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The development of local implementation scenarios for innovative urban transport concepts: the NICHES+ approach

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Abstract

NICHES+ was a FP7 coordination action funded by DG Research. The project aimed at stimulating a wide debate on innovative urban transport and mobility between relevant stakeholders from different sectors and disciplines across the EU and accession countries, in order to promote the most promising new concepts, initiatives and projects from their current “niche” position to a “mainstream” urban transport policy application.

The project explored 4 thematic areas: accessibility, efficiency of infrastructure and interchanges, traffic management centres, and automated and space efficient transport systems, embedded in an advanced spatial setting.

In each of these areas, three innovative concepts were examined. The project elaborated real life implementation scenarios directly with local and regional authorities for the integration of one or more innovative concepts in existing urban transport policies. 6 Champion Cities were selected (Daventry - UK, Artois-Gohelle - FR, Worcestershire - UK, Cork - IE, Trondheim - NO and Burgos - ES).

As key results, the project

- matched the selected champion cities with suitable NICHES+ concepts that could be implemented at the specific sites;
- conducted a transferability analysis between donor cities that already had experience with the implementation of an innovative concept and the NICHES+ Champion Cities;
- developed - in cooperation with selected stakeholders in the Champion Cities - concrete implementation plans for the uptake of innovative concepts;
- encouraged the use of innovative planning and financing strategies in the implementation by providing tailored recommendations on these aspects.

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Urban transport; innovation; transferability

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1. *Main text

1.1. Introduction

The mission of NICHES+ (2008-2011) was to stimulate a wide debate on innovative transport and mobility among relevant stakeholders from different sectors and disciplines across the EU and accession countries. The project aimed to promote the most promising new urban transport concepts, initiatives and projects in order to move them from their current “niche” position to a mainstream urban transport application.

The following 12 innovative concepts in 4 thematic areas were examined and promoted:

Table 1. NICHES+ innovative concepts per thematic area

Thematic area 1: Innovative concepts to enhance accessibility		
Concept 1.1: Travel training for public transport	Concept 1.2: Neighbourhood accessibility planning	Concept 1.3: Tailored traveller information for users with reduced mobility
Thematic area 2: Efficient planning and use of infrastructure and transport interchanges		
Concept 2.1: Passenger friendly intermodal interchanges	Concept 2.2.: Innovative cycling facilities for intermodal interchanges	Concept 2.3: Infrastructure for innovative bus systems
Thematic area 3: Traffic management centres		
Concept 3.1: Finance models for traffic management centres	Concept 3.2: Mobile travel information services for the public	Concept 3.3: Using environmental pollution data in traffic management
Thematic area 4: Automated and space efficient transport systems		
Concept 4.1: Group Rapid Transit (GRT)	Concept 4.2: Personal Rapid Transit (PRT)	Concept 4.3: Using Electric Vehicles in City Car Share Schemes

Key achievements of the project include a.o. the publishing effective guidance for cities in form of ‘Guidelines for Implementers’ and e-learning modules including key information on how to successfully implement the selected urban transport innovations and working with cities on the ground by providing resources and support for 6 champion cities helping them to develop concrete implementation scenarios for NICHES+ concepts. The champion cities were: Artois-Gohelle (FR), Burgos (ES), Worcestershire (UK), Cork (IE), Trondheim (NO) and Daventry (UK). This paper will focus on the development of implementation scenarios in these cities.

1.2. Involvement of Champion Cities

The project worked directly with its main target group (i.e. local and regional authorities) to develop implementation scenarios for the integration of innovative concepts in existing urban transport policies. This way, NICHES+ could help to find answers to crucial questions relating to innovative and sustainable urban transport policy making. NICHES+ worked with the 6 NICHES+ Champion Cities (see map below) that were supported in the uptake of selected innovative concepts.

