Final publishable Summary Report

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I. Executive Summary

Objectives

The project UPSIDE aimed at delivering economic and societal benefits by fostering the emergence and development of **User-driven Participatory Solutions for Innovation in Digitally-centred Ecosystems**.

Test beds (pilot environments) in each partner region shall contribute to the emergence of interoperable innovation platforms and a faster development of single European markets for innovative digital services in the application areas selected (health, including ambient assisted living, new solutions for public transport (intelligent transport systems) / intelligent mobility, public services (e- and m-Government) and energy (energy autarkic cities). Societal benefits were expected to be generated by fostering the uptake of ICT-based technologies in those areas but also by implementing in the partner regions platforms for the development of user/citizen-driven participatory solutions that take into account the multiple stakeholder perspective within the framework of larger regional digital agendas.

Main results

12 Joint Actions (JA) were selected and implemented, focusing on the generation of concrete outputs for the benefit of the clusters and their members, the improvement of regional innovation ecosystems and aiming at fostering growth within the UPSIDE fields of action.

As regional anchors for a series of Joint Actions the UPSIDE partners implemented **Pilot Test Beds**, close collaboration with other stakeholders:

- Karlsruhe: Smart Quarter (www.karlsruhe.de/b2/zukunftsstadt/projektziele.de)
- Stockholm: Urban ICT Arena (www.urbanictarena.se)
- Tartu: Smart City Lab / SmartEnCity (http://smartcitylab.eu; http://mobilitylab.ut.ee/eng/smartencity-project; http://cordis.europa.eu/project/rcn/200259_de.html)
- Eindhoven: Sustainable Living Labs Approach (www.slimmerleven2020.org)
- Maribor: Smart neighbourhood Maribor (www.smartcitymaribor.si/en)

In addition to the measures involving primarily the clusters in the consortium and their members, the JAP also included activities that involve partners outside the consortium. This included the design of specific measures for **international cooperation (non-European)** and **mentoring (European)** activities for relevant clusters in the Baltic, Central European and Mediterranean areas:

International cooperation: the UPSIDE internationalisation strategy aimed at opening new markets for the cluster companies but also enlarges the pool of potential collaboration partners for innovation-related activities for all cluster members beyond the project lifetime. Cooperation has been started/intensified with relevant stakeholders in Silicon Valley, Atlanta & Puerto Rico, USA; Montréal, Canada; Pune & Mumbai, India; Hanoi & Ho-Chi-Minh-City, Vietnam; Daegu, South Korea. One major result is the close cooperation between Montréal and Stockholm/Kista leading e.g. to the establishment of the Cluster2Cluster Stockholm-Montréal working group and various delegation visits.

The **Business Roaming Agreement**, coordinated by CyberForum, supported the increased collaboration and internationalisation by connecting 57 clusters in 32 countries by June 2016 (http://clusterize.org).

Mentoring: The mentoring activities represented a significant part of the UPSIDE project. Activities were twofold, aiming at the set-up of a new research-driven triple-helix cluster in Maribor, Slovenia, and the fostering of the development of research-driven clusters in the Baltic, Central European and Mediterranean areas. Based on the mentoring activities several project proposals were developed. The first joint project started in June 2016 and allows to continue the activities started in UPSIDE. For more information on the Smart City Maribor Initiative see www.smartcitymaribor.si.

A major result of UPSIDE was also the **Participatory Methods Inventory** prepared based on a survey and an analysis of the state-of-the-art and state-of-play of methodologies, techniques, tools and best practices for user/citizen-driven innovation processes (e.g. multi-stakeholder workshops, user involvement via social events and social media, user/citizen involvement via on-line surveys, One-shot-video, Interaction Navigator, Project-in-a-day). These methodologies have been successfully applied in the implementation of Joint Actions as well as project dissemination and will be a valuable tool beyond the UPSIDE project in new projects as e.g. URBAN INNO, with parts of the UPSIDE consortium participating.

40 joint proposals (involving at least 2 UPSIDE partners or at least 1 UPSIDE partner and 1 mentoring region) and 10 additional proposals by single UPSIDE partners with topics closely linked to UPSIDE have been submitted to relevant funding schemes in order to support the further implementation and sustainability of the UPSIDE Joint Actions and Pilot test beds. By the end of project 12 proposals were already successful, 9 additional still under review. Over 42 Mio. EUR – of which about 1/3 in the UPSIDE regions – could be leveraged by the end of the project, likely more taking into account the proposals still under review.

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II. Summary description of project context and objectives

The project UPSIDE aimed at delivering economic and societal benefits by fostering the emergence and development of User-driven Participatory Solutions for Innovation in Digitally-centred Ecosystems.

Fostering economic benefits

UPSIDE fostered the convergence of the digital research and innovation agendas of leading ICT clusters in the partner regions and their home city administrations, which have a strong policy dedication to digital services. The project aimed at promoting the development of cooperation frameworks and synergy linkages between research, innovation activities within the companies as well as open innovation, urban development policies and open user-driven innovation ecosystems.

Building on the priorities of the cities involved in the project and the estimated market potential, the UPSIDE partners focused on the following fields of action:

- health, including ambient assisted living,
- new solutions for public transport (intelligent transport systems) / intelligent mobility
- public services (e- and m-Government), and
- Energy (energy autarkic cities).

with a common viewpoint of developing user-driven participatory solutions that use the ICT specializations within each of the partner regions. Within these fields, the partners defined a common strategy and measures to be implemented so as to foster the development of innovation systems able to accelerate the cycle of research, innovation and adoption in real-life environments. This is expected to stimulate faster development of new and innovative products and services within these application areas. The cities shall contribute to the faster development of technologies and markets not only through policy support but also by providing the right scale for test beds (e.g. Living Labs, Experience Labs, Field Labs), which are needed in order to optimize different applications and scale up pilot projects to ensure real-life deployment. This is crucial for the take-up of the new digital services.

Test beds (pilot environments) in each partner region shall contribute to the emergence of interoperable innovation platforms and a faster development of single European markets for innovative digital services in the application areas selected.

Fostering societal benefits

The Digital Agenda for Europe is one of the seven flagship initiatives of the Europe 2020 Strategy, set out to define the key enabling role that the use of Information and Communication Technologies (ICT) will have to play if Europe wants to succeed in its ambitions for 2020. The Digital Agenda particularly underlines that "Digital Technologies will provide Europeans with a better quality of life through, for example, better health care, safer and more efficient transport solutions, cleaner environment, new media opportunities and easier access to public services and cultural content".

Within the strategic markets / application areas selected, the UPSIDE partners contributed to societal ICT-enabled benefits in the following areas, as listed in the Digital Agenda:

- ICT for environment (2.7.1 in the Digital Agenda),
- Sustainable healthcare and ICT-based support for dignified and independent living (2.7.2),
- eGovernment (2.7.4),
- Intelligent Transport Systems for efficient transport and better mobility (2.7.5).

Societal benefits will be generated by fostering the uptake of ICT-based technologies in those areas but also by implementing in the partner regions platforms for the development of user/citizen-driven participatory solutions that take into account the multiple stakeholder perspective within the framework of larger regional digital agendas.

The multiple stakeholder platforms included public policy and administration entities, businesses, research and education organizations, and particular efforts were made for meaningfully engaging the users, i.e. the citizens. Methods, techniques, tools and best practices were analysed, selected, developed and tested, so as to implement those multiple stakeholder platforms in the partner regions. Thereafter, appropriate methods and tools were disseminated to other regions through adequate mentoring support.

Challenges and context

The role of cities in the realisation of the Digital Agenda

According to the United Nations Population Fund (UNFPA, 2007) more than half of the world's population is living in towns and cities since 2008. It is expected that by 2030 this number will increase to almost 5 billion or 70% of the world's population. In Europe 80% of people already live and work in cities. Between now and 2050 the global population is expected to increase from 6.9 billion to more than 9 billion, with 98% of this growth happening in cities and in the

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developing and emerging world (c.f. World Business Council for Sustainable Development). Cities and their administrations are in charge of housing, healthcare, energy, education and mobility infrastructures, infrastructures for water and energy. They deal with the necessity to increase resource efficiency, reduce emissions, and improve care services for ageing populations as well as services for active ageing. There is no doubt that the use of ICT plays a major role in solving those challenges and will continue to do so in the future.

The potential role of cities as innovation environments is increasingly recognised. The stimulation of ICT-based applications enhancing citizens' quality of life is now becoming a key priority for urban policy makers. Cities can contribute to empower people and businesses to innovate, learn and create.

Challenges for user and public involvement

For the most part, a deep understanding of technology per se and of specific solutions to particular problems exists, i.e. the technology push side of product and service innovation is strong. However, a lack of vision and understanding of what the digital economy is really about and what users really want and are ready to accept (in terms of loss of privacy, security of their data …) can hinder further technological advances because of slow or non-existent uptake, i.e. the market pull side of product and service innovation is too weak.

The UPSIDE partners believe that there is a need for a top-down shift in the mindset. Like app users, citizens need to be involved at the early stages of society planning, not just choosing between, or voting for, pre-selected options. To achieve this, for the development of technical solutions must be a result of collaboration between community leaders, regional governments, citizens, academia, students, professors, researchers, inventors, entrepreneurs, small and big businesses.

To fully utilise these openings for innovative happenings, cities and clusters need to create meeting areas (e.g. Living Labs) for the development and visualisation of requirements, and to develop easily accessible and user-friendly interfaces to enable everyone to get involved in the processes of defining, finding and comparing different solutions. At present, as a market for governance systems and solutions, the city appears from the outside to be quite closed. When in need of new solutions, whether for energy, water or traffic management, waste handling or a more open and democratic stable election process, cities approach local companies and networks of experts, hence creating local solutions to solve local problems.

On a global scale, there are thousands of 'smart cities' and 'intelligent communities' that are starting to understand the need for a more open process and for harmonized solutions. These have started to set benchmarks for other municipalities to learn from. This brings hope for the future, especially for small companies trying to bring their product to the global market. Presently, small companies successful on a local market are often disappointed when they approach a wider market only to find that it is fragmented and difficult to access. Another perspective to take into account when trying to understand the market for different solutions is the different timeframes that the responsible stakeholders act in. Finally, add to that the economic risks of these creations, and the complexity of building a functioning city infrastructure starts to emerge. In addition, involving users implies that a wide variety of people need to be included, and the best way of doing this is not always evident. The UPSIDE approach is therefore a holistic one.

Challenges for creating new markets for digital solutions

Technology developments in e.g. cloud computing and the emerging Internet of Things open new possibilities for services. These technologies can ensure economies of scale in, for example, infrastructure, standardisation of applications, and solutions for software as a service, platform as a service (PaaS) and infrastructure as a service (IaaS). Digital technologies have the potential to decrease development costs of new solutions for cities while accelerating their learning curve. However, technology push is still dominant. As consumers are becoming more aware of them, the demand for e-services is increasing but there is still a gap between software applications and the provision of e-services in terms of sustainability and financial viability. Many applications are so-called "vertical ICT solutions" which are not interoperable with other applications and lead to the emergence of an unsustainable diversity of solutions and highly fragmented markets. The positive impact of available "smart city solutions" on European cities has not yet been demonstrated, nor have the necessary funding mechanisms and business models for their sustainability been developed.

