need to cut transport GHG emissions by 60 percent compared to 1990. These include the full phasing out of conventionally fuelled vehicles in city centres by 2050 and close to zero-emission logistics in cities by 2030.

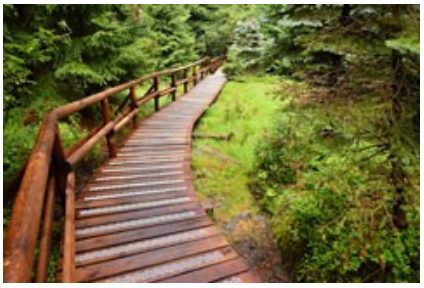
These goals were reiterated in ‚A European Strategy for Low-Emission Mobility ', as well as the communication , A Clean Planet for all '.

Additionally, the ‚Graz Declaration ' on clean, safe and affordable mobility develops additional priorities for implementation.

On the basis of these European goals for the transport sector, the Strategic Transport Research and Innovation Agenda (STRIA) - Smart Mobility Systems and Services Roadmap 2019 proposes an action plan of priority European innovation actions to facilitate European innovation in sustainable, clean, safe and affordable mobility to **ensure more rapid attainment of long-term European transport goals until 2025 and 2030**.

And the so called, and often cited ‚European Green Deal ', that should be presented in the first 100 days of the new European Commission, will enormously support this effort.

New pathways to sustainable mobility



Source: Freepik

Significant changes can be observed in user behaviour and lifestyle in relation to transport that will affect the decarbonisation impacts of new service models in the transport sector. Younger generational cohorts and other user groups are currently opting for reduced motorisation rates and modal shift away from daily use of the automobile and towards multi-modal, shared, public and active travel modes.

If such behavioural trends persist, they can offer a principal support factor for decarbonisation, if **innovations are building on decarbonised mobility systems and promote genuine intermodality**. Forward innovation actions and policies present an opportunity to reinforce these promising behavioural trends.

In that context, cities and regions are confronted with the challenge of transforming their transport modal splits and flows by integrating these emerging changes into **evidence-based policy making** and to provide **effective tools for decision making processes**. However, new innovations in technologies and use need to optimise the whole transport system and beyond, including settlements and districts. And not road-based car travel only to make a long-term contribution to decarbonisation.

Certification system confirms climate compatibly of settlements and districts

Photo: BMNT – Stephan Huger

Today city planners are confronted with two global trends: on the one hand, living space is getting less due to urbanisation. On the other hand, demands on living space are constantly rising as for example through stricter climate and energy political objectives based on the Paris Agreement. Therefore, it will be necessary consider also the climate compatibility as one central aspect in the construction of settlements and districts.

To identify and to push successful concepts, **klimaaktiv** – the climate initiative of the Austrian Federal Ministry for Sustainability and Tourism – has implemented a **certification system that allows to plan, to asses and to ensure high quality standards of settlements and districts.**

Mobility is thereby one of six key elements. The planned mobility concepts will be evaluated before their implementation based on qualitative and quantitative criteria.

For **further effective tools for decision making processes** see, for example, also the second edition of the Guidelines for developing and implementing a Sustainable Urban Mobility Plan (SUMP), the Sustainable Urban Logistics Plan (SULP) for Vienna-Lower Austria (in German language only), or the Study on Urban Vehicle Access Regulations (UVARs) and the related technical reports.

A renewed focus is required

Moving forward, innovation actions should facilitate the pro-active integration of smart mobility services with existing public transport and utility systems to unlock their potential to significantly leverage low-carbon and efficient mobility in European cities and regions.

This will require a renewed focus on their potential contribution to modal shift, behavioural change, energy transition and intelligent demand and land use management.