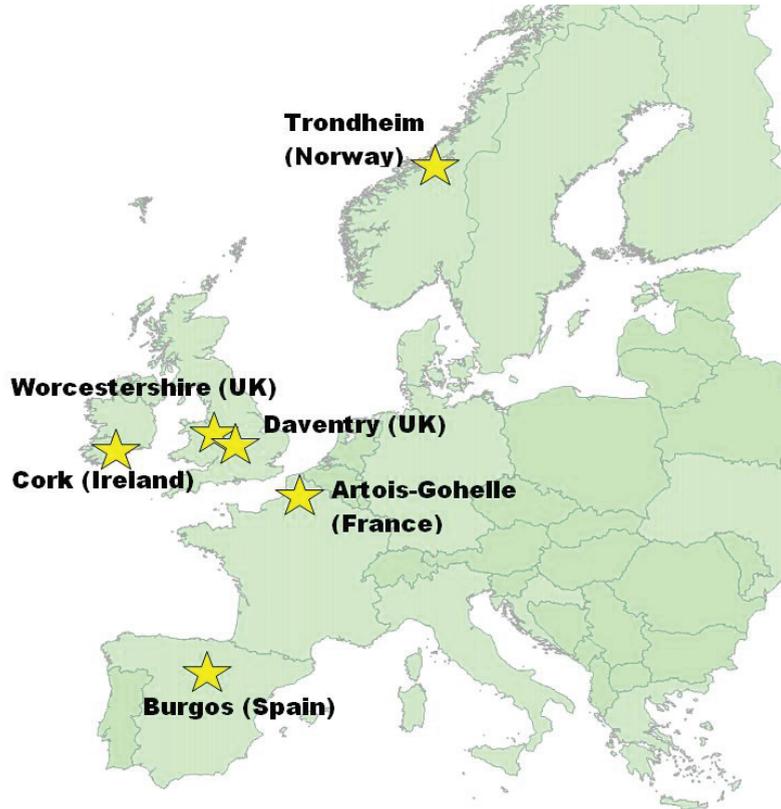


Figure 1: NICHEs+ Champion Cities

A call for proposals through Polis and EUROCITIES had been issued at the beginning of the project to search for cities that were interested in the uptake of the innovative transport and mobility concepts covered in NICHEs+.

The six Champion Cities selected the following innovative concepts for their implementation scenarios:

1. Artois-Gohelle (France) - Travel Training and Neighbourhood Accessibility Planning
2. Burgos (Spain) - Travel Training and Neighbourhood Accessibility Planning
3. Worcestershire (UK) - Key Corridor Improvement Schemes, incorporating Innovative Bus Systems
4. Trondheim (Norway) - Mobile Travel Information Services for the Public
5. Cork (Ireland) - Smarter Travel scheme (including a wider package of measures)
6. Daventry (UK) - Personal Rapid Transit (PRT)

These cities worked together with the NICHEs+ partners in drafting realistic implementation scenarios to support the uptake of the innovative concepts in the local context. Managerial issues, stakeholder consultation, financing and action planning were addressed. The NICHEs+ project provided technical advice as well as financial support to the cities. National take-up seminars, organised by the Champion Cities in their respective countries, offered a chance to spread the message about the innovative concepts and to raise their profile among decision makers.

1.3. Methodological Approach

The cooperation with the Champion Cities was organised in the NICHES+ project's Work Package 5: Implementation scenarios and preparation of take up in Champion Cities.

The Champion Cities process was built around the development of a concise implementation scenario for a chosen Innovative Concept. The implementation scenarios were drafted during a process comprising four steps. The Champion Cities designed a work plan to arrive to a finalised and approved implementation scenario.

The four steps are:

- Step 1: Assessment of the context and concepts
- Step 2: Needs of users and stakeholders
- Step 3: Transferability of existing solutions
- Step 4: Action Planning

The practical work with the Champion Cities was a core element of NICHES+. On the one hand it served to test the transferability analysis and the suitability of the Guidelines for implementers that had been developed in the project, on the other hand the experiences of the Champion Cities contributed to better understand the barriers and success factors for the uptake of innovative urban transport and mobility solutions.

