Cross-border mobility in the Alpine Region

Co-financed by the European Union through the Alpine Region Preparatory Action Fund (ARPAF)

CrossBorder Mobility in the Alpine Region

WP4: Improvement of cross-border mobility and passenger flows –Innovative solutions for public authorities and transport operators

Synthesis Report

Contents

Contents of this document

- This report gathers the findings of the project "Improvement of cross-border mobility and passenger flows–Innovative solutions for public authorities and transport operators".
- Based on the experiences of three local workshops, this synthesis report summarises the potentials of innovative mobility solutions and provides public authorities and transport providers with concrete steps for implementation.
- Corresponding with the topics of the three workshops, one chapter is dedicated to the potentials of creating integrated tariff and ticketing systems in cross-border commuter hot spots, a second chapter to the potential of innovative mobility solutions in border regions, and a third chapter to the links with mobility management.

List of Abbreviations

EU	European Union
EUSALP	EU-Strategy for the Alpine Region
PTA	Public Transport Authority
PTO	Public Transport Operator
SWOT	Strengths-Weaknesses-Opportunities-Threats
TfL	Transport for London
VVT	Verkehrsverbund Tirol
WP1	Working Package 1
WP2	Working Package 2
WP3	Working Package 3
WP4	Working Package 4
WS1	Working Step 1
WS2	Working Step 2
WS3	Working Step 3
WS4	Working Step 4

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1 Introduction

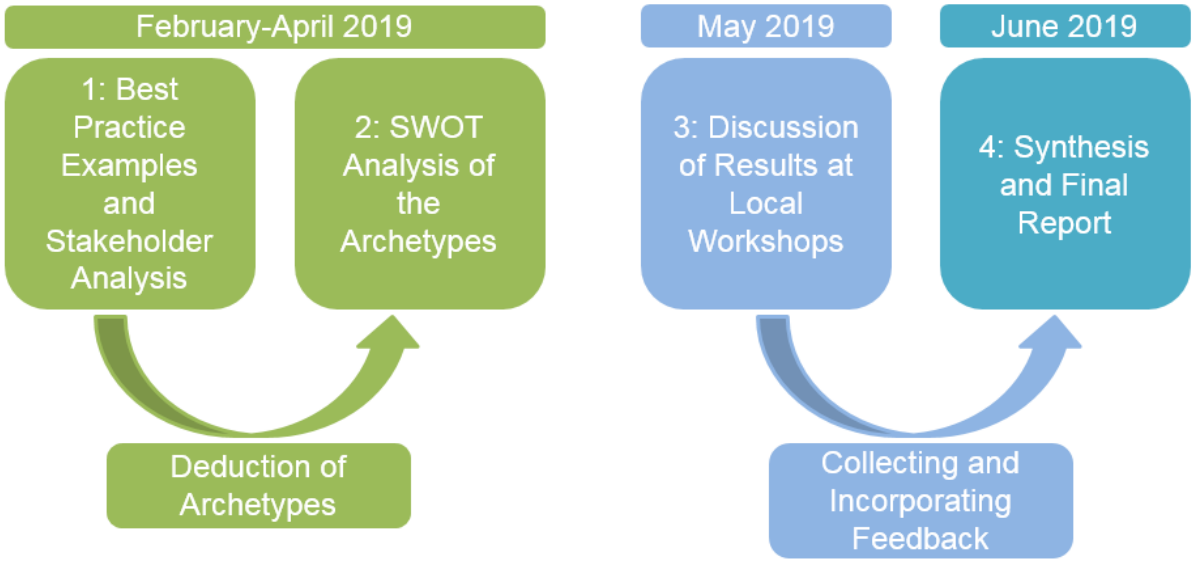
This is the final report of the study "Improvement of cross-border mobility and passenger flows – Innovative solutions for public authorities and transport operators". The study represents Work Package 4 (WP4) of the broader ARPAF project “CrossBorder” that directly supports Actions 4 and 5 of the EU Macro-regional Strategy for the Alpine Region EUSALP. In Action 4, the project helps to remove infrastructure bottlenecks, bridging missing service links, coordinating planning and timetables of public transport, modernising infrastructure, and enhancing cooperation with a special focus on cross-border mobility. For Action 5, the digital accessibility helps to connect people even across borders and to reduce passenger flows. The study idea emerges from both AG4 and AG5 work plans. Both AG's have identified the topic of cross-border mobility as of strategic relevance and as a topic which should be dealt with within EUSALP.

