Benefits of Internet of Mobility for Cities and Service Providers

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Abstract

The European Union has set itself the ambitious target to reduce CO2 emissions by 2020 by at least 20% of 1990 levels (1). To achieve such an effect will require substantial changes in transport users' behaviour while transport Information and Communication Technologies (ICT) will need to make an important contribution to those improvements (2). In this context, the EU funded project MOBiNET aims to address this need by developing, deploying and operating the technical and organisational foundations of an open, multi-vendor platform for Europe-wide mobility services (3). The paper presents the case of Trikala city in Greece as an example of the way how a city can benefit from this approach by increasing the use of ITS services, as well as the way that infomobility service provider can also take the opportunity and the advantage of participating in the Europe-wide service platform.

KEYWORDS

Internet of mobility, info-mobility services, Europe-wide platform

Introduction

Transport is a key factor for economic development and wealth in modern societies. But at the same time, there are several reasons why there is an urgent need for eco-efficiency in transport. Transport is responsible for around a quarter of EU greenhouse gas emissions making it the second biggest greenhouse gas emitting sector after energy. Road transport alone contributes about one-fifth of the EU's total emissions of carbon dioxide (CO2), the main greenhouse gas. While emissions from other sectors are generally falling, those from transport have increased. The EU has policies in place to reduce emissions from a range of modes of transport, such as CO2 emissions targets for cars. Towards that end, a wide range of technologies and concepts have been made available and are being pushed by extreme progress in ICT while others are emerging (for example infomobility services, cooperative

systems and the connected vehicle), but most of them still have a low level of market penetration.

Widespread deployment of ITS services is frustrated by the complexity of the real world of mobility information and infrastructure, as the current ITS market consists of many competing (mostly national) value chains. These barriers do not allow Europe-wide mobility service delivery and availability for the end users as well as service exchange among various service providers from different countries. The MOBiNET project brings a simplifying solution to the most important of these obstacles, as it envisages a new "Internet of Mobility" where transport users meet providers of next-generation mobility services. More specifically, MOBiNET project creates a platform that will provide common ICT enablers, business services and application independent features enabling a more flexible open ITS environment, able to provide sustainable solutions and a competitive advantage to its stakeholders.

The Trikala case

Trikala is considered to be the first digital city in Greece and quite innovative in national and European level. It is a medium sized provincial city in the middle of Greece with a population of about 76,000 inhabitants. Regarding mobility, the city hosts around 85,000 per day including both residents and visitors. Twenty-six municipal buses operate in the city, from which some conduct itineraries within the city boundaries, and the rest provide connection with other cities or villages. A main objective of the city of Trikala administration is the decongestion of the city centre and by that the reduction of the CO_2 emissions. The aim is to change the citizen's mobility habits towards more environmentally friendly and sustainable urban mobility, while raising their awareness about alternative mobility schemes that will support them in the decision making process.

A platform for Europe-wide mobility services, could offer a global solution, as it would provide central facilities, hosted as cloud services available not only to the supplier community, but also to the end user in the form of an e-Marketplace for ITS applications. Trikala has enrolled in the MOBiNET project, in order to enable the growth of the MOBiNET community and with the aim to validate its concept from a business assessment point of view. Trikala as one of the MOBiNET European pilot sites will have the opportunity to test exemplary use cases that are expected to facilitate or even push modal shift in the city, and therefore achieve reducing congestion and as a secondary effect, minimizing the air pollution. The services expected to be piloted at Trikala city are the multimodal travel planner and the parking search engine.

How a local infomobility service provider positions in a global infomobility service platform

As mentioned above, one of the core ideas of MOBiNET is to create a business to business e-Marketplace that brings together different either local or at wider area infomobility service

providers and lets them benefit mutually through sharing their services. This allows service providers to discover existing services and vice versa advertise their own services to other parties/providers or end-users. For instance in case of a service provider who has strong participation in B2B (ITS application for the public and private sectors) as well as in B2C market (infomobility services to end-users) at local level, a new generation of content products is envisaged through the global infomobility service platform (MOBiNET) which will be furthermore fully integrated into the management applications-products such as those have been described above. The existing content services of local service provider are migrating from "simply" isolated transport applications/services to take advantage of other B2B or B2C services available in MOBiNET. Moreover MOBiNET project will make use of future internet capabilities so that the existing services/products will be enhanced and be upgraded into a new cloud environment. In this context the local infomobility service provider will gain valuable experience and know-how and in the same time integrate innovative project results' into its existing applications by using a specific toolkit as a reference on how to migrate existing services in order to make them MOBiNET compliant. Through products and services upgrade, the provider will re-enforce its position in home market and also address challenges at foreign markets by increasing and upgrading its company's product portfolio. One indicative example to prove the aforementioned idea is a local or national multi-modal trip planner provided by a local infomobility service provider to be integrated with a trip planner or other service such as insurance, parking, traffic information provided from other service provider by another country (B2B functionality) available in e-Marketplace of MOBiNET so as to formulate an integrated and uniform mobility service to end-user (B2C functionality).

Acknowledgements

References

1. What is the EU doing about climate change? *(web link: http://ec.europa.eu/clima/policies/brief/eu/index_en.htm, accessed on January 2014)*

2. Eco-Efficient Transport Futures for Europe study *(web link: http://www.europarl.europa.eu/RegData/etudes/etudes/join/2013/513520/IPOL-JOIN_ET(2013)513520_EN.pdf, accessed on January 2014)*

3. Description of Work, MOBiNET project, 2012