Several site visits of the WG leaders and of external experts were an essential element of NICHES+ to understand the local context and to provide tailored advice to the Champion Cities on how to implement a given innovative concept.

1.3.1. Step1: Assessment of the context and concepts

This step entailed the assessment of the suitability of the selected innovative concepts for implementation in the different Champion Cities, based on the interest expressed by the selected cities. This included:

- Definition of problem: Why does the city want/need to address this topic?
- Vision and objectives of city with regard to the action field
- Assessment of the availability of promising context conditions for implementation in the Champion Cities. These context conditions include:
 - Components relevant to transferability (cf. WP3 Document: NICHES+ transferability of innovative concepts)
 - Existing plans and strategies,
 - Available resources
 - This could also lead to a definition of data gaps, which should be dealt with along the process, if relevant.
- Prioritisation of most suitable innovative concepts for implementation for the different champion cities, in consultation with local stakeholders, in order to quite early define the focus of the work.
- Definition of real starting point for implementation: what have they been doing on the topic?

1.3.2. Step 2: Needs of users and stakeholders

In this step the needs and expectations of the champion city, its users and stakeholders were defined following different lines:

- Mobility needs and expectations
- Usability needs and expectations
- Needs and expectations regarding timeframe

The managerial set-up was taken on board in this step:

- Project team definition: the organisation plan of stakeholders closely involved in realising the innovative concept implementation scenario.
- Participatory approach definition: the description of the method that will be followed to reach out to stakeholders. Champion Cities were asked to set up a stakeholder consultation body. This reference group would be the minimum required structure.

1.3.3. Step 3: Transferability of existing solutions

In this phase, NICHES+ investigated the possible success factors and barriers for implementation (legal, financial, technical, cooperation set-up, participatory processes). An analysis was made of the transferability of comparable measures that have been implemented across Europe. This refers back to the context conditions that were described in step 1. If necessary, an assessment of different options per innovative concept was carried out.

1.3.4. Step 4: Action Planning

This phase brought forward tailored recommendations in the implementation scenario. These consisted of a specific and detailed implementation plan, including the following main elements:

- Specification of activities and responsibilities (to cover items such as contracting– and the identification of the project management team, specification of works, feasibility study, tendering etc. – all if necessary)
- Timeline and budget plan
- Innovative stakeholder relations and involvement schemes
- Awareness raising and branding, target-group specific marketing
- Innovative packaging of services;
- Innovative funding and financing mechanisms for innovative concepts such as PPP, land value taxation, pricing concepts
- Guidelines for monitoring and evaluation

1.4. Champion Cities activities and key conclusions for these activities

1.4.1. Artois-Gohelle focused on “Innovative concepts to enhance accessibility”

The region is located in northern France and characterised by a disperse polycentric settlement structure with many small towns and villages. The “urban heart” of the region is formed by the cities Lens (35,000 inhabitants) and Liévin (32,500 inhabitants). The region is a former coal mining area. Urban regeneration and renewal is a key policy objective, in which attractive and accessible public transport services also play a role.

The key partner for the work in NICHES+ was the Transport Authority Syndicat Mixte des Transports Artois-Gohelle (SMT), which is responsible for managing public transport in the region. In response to the French Accessibility Act from 2005, SMT developed an accessibility scheme with a comprehensive strategy to enhance the accessibility of public transport in the region.

Artois-Gohelle investigated the implementation of two measures.