WP4 has built on the results of Work Package 2 (Analysis of existing cross-border mobility networks) and Work Package 3 (Collection of existing cooperation models) to display best practice innovative mobility solutions, deduce archetypes, and determine their potential suitability for different Alpine settlement systems.

The output of the study provides public authorities and transport providers with a concrete approach with regard to digitalisation, especially integrated tariff and ticketing systems. It presents:

- innovative solutions for improving cross-border mobility tailored towards public authorities & transport providers
- proposals for improving cross-border commuter flows and to identify new forms of cooperation
- ideas to public authorities and transport providers on how innovative solutions can be implemented
- a future vision of transport relevant for improving sustainable mobility and in particular cross-border connections
- a basis for future activities of AG4 and AG5 of EUSALP

This final report represents Working Step 4 (WS4). The first three Working Steps will be detailed further in the following chapters.



2 Innovative mobility solutions–best practice examples and stakeholder analyses

This chapter corresponds with Working Step 1 of the project: It

- presents the innovative mobility solutions that have been identified ("state of the art report"),
- summarises the emerging players and actors in mobility, and
- describes the cooperation potential for public authorities and transport providers.

Working Step 1 (WS1) used the outcomes of WP2 and WP3 as a stepping-stone to carry out a wide-ranging and exhaustive desk research and to compile a list of international good and best practice examples of innovative mobility solutions. WP3 displays 39 projects in total, which can be sub-classified into six project types.

Project Type	Icon
Infrastructure	
Sharing	
Cross-border connection	
Tickets and Tariffs	
R&D cooperation	
E-Mobility	
Maps/Online Platform	

Table 1: Project Types according to WP3

Based on the project types/models presented in WP3, a group of 20 good and best practice examples from the Alpine region and beyond were chosen and looked at in detail. The projects and solutions were further classified into classic projects, innovative projects, and

new players in mobility, while also differentiating between cross-border projects and non cross-border projects. Many of the cross-border projects were initiated by Interreg Europe cross-border programs and funded by the European Regional Development Fund (ERDF).

The best practice projects studies are the following:

Classic Projects:

- Strasbourg–Kehl tramline D (Cross-border)
- ZVON Dresden–Wroclaw Rail Connection (Cross-border)
- Léman Express (Cross-border)
- KOMBI–Cross-border integrated bike sharing system (Cross-border)
- SacraVelo (Cross-border)
- Hungarian–Croatian Cross-Border Bike Project (Cross-border)

Innovative Projects:

- e-MOTICON (Cross-border)
- E-bike Net (Cross-border)
- ELEC'TRA (Cross-border)
- Covoiturage Léman (Cross-border)
- TERMINAL (Cross-border)
- MyShuttle
- Mobiregio (Cross-border)

New Players in Mobility:

- WhimApp
- FAIRTIQ
- Rejsekort (Cross-border)
- TfL Open Data
- The Trainline (Cross-border)
- BerlKönig
- Co-wheels

Each project was examined closely and an excel table collecting information about each of the projects was compiled with a special focus on the following categories:

- Presentation of the solutions along the categories of:
    - Main facts
    - Project aims and user benefits
    - Settlement characteristics (metropolitan, urban, rural)
    - Spatial commuting structure (monocentric, linear, polycentric)
    - Transport modes
    - Number of countries involved (bilateral, trilateral, multi-lateral)
    - Stakeholders: involved actors
    - Enabling factors: financial, technological, or political factors
    - Funding/investment sources: EU, public, or private
    - Intensity of cooperation: Based on the knowledge of the different best practice solutions and on the stakeholder analysis, the intensity of cooperation for each of the best practice solutions was determined. The four levels of cooperation intensity were split as follows:
        - Low: Partners provide support in kind/make minimum financial contribution and/or agree on standards or similar (e.g. open data)
        - Medium: Staff cooperate on project; partners provide financial contribution
        - High: Partners are in close regular contact and provide significant financial or other contribution
        - Very High: New joint organisational structure with all partners contributing significantly (e.g. franchising)

- Stakeholder analysis

Stakeholders are crucial to the success of a project. A stakeholder analysis allows the project owner to assess how the interests of the stakeholders identified should be addressed in a project or a policy implementation.