Cities must also address the enrichment of the physical space and infrastructures with embedded systems, cyber physical systems, smart devices, sensors and the creation of applications enabling data collection and processing, web-based collaboration. This is necessary to make sense of the incredible amount of data and information available, and to find clever ways to extract value for interactive and innovative digital solutions.

Cities need to initiate large-scale participatory innovation processes for the creation or further development of applications that will run and improve every sector of activity and infrastructure. All city economic activities and utilities can be seen as innovation ecosystems in which citizens and organisations participate in the development, supply and consumption of goods and services.

Opening new markets for applications and services constituted a priority for UPSIDE. Innovation ecosystems have to be defined in terms of applications, services, and financial engineering. Partnerships and clear cooperation strategies among

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main stakeholders are needed in order to share research and innovation resources such as experimental technology platforms, emerging ICT tools, methodologies and know-how, and user communities for experimentation on future technologies and e-service applications.

Scientific and technical objectives

The UPSIDE project had following scientific and technical objectives, addressing the overarching goals of the Regions of Knowledge action as well as specific objectives related to digital technologies and the multi-stakeholder approach selected.

#1	Improving links between regional authorities, research entities and the local business community for the development of specific regional RTD policies and also partnerships in national or European initiatives.

UPSIDE aimed at leveraging the positive effects of European collaboration, building on individual regional strengths, to clearly develop and define cooperation

- between the five research-driven regions in the consortium, including the five ICT-based clusters
- between the UPSIDE partners and other relevant regions identified in the development of the Joint Action Plans

#2	Developing a Joint Action Plan (JAP) at the regional and European level to increase regional economic competitiveness through research, technological development activities and innovation in traditional or emerging business sectors.

Developing the JAP was the core focus of the first half of the UPSIDE project. The JAP included both a regional part and a European perspective specifying the collaboration among the clusters and their stakeholders. The focus of the JAP was on innovation and RTD activities related to the strategic applications areas selected, which are also business sectors with an expected strong growth potential.

#3	JAPs will also explore opportunities for mobilising financial and other forms of support offered by national/regional authorities, private investments and by EU programmes (such as the Research Framework Programme, CIP, and Structural Funds), in order to exploit the synergies between regional, national and EU programmes for research and economic development.

The partners described the funding for each of the measures in the JAP. They took thereby into account, in addition to private funding (e.g. businesses, banks, business angels, sponsors) and expected income, different sources of public funding. Particular attention was paid to the involvement of the management authorities for the Structural Funds in the relevant regions in the planning. Also funding opportunities from European programmes were explored (Horizon 2020). The financial plans included in the JAP described how the partners expect to make use of those different financial instruments.

#4	Boosting the competitiveness of the regional research-driven clusters via dedicated internationalisation measures.

Potential international cooperation partners (cities and clusters) and activities were identified by following a double approach:

- Market approach: cities and clusters sharing similar approaches with respect to the development and testing of intelligent solutions for smarter cities, and thus presenting a potential for new market opportunities for the clusters in the consortium;
- Technology approach: research-driven clusters sharing the scientific and technology priorities of the project partners, thus presenting a potential for innovation and R&D cooperation.

The target areas for the identification of cooperation partners were Asia and North America, which represent the major present and future markets in the areas addressed by the project.

#5	Mentoring regions with a less developed research profile to support their capacity in setting up and developing regional research-driven clusters.

The first contribution to this objective consisted in support to set-up a research-driven cluster in the Maribor area, which was constituted by month 18 and integrated into the JAP. Beyond this, the project contributed to setting-up or fostered the development of research-driven clusters in the Baltic, Central European and Mediterranean areas, building on existing relationships of the clusters and thus enabling to enlarge significantly the trans-European basis for cooperation of the partners and generate new market opportunities.

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#6	Promoting the visibility of regional research-driven clusters by targeted dissemination and communication actions including regional stakeholders and the general public.
A specific work package was dedicated to dissemination activities, which were designed to disseminate UPSIDE activities and results at regional (cluster), national and European levels.	

#7	Methods for user-driven participatory solutions for innovation in digitally-centred ecosystems
User-driven approaches are dealt with in innovation theory and research projects but are not always part of a region's usual approaches. In order to foster their uptake in the clusters' and cities' joint approach to economic development, the UPSIDE partners analysed, evaluated, selected and adapted tools and methods. This was done to provide the participating research-driven clusters and the innovation community in general with a set of tools and methodologies that facilitate and encourage user involvement and multiple stakeholder platforms for innovation in digitally centred ecosystems.	

#8	Set-up of pilot test beds for participatory solutions for innovation in digitally centred ecosystems
The methodologies chosen for the development of user-driven participatory solutions were tested and implemented in the participating regions and applied to selected application areas. These areas correspond to the strategic priorities defined by the clusters: health, including ambient assisted living, new solutions for public transport (intelligent transport systems) / intelligent mobility, public services (e- and m-Government), and energy. Each region took the lead for the development of a pilot test bed, with the support of the other regions and the participation of their businesses and research organisations as relevant.	

#9	(Further) development of regional digital agendas
UPSIDE addressed several priorities of the European Digital Agenda (ICT for environment, Sustainable healthcare and ICT-based support for dignified and independent living, eGovernment, Intelligent Transport Systems for efficient transport and better mobility). The clusters and regions involved already have strong economic development strategies and policies building on ICT-based solutions. By bringing together the relevant stakeholders, especially with a strong commitment of local/regional authorities to the project, UPSIDE aimed at supporting the adoption of regional digital roadmaps agreed upon by the regional stakeholders and in line with the Digital Agenda for Europe. UPSIDE thus fostered the translation of the Digital Agenda and its priorities into regional strategies and concrete actions.	

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III. Description of main S & T results/foregrounds

The UPSIDE project brought together five strong regions having research-driven ICT-based clusters, with a strong commitment from all stakeholders. The UPSIDE partners encompass local governments, businesses, research and academia from:

- two leading and highly innovative research-driven ICT-based clusters, namely CyberForum and Kista Science City, being among the top three European ICT clusters in terms of employments;
- one high-tech region, Brainport Eindhoven, leading for innovation in several domains;
- one recently established and dynamic research-driven ICT cluster – mCluster in Tartu, Estonia – with a strong development pace and strong networks in the Baltic Area;
- one emerging cluster that has been established in the framework of the project – Maribor, Slovenia.

Partner list:

- **Karlsruhe, Germany:** CyberForum e.V., City of Karlsruhe Economic Development Department, inno AG
- **Stockholm, Sweden:** Kista Science City, Bevel, Interactive Institute, Stockholm University – eGovLab
- **Tartu, Estonia:** Baltic Innovation Agency, Tartu City Government
- **Maribor, Slovenia:** E-zavod, Municipality of Maribor
- **Eindhoven, The Netherlands:** Eindhoven Metropolitan Region, University of Technology Eindhoven
- **Copenhagen, Denmark:** Living Labs Global

1. Overview of the work performed and main results achieved

The UPSIDE project was articulated in the following three phases:

Phase 1: Analysis and integration of research agendas of regional research-driven clusters (M1-M12)

This first phase started in July 2013 with the analysis and integration of regional research agendas and state of cluster development. During the initial months of the project, a common framework for the cluster mapping has been developed by the partners, taking especially into account the requirements from the European Cluster Excellence Initiative (ECEI). However, as the ECEI indicators mainly focus on cluster organisation, additional aspects such as e.g. the ecosystem of a cluster (history, cluster members, cooperation, local and national innovation system) have been included.

These activities provided the necessary input for performing an analysis of Strengths, Weaknesses, Opportunities and Threats (SWOT) taking into account the following six dimensions: economy, innovation / research and development, HR / education, policy / cluster environment, cluster organisation, user involvement. Additionally, the UPSIDE partners decided to follow a more dynamic approach, namely to conduct an analysis of Strengths, Problems, Opportunities, Threats (SPOT), that extracts the results of the regional SWOT-analyses. The analyses allowed identifying complementarities of the partners within the scope of the project and highlighted the dynamics of each cluster as well as the consortium.

Phase 2: Design of the Joint Action Plan (JAP) (M7-M18)

The conclusions drawn from the comparative SWOT- and SPOT-analyses served as input for drafting the UPSIDE Joint Action Plan (JAP), which addressed the identified strengths and opportunities as well as weaknesses and threats by suggesting a series of concrete measures.

The JAP defines a common strategy and measures to be implemented so as to foster the development of innovation systems able to accelerate the cycle of research, innovation and adoption in real-life environments within these fields. The JAP also included a Financial Plan providing information on the presumed funding for each action, taking into account UPSIDE budget, regional funding as well as funding through national and European programmes.

From a longer initial list, **12 Joint Actions** (JA) were selected, focusing on the generation of concrete outputs for the benefit of the clusters and their members, the improvement of regional innovation ecosystems and aiming at fostering growth within the UPSIDE fields of action:

1. World Cafés for User-Driven Participatory Solutions for Smart Cities/Regions
2. Sustainable living labs
3. Development and Pilot Testing of the Smart City/ Region Assessment and Benchmarking Methodology
4. Innovation workshops
5. Joint application to collaborative research and innovation funding schemes
6. TopClass eHealth
7. eHealth Regional Mapping
8. Participatory e-Governance solutions and public services
9. Maribor cluster set-up

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10. Mentoring emerging research driven clusters
11. Study visits to facilitate international collaboration (non-EU countries)
12. Staff Exchange Programme between UPSIDE partners

As regional anchors for a series of Joint Actions the UPSIDE partners identified suitable **Pilot Test Beds**. These pilots covered the full spectrum of the UPSIDE thematic priorities and have been further developed at regional level in the framework of the implementation of the JAP.

Phase 3: Implementation of the JAP and accompanying measures (M19-M36)

The Joint Action Plan, that has been designed and validated by all partners during the first half of the project, has been successfully implemented during the second half, and shall partly last beyond UPSIDE:

The JAP served as an instrument for the coordination of RTD activities between clusters/regions and was closely linked to the implementation of the following Pilot Test Beds, implemented in close collaboration with other stakeholders from the triple / quadruple helix:

- Karlsruhe: Smart Quarter (www.karlsruhe.de/b2/zukunftsstadt/projektziele.de)
- Stockholm: Urban ICT Arena (www.urbanictarena.se)
- Tartu: Smart City Lab / SmartEnCity (http://smartcitylab.eu; http://mobilitylab.ut.ee/eng/smartencity-project; http://cordis.europa.eu/project/rcn/200259_de.html)
- Eindhoven: Sustainable Living Labs Approach (www.slimmerleven2020.org)
- Maribor: Smart neighbourhood Maribor (www.smartcitymaribor.si/en)

All Pilot Test Beds have been successfully developed and implemented within UPSIDE. The test beds were not considered as "vertical silos", independent from each other; the partners aimed at implementing bridges between them, focusing on experience and knowledge exchange so as to maximise the impacts of each pilot.