- With regards to the Innovative Concept of *Neighbourhood Accessibility Planning (NAP)*, the project concluded that it can become a key tool for improving conditions for walking and cycling at the local level. It does not only address the mobility aspect but also has the potential to create more lively communities and foster better use of public space and social inclusion. The concept is in general easily transferable. The multi-stakeholder environment of NAP however requires a good management of the process. The experience in Artois-Gohelle shows that awareness raising and political commitment are a first step to enable NAP processes. It will be a key aspect in Artois-Gohelle to activate political support for a co-operation of SMT (public transport authority) with the local communes. Fragmented responsibilities can otherwise become a major barrier for implementation. The examples of forerunner cities as Munich and Gothenburg provide mature methodologies and processes for running a NAP process, which SMT and the communes could apply in pilot projects to the surroundings of tram stops. The aim would be to expand NAP schemes after these first “experiments” on a wider scale to achieve a higher impact.
- With regards to Travel Training, the project concluded that *Travel Training for older people* is an effective measure to enable and encourage older people to use public transport. The low costs of implementing a scheme and the comparably simple setup makes it highly transferable. The experience from Artois-Gohelle shows that it is extremely valuable and saves a lot of time to look at successful examples like Salzburg and to learn from them. This is the basis for developing a tailored travel training scheme for the own city or region. The project team that prepares and carries out the training activity needs to be highly committed to work with the target group of older people, which sometimes requires a lot of patience and sensitivity. Finally, travel training should be integrated into a wider strategy to make public transport more attractive and safer to use for older people. This includes other measures such as driver training, mobility day events or better bus stop and vehicle accessibility.

1.4.2. Burgos focused on ‘Innovative concepts to enhance accessibility’

The medium-sized city has 180,000 inhabitants and is situated in north-western Spain, in the Autonomous Region of Castilla-León. Burgos offers a rich historic and cultural heritage and an active cultural life around its flourishing university with the bustling presence of 9,500 students.

Burgos devised and drew up a Civic Mobility and Accessibility Pact, which was the first step towards developing a serious mobility and transport policy for the city. This Pact is founded on the premise that the key to a sustainable city and an improved quality of life is to solve the problem of mobility and urban

accessibility. The principles of mobility, global accessibility and sustainability formulated in the Mobility Pact provided the framework for the CiViTAS project in Burgos. Its implementation has meant a complete transformation for the city in terms of mobility.

The body responsible for the work in NICHES+ was the Strategic City Plan (APEBU), a non-profit and public association belonging to the City Council.

Burgos elaborated a strategy for *Travel Training for school children*. The project concluded that it is an effective measure to enable and encourage children to use public transport. This includes also a marketing effect with a view to the “customers of the future”. The low costs of implementing a training scheme and the comparably simple setup make the concept highly transferable across Europe. The experience from Burgos shows that it is possible to set-up a locally tailored training scheme relatively quickly. The look at other successful examples from forerunner cities helped to design an effective scheme. A challenge is however to secure funding for travel training schemes in the mid- to long-run, especially in countries where public budgets are under pressure. Showing the success and added value of travel training schemes with local decision makers is therefore of crucial importance. The potential of new forms of funding such as sponsorship still needs to be better exploited. Finally, travel training for public transport that is targeting school children should be part of a comprehensive mobility education approach on sustainable transport means as already demonstrated in Burgos.

Burgos also developed and implemented measures in the field of Neighbourhood Accessibility Planning (NAP). Burgos can present a recent activity in one of the oldest neighbourhoods of the town. The focus was to increase the vertical accessibility, improve the quality of public space and give better orientation. A lesson learnt during these activities is that linking up urban renewal and neighbourhood accessibility planning can create important synergies. Key to successful measures in Burgos was to understand well the needs and expectations of the residents, which was achieved via a survey in the urban renewal context. A dedicated office with architects/urban planners is in charge of the projects. A challenge is the parking management, which needs to balance the request of residents in the historic neighbourhood for parking spots with the demand for car free public spaces.

1.4.3. Worcester focused on Concepts for Efficient Planning and Use of Infrastructure (WG2)

Worcester is one of the premier cathedral cities of England, its setting on the River Severn adds to its attraction and its role as a focal point for the regions rural communities give it a vibrancy and strong economic role within the region. The city is situated some 48 km southwest of Birmingham, 47 km north of Gloucester, with an estimated population of 94,700 people with a wider Worcester-shire population of 556,500.