The role of the different stakeholders varies depending on the type of project and can range from low to high contributions like:

- Providing funding
- Providing infrastructure and/or human resources
- Participating in working groups or advisory boards
- Using infrastructure, providing product or service

The following three steps have been executed:

1. Identification of stakeholders, whose interests are affected and whose support would benefit the project. Types of stakeholders and their key policy goals and orientations:
   - EU institutions: European integration and cohesion, economic growth, and sustainable transport to reduce negative environmental and climate impact
   - Nation-state/federal bodies: Maintain and improve relationships and cooperation with neighbouring states, provision of services of general interest, equal living conditions, promotion of innovation, economic development, create conditions that enable local communities to thrive
   - Regional bodies: Provide favourable conditions for economic growth and development in the region, including good connections to jobs, education, good quality of life/attractive surroundings for residents and visitors
   - Local authorities including Public Transport Authorities (PTAs): Enable convenient, affordable, and sustainable travel options, reduce dependency on private car ownership, ensure cross-border cooperation of municipalities, and plan according to priorities and available budgets
   - Private and public enterprises including Public Transport Operators (PTOs):
     - Availability of infrastructure and permission/ability to operate across borders
     - Provide products and services that meet the demand of the users
     - Commercial interests: Grow market share and profits
     - PTO services vary widely across Europe, some have a clear focus on passenger needs, some just deliver the services they are contracted to deliver
   - Transport participants of all modes: Get to destinations conveniently and at affordable prices without delays
2. Description of the needs, motivations, and business models (if applicable) for each type of stakeholder. The public sector's motivations differ greatly from private companies' motivations. For example, the public sector provides subsidies to rail services that facilitate mobility for citizens and therefore bring a greater economic good to a region. A contracted private operator is looking to make profit. This plays a role in how these stakeholders act and what the driving force behind their participation in any project is.
3. Assessment of the level of interest and influence for each type of stakeholder.

The analyses of the 20 selected best practice projects' stakeholders lead to the following observations and findings (e.g. effects of EU funding, characteristics of private stakeholders, effects of digital solutions on user benefits):

- Half of the selected projects heavily rely on EU Funding (up to 85%).
- EU funding generally seems to intensify (cross-border) cooperation between public actors. This only partly applies to private sector actors involved during project delivery, who tend to be involved as suppliers, not necessarily as partners.

- The private actors involved in the selected projects are active in more than one location/country and have secured funding from global funds/companies.
- Many (not just digital) solutions and/or approaches have the potential to provide significant user benefits independent of sizeable public funding or intense cooperation with the public sector.
  - Examples: open data, mobile ticketing, coordinated cross-border time tables
- In cases where user benefits can be directly monetized, new players have entered the field. The public sector's role is to ensure that these new actors and their business models contribute to wider objectives rather than just fulfilling customer needs. Regulation can reduce potential negative environmental or other impacts.
  - Examples: BerlKönig, WhimApp, FAIRTIQ
- Innovative projects aimed at opening up new markets for products or services already functioning elsewhere can attract significant private investment.
  - Example: Shared mobility services in metropolitan and urban settings
- Very high levels of cooperation seem to occur relatively seldom and tend to a) require high-level approval (nation-state) and alignment with long-term strategy goals b) involve companies (including state-owned) and c) happen when there is a strong business case.
  - Examples: Co-wheels, Léman Express, Rejsekort
- Research projects as well as infrastructure construction have long-term economic and wider benefits but do not bring a short-term return of investment. Therefore, they heavily rely on public funding.
  - Examples: SacraVelo , TERMINAL, Strasbourg–Kehl tramline D

The classic stakeholder analysis provided some useful findings but deeper insights were difficult to obtain without interviewing stakeholders involved in each of the projects. This is outside of the project's scope.

The findings and conclusions reflect the (small) sample of selected projects and may not be generalized for other projects, which do or do not receive EU funding. With that said, some interesting patterns and possible correlations were identified in the critical and comparative assessment of the solutions:

- A major factor for cross-border mobility projects is the availability of various EU funding sources and their role in bringing stakeholders together and enabling the implementation of projects and ideas regardless of the financial power of the region or benefactors of the project.
- Many of the exhibited projects are/were funded by Interreg Europe
- Interreg Europe projects aim at stimulating growth and creating job opportunities as well as increasing cohesion between the different members.

- Funding is allocated through applications to Calls for Proposals. Interested partners submit project proposals based on specific terms of references, topics, criteria, and available funding.

The analysis of each project has been compiled into a single **Factsheet** and is available as **Annex I** of the report.

