TEMPLATE

Output factsheet: Strategies and action plans Version 1

Project index number and acronym	CE1044 - TalkNET
Lead partner	North Adriatic Sea Port Authority
Output number and title	O.T. 1.9 - Action plans – Rijeka (NAPA)
Responsible partner (PP name and number)	PP6 – Port of Rijeka Authority
Project website	https://www.interreg-central.eu/Content.Node/TalkNET.html
Delivery date	31/10/2019
Summary description of the strategy/action plan (developed and/or implemented)	

For the past few years, Rijeka Port Authority, as a project partner of TalkNET project and as a responsible institution for the development and promotion of the Rijeka's traffic route, has been implementing numerous consultations with key stakeholders and experts in the field of multimodal transport and port efficiency. Various activities have been carried out with an aim of collecting bottlenecks and finding solutions to them, such as workshops, individual meetings, and conduction of surveys and desk researches. Bottlenecks refer to the technological, infrastructural, organizational, administrative, and legal levels of functioning of traffic services through the routes across the Port of Rijeka as well as to increase of energy efficiency in entire port area. The result is a list of activities that are necessary to be implemented in order to enable the optimization of the service, increase its competitiveness, achieving energy self-sustaining port system, and, consequently, stimulate social and economic growth.

During stakeholder meetings, a consensus was reached on the content of the tentative pilot action and action plan. When loading cargo on wagons, it is extremely important to optimize loading in relation to the wagon capacity. The current mode is that operators, according to experience and using simple Excel table, create wagon utilization calculation and loading plan.

Such primitive work cannot ensure the ideal utilization of wagon capacity. The result is a loss of space and capacity on the wagon, inefficient work and transport by rail and increased GHG emissions.

One possible way to tackle this issue is to create tailor-made software that will independently calculate the cargo loading plan based on indvidual cargo characeteristics and technical wagon data. This will result in speeding up the loading process and increased productivity of rail transport. Ultimately it also contributes to increasing the competitiveness of the transport route.

After the stakeholder meeting, a comprehensive analysis was undertaken, that involved the following:

1. Identification of stakeholders and railway operators,
2. Identification of technical data on utilized wagons,
3. Identification of technical data on used containers,
4. Business process analysis of wagon cargo loading,
5. Translation of business case to application requirements,
6. Identification of application configuration and use-cases.

A series of talks and meetings were held with the partner, and management buy-in was obtained, meaning, the management is committed to allocating time resources to the PP6 in order to fully map processes and provide insight into applicable business needs and timely delivery of data, documents and information required to build the application.

The partner's position derived from real business use-case that the application should present high usability and portability, because the employees working with the cargo wagon composing applications are remote workers and need accessibility outside the office. As a suitable delivery method, Android application is selected, with alternative being Web-accessible application compliant with mobile phone and tablet browsers.

Continuing with the activities, a very brief project proposal for application coding was done, and a local market was surveyed in order to identify the suitable and reliable coder willing to undertake the project, mid-July 2019. It proved to be a very complicated task due to local market, coders being engaged on already existing projects and hesitant to undertake projects under such strict deadline. Business process modeling, data analysis, technical wagon data collection and analysis and business rule gathering was successfully completed and information is synthesized and handed over to the coding team that has produced the application. The application was alpha tested internally, beta tested and UAT (User Acceptance Testing) was completed. After this, the application is properly documented, transported to live environment and it is available on the Internet to all the stakeholders dealing with cargo transport using railway.

NUTS region(s) concerned by the strategy/action plan (relevant NUTS level)

NUTS2 - Jadranska Hrvatska
NUTS3 – Primorje-Gorski Kotar

Expected impact and benefits of the strategy/action plan for the concerned territories and target groups

A port is a very complex system that depends on a large number of stakeholders and inter-processes, which depend on the characteristics of the infrastructure on the port and hinterland side. Optimizing the port system means orchestrating all parts of the system and continually exploring elements that can be improved. This Action Plan identified what needs to be improved in the Rijeka port system in order to eliminate all bottlenecks and raise its level of competitiveness. Some of the elements have a greater impact, some smaller, but they all affect the level of competitiveness and require progress. First and foremost, this relates to the improvement of the road and rail network towards the port, the optimization of the process on the railway in the port and the raising of the level of promotion and sales in the target markets. Furthermore, Rijeka port is a large consumer of energy that is currently only made available by burning fossil fuels. In order to become completely energy-independent it is necessary to utilize the existing large surfaces of the ports for the production of energy from renewable energy sources (sun, wind, sea). Furthermore, the utmost goal is to achieve the lowest possible level of energy consumption for all port operations and to enable energy self-sustaining port system.