Worcestershire aims to be a 'self-contained' county, offering a wide range of service and amenities to its residents, reducing their need to 'out-migrate' in search of suitable employment or other opportunities. Worcestershire County Council, the cooperation partner in NICHES+, proposed the implementation of a series of high quality Key Corridor of Improvement (KCI) schemes, which embrace the BHLS (Buses with a High Level of Service – Innovative Bus Systems) concept. In the next 20 years, the City of Worcester could grow significantly. The City must embrace this change.

Individualised Travel Marketing (ITM) was a key component of Worcester’s “Choose how you move programme”. Between 2005 and 2007, Worcestershire County Council delivered an ITM programme in

which a total of 23,504 households in the city were offered personalised travel information and support in a series of five separate campaigns carried out in three stages. This was the first part of the Council's step by step approach to influence the people to be more aware of sustainable and environment friendly modes of transport, and to convince them to use PT and soft modes rather than car. The process ended up and continued in the context of the second Local Transport Plan (LTP2) to sustain the results and benefits by implementing KCI-s.

The key issues during implementation, and preparation were:

- Effective communication towards politicians and the public
- Public consultations
- Complex and provident planning approach
- Smooth cooperation among stakeholders

1.4.4. Cork focused on the thematic area of Traffic Management Centres

Cork is Ireland's second largest city, located in the south-west of the country with a population of 119,418 (270,000 in the wider metropolitan area). It is the principal city and administrative centre of County Cork. The broad economic situation in Cork is one of reduced budgets. Despite these economic conditions, Cork is still prioritising its planning objectives to provide a smart, effective and efficient transportation system. Traffic control within Cork currently comprises a number of stand-alone deployments. The cooperation partner in NICHES+ was Cork City Council.

Cork, along with most other European cities, currently finds itself in a difficult position due to uncertain economic conditions. Bringing Smarter Travel to Cork should be relatively easy provided capital funding from central government is forthcoming for the STI (Smarter Travel Initiative) component. Key elements of the integrated package are:

- The upgrade of the existing traffic management centre components into a Mobility Management Centre (MMC)
- Delivery of Real Time Passenger Information (RTPI) to the bus network
- Smarter Travel (ST) initiatives, which focus on raising awareness of non-car travel options through education and promotion, and provision of enhanced facilities for cycling and walking.

The city's step-by-step approach towards an integrated package of measures can be seen as representing a possible approach for other adopting cities, although it is important to be aware of, and give full consideration to, a range of funding options. Stakeholder involvement in Cork is well organised. Users are well represented through the Smarter Travel Fora, while many of the stakeholders are represented on the core project team or as co-operation partners.

1.4.5. Trondheim focused on the thematic area of Traffic Management Centres

Trondheim is the fourth most populated city in Norway and is the administrative centre of Sør-Trøndelag county. The city of Trondheim has 165,000 inhabitants at a density of 458 people per km². Trondheim currently experiences an adverse environmental impact from excess car use in the city centre: 44% of journeys in the CBD are made by private car. The re-introduction of road tolling was a strong recommendation of the Norwegian Department for Transport but has enabled Trondheim's objectives to become self-financing through the hypothecation of revenues to finance improvements to Public Transport. The main objective is to increase the attractiveness of Public Transport by reducing travel

times and improving the range and quality of services on offer. The cooperation partner in NICHES+ was the city administration.

There are a number of useful lessons that have been learnt through the introduction of MTIS (Mobile Traveler Information Services) in Trondheim. It is crucial to maintain stakeholder relations, in particular ensuring that all members of the core project team are engaged in the operational phase. A marketing strategy should be developed, and modified where required, to ensure that MTIS will be used. It may be valuable to develop a dedicated marketing strategy aimed at the travelling public at large, to enhance attractiveness of the new services and thus Public Transport. It will be worth exploring new communication channels e.g. social networking sites, and also to conduct consultations with end users, and widen the consultations beyond existing target groups. Connected to this is the importance of periodic evaluation of the MTIS as a tool to fine-tune operations. User surveys can help optimise concept performance and encourage support amongst funders and politicians. Involvement of operators is important in order to monitor patronage and user feedback. Technical/operational partners should continue to be engaged to ensure optimised technical performance. Risk of unreliability can be quite high after introduction of a new concept and unreliability can put off customers from using the service in the future. It may be useful to retain a mechanism for knowledge exchange i.e. a network of experts. This will be valuable in terms of moving towards an integrated mobility management concept.