In addition to the Pilot Test Beds in the UPSIDE-regions, the JAP also contributed to the coordination of additional research and innovation activities, in specific:

- Staff exchange programme between the clusters,
- Identification and development of joint RTD and innovation projects.

In addition to the measures involving primarily the clusters in the consortium and their members, the JAP also included activities that involve partners outside the consortium and provided a specific contribution to the coordination of activities with respect to the development of research-driven ICT clusters and the development of innovative solutions for health, mobility, public services and energy (resource efficiency).

This included the design of specific measures for **international cooperation (non-European)** and **mentoring (European)** activities for relevant clusters in the Baltic, Central European and Mediterranean areas:

**International cooperation**: the UPSIDE internationalisation strategy aims at opening new markets for the cluster companies but also enlarges the pool of potential collaboration partners for innovation-related activities for all cluster members beyond the project lifetime. Potential cooperation partners have been identified following a double approach: international call for collaboration (market or solution-based approach) and a technology / strategic (or process-based) approach. Moreover, relevant internationalisation practices, tools and services have been identified. The target areas for international cooperation were Asia and North America, which represent the major present and future markets in the areas addressed by the project. Cooperation has been started/intensified with relevant stakeholders in Silicon Valley, Atlanta & Puerto Rico, USA; Montréal, Canada; Pune & Mumbai, India; Hanoi & Ho-Chi-Minh-City, Vietnam; Daegu, South Korea.

One major result is the close cooperation between Montréal and Stockholm/Kista leading e.g. to the establishment of the Cluster2Cluster Stockholm-Montréal working group, various delegation visits and a Mayor-to-mayor. The target of setting-up a long-term collaboration with the City of Montréal was achieved thanks to UPSIDE internationalisation activities and to the setting up of the test bed Urban ICT Arena as a forum for exchanges and discussion.

The Business Roaming Agreement, coordinated by CyberForum, supported the increased collaboration and internationalisation by connecting 57 clusters in 32 countries by June 2016 (http://clusterize.org).

**Mentoring**: The mentoring activities represented a significant part of the UPSIDE project. Activities were twofold, aiming at the set-up of a new research-driven triple-helix cluster in Maribor, Slovenia, and the fostering of the development of research-driven clusters in the Baltic, Central European and Mediterranean areas. These activities have been successfully implemented. Based on the mentoring activities several project proposals have been developed. The first joint project started in June 2016 and allows to continue the activities started in UPSIDE. For more information on the Smart City Maribor Initiative see www.smartcitymaribor.si.

A major result of UPSIDE was also the **Participatory Methods Inventory** (available on the website) prepared based on a survey and an analysis of the state-of-the-art and state-of-play of methodologies, techniques, tools and best practices for user/citizen-driven innovation processes (e.g. multi-stakeholder workshops, user involvement via social events and social media, user/citizen involvement via on-line surveys, One-shot-video, Interaction Navigator, Project-in-a-day). These methodologies have been successfully applied in the second phase linked to the implementation of Joint Actions as well as project dissemination and will be a valuable tool beyond the UPSIDE project and will be further used in upcoming projects, such as e.g. UrbanInno, in which parts of the UPSIDE consortium participate.

The UPSIDE activities and results were regularly disseminated at regional (cluster), national and European levels. The final conference "High Capacity Digital Societies – Make it happen!" was organised as one-day track within the 29th Bled eConference 2016 (http://bledconference.org) and allowed to share the UPSIDE results and methodologies with a broad audience.

2. Implementation of the Joint Action Plan

In the following we provide a more detailed description of the main results achieved with the implementation of the Joint Action Plan, taking into account the following aspects:

- Implementation of Pilot Test Beds
- Implementation of Joint Actions
- Further development of regional Digital Agendas
- International cooperation strategy

a) Implementation of Pilot Test Beds

In each UPSIDE region Pilot Test Beds have been implemented in close collaboration with other stakeholders from the triple / quadruple helix.

All Pilot Test Beds have been successfully developed and implemented within UPSIDE. They cover the full spectrum of the UPSIDE thematic priorities and served as regional anchors for the implementation of 12 UPSIDE JAs and allowed to build strong regional networks that are interlinked on European and global level.

The Pilot Test Beds shall be continued after the end of the project. Regional interest and commitment is high, funding could be acquired for most Test Beds.

The following table provides an overview of the **Pilot Test Beds** including an update on their implementation.

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Region	Test bed	Short description	Partners
Karlsru he	Smart Quarter	Major topics: ● "Zero-Energy" Quarter ● "Zero-Emission" Quarter ● Quality of life – Citizen-centred Quarter ● Commerce and industry, supply and logistics: short distance Quarter	Lead: ● City of Karlsruhe ● CyberForum e.V. (operational responsibility) Further partners: ● Businesses ● Research organisations ● Citizens associations ● Diverse offices of the City of Karlsruhe

Implementation update:

- A holistic concept for the transformation of city districts into "smart quarters" was developed for the City of Karlsruhe, called "SmartQuarter Karlsruhe". This concept is based on UPSIDE facilitated workshops with industry and science, interviews with chief officers of several urban departments and a first World Café for citizen participation. The concept focuses especially on the involvement of "end users" (i.e. city administration and citizens) during the complete process. It can be seen as a management approach on how to transform a city district into a "smart quarter" by using an iterative process. This process starts with an "urban requirements analysis", "gathering of ideas", followed by feasibility studies. Feasible solution ideas will then be defined as projects.

- For the implementation of these projects, appropriate consortia will apply for public funding on regional, national or European level. In case of a successful proposal, a project will be implemented. Successful solutions resulted from such a project will be implemented in the respective city district as well as analysed concerning transferability to other districts with similar problems.

- Best practices and lessons learned will be used to define a reference model for new city districts. In any step of the process model, both industry/science and citizens/public administration are involved. The implementation of the concept is managed by the urban initiative "SmarterCity Karlsruhe", coordinated by EDDKA.

- This concept has become part of the Integrated City Development Concept Karlsruhe 2020 and formed the basis for a funding proposal in the federal contest "Zukunftsstadt", aiming on the topic Smart City. Since the proposal has been successful, CyberForum could further develop its concept during the funded project "SmartQuarterVision KA 2030+" in order to improve citizen participation processes and usage of Open Innovation methods.

- In the context of UPSIDE and in conjunction with SmartQuarterVision KA 2030+, valuable experiences and lessons learned could be gained and user-driven participatory methods (especially the World Café concept) could be further developed and tested under real life conditions. Based on the approach, results and lessons learned, CyberForum was able to improve the concept SmartQuarter Karlsruhe for the City of Karlsruhe, especially with regard to citizen participation processes.

- Indian Prime Minister Narendra Modi started recently a program of "100 Smart Cities in India", targeting at a transformation of cities and an "urbanization as an opportunity for growth." The head of government is providing funding of around seven billion euros for Smart City projects - in a five-year period. In a first designation 20 cities have been selected as a sort of kick-off of the development process – with Poona - visited during the UPSIDE internationalization activities of some UPSIDE partners and project cooperation partner of the City of Karlsruhe - being on second place, proving the high quality of its planned Smart City projects. This is also an opportunity for companies in Karlsruhe and the region to contribute their expertise and gain new business relationships and orders as interest in this know-how is great.

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Region	Test bed	Short description	Partners
Stockholm	Urban ICT Arena	Major topics: ● Focus on Intelligent Transport Systems ● open to all kinds of ICT-related topics	Lead: ● Kista Science City AB Further partners: ● City of Stockholm ● Ericsson ● KTH, SU and many others

Implementation update:

- The City of Stockholm, large and small industry partners, and academia and research institutes are included in the stakeholders that initiated and are helping to drive the Urban ICT Arena forward. The lead is still taken by Kista Science City. Partners include the City of Stockholm, IBM, Intel, Citycon & Kista Galleria, the Hub Hotel, Cisco, Telia, Swedish ICT, the County Administrative Board, Stockholm University, KTH Royal Institute of Technology, and Ericsson. STING is indirectly involved via Electrum Foundation and Kista Science City.
- "Urban ICT Arena", is an open co-creation arena and testbed in Kista where the opportunities of digitalization are developed, tested and showcased in an urban environment. Partly developed and as a result of collaborations and benchmarks inside the UPSIDE project this new platform has had its ground-breaking in April 2016 and will be formally inaugurated in September 2016 with new partners as Cisco and Intel.
- The testbed has its own website (www.urbanictarena.se) and related events are posted there.
- 2 additional national funding requests were granted to Kista Science City and partners during the course of UPSIDE which allowed further development of the arena
- Together with the Electrum Foundation celebrating 30 years of innovation and growth in April 2016, the testbed offered tours in the driverless busses that were tested in September 2015.
- The testbed infrastructure, coordinated by SICS Swedish ICT on behalf of Kista Science City, includes among others
  o The City of Stockholm subsidiary Stokab's dark fibre as the IT-infrastructure base with around 15 access points in the Kista area
  o Stokab subsidiary S:t Erik Kommunikation's WiFi and IP/Ethernet access for projects targeting applications and solutions supporting the City of Stockholm and its departments
  o Ericsson's 5G net for projects focusing on next generation radio applications
  o Intel/Connodes 6LoWPAN mesh net for projects exploring early adoption of IoT type solutions
  o Telia company commercial WiFi network
- The Urban ICT Arena has opened the Kista Mentorspace, a dynamic organization of knowledge exchange managers and mentors who design and conduct makerspace activities in Kista.
- The Urban ICT Arena also is planning 15 WiFi access points that together will form a WiFi net with encryption according to 802.1X
- The Urban ICT Arena has already started running pilot projects.
- The official grand opening is scheduled for September/October 2016.
- The Urban ICT Arena has three overarching goals:
  o To foster more ICT-based solutions for urban sustainability challenges than there are at present, resulting in both a greater impact (individually and in conjunction with other solutions) and lower cost;
  o To secure and strengthen the ability to support innovation processes and to support SMEs and start-ups in the development of ICT-based products and services. In particular, the region needs to get better at attracting new talent, and the role of the arena in boosting attractiveness for skilled labour can play a key part in this effort;
  o One of the long-term aims of Urban ICT Arena is to further develop the region and prepare it for new demands in the future by securing more jobs in the region and setting requirements for the skills necessary to meet future needs.