Deducing the Archetypes:

The result of the analysis of the projects, their funding, stakeholders involved, enabling factors, and other factors led to a better understanding of how and under what circumstances a project/solution can be implemented. Therefore, the conclusion of the stakeholder analysis was a clear description of the cooperation potential for public authorities and transport providers.

The last part of WS1 was the grouping of the mobility solutions into archetypes. After looking for a typical overarching general theme to represent the projects the following 10 archetypes emerged:

1. Physical Link: A physical connection or infrastructure project (e.g.: Strasbourg–Kehl tramline D or Hungarian–Croatian Cross-Border Bike Project)
2. Physical Link +: In addition to infrastructure, there is a branding or digital aspect to the project (e.g.: Mobiregio, SacraVelo, Rejsekort). This type of project does not necessarily involve the construction of a completely new connection but can be seen as adding an attribute to an already existing link.
3. Public Transport Cross-Border Cooperation: Cooperation by transport authorities or operators in two or more countries through the coordination of timetables or tariffs (e.g.: Strasbourg–Kehl tramline D, ZVON Dresden–Wroclaw Rail Connection)
4. Experimental/Research Projects: Research projects that are not available for public use. They are usually aimed at testing a concept for a limited time as pilot projects (e.g.: MyShuttle, TERMINAL)
5. Shared Mobility in Urban Areas: Such services are provided in dense urban areas – usually by private companies that are looking to make financial profit by meeting the high demand for mobility. Services can be on demand ridepooling (e.g.: BerlKönig), bike sharing, car sharing (e.g.: Co-wheels), etc.
6. Shared Mobility in Rural Areas: These services usually require public subsidization and are introduced in low-density areas to provide mobility where the public transport offer is either weak or non-existent. Furthermore, such services could be used to encourage tourism and stimulate the economy in rural areas (e.g.: E-bike Net, Co-wheels).

7. Digital Solutions: Digital services or solutions that act as connector between user and service provider. Such platforms for mobility generally do not need any extra infrastructure investment (e.g.: The Trainline, FAIRTIQ, WhimApp).
8. Harmonizing Standards: Projects aimed at reaching a standard with respect to infrastructure or data handling. This standardization harmonizes conditions on both sides of the border. It enables seamless/non-discriminatory access to networks and facilities (e.g.: TfL Open Data, e-MOTICON).
9. Multimodal Hubs: Transportation hubs that allow/facilitate seamless shift between modes, often including shared mobility services. Hubs can be extended to include micrologistics (e.g.: ELEC'TRA)
10. Joint Ventures (Cross-border): Founding or setting up a legal entity that is owned by two or more stakeholders on both sides of the border. This entity formalizes the relationship between the stakeholders and ensures a long-term partnership (e.g.: Lémanis operating Léman Express).

3 SWOT analysis of innovative mobility solutions

- This part of the report presents the results of Working Step 2.

The Strengths-Weaknesses-Opportunities-Threats (SWOT) analysis is a strategic tool for assessing strengths and weaknesses of a business, analysing opportunities available to the business, as well as threats faced by the business. Strengths and weaknesses are defined as internal factors, i.e. businesses are able to influence and to manipulate them. Opportunities and threats on the other hand are defined as external, i.e. they are presented by the environment external to the organization. A SWOT analysis can be used at the organizational and personnel levels as well.

In this particular case, a SWOT analysis was applied to eight of the ten archetypes, that were deduced at the end of the previous Working Step. The two archetypes that did not undergo SWOT analysis and the reason for their exclusion are listed below:

- Physical Link:
  - Reasons for exclusion: new infrastructure is typically associated with high construction costs and excessive planning efforts. Such solutions are time consuming and resource intensive and are not in themselves innovative solutions, which are more relevant for the project at hand.
- Experimental/Research Projects:
  - Reasons for exclusion: initiative to conduct research projects lies mostly with research organisations/universities, and the public sector is not typically the driving force of such projects. This does not imply, however, that local authorities, PTAs and PTOs should not participate in such projects.

The results of the SWOT analyses of the remaining eight archetypes are included in the presentation slides. Furthermore, a summary of the archetypes and their SWOT analyses are included as **Annex II** of the report in **Factsheet** form.

4 Testing of solutions “in the field”

- Based on the experiences at the local workshops, this chapter summarises the potentials of the innovative solutions and provides public authorities and transport providers with concrete steps for implementation.

