

Strategy paper

**Digital, secure, interconnected,
customisable: improving
the framework conditions for smart
mobility throughout Europe**

Strategy paper
of the German Transport Forum
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THE GERMAN TRANSPORT FORUM

Our mission

The Deutsches Verkehrsforum (German Transport Forum) is the only multi-modal industry association in Europe. As the lobby for all modes of transport, we provide stimuli for the political decisionmakers. In Berlin and Brussels, we proactively promote competition and the elimination of red tape.

In constant dialogue with politicians, scientists, the media and the public at large, the German Transport Forum is a dynamic stimulus provider, competent knowledge manager and politically independent platform rolled into one. We see our role as that of an »advocate for mobility« and promulgate an integrated transport system that is efficient, customer-oriented, affordable, resource-saving and eco-friendly. In order to safeguard and improve mobility, about 170 German and European member companies and associations have joined forces in the German Transport Forum.

Our aims

Our overall aim is to enhance public awareness of the economic, political and social potential of mobility and to improve the framework conditions for the transport industry.

The German Transport Forum establishes a link between the transport industry and other sectors of the economy. Experienced, high-calibre industry representatives contribute to our work. This allows us to act as a knowledge manager that consolidates, evaluates and imparts information and knowledge.

At the intersection between business, politics and science, we create opportunities for dialogue relating to all aspects of mobility.

- To obtain recognition for the key importance of mobility by politicians and society
- To safeguard and further develop a competitive and efficient transport infrastructure
- To establish intelligently-networked transport systems that fully utilise the synergy potential and specific strengths of individual transport providers
- To ensure fair competitive conditions for all transport providers at national and international level
- To provide customer-oriented and integrated mobility solutions
- To promote mobility-oriented research and prompt implementation of research results
- To protect the global climate by reducing emissions, increasing efficiency and using resource-saving technologies.

DIGITAL, SECURE, INTERCONNECTED, CUSTOMISABLE: IMPROVING THE FRAMEWORK CONDITIONS FOR SMART MOBILITY THROUGHOUT EUROPE

In recent decades Europeans have become increasingly mobile, and their radius of action for work, leisure and shopping has constantly increased. Developments such as electromobility (e-mobility), interconnectedness through information and communication technology and the advent of vehicle automation are leading to new forms of mobility.

Digital technology and data interchange are delivering a further boost to the efficiency of freight transport as well. Logistics partners are finding it easier to link up with each other, capacity utilisation is improving, and waiting times at customs and for loading and unloading are decreasing. Physical mobility and the associated digital flows of information are being combined, and innovative products and services are emerging. In addition to established transport companies and vehicle manufacturers, newcomers are also entering the market with platforms, apps and new services. The urgent need to protect the climate is another driver of change.

Innovation, change and new ideas are required to bring about these modern mobility scenarios, both now and in the future. To enable all this to happen, however, the framework conditions will need to change. In other words, obstacles to progress will have to be removed. However, in this dynamic environment it is also particularly important both to take advantage of existing solutions and collaborative approaches when implementing new concepts and ideas and to ensure that, ultimately, the greatest possible common benefit is obtained from these concepts and ideas.

Consequently, in its capacity as a multi-modal industry association, the German Transport Forum (DVF) has teamed up with the German IT industry association BITKOM to create an Action Plan designed to implement smart mobility. This strategy paper is based on that Action Plan. In order to press ahead in nine fields of action at the national and European levels:

1.) Make data available: There is currently a lack of relevant data available on mobility across company and administrative boundaries. Moreover, the data that is available varies greatly in terms of how up-to-date it is. It is often not clear what data must or can be made available or how good its quality is.

Action required:

It is necessary to have a data code and define criteria for data to be released and made available. National and European trade associations can act as mediators to facilitate this. An obligation to release public-sector data and make it available must be developed. The open-data approach must continue to be encouraged. It is also important to have regional data coordinators in order to negotiate with companies and the public sector and get them to make data available. The public sector should support mobility data market-places in which information on both data inventories and access modalities is stored.

2.) Provide data protection and data security: People have only limited confidence in the security of their own personal and mobility-related data, and users are generally not clear about how anonymised data is used and where it ends up. There are doubts and uncertainty about both data security and restrictions imposed on the collection (copyright), forwarding and use of data. When previously closed systems are opened to permit access and data interchange, their integrity, reliability and functioning must be ensured, and access by unauthorised individuals must be prevented (cyber-security).

Action required:

It must be clear that data protection is being monitored and that there are sanctions for any violations. Compliance with data protection regulations - in particular, the anonymisation of data - must be documented so that it can be verified and certified by independent bodies. At the same time, verification and certification processes for standard applications such as traffic information services must be simplified significantly. Companies must be responsible for ensuring that critical areas are protected so that they cannot be accessed or interfered with in any way by third parties.

3.) Ensure there is enough bandwidth in the data network: In order to be able to provide transport companies and consumers with adequate mobility services, there must be sufficient bandwidth available in the mobile and landline networks, particularly along traffic routes, at transport hubs and in logistics centres. The broadband and mobile networks currently do not offer 100% coverage with the mobile bandwidths required for mobility applications. This must be addressed. In addition to this, there is a need for service level agreements, and prioritisation of traffic must be taken into account (quality of service, QoS).

Action required:

The mobile network along road and rail corridors and at transport hubs and logistics centres must be developed in order to provide 100% coverage with a higher bandwidth in the medium term. At the European level, this upgrading of the network must be prioritised along the TEN corridors.

4.) Overcome borders: Despite European integration and the extensive work done by DIN, CEN and ISO, some countries are still going it alone and producing their own standards in the field of smart mobility. There are interface problems in cross-border traffic

and even in some cases between district authorities and federal states. Customs systems, timetable information, traffic information, tracking data, etc. are all affected by this.

