Social Network Enabled Multimodal Planner (AVATAR)

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10th ITS EUROPEAN CONGRESS
Helsinki, Finland | 16-19 June 2014

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Overview

Where does the AVATAR concept come from?	• Issues • Enablers • Challenges
Why is this important?	• Relevance of the solution respect to European Commission research objectives and traveller needs
AVATAR: as a solution	• Description of the solution • What is innovative?
Considerations	• Final considerations • Ackowledgment

AVATAR: where does this concept come from?

Urban Mobility issues

- Urban mobility accounts for 40% of all CO_2 emission of road transport [1]
- Congestion in the EU is often located in and around urban areas and costs nearly 100 billion Euro, or 1% of the EU's GDP, annually [1]

  [1] Ref. EU Commission, «Clear Transport, Urban Transport», May 2013)

- Nowadays travel assistance is mostly limited to "pre-trip planning"
- Lack of modal integration in travel assistance to the user
- No feedback for traveller behaviours

AVATAR: where does this concept come from?

Organisational and technical issues

- Public, private entities and research institute act as independent domains
- Vertical implementation of applications and technology islands

  - Delivery of unreliable information
  - Duplication and weakness of technical solutions

- The use of different protocols/standards
- Existing systems are not ready to include future internet aspects
  - Social networking
  - Cloud computing

AVATAR: where does this concept come from?

Enablers:

- Capillary diffusion of personal devices
- Availability of contents (Big data)
- Increased digital literacy and use of App

Challenges:

- Enhancing mobility & reducing congestion, accidents and pollution - common challenges to all major cities
- Travel assistance shall include pre-trip, on–trip assistance & post–trip evaluation
- Multimodal integration
- European-wide extension
- Social network for improved mobility and best practice sharing

Why is this important?

European Commission Research programmes incentivise:
- Innovation on Traveller Assistance for improving "green" mobility
- Internet of things and crowd sourcing for improving quality of life
- Europe wide service platform
- Horizon2020

Traveller needs:
- Moving at ease around the world
- New trends in travel assistance: "push" automatically needed travel information instead of "pull" travel information

What is Avatar?

- Avatar is a prime ideal of one self
- It resides in a virtual world
- Your Avatar Mirrors the system & follow you every where

- Mobility recommendation
- Puts you in a loop to be service consumer but also as data provider (for improving quality of service)
- Share info with crowd – Neighbouring Avatars

AVATAR & the B2B

Avatar **reflects** the **recommendation** provided by **TMC**

- Advanced Integrated Platform for mobility management is needed:
  - Integrate all existing systems & modes
  - Provide Traffic monitoring, management and control
  - Provide real-time traffic information and forecasts

E.g. Open platform designed to functionally integrate and to offer easy access to a wide range of ITS applications through a common interface

AVATAR: the solution it provides

- Provide a multimodal real-time route recommendations
- Follow you everywhere with mobility travel recommendations
- Integrate environmental footprint costs on post planned journey
- Enrich your travel experience with post trip cost/benefit analysis
    (comparison of travel behaviors of a real end-user and a virtual traveler (Avatar -end user)

AVATAR: Shared Info…

Information shared through Social Network enabled Planner

- Free parking spaces and occupancies
- Price
- Bus regularities
- Abnormal traffic situation
- First-hand information - experience about the quality of services

AVATAR: what is innovative?

Travel assistance powered by Social Network

- Sharing of end user-best practices through the **"Get together"** capability

Integration between TMC and Social networked data enables:

- TMC to become **bidirectional** entity
- Improved **traffic status, events** & convey reliable info
- Improved strategies and control at network level
- It helps transport operator to **set up a rank** for those who behave good

(participate positively to emission reduction, fuel consumption and PT usage etc.)

AVATAR: what is innovative?

What if analysis supported by simulation and prediction algorithms improves end user travel choice and behavior

- at the end of each day profiles of benefits achieved for each trip made (Co2 emission reduction, fuel consumption, costs related to the trip & premium achieved)

Self-learning capability (future)
- the use of advanced algorithms for developing artificial intelligence

Considerations

Innovative solutions such as the Social network enabled multimodal planner works only, if there is an innovative and flexible integrated TMC.

Acknowledgment

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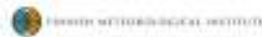
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