Working Step 3 of the project entailed the participation of the consultant in three different workshops attended by different stakeholders. The workshops took place in three different locations and each of them covered a specific topic. The consultant gave an overview of the project and presented the results of the Working Steps 1 and 2. The goal of these workshops was to collect comments and feedback in order to incorporate them into the last Working Step and to produce useful recommendations. This chapter summarizes the events of each of the three attended workshops and the results or conclusions made by the consultant.

4.1 Workshop 1: Integrated tariff and ticketing systems in cross-border commuter hot spots

Date: May 9, 2019

Location: Kufstein, Austria

Discussion points from the Kufstein workshop:

During three discussion rounds, the participants discussed the following aspects: (1) Transport offer in the Kufstein–Rosenheim cross-border region, (2) Communication strategies, (3) Financing of the services, and (4) Organisation/cooperation issues.

- (1) Transport offer

  Apart from the railway connection Kufstein–Rosenheim, cross-border public transport connections are lacking. Existing bus lines do not offer enough trips. There is also a general deficiency in the number of services, especially on holidays and during the weekends on the Bavarian side of the border.

  Different strategies may be considered to improve the offer: Discuss financing of extra services with different stakeholders/beneficiaries of the services (public and private), improve the infrastructure at stations, and enlarge the transport association.

  The introduction of a cross-border tariff that is easy to understand is furthermore considered important.

- (2) Communication strategies

  Workshop participants mainly mentioned two common communication shortcomings that are linked to public transport in the region:

a. Awareness for the benefits of public transport are not communicated clearly and they should be more present both at the municipal level as well as in the private sector. Enhanced communication could result in new offers being introduced, for example for the employees of large companies and for leisure travel.

b. On the other hand, information about the services (timetables, tariff) must be improved for current and potential users of public transport.

- (3) Financing of the services

  A general conclusion was that although financing for rail services in the region is somewhat satisfactory, bus services are not receiving sufficient budgets.

  Furthermore, financing bus services on both sides of the border follows different principles: On the Austrian side (Kufstein) of the border, organization and financing is ensured by the Verkehrsverbund Tirol (VVT), while busses on the German side of the border are mostly operated without subsidies.

  A number of potential means for funding for additional bus services were discussed, especially private sources, crowdfunding, and EU funds for the start-up phase of new offers.

- (4) Organisation/cooperation issues

  - Even though the representatives from Bezirk Kufstein and VVT seem to have strong personal ties, institutional cooperation between the transport authorities in the region must be improved. Three possible solutions for the organizational and cooperational issues were mentioned:

    - founding of a cross-border European Grouping of Territorial Cooperation
    - the extension of Verkehrsverbund Tirol beyond the Austrian–German border
    - the extension of Münchener Verkerhrsverbund towards the Austrian border

Workshop 1 Results:

- The participants were optimistic that by means of enhanced cooperation between the competent authorities, the coordination of timetables and tariffs and the marketing of cross-border services could be improved.
- Overall, innovative mobility solutions were not the central topic of the discussions during this workshop. Obviously, the need for improving the cross-border public transport services and offer in the region is a much more important issue than the introduction of innovative integrated tariff and ticketing systems. **A second step might include such solutions but at the moment these are not considered to solve the prevailing and pertinent problems.**

4.2 Workshop 2: The potential of further innovative mobility solutions in border regions

Date: May 14, 2019

Location: La Chaux-de-Fonds, Switzerland

Discussion points from the La Chaux-de-Fonds workshop:

The participants of this workshop discussed digital mobility solutions that have already been implemented in the Jurassic Arc region and that may potentially be implemented in the future.

- During the first round of discussions, the participants analysed and discussed SWOT analyses for each of the projects.
- During a second round, ideas for supporting the existing and future mobility solutions were debated.

However, most of the solutions mentioned by the participants rather focused on conventional measures such as financing extra trains and busses or constructing commuter car parks.

Two of the mobility solutions discussed by the participants are either based on or have links or potential links to digitalization.

- The first example discussed was the publicly financed Jura carpooling project (Co-voiturage de l´Arc jurassien). Some of the participants of the workshop think that this project has a potential of reaching more users by means of a digital platform.
- Another example mentioned was related to the cross-border railway line from Belfort via Delle to Bienne. According to some participants, the tariffs are not adapted to cross-border travelling and might deter some users from taking the train. In this case, a digital ticketing platform could help public transport to attract additional users.
- It was clear, however, that most of the innovative solutions presented during the first half of the workshop either would not work in the region or do not solve/address the existing problems connected to excessive car use. For example, solutions such as shared bikes and scooters were deemed inadequate due to a lack of density in the region, which does not provide a sufficient number of users. Moreover, the landscape typology (mountainous) and the climate (snow in winter) were seen as potential problems.