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Region	Test bed	Short description	Partners
Tartu	**Smart City Lab**	Major topics: ● Smart Transport Systems ● Modern infrastructure and networks ● Tourism and leisure time services ● Digital TV-based interactive services ● Participatory and efficient governance services	Lead: ● City of Tartu ● Baltic Innovation Agency Further partners: ● R&D (e.g. Tartu University, Garage48, Tartu Science Park, …) ● ICT companies (e.g. Microsoft, Mobi Solutions, Nutiteq, Ericsson, Samsung, …) ● Infrastructure companies (e.g. Elion, EMT Tartu Veevärk, …)
Implementation update:			

- Cluster is engaged in various internationalisation activities by participating and organising study trips to different partners together with UPSIDE partners and independently.
- First innovative public procurement actions are currently under preparation together with City of Tartu and relevant SMEs.
- Launching of the major Living Lab test with 900 apartments to test the viability and scalability of new and innovative smart home solutions in the area of energy efficiency, retrofitting and citizen engagement.
- The Living Lab test was visited and discussed with UPSIDE partners during the GA that was held in Tartu in April 2016.

Region	Test bed	Short description	Partners
Eind-hoven	Sustainable Living Labs Approach	Major topics: ● Ambient Assisted Living ● Health / Quality of life ● Prevention (healthy living) ● Combining initiatives – increased collaboration on innovation in e-health / AAL Goal: 1) Create living lab structure – sustainable test bed(s) structure with focus on user-driven development 2) Strengthen community sense / create consortia with the focus on future development	Lead: ● SRE ● Brainport / Slimmer Leven 2020 ● TU/e ● GGZe Further partners: ● EIT ICT Labs ● Province Brabant ● Local governments ● Businesses ● Research institutes
Implementation update:			

- On 21 October 2015, the network conference "Create Health/ Slimmer Leven" took place with fruitful discussions with stakeholders about the sustainable living labs approach. UPSIDE-representatives had an active role during the workshop session.
- November 2015: decision of the directors' level about implementing a sustainable living lab.
- Feb-march 2016: appointment of a project leader.
- May 2016: presentation of the project plans for a Healthy Living Lab.
- May 27th 2016: UPSIDE conference for regional and national stakeholders; Healthy Living Lab CSL2020 on the agenda.
- Since June 2016, Brainport Healthy Living Lab is part of a wider European network 'Cross Care'. Testing grounds of care innovations in Belgium and Netherlands are working together. Focus is on valorisation, exploration & co-creation, testing (with end-users, among other things) and validation.

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Region	Test bed	Short description	Partners
Maribor	Smart neighbourhood Maribor	Integration of new technologies in energy production and management: ● smart grids ● smart lightning ● smart homes ● smart transport with ICT solutions plus social and behavioural measures (intelligent energy consumption, car/bike sharing etc.)	Lead: ● TECES ● Municipality of Maribor ● E-zavod Further partners: ● Elektro Maribor Ltd ● Drava Hydropower Ltd ● Nigrad Jsc ● University of Maribor

Implementation update:
- In November 2015 Slovenian government agreed with the plans of implementation of part of the project with the help of financing from structural funds 2014-2020. But financing on the basis of Operational Programme for the Implementation of the EU Cohesion Policy in the period 2014 – 2020 did not enable the implementation of investment for establishment of smart grids.
- For this reason at the end of 2015 ELES, Ltd., Electricity Transmission System Operator, joined the discussion for implementation of smart grids and smart communities demonstration project. ELES took over from SPIRIT agency the project coordination and cooperation with Japanese agency NEDO. With Japanese partner, ELES will prepare final scope of the partnership, implementation plan and the selection of contractors. ELES will use the results of feasibility study, which was already prepared. The project should start at the latest in September 2016. The value of the project, with the duration of 3 years, is estimated at 30 mio EUR.
- The investment and implementation of demonstration project of smart cities and smart grids will be complemented from the side of Slovenian government with the implementation of foreseen measures for stimulation for carrying out research and development and measures for stimulation for smart grids.

b) Implementation of Joint Actions

The implementation of the Joint Actions (JA) was performed successfully form January 2015 to June 2016. The JAs were closely linked to the Integrated Research Agenda and the thematic priorities identified by the UPSIDE partners:

- health, including ambient assisted living and e-health;
- solutions for public transport, including intelligent transport systems and smart mobility;
- public services, including e-government and m-government; and
- energy, including energy autarkic cities.

At regional level the JAs were strongly linked to the pilot test beds providing methodological support, supporting their successful and timely implementation.

In order to follow-up each action and the expected results, a monitoring methodology has been defined, based on the JA descriptions in D4.4 and the suggested monitoring indicators. These indicators have been validated and if needed adapted as well as complemented in WP5.

Not only the progress of each action towards implementation was monitored; but also lessons learned and good practices identified by the partners have been collected and processed for dissemination:

- among the partners,
- within mentored clusters,
- within the EC community.

As an ongoing monitoring tool, PP3 inno developed a monitoring sheet that was available as Google sheet and regularly updated (at least every two months) by the JA leaders.

Moreover, the current status of the implementation the JAs as well as the next steps and possible open issues have been discussed in detail during each GA. Regular updates have been provided during the UPSIDE conference calls. All partners shared their input, feedback, and recommendations regarding the progress of the JAs, the relevance of on-going and scheduled tasks and possible connections between JAs.

Each JA has been structured in several tasks, that are being implemented within the UPSIDE project lifetime and provide the basis for an extension beyond UPSIDE.

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All JAs and most of the planned tasks have been implemented within the timeframe of UPSIDE, a few tasks will be finalised after the end of the project. Nevertheless, all Joint Actions aim at sustainability – as described in chapter 3. In the following, the achievements in each JA are presented in detail.

- **Joint Action 1: Promotion of participatory methods and citizen-driven innovation processes in the clusters**

Responsible	
Organisation	CyberForum e.V.
Contact person with details	Tamara Högler hoegler@cyberforum.de
Partners involved	
Organisations within UPSIDE	CyberForum, EDDKA, Kista Science City, BIA, Tartu City, E-zavod, MOM, SRE, TU/e, Bevel, II
Organisations outside UPSIDE	City districts of Karlsruhe and possibly additional districts in the UPSIDE regions Office for Urban Development Karlsruhe Town Planning Office Karlsruhe Office for Environment Karlsruhe KIT (Karlsruhe Institute of Technology) EIFER (European Institute for Energy Research)
Achievements	

The main objective of this Joint Action was to support – through the use of partcipatory methods involving citizens - the definition and implementation of projects within the framework of "SmarterCity Karlsruhe", Responsive City Kista and others as relevant.

Implementation in the framework of "SmarterCity Karlsruhe"
Based on workshops with industry and science, interviews with chief officers of several urban departments and a first World Café for citizen participation, CyberForum has developed a holistic concept for the transformation of city districts into "smart quarters" for the City of Karlsruhe, called "SmartQuarter Karlsruhe". The concept has been presented to the Lord Mayor of Karlsruhe in December 2014 and focuses especially on the involvement of "end users" (i.e. city administration and citizens) during the complete process. This concept has become part of the Integrated City Development Concept Karlsruhe 2020 and formed the basis for a funding proposal in the federal contest "Zukunftsstadt", aiming on the topic Smart City. Since the proposal has been successful, CyberForum could further develop its concept during the funded project "SmartQuarterVision KA 2030+" in order to improve citizen participation processes and usage of Open Innovation methods. Based on the results and lessons learned from the project, the concept SmartQuarter Karlsruhe could be updated in April 2016.

In this framework:
- 12 World Cafés involving a total of over 300 persons were delivered in Karlsruhe.
- In the 12 World Cafés about 90 ideas were generated.

Beyond this, the use of participatory methods, especially the World Cafés, for the identification of potential solutions to urban challenges has been widely promoted by the UPSIDE partners. In total 50 proposals have been submitted by the UPSIDE partners supporting the implementation of World Cafés and other participator methods.

- **Joint Action 2: Pilots / Knowledge sharing and sustainability approach**

Responsible	
Organisation	Eindhoven Region (SRE)
Contact person with details	Sandra Jager s.jager@sre.nl
Partners involved	

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Organisations within UPSIDE	SRE, CyberForum, inno, Kista Science City, BIA, TU/e, LLG
Organisations outside UPSIDE	Brainport Development, Municipality of Eindhoven, Province of North Brabant, GGZE (mental health care organisation), FZI House of Living Labs (tbd.) (Karlsruhe); possibility to invite mentoring regions and international partner clusters.

Achievements

The main objective was to create a regional platform where Living Labs within a given region can share knowledge and methods so as to stimulate the collaboration and create an atmosphere in which the different actors are willing and able to use each other's test facilities. This way a living lab can be used multiple times, creating a sustainable living lab structure. The action was piloted in the region of Eindhoven.

The definition, common methodology and overview of different living labs have been discussed with several partners. In November 2015, the initiative has been taken to start a sustainable living lab, Brainport Healthy Living Lab, with a focus on digital healthcare. A project leader had been appointed.

In May 2016, during the UPSIDE event 'Digitale steden estafette E Health' the concrete plans were communicated to the relevant stakeholders. Brainport Healthy Living Lab will be part of a wider European network 'Cross Care'. Testing grounds of care innovations in Belgium and Netherlands are working together. Focus is on valorisation, exploration & co-creation, testing (with end-users, among other things) and validation.

- **Joint Action 3: Benchmarking Smart Cities and Regions**

Responsible	
Organisation	Baltic Innovation Agency
Contact person with details	Rene Tõnnisson rene@bia.ee
Partners involved	
Organisations within UPSIDE	BIA, CyberForum, EDDKA, inno, Kista Science City, Bevel, Tartu, E-zavod, MOM, TU/e, SRE
Organisations outside UPSIDE	Smart City Lab; possibility to invite mentoring cities/ regions and international partner clusters
Achievements	

Benchmarking methodology

A preliminary Benchmarking Template was developed by the end of October 2015 by BIA. After receiving feedback from other partners, the Template was finalised in November 2015 already together with submitting the preliminary Benchmarking Profile for Tartu in order to facilitate the process of compiling the profiles of other cities.

Karlsruhe, Kista/Stockholm, Maribor and Tartu participated in the full benchmarking, while Eindhoven went through a "light" version of the benchmarking exercise. This means that a full profile of the city was not developed for Eindhoven, but the city contributed to the most important parts particularly relevant for comparison (including ICT infrastructure and implementation of the digital agenda, SWOT analysis and self-assessment of smart city development level).

The nearly final drafts of benchmarking profiles of Karlsruhe, Kista/Stockholm, Maribor and Tartu were submitted by the end of April 2016, with work slightly delayed in Eindhoven. In addition, information regarding smart city status was obtained from Montréal, Canada and shared with the UPSIDE consortium. The activities were finalised as planned until June 2016.

Analysis of benchmarking result

Building upon the results of the Smart City benchmarking exercise, the main challenges for a further development of the Smart City approach and initiatives in the UPSIDE cities / regions were identified in two perspectives:

a) innovation factors and

b) policy factors.

