

WP6 : Equipment and operational aspects

Conclusion of 3rd Working Group Meeting (WGM), Leipzig 17 -18 April 2008

Main subject: Innovations and migration strategies

This working group meeting was dedicated to the topic: “**innovation and migration strategies**”, regarding vehicles, infrastructure or operating tools, such as information, ticketing systems or fleet control systems. The group strived to find out, discuss on the best ways as well as the main barriers amongst their experiences of innovative migration.

Definition of the migration strategy

At the beginning of the WGM the participants - members of the consortium and invited experts - expressed the need to formulate a common definition of the term “migration strategy”. As a result of the discussion and exchange of own viewpoints participants agreed on the following definitions:

Migration – implementation of the chosen innovative technology, innovative for the network itself (and sometimes not an innovation in the global sense).

Strategy – precise plan describing the process of the implementation of a new technology that includes a way to achieve the goals regarding the local context and funding possibilities, timeframes, transition period management, responsible persons etc. (how to invest, how to reach a goal).

Summary and outcomes of questionnaire

A special questionnaire that consisted of four general questions on migration experiences with some sub-questions going more into detail was filled out by the experts well before the meeting. The answers given served as the basis for discussion and lead to the following outcomes:

“Who is most responsible for the migration of the innovations (the operator, supervision authority, passengers)?”

Conclusions:

Generally, the responsibility for the migration of innovations depends on the structure of PT system and its organization. A PT operator seems to be a driving force for the innovations in rolling stocks whereas the PT authorities play a significant role in case the planned new solutions and changes concern the infrastructure.

However, some equipment migration need a coherent action of the two stakeholders, authority and operator, that could be the cause of lots of difficulties (different sources of funding, different temporality between politician goals and technical solution)

“Are privatizations essential for the migration of innovations?”

Conclusion:

Answers were different, as a conclusion privatization is not essential to achieve a good migration. The coherence of the governance and funding sources is more essential. On an other hand, in case of privatization, the sector should offer a competitive framework.

“Did you realize any innovation project in last years? What are your (good/bad) experience regarding migration?”

All the experts were asked to briefly describe best and worst examples of the innovations implemented in their cities. The examples were following.

City	Best example	Worst example
Zagreb, Croatia	Real time information system for passengers	Biodiesel vehicles; main reason of failure was a political decision – no domestic production of the fuel
Lisbon, Portugal		Lack of a good governance in infrastructure – no authority responsible for the improvement of an infrastructure suggested and needed by the operator
Dublin, Ireland	Conversion to LCD traffic signal lights; Biggest benefit: money savings, 50% of energy consumption	Not yet implemented: big delay in real time passenger information and integrated ticketing system project (since 1993!) Barriers: mainly institutional (i.e. several companies, too many PT operators)
Sofia, Bulgaria	Implementation of the fleet control system based on GPS and covering 1000 vehicles (buses trolleybuses and trams). PT operator was responsible for planning operating and financing. Duration of the implementation – 2 years. Solution based on an existing system with the help of the local Technical University. Benefits for passenger – real time information on PT stops, timetables available in internet Benefit for the PT authority – ability to better control the operators (penalties if the targets are not achieved)	Renewal of tram fleet based on the strategy for retrofitting. Result: only one vehicle retrofitted after 6 years Reasons of failure: bad strategy indicating only one local tram manufacturer; political problems as the deciders were changing too much. , choice of tram type to be retrofitted

City	Best example	Worst example
Sofia, Bulgaria (technical university)	<p>Research Project aimed at energy control and savings in trains.</p> <p>The project had shown benefits until around 10 % in energy consumption by a better management of speed and acceleration management with the same goal of running times.</p> <p>The control system was never implemented on a bigger scale. But it proved the energy savings in train vehicle.</p>	
Leipzig, Germany		<p>Implementation of the ticketing machines which accept only special money cards (neither credit cards nor cash were accepted by these devices)</p> <p>Loss : 1 million euros</p>
Nicosia, Cyprus	<p>Implementation of the mobility master plan for the enhancement of PT.</p> <p>The drawback of the project was related to politicians' expectations for immediate results.</p>	
Brno, Czech Republic	<p>Implementation of the GPS control system, with new efficient track switch system</p>	<p>Low floor trailers for trams</p> <p>Drawbacks: low capacity, non experience of the chosen supplier , low reliability, high maintenance costs</p>
Krakow, Poland	<p>A Change of fare collection system for contact less MIFARE cards. Start of the implementation – October 2007. 2000 users till the end of March 2008. Turnover of 10 MLN €.</p> <p>The migration included: 300 000 smart cards, ticket vending machines on street (63), ticketing machines onboard, and validating machines for ticket inspection. PT operator responsible for the implementation; 75% of costs covered by EU structural funds (onboard machines excluded, 100% financed by PT operator)</p>	<p>Introduction of CNG buses as a result of political pressure.</p> <p>5 out of 15 CNG vehicles were bought and tested by the PT operator</p> <p>Drawbacks:</p> <p>Investment costs ca 20% higher than for diesel buses: raise of CNG fuel price; higher maintenance costs, same environmental benefits like for Euro V and EE.V</p>