Workshop 2 Results:

Innovative mobility solutions in the Jurassic Arc region may be a good means for rendering existing offers more efficient, but they are not likely to solve mobility related problems when they remain unaccompanied by other classic solutions.

4.3 Workshop 3: Links between innovative mobility solutions and mobility management

Date: May 20, 2019

Location: Basel, Switzerland

Discussion points from the Basel workshop:

During the third workshop, representatives from the public administration and private companies reflected on how mobility management in companies can contribute to reducing individual cross-border commuter mobility in the Basel region. Major issues in this hotspot region are long traffic jams and congested public transport during the peak hours.

During the first part of the afternoon, the participants received input on the importance of innovative mobility solutions for company mobility management. Examples included the following services: Deutsche Bahn (mobility budget), VEOMO, Commutify, Liftshare, ByCycling and Covoiturage Léman.

A second presentation introduced the findings from the program "Company-friendly mobility management in Basel" that has been initiated by Handelskammer Beider Basel.

Intense discussions took place during the workshop:

- Session 1 analysed the starting position of company mobility management with regard to cross-border transport.
  - Several good examples were mentioned (e.g. job tickets, carpooling, parking management, bicycle parking spaces, mobility lump sum paid to employees).
  - Many companies do not consider mobility management to be their responsibility. This is also the case for many environmentally conscious companies that do not act unless they see that their employees´ commuting to the work place is at risk. Mobility management entails extra expenses for private companies and many see that such investments could be better utilized elsewhere. In such circumstances, companies ask municipalities to launch and finance mobility management projects.
  - There are a number of obstacles to reduce commuter traffic by car, e.g. missing public transport links, unfavourable taxation of home office work by French employees in Swiss companies, and deficiencies in spatial planning.
- Session 2 asked for needs for action.

Workshop 3 Results:

Several needs for action were mentioned in the second workshop session. **Some of these include innovative and digital mobility solutions that were presented in the first part of the workshop, such as company mobility budgets, mobility information, and company supported carpooling/bicycle programs.**

5 Summary of the potentials of innovative mobility solutions and final recommendations

The participation in the above mentioned workshops has shown the potentials as well as the limitations that public authorities and public transport operators are faced with when thinking about innovative mobility solutions. It is quite clear that there is no silver bullet solution that will be suitable for all hotspots. Nevertheless, the project did lead to a better understanding of how such solutions could be useful and what public authorities and operators can do to push for the implementation of similar solutions.

- The project provides a good overview on a wide range of innovative solutions. The SWOT analyses link archetypes to the hotspots in which they can be implemented (check Annex II: Archetype Factsheets).
- Framework conditions or enabling factors must exist in order to ensure project success. These factors, such as funding, political will, drive to innovate, etc., are crucial for project success.
- As examples of already implemented projects have shown, on the one hand, there is a great potential for innovative mobility solutions to enhance public transport and to improve mobility, especially in border regions. On the other hand, these mobility solutions have to fit to the potential, the needs, and aims of the regions. As a result, an innovative mobility solution is not an aim in itself, but it has to support and be in line with regional strategies.
- Innovative solutions are not stand-alone but must build on an initially well established basic offer in order to ensure success. The introduction of a public transport mobile ticketing app without a proper public transport offer will not achieve much to increase public transport ridership. With that said, there is a potential for using innovative solutions to achieve higher efficiency in the existing networks (e.g.: information, e-ticketing, sharing, etc.)
- Success of potential projects depends on local support by the public authorities, transport operators, and citizens. If a sense of ownership of a project or idea is not established, then it will be difficult to achieve success.
- It is unlikely that innovative mobility solutions that require significant investments, such as shared mobility, can be implemented without subsidies outside of urban agglomerations.
- Idea competitions in the different hotspots are a way to ensure the involvement of local actors who are interested in testing these new concepts in their regions. These competitions can collect ideas for potential innovative mobility solutions from different public sector actors in the Alpine Region (e.g.: an Alpine Region competition).

6 Annexes

6.1 Factsheets

- Annex I: Project Factsheets
- Annex II: Archetype Factsheets

6.2 Presentation

- Cross-border Mobility Presentation Complete Slide Set
  - The slides include all project Working Steps
  - SWOT analysis for eight Archetypes (summaries and extended versions)
  - Pictures of best practice examples presented during the different workshops