Based on that, priority topics to be dealt with in the future were identified and recommendations for overcoming

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the main challenges given, also for better alignment of regional digital agendas to the UPSIDE priorities and the Digital Agenda for Europe. Activities were finalised as planned in June 2016 and prepare further collaboration beyond UPSIDE.

Al results were documented in the Benchmarking report, approved by all partners and submitted in June 2016.

- **Joint Action 4: Innovation workshops**

Responsible	
Organisation	Technische Universiteit Eindhoven
Contact person with details	Harold Weffers h.t.g.weffers@tue.nl
Partners involved	
Organisations within UPSIDE	TU/e, inno, Kista Science City, SRE, LLG, Bevel, II
Organisations outside UPSIDE	For the organisation of UPSIDE Innovation Workshops in the region of Eindhoven discussions were conducted with a number of relevant organisations such as Municipality of Eindhoven, DITSS and ZLTO. Within the time frame of the project itself, next to the regional UPSIDE partners, the Municipality of Eindhoven was the primary partner for the UPSIDE Innovation Workshops.
Achievements	

A Guide for the implementation of Regional Innovation Workshops was prepared and shared with all UPSIDE partners – with a "final" version delivered in June 2016.

After initial difficulties with the delivery of the first workshops by Tue, due to a large number of initiatives with similar target groups in the region, the focus towards a small series of workshops on 'data-driven' smart mobility solutions for the regional challenges related to the official 'Reachability' agenda enabled to implement several workshops.

A number of UPSIDE Innovation Workshops have been held in the Eindhoven region with partners from the UPSIDE consortium as well as with partners that are not part of the UPSIDE consortium. On 29 April 2016, 27 May 2016 and 27 June 2016, TU/e and SRE (MRE) organised UPSIDE Innovation Workshops on "Bereikbaarheid Zuid Nederland" a large initiative to improve the 'accessibility' of the South Netherlands (including the Amsterdam Vienna Corridor) and on 28 June 2016 TU/e and the Municipality of Eindhoven organised a UPSIDE Innovation Workshop on 'Internet-of-Things Principles for Smart Society'. In all cases, the participants reflected the relevant actors from the Triple Helix.

Due to the delay in implementing the Innovation Workshops in Eindhoven, take-up by other UPSIDE regions was delayed and shall continue after the end of the project.

- **Joint Action 5: Joint application to collaborative research and innovation funding schemes**

Responsible	
Organisation	inno AG
Contact person with details	Luc Schmerber, l.schmerber@inno-group.com
Partners involved	
Organisations within UPSIDE	inno, CyberForum, EDDKA, Kista Science City, Bevel, BIA, Tartu, E-zavod, MOM, SRE, TU/e, SU – eGovlab, Interactive Institute
Organisations outside UPSIDE	Mentoring regions and other partners involved in the newly generated project consortia
Achievements	

Based on regular screening of calls, information on suitable calls has been provided to the partners throughout the project. inno and other UPSIDE partners provided support in the development of consortia involving UPSIDE

members as well as new partners.

40 joint proposals (involving at least 2 UPSIDE partners or at least 1 UPSIDE partner and 1 mentoring region) and 10 additional proposals by single UPSIDE partners with topics closely linked to UPSIDE have been submitted to relevant funding schemes in order to support the further implementation and sustainability of the UPSIDE Joint Actions and Pilot test beds. By the end of project 12 proposals were already successful, 9 additional still under review.

Significantly more funds (over 42 Mio. EUR – of which about 1/3 in the UPSDIE regions - by the end of the project, likely more taking into account the proposals still under review) could be raised by the UPSIDE partners, compared to project costs of about 3 Mio. EUR.

The UPSIDE partners are motivated to carry on identifying new funding possibilities and activities to further develop the UPSIDE approach and continue to implement the Pilot Test Beds as well as the generated ideas also beyond the project lifetime.

- **Joint Action 6: TopClass eHealth (Masterclass)**

Responsible	
Organisation	Eindhoven Region (SRE)
Contact person with details	Sandra Jager s.jager@sre.nl
Partners involved	
Organisations within UPSIDE	SRE, TU/e, Kista Science City, LLG
Organisations outside UPSIDE	Fontys University, Nictiz (Centre of National Excellence for Standardisation and E-health), Brainport Development
Achievements	

There is a lot of misunderstanding and miscommunication on the theme of eHealth. Every organisation has its own definition and ideas of what eHealth is and how it can benefit society. The main goal of the TopClass eHealth wasto help decision makers to create a shared language and common knowledge, improve their network and help them initiate collaboration.

A first version of the programme was developed and the target of about 70 stakeholders being informed about the existence of the upcoming TopClass until August 2015 was reached. In January 2016, the TopClass 'E-Health, from strategy to application' started. A masterclass for directors and regional partners joined this. The feedback to the TopClass eHealth in the region idea was very positive. Nevertheless, only 10 people applied for the first TopClass eHealth originally planned for October 2015. Main reasons for the few applications are the relatively high time investment (5 times 1.5 days) and the price. Synergies with other developments/activities have been identified. In order to reach a strong added value, a conference on eHealth has been organised.

The original method and set up of the TopClass ehealth, as well as the analyses and adjustment has been communicated to the UPSIDE partners so they can make their own decisions on how to organ-ise a TopClass in their own region.

- **Joint Action 7: eHealth Regional Mapping**

Responsible	
Organisation	Living Labs Global
Contact person with details	Jakob Rasmussen jr@livinglabs-global.com
Partners involved	
Organisations within UPSIDE	LLG, Kista Science City, BIA, SRE, Tartu City
Organisations outside UPSIDE	Relevant regional stakeholders

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Achievements	

A methodology has been defined for performing a mapping of eHealth related organisations within several UPSIDE regions. It includes:

- Definition of 7 solution categories: Healthcare applications, Information management, Clinical solutions, Wearable technologies, Assistive technologies, Telehealth and Data analytics.
- Identification and contact of stakeholders in each city to make an inventory of stakeholders on the demand-side (cities, associations, regional institutions) and the supply-side (companies and organisations with innovative solutions) in the eHealth key thematic area of UPSIDE.
- Additional workshops with demand-side stakeholder to define needs that can be met by the innovative solutions of the supply-side stakeholders, and turn these into challenges that can be published to the supply-side stakeholders.
- Conversion of needs into challenges and publication.
- Identification and contact stakeholders on the supply-side in each city, and for each supply-side stakeholder, preparation of an inventory of innovative solutions that can be shared with demand-side shareholders, with the purpose of solving their needs.
- Presentation of a platform to map healthcare challenges and solutions mapping for supply and demand.

By the end of June 2015 a mapping has been performed in the regions of Eindhoven, Stockholm and Tartu, enabling the identification of 122 eHealth solution providers.

- **Joint Action 8: Participatory e-Governance solutions and public services**

Responsible	
Organisation	SU – eGovlab (Lead has changed from BIA to SU)
Contact person with details	Vasilis Koulolias vasilisk@dsv.su.se
Partners involved	
Organisations within UPSIDE	SU – eGovlab, CyberForum, EDDKA, inno, BIA, Tartu, E-zavod, MOM, II, Kista Science City, Bevel
Organisations outside UPSIDE	Estonia: Estonian Information System Authority, Estonian ICT Cluster, Smart City Lab
Achievements	

The main achievement was the development of a new peer-to-peer mobile e-health platform, which allows individuals to choose their preferred doctor, based on collaborative filtering and a recommendation engine. A research paper and a final prototype of the e-health app were delivered upon completion of the project.

More specifically, the e-health app was conceived to match patients to doctors thanks to a recommendation engine, which identifies users' preferences and item ratings (e.g. doctor visit, experience and procedures) to match common or similar preferences among the app users. This collaborative filtering results in the recommendation engine's detection of those items that similar users rated highly, in order to then provide a doctor recommendation. A prototype/conceptual model using toy synthetic data was implemented for iPhones (iOS app), which stores data on a remote server.

The above activities derived from the need to promote e-participation and user-driven innovation in the design of healthcare services. Besides the development of the mobile platform, eGovlab conducted background research and facilitated a series of workshops throughout the project, in order to identify opportunities for a paradigm shift in the role of the citizens in the access and delivery of e-health services, as well as to collect complementary and detailed insights around the subject directly from the workshop participants.

- **Joint Action 9: Maribor cluster set-up and development**

Achievements	
Organisation	E-zavod

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Contact person with details	Matjaž Gerl matjaz@ezavod.si

Partners involved	
Organisations within UPSIDE	E-zavod, CyberForum, EDDKA, inno, Kista Science City, BIA, Tartu, MOM, SRE, TU/e, LLG, Bevel
Organisations outside UPSIDE	Different organisations from Maribor and UPSIDE partner cities

Achievements

Cluster set-up

The activities started in the first half of the UPSIDE project related to the initial cluster set-up were finalised. A Memorandum of Understanding was prepared and meanwhile signed by 23 partners. The set-up of a research driven triple-helix cluster "Smart City Maribor" was completed by February 2015.

The preparation of an Action Plan for the clusters then started. A set of mentoring activities was defined to help the task force of Maribor (Municipality of Maribor, E-zavod) at the triple-helix research driven cluster set-up. All UPSIDE partners made available their materials, experiences and contacts to Maribor task force upon request.

The following site visits took place:

- Brainport Eindhoven and TU Eindhoven with objectives to present approach of cluster set-up and management /marketing of cluster (region), best practices of industry-research cooperation, role of public authorities at the smart city/region development, in November 2013.
- Stockholm – Kista Science City with objectives to learn how to manage needs of global high-tech player, how to design living space for global qualified and how to design test-beds for industries, in March 2014.
- Municipality of Tartu with objectives to present high-tech ICT and policy solutions for the management of public transport in the city and region, in September 2014.
- Freiburg, Germany: Visit took place between 1st and 3rd February 2016 and was held in the light of exchange of experiences and the design of joint potential smart city project. During the visit, team from MOM met with representatives of the Fraunhofer Institute (Fraunhofer ISE), representatives of the Institute of ICLEI (Association of Local Governments for Sustainability) and representatives of the city of Freiburg.

The site visits have been attended by different professionals from different organisations from Maribor and from host city/organisation.