Expected impact and benefits of the action plan and implemented key action for the territory and target groups are the following:

1. Introduction of operative research methodology in container loading thus increasing last mile connectivity efficiency (considering location of the terminal in the city center),
2. Improvement of financial efficiency as a component of overall sustainability (by maximum loading used wagons),
3. Introduction of additional efficient multimodal shuttle trains,
4. Improvement of the terminal-rail connection and terminal management by increase of throughput,
5. Enhancement of the terminal-rail connection, and
6. Introduction of innovative methods in container loading process, establishment of the model for new services by including new wagon models.

Ouput of the action plan – railway cargo loading application can be used directly by all railway operators as a group category, it is indirectly used in optimization by all cargo operators and port stakeholders, while it cannot be used by just one category (visitors to port area).

Sustainability of the developed or implemented strategy/action plan and its transferability to other territories and stakeholders

All identified measures of the Action Plan are universal measures when it comes to raising the level of efficiency and competitiveness of the port. As such, they can be applied to any port system in the region or the world. This is particularly true of energy efficiency measures where the Action Plan recognizes technologies and measures commonly used in the world, but is now being applied to the Rijeka port system.

Infrastructure upgrading has a direct impact on improving port efficiency and is therefore recognized by the Action Plan. The infrastructure is state-managed and commercially used by users and there is no concern for its sustainability. Other elements of the Action Plan, such as launching a feeder service or crossover of rail-terminal containers using existing RMG cranes, are commercial activities where sustainability is ensured by the operator and an increase in the volume of cargo through the port of Rijeka.

During held project events that were helpful to analyse the problems found through the analysis in the nodes' region and to understand the different point of view of the different operators, all stakeholders were actively involved in discussion and analysis. These discussions and the aforementioned results of the analysis were the starting point to elaborate the action plans. In fact, the comparison with other subjects operating in the same field gave a better overview of the multimodal chain that increases the opportunities to solve the issues. Therefore, the action plan and implemented pilot project has produced benefits that are converted in concrete results using example of railway optimizations in port of Rijeka, but can equally be transposed to other PPs that require container cargo loading optimization.

Lessons learned from the development/implementation process of the strategy/action plan and added value of transnational cooperation

Given the complexity of the port system and its sensitive competitiveness, it is important to involve all stakeholders in development process. Investments in the port system are capital intensive, and the process of planning and preparing project documentation is crucial in order to be ready for investment when financial resources are found. The port authority must coordinate and encourage development, but users, especially concessionaires, should be motivated, educated and, if possible, committed to progress and investment.

Lessons learnt related to executed pilot action that can be shared for mutual learning/transnational cooperation are the following:

1. Multimodal shift (trucks->railway) requires new and specialized quantitative method-based Web applications,
2. There is a gap between railway wagon demand and supply: new orders for railway wagons ad the moment take around two years,
3. Different railway operators use and operate (lease) different wagon types, accentuating need for dynamic application structuring,
4. Container loading optimization applications should preferably be integrated with TOS and PCS systems,
5. There are pronounced requirements for security assessment of said applications,
6. Container wagon loading largely depends not only on the technical characteristics of the wagons, but also state of the railway and characteristics of the operated railway that has to be taken into account during optimization and wagon placement.

References to relevant deliverables and web-links
If applicable, pictures or images to be provided as annex

- D.T1.2.4 Analysis on multimodal nodes efficiency and connections - Venice;
- D.T2.2.4 Analysis on ECO solutions deployment - Venice;
- D.T1.5.1/D.T2.5.1 Methodology for action plans development
- D.T1.5.5 – Action plans to improve multimodal nodes efficiency and connections – Rijeka (NAPA)
- D.T2.5.5 – Action plans on eco-solutions deployment – Rijeka (NAPA)

http://www.prailway.host – publicly available frontend for the container cargo loading optimization application