To this end, the **STRIA Roadmap recommends designing and prioritising innovation actions in the following five priority areas.**

Priority Area 1

Development of sustainable and integrated smart mobility systems connecting urban and rural mobility services and promoting modal shift, sustainable land use, sufficiency in travel demand and active and light travel modes

Next generation smart mobility systems and services require sustainable interlinkage of densely populated areas with peri-urban areas, shrinking regions or rural mobility services.

1. Smart mobility solutions sustainably interlinking urban and rural mobility systems.
2. Develop urban design and land use strategies that promote active, micro and public mobility and that facilitate the integration of passenger and freight services.
3. Defining new governance concepts, tools and technologies through large-scale systems implementation.
4. Frame transport policy to foster inclusion, public acceptance and respect for diversity through research on behavioural change and user needs.

Priority Area 2

Design of effective operating models for integrating smart mobility with public transport services and zero-carbon energy systems

Effective collaboration of cities, users, public and private transport providers and industry should be a central theme in the development of smart mobility technologies, solutions and systems.

1. Design and development of effective operating models that sustainably integrate public and individual mobility service provision.

2. Development of integrated multimodal solutions providing a sustainable energy-transport nexus.

Priority Area 3

Fair-access public digital infrastructure and mobility data management solutions

Private companies, governments and public entities should be equally encouraged to provide and share user and urban data collected on the use of public space and infrastructures wherever it is available.

1. Collecting and collating systemic and dynamic mobility data to contribute to effective policy-making and implementation
2. Fair-access digital infrastructure and mobility data management

Priority Area 4

Implementation of intermodality, interoperability and sector-coupling

Support in the development of technical standards for communication and interoperability of user devices, vehicles, critical infrastructures, energy systems and mobility data are vital.

1. Design and development of efficient solutions for integrated infrastructure and mobility systems shared by passenger and freight services.
2. Expand and extend the role of active and light travel modes and use of micro-mobility solutions as part of integrated intermodal mobility systems.

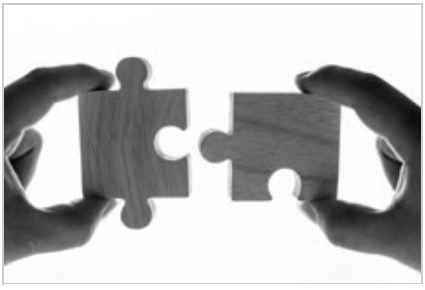
Priority Area 5

Validation and integration of automated, air and virtual mobility

Level 4 autonomous vehicles pave the way for driverless mobility. A rapid proliferation of drone and low-altitude aerial mobility technology is taking place. Virtual mobility solutions provide a contribution to transport sufficiency.

1. Test and validate the potential contribution of automated mobility services to sustainable, zero-carbon and integrated public transport systems.
2. Test and validate real-world integration and governance of air mobility with urban and rural transport systems.
3. Validate and integrate virtual mobility.

Conclusion: Specific political pathways and policy instruments are urgently needed



A vital aspect of transport and mobility transformation will be to **progress behavioural innovation and the acceptance and adoption of sustainable technology and services by transport and mobility users.**

This will require integrating innovation action across technological, behavioural, regulatory and economic domains. The STRIA Roadmap is focused on identifying necessary and sufficient innovation levers of European transport and mobility transformation and potential pathways to sustainability and decarbonisation.

While of great importance, defining specific political pathways and policy instruments

Source: Freepik

towards the implementation of these levers is outside the scope of this roadmap and should be developed in democratic decision-making by the responsible institutions of governance at local, national and supra-national level as a matter of urgency.

About the STRIA Roadmap - Smart Mobility Systems and Services 2019

This implementation roadmap complements the Strategic Transport Research and Innovation Agenda (STRIA) Smart Mobility Systems and Services Roadmap 2017 - one of seven STRIA roadmaps included in the European Commission Staff Working Document ‚Transport Research and Innovation Contribution to the Mobility Package' from May 2017, which identifies and reviews options of smart mobility innovation for low-carbon transport and mobility in Europe.

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