Development of pilots and test-beds

Three pilot projects have been implemented:

- **Smart Maribor technology platform, 'Exploitation of ICT technologies to support smart city activities'** lead by a stakeholder of SCM, company AMIS d.o.o.: Municipality of Maribor signed the letter of support to the research and development programme "iCity - Efficient resource sharing for sustainable cities of the future", submitted to the call for proposals in the frame of Slovenian Smart Specialization by Jozef Stefan Institute and iCity consortium. We believe this programme will have a notable impact and important contributions to the research and development of new solutions, services and applications in the area of smart cities and communities. If accepted for funding, Municipality of Maribor will endeavour to follow the development and results, and set up formal cooperation with the iCity consortium, possibly leading to some joint piloting of smart city solutions and proposals for international projects/funding.
- **Smart neighbourhood:** In November 2015 Slovenian government agreed with the plans of implementation of part of the project with the help of financing from structural funds 2014-2020. But financing on the basis of Operational Programme for the Implementation of the EU Cohesion Policy in the period 2014 – 2020 did not enable the implementation of investment for establishment of smart grids. For this reason at the end of 2015 ELES, Ltd., Electricity Transmission System Operator, joined the discussion for implementation of smart grids and smart communities demonstration project. ELES took over from SPIRIT agency the project coordination and cooperation with Japanese agency NEDO. With Japanese partner, ELES will prepare final scope of the partnership, implementation plan and the selection of contractors. ELES will use the results of feasibility study, which was already prepared. The project should start at the latest in September 2016. The value of the project, with the duration of 3 years, is estimated at 30 mio EUR.

  The investment and implementation of demonstration project of smart cities and smart grids will be complemented from the side of Slovenian government with the implementation of foreseen measures for stimulation for carrying out research and development and measures for stimulation for smart grids.
- **The online tool "Improve Maribor":** in the period from autumn 2015, until May 2016, Municipality received, 268

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suggestions, initiatives, comments via application Let's Improve Maribor. In the near future we are planning to implement 2nd upgrade of existing tool "Let's improve Maribor". The upgrade will allow City of Maribor (or other interested stakeholder) to use the web-platform for open discussions on bigger development projects in urban area and to offer innovation challenges to solve particular urban problems**.**

Preparation of cooperation beyond the end of UPSIDE

Several follow-up project proposals have been prepared aiming to develop R&D projects including living labs and projects supporting the internationalisation of the Maribor cluster. Project partners MOM & E-zavod (together with other UPSIDE partners and mentoring regions) submitted several project proposals to Interreg Central Europe (e.g. URBAN INNO) and Interreg Danube Europe programme (e.g. GENESYS – 2nd step). The first project URBAN INNO was selected for funding under the Interreg Central Europe Programme and started in June 2016.

- **Joint Action 10: Mentoring further clusters**

Responsible	
Organisation	E-zavod
Contact person with details	Matjaž Gerl matjaz@ezavod.si
Partners involved	
Organisations within UPSIDE	E-zavod, CyberForum, EDDKA, inno, Kista Science City, BIA, Tartu, MOM, SRE, TU/e, LLG, II, SU – eGovlab
Organisations outside UPSIDE	Mentoring candidates ● Grad Rijeka + Ericsson Nikola Tesla (City of Rijeka initiative) – Croatia ● Kielce Technology Park – Kielce, Poland ● Trentino Lab – Trento, Italy ● FH Vorarlberg – Smart City Rheintal, Austria ● Latvian ICT Cluster, Riga, Latvia ● Lithuanian Innovation Centre, Vilnius, Lithuania
Achievements	

The objectives were to contribute to the set-up and /or further development of research driven triple-helix clusters in mentoring cities in the Central European and Mediterranean as well as the Baltic areas by sharing good-practices on cluster organisation and development in the framework of dedicated workshops.

The following mentoring workshops have been implemented:

- The following workshops have been delivered in the **Central European and Mediterranean area**:

    o 03.06.2014, Bled, dedicated to cluster set-up

       MED regions: 2 official UPSIDE mentoring regions /clusters

       CE regions: 2 official UPSIDE mentoring regions /clusters

    o 12.03.2015, Maribor, dedicated to participatory processes

       MED regions: 1 official UPSIDE mentoring regions /clusters

       CE regions: 2 official UPSIDE mentoring regions /clusters, 4 additional regions / clusters from Austria, Hungary and Slovakia.

    o 05.06.2015, Ljubljana, 1 individual mentoring workshop, implemented by CyberForum for public institutions

    o 12.02.2015, Ljubljana, 1 individual mentoring workshop, implemented by CyberForum organized by Slovenian Ministry of Education, Science and Sport (MIZŠ)

    o 14.04.2015, Kielce: 1 Workshop with local stakeholders in Kielce, Poland (hosted by Kielce Technology Park) dedicated to cluster and urban innovation ecosystems building issues such as trust building and networking among the regional players, design and delivery of services to the members, designing research and innovation-driven activities, cluster financing etc.

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o   21.06.2016, Bled, dedicated to participatory processes

MED regions: 1 official UPSIDE mentoring regions /clusters

CE regions: 1 official UPSIDE mentoring regions /clusters, 3 additional regions / clusters

- The following workshops have been delivered in the **Baltic area**:
    o   11.02.2015, Riga, dedicated to the role of ICT clusters in smart city development

    Baltic region: 7 regions/clusters

    o   29.06.2015, Tartu, dedicated to international cooperation in smart city area

    Baltic region: 7 regions/clusters

    o   01.06.2016, Tartu, dedicated to smart city development and mutual learning in the Baltic region

    Baltic region: 7 regions/clusters

Preparation of mentoring activities after UPSIDE

CyberForum has prepared mentoring presentation / training material for appr. 1 week mentoring in total on different topics, e.g. cluster management, internationalisation etc.
Mentoring regions were so far included in 17 joint proposals with at least one UPSIDE partner (Interreg, H2020).

- **Joint Action 11: Study visits to facilitate international collaboration (non-EU countries)**

Responsible	
Organisation	BIA
Contact person with details	Kadri Uus kadri@bia.eu
Partners involved	
Organisations within UPSIDE	BIA, CyberForum, EDDKA, inno, Kista Science City, Tartu, E-zavod, MOM, SRE, TU/e, LLG, Bevel, II, SU – eGovlab
Organisations outside UPSIDE	Cluster organisations and relevant stakeholders (business development organisations, technology transfer offices, science and technology parks, accelerators) in cluster regions shortlisted for international cooperation: 1) In North America: Montreal, Silicon Valley, Boston, North Carolina 2) In Asia: Bangalore, Beijing, Pune, Taipei *(NB: The international cooperation will not be limited to these regions – they are shortlisted as strategic cooperation partners but the UPSIDE consortium will also aim to make use of relevant emerging opportunities in other regions if there are considerable benefits involved for the UPSIDE clusters and companies).*
Achievements	

The main objective of the study visits were to specify the cooperation framework outlined in the International Cooperation Strategy and discuss the measures and activities to be performed jointly by the UPSIDE clusters and the key partner clusters in Asia and North America. While the International Cooperation Strategy outlines the main areas and activity lines for cooperation, for starting concrete collaborative actions, face-to-face discussions for clarifying the details and facilitating the development of deeper linkages between the involved parties are needed. The study visits also supported getting a better overall understanding of the local/regional context in which the partner clusters are operating, meeting other relevant stakeholders, seeing potentially interesting solutions in action, etc.

The study visits were built up in a way that during one visit, several target clusters in a broader region in North America or Asia can be visited, taking into account both time- and cost-efficiency. The program of an international study visit will include:

1. Meetings with the key partner clusters (cluster organisations or other relevant stakeholders) to discuss specific cooperation activities;
2. Company and site visits to get acquainted with the partner clusters´ leading companies/solutions in the UPSIDE target areas (mobility and ITS, energy, e-governance, health);

3. Pre-scheduled B2B meetings between companies based on mutual interests;
4. If feasible, participation in relevant broader-scale cluster/ ecosystem events.

The following countries / regions were visited:
- Canada: Montreal (December 2014)
- India: Pune (January 2016)
- USA: Atlanta and Puerto Rico (August 2015), Silicon Valley (September 2014, February/March 2016))
- Vietnam and South Korea (November 2015)

The study visits contributed successfully to the implementation of the internationalisation strategy (see below).

- **Joint Action 12: Staff Exchange Programme**

Responsible	
Organisation	Kista Science City
Contact person with details	Åke Lindström ake.lindstrom@kista.com
Partners involved	
Organisations within UPSIDE	Kista Science City, CyberForum, EDDKA, inno, BIA, Tartu, E-zavod, MOM, SRE, TU/e, Bevel, II, SU – eGovlab
Organisations outside UPSIDE	Relevant regional partners, as occurring. International partners, as occurring.
Achievements	

A series of staff exchanges were performed, which contributed to support the implementation of the Joint Action Plan. They were related to the following topics:
- Smart mobility: 3 exchanges
- E-Government: 3 exchanges
- Innovation Ecosystems: 3 exchanges

c) Further development of regional Digital Agendas

Building upon the analysis presented in the previous chapters, the final chapter outlines the main challenges for further development of the Smart City approach and initiatives in UPSIDE cities in two perspectives: a) innovation factors and b) policy factors. Based on that, priority topics to be dealt with in the future are identified and recommendations for overcoming the main challenges are given, also for better alignment of regional digital agendas to the UPSIDE priorities and the Digital Agenda for Europe.

Innovation challenges

I.e. innovation factors to be dealt with to support the development of new smart city solutions (answering the question "where could innovation happen and what are the intrinsic factors that hinder innovation, other than policy?"). In the context of UPSIDE cities, the main innovation challenges include:

EINDHOVEN
The Southeast Netherlands has a highly developed innovation ecosystem, but the world is changing rapidly. The major societal themes of the current era have also considerable impact on the competitiveness of the region: scarcity of raw materials, ageing population, climate change, growing need for energy and food, congested roads and strong international competition.
Some of the main challenges include:

- Full potential of Eindhoven is still not used terms of the start-up ecosystem, incubators and testbeds. There is a need for further development so that innovations can be tested, improved and scaled up more efficiently (food connection point / food-tech, design, - processing/ agritech, life science, life tech, automotive, smart mobility).
- Room for improvement exists also in the field of Smart Mobility

KARLSRUHE
- Most of the regional businesses are small (95%)
- There are still situations where the full potential of the Smart City services is not realized due to
    o limited public awareness
    o insufficient skills of some user groups.
    o limited transparency / communication of the administration
- Companies see the smarter city sometimes just as a market to sell their already existing products – from the city´s perspective the smarter city is more a tool for a co-creation process. Companies should better combine their products to offer intelligent solutions.

KISTA/STOCKHOLM
Innovation challenges, the issues that need to be addressed in order to ensure a growing and healthy innovation climate in Stockholm/Kista are today mostly focused on economy and housing.
- In terms of smart economy, public investments are increasing and relatively speaking, private investments are not following in Stockholm. This is a signal that something needs to be done so as not to export R&D investments.
- As small companies are increasingly responsible for jobs, setting up a start-up climate that is beneficial to new companies and that can attract new entrepreneurs to the region is important.
- In terms of smart living, there is a shortage of dwellings, and the ones that exist have high rent. It is important to attract the best people that they also can have a nice and affordable place to live.