“What do you think are three determining parameters for a successful migration of innovative technologies?”

All the participants of the meeting were asked to express their opinions about the factors determining a success of the migration strategies for innovative technologies in PT. The discussion revealed following preconditions:

- ∅ Access to and good knowledge about the technology to be introduced,
- ∅ Site visits in other cities aimed to deepen the knowledge, exchange experience and avoid mistakes made by others during the implementation process,
- ∅ Political acceptance and involvement,
- ∅ Clear share of competences and responsibilities among all PT stakeholder involved in the migration of technology (operator, authorities etc.),
- ∅ Dissemination to the public,
- ∅ Proper implementation plan (detailed and realistic) including clear framework and target system,
- ∅ Project management system and people with proper managerial skills on the top of the project structure (best solution – one project manager),
- ∅ Well prepared and skilled staff.

Presentations by experts

The first presentation showed the today’s situation in Cyprus, where the modal split for PT decreased by 75% in the last 25 years. A bad condition of infrastructure and rolling stocks along with an increasing number of cars per family make it a big challenge for PT actors to improve the system and reach desired level of the services. Therefore the Ministry of Communications and Works decided to elaborate a master plan – “Programme for the enhancement of PT”.

During the Dublin example for migration strategy the speaker emphasized a significant role of a good traffic organization, steering and control that allows PT vehicles to move smoothly on separate lanes. The expert also explained the importance of the project management methods and tools which should be applied for the implementation of innovative solutions in PT.

In his speech one of the experts from Bulgaria presented the process chosen of implementation of the new electronic ticketing system in Sofia. It is necessary to underline that nowadays in Sofia fare collection is based mainly on paper tickets which are punched by passengers onboard. So according to migration strategy it is assumed to skip so called plastic printed tickets and launch electronic smart cards. It is a big investment difficult to realize in the city of 1,5 MLN inhabitants where a number of trips per year is 500 MLN.

The last presentation by the expert from Lisbon showed already existing efficient solutions regarding interoperability between different transport modes (based on examples from some European cities, therein Bologna, Karlsruhe (with the famous “tram train” launched in the 90ties with its great success, a much higher ridership), Delft, Hanover and Grenoble).

Discussion on the platform for the second hand rolling stocks

One of the cluster members presented the already existing MES website <http://www.mes-services.de> – kind of the platform enabling suppliers of PT objects (mainly vehicles) and potential buyers to meet and negotiate.

It was agreed that EQ cluster should investigate MES and other available platforms for PT second hand vehicles and parts then deliver information on functionalities of these tools as well as some recommendations how to use them.

Good practices that can be carried out

Participants agreed to have the objective to set up these following good practices before mid of September if possible:

- Krakow : the ticketing system
- Sofia : the fleet control system
- Dublin: one of the Quality Bus Corridor
- Leipzig, as previously agreed, the ways to make accessible the tram stations

Materials are requested to the experts in accordance to the “Sputnic” templates

General conclusions

The meeting was very fruitful. Both cluster members and the experts actively participated in discussions and shared their opinions and know how about innovations and migration strategies basing on experiences from different European cities and countries.

Disputants came into conclusion that each PT system requires different migration strategy which depends on actual level of PT development, customers’ expectations and needs, as well as political and institutional frames. The crucial factors for the successful migration are good knowledge about the technology, well-prepared realistic planning and professional project management. Political decisions can interfere with the execution of the migration strategy and seem to be major barrier for the success.

Lessons learned:

Try to avoid being the first (forerunner) to implement a new technology.

Political acceptance of the technical solution is a must.

Learn from other (good and bad) examples but do not copy the solutions.

Good knowledge / profound study on technology to be implemented is indispensable.

A proper and realistic implementation plan with an excellent project management is essential.

*Clear share of competences and responsibilities between **all** PT actors involved in the implementation process helps to avoid a waste of time and money.*

Migration has to be part of the entire strategy for PT.