1.4.6. Daventry focused on the thematic area of 'Automated and Space Efficient Transport Systems'

Daventry is a small market town situated in a rural ie green environment, although it lies in the midlands area of the UK where car manufacturing in nearby towns and cities such as Longbridge, Birmingham, and Coventry, has traditionally been a major industry. The town of Daventry is expected to nearly double in population from 23,000 to 40,000 by 2021. Mobility is currently heavily focused on the use of the private car (59% modal share). Public transport services are based almost exclusively on a bus network and are used for only 2% of all trips. The size of the town and the passenger numbers are too small to allow an economic service with a sufficiently high frequency to be attractive to users, and this situation is not expected to change significantly as the town grows. Daventry is therefore keen to find a new sustainable system of transportation that will provide flexible transport between the existing and new residential, business, retail and leisure areas and at the same time help reduce the need to travel, especially by car; support the development of sustainable communities; reduce social exclusion and improve intermodality. The town falls within Daventry District and the responsible local government body is Daventry District Council (DDC) who were the partner representing Daventry in NICHES+.

Daventry has investigated the use of Personal Rapid Transit (PRT) as means of public transport for the growing city. Daventry has completed two feasibility studies: one (DDTS, 2007) to confirm that PRT offers a viable solution; and a second (DPRTSS, 2008) to confirm that it offers the preferred solution (compared with a bus based alternative), and to specify and evaluate a proposed pilot scheme. Following a conference to present the NICHES+ findings and identify future actions, the way forward could be via a GRT system as a first step. It would be cheaper to implement initially and at the same time provide a means for investigating the options and procedures for both types of systems. It would also substantially avoid the visual intrusion and severance issues identified as a problem by the local community.

Conclusion

Each of the Champion Cities produced, in close cooperation with a support partner from the Consortium, an implementation scenario that describes in detail how one or more of the NICHES+ innovative concepts can realistically be implemented in the local context.

All of the NICHES+ Champion Cities benefitted from the elaboration of concrete implementation scenarios. For some of the Champion Cities, the implementation of the selected concept already took place (e.g. travel training and neighbourhood accessibility planning in Burgos), is under way (e.g. BRT in Worcester) or has been confirmed to take place in 2011 (e.g. travel training in Artois-Gohelle). For others, the implementation scenario is an important basis to work towards the implementation (e.g. advanced traffic management and traveler information in Cork).

The NICHES+ approach has proven to be very valuable for the participating cities for the following reasons:

- The project provided a sound guidance for the analysis of the success factors and barriers that influence the up-take of urban transport innovation. This was based on the NICHES+ transferability methodology that also took into account experiences of European good practice cities. This helped technical staff in charge of the implementation to develop a clearer view on success factors and barriers for implementing an innovative concept.
- NICHES+ provided support through Consortium Partners that assisted the cities in their work on the implementation scenarios, providing guidance for each of the steps to be performed.
- External experts visited the Champion Cities, which ensured a knowledge transfer and exchange between local stakeholders and these experts.
- The Champion Cities had the opportunity to visit good practice cities with experience in successfully implementing similar innovative concepts as those planned in the Champion Cities.
- The project activities in some cases positively influenced decision-makers on the local level by highlighting the potential benefits of the innovative concepts and showing that implementation is feasible by pointing to other examples.

The feedback of the cities at the end of the project showed that the exchange with peers from other European cities and the guidance provided by NICHES+ was highly valuable to better understand the innovative concepts and how to implement them successfully in the own local context.

While some of the innovative concepts have already been implemented or implementation is under way, most of them will be implemented after the end of NICHES+. The implementation scenarios developed in the project provide a sound basis for the work of the local stakeholders to drive these processes forward.

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