MARIBOR
- Currently limited internationalization (global diffusion) of companies. Small internal market limits the development of new products and technologies and makes it difficult to penetrate the global markets.
- Poor knowledge of global market needs and trends, the threat of missing new technology trends / lesser innovation capacity Barriers, which burden or block SMEs, organizations and individuals to more efficiently, implement and organize innovation processes, are: deficit in knowledge about new available technologies and about innovative business models, lack of accessibility to knowledge and qualified experts, deficiency in skills about innovation management.
- Lack of venture capital in Slovenia.

TARTU
- Low productivity of the business sector in international comparison;
- Limited ability to translate R&D results to innovation. This is also connected to challenges in achieving a fully functioning Triple/Quadruple Helix collaboration, as the R&D institutions´ long-term perspective is often in conflict with the industry´s need to demonstrate results in a short-to-mid-term time frame;
- Most of the regional businesses are small, lack international visibility and have limited internationalisation skills;
- There are still situations where the full potential of the Smart City services is not realized due to limited public awareness or insufficient skills of some user groups.

JOINT CHALLENGES

In sum, the following themes can be outlined as the key joint innovation challenges:
- Most of the **regional businesses are small**, **which creates limitations to their development** (Karlsruhe, Maribor, Tartu)
- Currently **limited internationalization** of companies (Maribor, Tartu)
- Full potential of the Smart City solutions is not always realized due to **limited information or skills related to smart city products and services**(Karlsruhe, Tartu)
    - limited public awareness
    - insufficient skills of some user groups.
    - limited transparency / communication of the administration
- The **threat of missing new technology trends** and related lesser innovation capacity (Maribor, Tartu)
- Too much focus on public funding and **limited private investments** into smart city development (all)
- The challenge of **ensuring further development of a start-up climate** that is beneficial to new companies, including attracting more venture capital (all)

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Policy challenges

I.e. challenges on policy level related to establishing/advancing policies supporting the emergence of new innovations (answering the question "what are the policies and policy circumstances that are creating obstacles for innovation to happen?").

EINDHOVEN
- The decision making processes in the administrative system are slow
- The policies are still not fully adjusted to support the development of the ecosystem, e.g. for fostering stronger cross-border collaborations
- intensive co-evolution of digital and analogue, virtual and physical, online and offline involves a range of challenging topics (putting privacy first, developing open data and interface, embracing open standards, sharing where possible, supporting modularity, maintaining security, accepting social responsibility
- The focus on society (Smart Society) is still not strong enough

KISTA/STOCKHOLM
- Living and liveable city quality is still challenging. Kista Science City was initially built as an industry park, but the move to a City means a change in mind-set. Today, a milieu that attracts people to stay after hours is still a challenge, the people who work in Kista during the day are not the same as those living there after hours
- Innovation procurement is also one of the five pillars identified as critical for action to achieve the innovation strategy for the region of Stockholm, which aims to be the world's most innovation-driven economy.

KARLSRUHE
- Insufficient metrics in the Smart City key fields and lack of a system for holistic measurement of Smart City development/impact analysis.
- Definition of future Smart City strategy and funding on level of Regional Government but also on level of city.
- One of the most important policy level challenges is actually realizing the potential of the approach to acquire other public funding and to create unique selling points - for the whole region.

MARIBOR
- Poor cooperation tradition in region, illustrated by the following: strongly diverging views among different stakeholders about innovation ecosystem in the Podravje region, inadequate development and non-integrated platform for technological transfer and links between business and research, lack of promotion of innovative business models, lack of different forms of horizontal and vertical integration of enterprises in supply chains, technological networks and clusters.
- The existing city government structure that does not guarantee efficiency in city processes: the city governance structure still relies on the coordination between existing departments. In the future, more efficient cross-departmental city governance structure with shared performance targets, which will ensure faster and more accountable decision making is necessary to be able to keep up with global changes and challenges
- On the national level, policy challenges are related with implementation of national structural reforms: reduction of administration burdens connected with new investments, financial stability for SMEs in the sense of clear and long-term tax policies, integrated innovation policy adjusted to SMEs needs.

TARTU
- Insufficient metrics in the Smart City key fields and lack of a system for holistic measurement of Smart City development/impact analysis;
- The existing (nationally enacted) public procurement system creates obstacles for Smart City development as it is prone to overly limiting conditions or focusing primarily on cost-minimization. This is problematic, as the demand side (i.e. representatives of local authorities) are not likely to have a full overview of alternative solutions and the knowledge related to emerging technological innovations is inevitably limited;
- A key challenge for Tartu in terms of becoming a stronger player in the international field is the currently very limited number of flight connections from the Ülenurme airport. In addition to the local level, political will in the national level is needed to ensure that more airlines would connect Tartu to the world.

JOINT CHALLENGES

While related to national, regional and local policies and smart city governance systems, the partners are dealing with a range of different topics, the following themes constitute the most important joint policy challenges:
- **Insufficient metrics** in the Smart City key fields and lack of a system for holistic measurement of **Smart City**

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development/impact analysis (all)

- Challenges related to **innovation procurement** – developing new models of public procurement that facilitate innovation instead of creating too many limitations and obstacles for innovative companies (Kista/Stockholm, Tartu). The analysis and search for updated models of innovation procurement is particularly relevant at the time where the EU procurements are beginning to be opened up more to international actors as well (e.g. in the context of the new free trade agreement with Canada).
- Although the partners have addressed this topic from somewhat different angles, one of the relevant policy challenges is also **how to make a relatively small city an internationally well-known and attractive living and working environment** for talented people (all partners, to a lesser extent for Kista/Stockholm)

Priorities and recommendations for better alignment of the regional digital agendas for future development

The following recommendations are provided to overcome the challenges outlined above, specifying the priority topics to be dealt with in the future:

- **Staying focused on the key growth areas identified in the context of the smart specialisation analysis**. These are also the sectors contributing most to the increase in productivity, with positive spill-over effects to other sectors as well (ALL);

- **Facilitation of large-scale piloting and demonstrator projects, particularly related to new technologies and emerging opportunities**. Setting up joint testbeds was an important aspect of the UPSIDE project that the partners want to take further in future collaboration. Quoting the analysis of Kista/Stockholm "The rapidly changing nature of what it means for a city to be "smart" and of the composition of the population making it that way means that predicting the future, even short-term, is difficult. In a few years' time, the changing immigration patterns we see today will affect those filling qualified jobs and we will see contributions and ideas no one had foreseen. Link this to true internet-of-things 5G networks and the possibilities are huge. Moving towards a sharing and circular economy and seeing the results of the national and international collaboration on demonstration testbeds promises to delight and amaze." The pilots and demonstrator projects also allow better evaluation of the potential and profitability of the new solutions (ALL);

- Continuous attention on good economic environment and a **focus in particular on the investment environment** and how it could be improved; attracting **more venture capital and private investments** into smart city development (ALL);

- **Strengthening the Triple/Quadruple Helix collaboration** is of key importance for the further development of the smart cities and realizing their ambitions in an international context, i.e. producing internationally competitive and scalable smart city solutions and securing its place among the leading Smart Cities in Europe. An assumption can be made that in the context of continuously increasing competition for EU R&D financing, the universities and enterprises are forced to collaborate on a deeper level. In this context, it is important to support such cooperation and channel it towards the priority areas of Smart City development (ALL);

- **Focus on factors that affect the quality of life, attractiveness of the city and good education possibilities** will make it easier to not just attract talent but keep it. Strengthening therefore the forth helix, i.e. involvement of citizens will be important in realizing the benefits of a Smart City. Also, special attention needs to be directed to creating an attractive living environment for expats, including special facilities, international schools etc. (ALL);

- Introduction of **advanced metrics and development of a smart city impact analysis system**, which also contributes to the ability of the city administration to act as a "smarter buyer" in the context of public procurement (ALL). This is a complicated topic that deserves a more thorough analysis and discussion and calls for further development of existing methodologies. While the benchmarking methodology developed within the UPSIDE project as well as other existing methodologies (e.g. the detailed smart city benchmarking approach of Dr Giffinger) allow for a comparison between different cities, carrying out a smart city impact analysis (including economic, social as well as environmental impacts) is still a very difficult task. While a good level of rigorous data is available regarding concrete smart city initiatives, it is rather difficult to estimate the exact extent of the aggregated impact, i.e. to which point can advancements in macro-level indicators be associated with Smart City development initiatives. The metrics system to be developed should be reasonably linked to the processes of the cities and not create an overly excessive burden in terms of additional data collection and analysis.

- It is necessary to continuously invest in **constant development of the awareness and skills of both citizens as well as members of city administration** to make best use of the range of **smart city services available**. Marketing and communication efforts are invaluable in this perspective, as well as targeted training activities in relevant occasions (Karlsruhe, Tartu):

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- **Introduction of innovative public procurement** that would facilitate the dialogue between the supply and demand side, enabling to move away from overly rigid rules and cost-minimization as the main goal. In addition, development of state-of-the-art standards that would support high quality implementation of innovative procurements and enable both exporting and importing best practices internationally (Karlsruhe, Tartu, Kista/Stockholm);

- **Promotion of business model innovation and related targeted development of the enterprises´ internationalisation skills** in order to deal with the difficulties related to a small internal market and smallness of businesses (Maribor, Tartu). In this respect, Karlsruhe potentially offers a possibility for learning and knowledge development – while 95% of the companies there are also small, they have significant internationalisation skills (43% of the products are exported).

- **Knowledge transfer and learning between the partner regions for continuous development of Digital Public Services** on the one hand and **Integration of digital technology by businesses** on the other hand. While e.g. Estonia is in the leading position among EU28 regarding the former, the latter constitutes the main challenge for the country and learning opportunities from Germany and Sweden exist in this domain. The need for strengthening the ability of the businesses to use digital technologies even more to enhance their efficiency and productivity was emphasised in the DESI 2016 also for the Netherlands. Further development of digital public services, in turn, is a particular priority area for Germany, Sweden and Slovenia, with learning opportunities from the other two partners.

- Contributing to overcoming the general challenge of **growing the pool of qualified ICT workforce** via new enrolments in ICT curricula and other measures.

d) Report on the international cooperation strategy including progress on implementation

While the cooperation framework outlined in the context of the UPSIDE Internationalisation Strategy extends well beyond the project period and the related Action Plan covers the years 2015-2019, the current document gives an overview of the progress made in the first years of activities according to the strategic collaboration framework agreed in the context of UPSIDE.

The main achievements within the duration of the UPSIDE project are the following:

- All UPSIDE partners have gathered rather specific market information and strengthened contacts with the internationalisation priority markets in the context of the various **bilateral and joint study visits** (Atlanta, U.S, August 2015; Puerto Rico, August 2015, Silicon Valley February 2016, Hanoi & Saigon, Vietnam, October 2015, Daegu, South Korea in November 2015, Mumbai & Pune, India in January 2015 and January 2016) and through the Montréal/Stockholm collaboration. Via the UPSIDE partners that have participated in the visits, the information and contacts are also available to other partners and clusters in the UPSIDE regions.