Action required:

In the short term, a mobility data marketplace could be used in order to open up interfaces in cases where there is sufficient demand, and thus provide data access to app providers etc. In the short and medium term, bilateral and multilateral solutions must be established between the stakeholders. In the medium to long term, agreements must be reached between companies, industry associations, federal states and national governments in order to implement cross-border standards.

5.) Press ahead with standardisation: The large number of services, data formats, processes and players in the mobility market is currently hindering the comprehensive integration of different offerings. A variety of custom solutions designed to meet a specific requirement (e.g. e-ticketing, mobile payment) have resulted in a heterogeneous landscape. The pressure to include all solutions and possible application scenarios results in arduous, lengthy standardisation processes. At the same time, the willingness of the providers to work with each other is increasing, and they are creating offerings together that can be expanded to form solutions that provide comprehensive coverage.

Action required:

Best practices and de facto standards defined by the industry - in other words, approaches that are already working - should provide the basis for the development of further standards. In the case of public transport, the VDV (Association of German Transport Companies) standard provides a good foundation on which to build. This development in the industry and resulting from the ongoing process of market development that is taking place increases the acceptance, market penetration and thus, ultimately, also the spread of smart mobility offerings. The functionality of the systems should be gradually improved, and the level of standardisation should be based on this improvement and increased in step with it.

6.) Develop cross-provider payment services and ticketing solutions: Both payment settlement and ticketing between providers offering different services remain a challenge. For example, it is often unclear how to allocate marketing costs, and in some cases problems are presented by non-standardised solutions that have become established due to the close links between transport companies and the public sector. But here, too, changes are taking place in the market, and comprehensive services are being developed by payment transaction providers and large transport companies.

Action required:

It is advisable to build on existing solutions in this case as well. The expertise of the payment transaction providers must be used to establish intermodal, interoperable payment settlement options. The development of payment platforms (on the »open wallet« model, for example) should be encouraged, so that users can bring together and possibly combine their preferred services (payment, couponing, loyalty, ticketing, etc.). Attention must be given to the implementation of interoperability. In public transport the replacement of non-standardised systems should be supported by public-sector investment. This must also be facilitated by the European Commission with regard to state aid legislation.

7.) Support the upgrading of the infrastructure: The existing telematics infrastructure, such as signalling, control and safety systems or traffic information systems, often cannot be augmented to include further services and applications. As a result of this obstacle to investment and development, »smart« transport routes and other intelligent infrastructure/signalling systems are not yet implemented to the required extent. Significant potential to develop smart mobility thus remains unexploited.

Action required:

It must be ensured, in particular through public-sector funding, that the existing infrastructure of roads, railways and waterways is upgraded and made »intelligent« - by means of internationally compatible systems as well, for example - in order to handle the volume of cross-border land transport, which is continuing to increase significantly. Examples of this are signalling, control and safety systems such as ETCS and ERTMS and electronic ticketing. The same applies to the development of the Single European Sky. Moreover, all public-sector invitations to tender and cost estimates in the field of mobility should take into account intelligent infrastructure and telematics systems. This process must also be accompanied indirectly by a positive assessment with regard to state aid legislation and directly by the investment programmes of the EU.

8.) Adapt the legislative framework: The statutory and regulatory framework for smart mobility needs to be improved or adapted. Issues such as data protection, the usability of heavy goods vehicles' road toll data, liability and automation have to be taken into account. For example, there is still insufficient clarity around issues of liability for the failure of transport connections, for costs resulting from delays, or for incorrect information in interlinked systems. In addition, the legislative framework still does not adequately take into account partial or full automation of means of transport.

Action required:

Statutory regulatory regimes for railway operations and road traffic, for example, need to be adapted to take into account the latest technical developments, while at least maintaining the existing high level of safety of these transport systems. In other words, a pragmatic approach to legislation and regulation is required. Efforts to address the current lack of clarity regarding liability issues, which in some cases are not covered by the legislation or regulations, must be made as a matter of urgency.

9.) Improve acceptance among users: New transport or mobility systems or services are often not well received by their target groups of users, because the services provided do not fit with their current patterns of behaviour or usage, or the benefits are not evident or sufficiently highly valued by customers. Consequently, they are unwilling to pay for the service offered.

Action required:

To avoid developing products or services that are not successful, these have to be tested at an early stage to establish how users rate them and verify that they add value compared to existing solutions. Transport companies, service providers and, above all, the public sector need to actively promote new developments in the field of mobility in order to ensure that users are ready to accept them and possibly even pay for them. Existing services have to be modernised and new services designed to suit users' habits in terms of mobility and communication, for example by integrating social media and by linking services with incentive systems and products in other spheres (e.g. mobile communications, leisure activities, the arts and culture, customer loyalty schemes).

Conclusion

This Action Plan can only be implemented if politicians, the industry and administrative authorities make a concerted effort to do so both on the local level as well as on the national and international levels. The European Commission also has a decisive role to play. In order to make progress with smart mobility in Europe, the European Commission must take on the following tasks, in particular:

- Provide positive support to facilitate the achievement of the »four Ds«: improved data availability, data protection with a sense of proportion, optimised data security and a data network that is able to cope with demand. To this end, the European Commission must oversee and help to work on the harmonisation of national framework conditions.
- Support research into and further development and implementation of new smart mobility services as far as possible. The European Commission is called upon to encourage the exchange of best practices – for data platforms, forecasting approaches, inter-modal payment systems, etc. – and facilitate competition in the development of innovative approaches and solutions.
- Allow the process of innovation and standardisation to emerge as a result of market forces in a practice-based, bottom-up approach.
- Add a digitisation component to European investment programmes so that existing infrastructure in the TEN corridors and other key locations in Europe can be upgraded.

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