Smart Mobility Through Multi-Level Innovation

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ABSTRACT
A number of areas within the North Sea Region are located at a distance from the main economic agglomerations of their countries and lag behind in terms of socio-economic development. Key elements in development are connectivity and accessibility. In line with the European Commission strategy document “A sustainable Future for Transport – towards an integrated technology-led and user-friendly system”, the ITRACT (Improving Transport and Accessibility through new Communication Technologies) project aims to improve those capacities through innovative transport and communication concepts. Contributing also to the Digital Agenda of Europe 2020, the project will focus on the development and use of ICT applications to boost efficient, environmental- and user-friendly transport concepts in order to reverse the spiral of decline in remote areas.

Keywords: Smart mobility, multi-level innovation, and digital services

1. INTRODUCTION
Smart Mobility Through Multi-Level Innovation (SOLUTION) is a current research and innovation program hosted by Viktoria Swedish ICT. The ITRACT Project is the first project included in the SOLUTION program. The purpose of SOLUTION is to deliver internationally competitive service and knowledge solutions for smart mobility with immediate sustainable national and transnational benefits.

Innovation in SOLUTION is defined as open design and evaluation of solutions, which in a certain respect shall facilitate and enable various concerned stakeholders. The innovations in SOLUTION, at a basic level, are digital services for transportation in everyday life which will facilitate and allow for 1) the users of the service before, during and after transport, but 2) also generate value for the service provider, and 3) imparting value for other stakeholders in the environment and promote the rest of society in the present and in the future.

In order to reach solutions that generate benefit and value for stakeholders SOLUTION starts from the idea that innovation should be open but that innovation at a fundamental level must be complemented by parallel design of solutions at other levels. In the field of sustainable
transport, open innovation has proven to be a powerful means to implement and generate both research findings and solid solutions (digital services and digital infrastructure) to support the challenges of everyday travelers.

To meet the challenges SOLUTION will support parallel innovation on multiple levels, i.e. multi-level innovation. The levels are:

Level 1. **TRAVELER CENTRIC DIGITAL SERVICES FOR SMART MOBILITY** - digital services (life puzzles, door-to-door), whose functionality and regional conditions require improvements and further development of,

Level 2. **INTERNET OF THINGS FOR SMART MOBILITY** - digital infrastructure (open data, Internet of things), where these two interactions, digital services and infrastructure, based on new,

Level 3. **COMBINATION OF DIGITAL SERVICES FOR SMART MOBILITY** - open business and cooperation models between the actors involved, where packets of digital solutions and knowledge solutions can be exchanged between players and regions on one,

Level 4. **CROSS-REGIONAL SHARING OF DIGITAL SERVICES FOR SMART MOBILITY** - marketplace for digital innovation, so that the implementation and coverage of sustainable transport solutions for smart mobility accelerates and becomes more widespread.

### 1.1 ITRACT

The ITRACT research and innovation project started in the beginning of 2012 and will be completed at the end of 2014, but interesting outcomes have already been accomplished. In the project 5 regions in the northern part of Europe is working together on an academically as well as practical level to develop virtual and physical services for selected target groups in all participating regions. Based on the outcomes of the research done in the first months of the project in all participating regions, pilot actions of virtual and physical services for the target groups in the remote areas has been designed. Experts from all partner organizations have contributed with their expertise. Exchange of knowledge and good practices has taken place cross-border wise as well as cross-sectorial wise to tackle the need for efficient and sustainable transport modes. Partners have also worked together on the information architecture and have started to build a pilot installation to be used in all participating regions.

### 1.2 Research and innovation program

WP leader Viktoria Swedish ICT has coordinated a transnational research program to assess and identify the needs of transport of various target groups in different remote areas. During this phase they have cooperated with businesses, umbrella organizations, transport companies, and passengers from all the regions. In order to gain knowledge about the needs in each region a “toolbox” was created to assist and aid each region in this task. The aim with the
toolbox was to provide a set of comprehensive and straightforward tools/work models to be used by the different partners in order to align the analysis of needs in the different regions and create a unified and prioritized base for conceptual service innovation. The results of the toolbox were then used to create good prerequisites for the service innovation workshops that were later completed in the five regions.

1.2.1 Service Innovation Workshops
As a preparation and to give suggestions of suitable methods to use in the Service Innovation Workshops in each region a dedicated session during a partner meeting was arranged. The participating regions were then able to ask questions and then formulate their own vision of suitable methods to use during the upcoming Service Innovation Workshops. Our general suggestion was to set up the Service Innovation Workshop in three parts. 1) Idea generation, 2) Prioritization and 3) Service definition.

The results of the five workshops were a total of more than 50 service ideas. During the next partner meeting a clustering (Figure 1) and then prioritization of the service ideas were carried out.

![Figure 1.](image)

2. CONCLUSION
As the ITRACT project reaches a phase were development activities have begun it is interesting to reflect upon the outcomes of the process so far. When it comes to the four levels in the SOLUTION program, the ITRACT project has clearly provided good results in each and every level, level 1 (Traveler centric digital services), level 2 (digital infrastructure etc.), level 3 (Combination of digital services) and level 4 (Cross-regional sharing). In particular, sharing and combination of digital services between the regions looks very promising to this date. As the services begins to be completed testing and evaluation will be done in order to get a better understanding of the influence and inspiration of the work process as well as the impact among the travellers in each of the 5 North Sea regions.