

## **Benchmarking innovation diffusion in the Intelligent Transport Systems sector in Europe and the US. A focus on Sharing Mobility, Mobility-as-a-Service and Connected and Autonomous Vehicles.**

*February 2018*

Within the framework of the EU-funded NEWBITS project, a benchmark analysis of ITS innovation diffusion<sup>1</sup> has been performed for three specific areas of ITS innovation: 1) Sharing Mobility, 2) Mobility-as-a-Service (MaaS), and 3) Connected and Autonomous Vehicles (CAV's).

According to this benchmark analysis, the critical aspect to consider in both the EU and US to boost diffusion of sharing mobility innovation can be found in overcoming the critical mass barrier and this has been done in several cases by making massive use of tracking technologies and social networks. Additional success elements are increasing interoperability and allowing data sharing among platforms, incentivizing multimodal transport integration, extending pre-tax benefits, establishing a community of trusted users and developing supporting policy measures.

MaaS is at its initial stages of diffusion in the EU, whereas in the US organisational and institutional challenges have even prevented deployment. Forces driving innovation diffusion were found to be: user's willingness to move from a car-borne transport; the presence of the large majority of operators offering electronic payment, opening data and allowing third parties to sell their services; stakeholder cooperation; user incentives; and the inclusion of MaaS within regional transport policy strategies. On the other hand, restraining forces identified are: challenges to make users using one single app; strong market competition; lack of provision of government subsidies and lack of tax reduction benefits; and financial pressure on public transport operators in case profits are sought from the sale of monthly subscriptions and ticket sales.

The benchmark analysis for CAV's has indicated user acceptance and willingness to pay, data protection and cyber-security, ethics and liability, and policy and regulatory issues as the most critical factors of innovation diffusion. According to the evidence reviewed, data privacy is not considered a critical barrier to innovation diffusion, whilst it is considered that CAV will result in a shift from personal to product liability, which will significantly impact the insurance market. Further challenges are also posed by the need for regulatory actions, such as enforcing that all new vehicles are equipped with digital connectivity and communication capabilities allowing to interact with each other and the surrounding road infrastructure, defining open technology standards and developing comprehensive national frameworks.

The full benchmark analysis is available online on <http://newbits-project.eu/publications/deliverables/>. To find out more about NEWBITS and current project news visit [www.newbits-project.eu](http://www.newbits-project.eu) and follows us on Twitter (@NEWBITS\_CITS) and LinkedIn (NEWBITS Project). Inquiries should be addressed to:

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<sup>1</sup> Innovation diffusion can be defined as: "the process by which an innovation is communicated through certain channels over time among the members of a social system. Diffusion is a special type of communication concerned with the spread of messages that are perceived as new ideas. [...] Diffusion has a special character because of the newness of the idea in the message content" (Rogers E. M. (2003) Diffusion of Innovations. Fifth Edition.).