- Two regions stand out in terms of the internationalisation efforts, having considerably strengthened their strategic collaboration frameworks with the targeted international regions:

  - Kista/Stockholm – Montréal collaboration – as a result of a series of mutual high-level visits and setting up of the Stockholm Cluster2Cluster Stockholm-Montréal working group set facilitate, discuss, and assist in exchanges between Stockholm and Montréal within ICT, a strong collaboration framework has been established between the two cities by now. Continued understanding and dissemination of the conditions of the upcoming Comprehensive Economic and Trade Agreement between Europe and Canada can be considered a critical factor in further strengthening of the Kista/Stockholm – Montreal collaboration but also for other UPSIDE regions.

    Karslruhe – Pune collaboration. A Memorandum of Understanding was developed in January 2013, a statement of Karlsruhe and the Maharatta Chamber of Commerce, Industries and Agriculture (MCCIA) that supports a very close cooperation between the two cities. In 2014, the establishment of a representative office of Karlsruhe in Pune followed, which significantly advanced Karlsruhe´s international self-positioning and understanding of the specifics of the Indian market. The Pune office of Karlsruhe can provide (because of good networking and proven partnerships in the Indian market) supportive connections, experience and direct partners to local companies from the Karlsruhe region. Furthermore, an Indo-German Network has been established in order to support the cooperation between the regions.

- In 2014, CyberForum took over the **Business Roaming Agreement** (see clusterize.org), a platform that supports SMEs in entering in foreign countries by providing them access to clusters and their infrastructure. Since October 2014, when CyberForum took over the coordination of BRA, 8 new members from 4 countries providing 9 new locations have been gained. However, the BRA has not yet been actively used by the UPSIDE clusters. When analysing the

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reasons, it may be concluded that the marketing and general information provision regarding the BRA needs to be strengthened in the future.

- A number of **international matchmaking events** have been (co-)organised by UPSIDE partners with participants from outside the EU mainly during 2016, including e.g. the Trans-Atlantic Webinar and Workshop High Capacity Digital Society in February 2016 and the EUREKA Innovation Week in April 2016, both with Montréal in 2016. In addition, a list containing ca 30 most relevant conferences and events in which the UPSIDE partners have participated in the recent years, focusing on topics relevant to UPSIDE and involving international participants, has been provided in the progress review of the respective part of the Action Plan (Activity 3.2).

- An **international call for collaboration** was launched within UPSIDE with the support of Living Labs Global, targeting over 200 major cities and regions globally, was launched on Citymart´s online platform on June 10, 2014. As a result of the call, a first list of potential cities and clusters with significant research and economic potential for international collaboration has been carried out, focusing on cost-efficient, sustainable public transport system. The City of Tartu was the pilot city in the context of the call, while other partners followed and monitored the pilot for future application in their own regions (see http://www.citymart.com/previous-challengescontent/2014/8/21/tartu-leveraging-digital-innovation-to-promote-economic-growth-and-improve-public-services for more information).

- A **benchmarking exercise** within UPSIDE cities was carried out by 30 June 2016. From the international cooperation partners shortlisted in the context of UPSIDE, the Montreal IT Cluster was interested in following the benchmarking process as part of the Kista / Stockholm – Montreal Cluster2Cluster collaboration. Montréal did not do a full benchmarking but has shared their smart city self-assessment with the partners of UPSIDE.

- In total **40 collaborative project proposals** were submitted jointly by at least 2 UPSIDE partners or at least one UPSIDE partner and one mentored region by June 30, 2016. In most of these proposals, the topics of moving the partnering companies/clusters further up the (global) value chains and strengthening their international competitiveness were among central themes, addressed from various different angels.

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1   Potential impact

a)   Exploitable knowledge and its use

AS UPSIDE was not a research project it was not the aim to develop products or services as such but rather to set up partnerships, develop and implement collaboration models, promote open innovation and generate knowledge on cluster development and management practices in the project regions. Those measures build on the knowledge developed during the project.

b)   Implementation of the Joint Action Plan

The Joint Action Plan encompasses a series of actions to be implemented at regional, trans-regional, European and international levels. Even if the implementation of the actions started during the lifetime of the project, most of the actions foreseen will run well beyond the project lifetime and shape the development of the clusters involved in the project with respect to innovation, R&D and international activities.

The implementation of the Joint Action Plan is therefore the most obvious and direct exploitation channel of the results of the projects. As the implementation of the Joint Action Plan also involved a large number of further actors in the regions, on national, European and international level (e.g. other clusters, businesses and research centres, regional and national authorities), the project results are made available to a wider community than the consortium and thus contribute to a better innovation performance.

c)   Participatory methods know-how

- **Participatory methods inventory**

The inventory was developed by Interactive Instituted in order to provide the UPSIDE partners and the innovation community with a set of tools and methodologies that facilitate and encourage user involvement and multiple stakeholder platforms for innovation in digitally centered ecosystems.

The inventory has been a practice-based exploration during various constellations of stakeholder and user activities from UPSIDE partners. It uses an experiential learning, or learning-by-doing approach to increase uptake.

- **Guidelines for Innovation workshops**

As globally, a gap exists between the demand side and supply side of knowledge, technology and solutions, events were organised to facilitate the meeting of supply and demand as to hopefully close the gap and enable innovation.

In the experience of the UPSIDE partners, these events generally suffer from two problems: (1) these events are usually focussed on some generic and high level theme (e.g. ICT and Health) attracting a very broad crowd and (2) they are usually strongly focussed on either the supply or the demand side. Such events can be very useful, but we believe that choices made in the way they are focussed leave many opportunities for innovation unused. Therefore, a more focussed and regional alternative was proposed and implemented in Eindhoven. The guidelines for the implementation of such Innovation workshops are made available to the project partners.

- **World Café methodology**

The UPSIDE partners adapted the World Café methodology and used it in the context of Smart City development. More than 20 target group-specific World Cafés were implemented in Karlsruhe, involving also other UPSIDE partners, an additional one was implemented in the UPSIDE final conference in Slovenia. The World Cafés were accompanied by specific measures to establish multi-stakeholder regional working groups, to elaborate the outcomes (concepts/ solutions/ projects) and to support their implementation (e.g. by identifying and applying for funding possibilities). The guidelines for the implementation of such World Café were made available to the project partners.

d)   Pilot test beds / Innovation ecosystems

In each UPSIDE region Pilot test beds as pilot environments for user-driven participatory innovation have been implemented in close collaboration with other stakeholders from the triple / quadruple helix.

All Pilot test beds have been successfully developed and implemented within UPSIDE. They cover the full spectrum of the UPSIDE thematic priorities, served as regional anchors for the implementation of 12 UPSIDE Joint Actions and allowed to build strong regional networks that are interlinked on European and global level.

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The Pilot test beds will be continued after the end of the project based on the multiple stakeholder governance and business models developed within UPSIDE. Regional interest and commitment is high, funding could be acquired for most Test beds leveraging significant public as well as private investments in R&D activities. Thus, the effects of the Pilot test beds are sustainable and contribute significantly to the exploitation of the project results.

- **Karlsruhe – Smart Quarter**

A holistic concept for the transformation of city districts into "smart quarters" was developed for the City of Karlsruhe, called "SmartQuarter Karlsruhe". This concept is based on UPSIDE facilitated workshops with industry and science, interviews with chief officers of several urban departments and a first World Café for citizen participation. The concept focuses especially on the involvement of "end users" (i.e. city administration and citizens) during the complete process. It can be seen as a management approach on how to transform a city district into a "smart quarter" by using an iterative process. This process starts with an "urban requirements analysis", followed by feasibility studies. Feasible solution ideas will then be defined as projects.

In the context of UPSIDE and in conjunction with SmartQuarterVision KA 2030+, valuable experiences and lessons learned could be gained and user-driven participatory methods (especially the World Café concept) could be further developed and tested under real life conditions. Based on the approach, results and lessons learned, CyberForum was able to improve the concept SmartQuarter Karlsruhe for the City of Karlsruhe, especially with regard to citizen participation processes.

For more information see www.wettbewerb-zukunftsstadt.de/index.php?id=117;
www.upside-project.eu/activities/implementation-of-pilot-test-beds/zukunftsstadt-2030-karlsruhe/

- **Kista/ Stockholm – Urban ICT Arena**

"Urban ICT Arena", is an open co-creation arena and UPSIDE pilot testbed in Kista where the opportunities of digitalization are developed, tested and showcased in an urban environment. Partly developed and as a result of collaborations and benchmarks inside the UPSIDE project this new platform has had its ground-breaking in April 2016 and will be formally inaugurated in September 2016 with new partners as Cisco and Intel.

The Urban ICT Arena has already started running pilot projects. The official grand opening is scheduled for September/October 2016.

The testbed has its own website (www.urbanictarena.se) and related events are posted there.

- **Tartu – Smart City Lab**

The cluster is engaged in various internationalisation activities by participating and organising study trips to different partners together with UPSIDE partners and independently. First innovative public procurement actions are currently under preparation together with City of Tartu and relevant SMEs.

One major achievement during the timeframe of UPSIDE was the successful application to implement a Smart City Lighthouse project. The major Living Lab test with 900 apartments to test the viability and scalability of new and innovative smart home solutions in the area of energy efficiency, retrofitting and citizen engagement already started.

The Living Lab test bed was visited and discussed with UPSIDE partners during the GA that was held in Tartu in April 2016.

For more information see http://smartcitylab.eu/frontpage,
http://cordis.europa.eu/project/rcn/200259_de.html.

- **Eindhoven – Sustainable living labs approach**

The two main goals of the sustainable living labs approach were to

1) Create living lab structure – sustainable test bed(s) structure with focus on user-driven development
2) Strengthen community sense / create consortia with the focus on future development.

The approach was piloted focusing on the health field. With support of UPSIDE the "Slimmer Leven" initiative was found as regional platform to share knowledge and methods as well as to stimulate cooperation and create an atmosphere in which the different actors are willing and able to use each other's test facilities. This way a living lab can be used multiple times, creating a sustainable living lab structure.

For more information see http://www.slimmerleven2020.org/.

- **Maribor - Smart neighbourhood Maribor**

This pilot test bed aims at the Integration of new technologies in energy production and management:

- smart grids
- smart lightning
- smart homes
- smart transport

with ICT solutions plus social and behavioural measures (intelligent energy consumption, car/bike sharing etc.)

In November 2015 Slovenian government agreed with the plans of implementation of part of the project with the help of financing from structural funds 2014-2020. But financing on the basis of Operational Programme for the Implementation of the EU Cohesion Policy in the period 2014 – 2020 did not enable the implementation of investment for establishment of smart grids.

The project should start at the latest in September 2016. The value of the project, with the duration of 3 years, is estimated at 30 mio EUR.

The investment and implementation of demonstration project of smart cities and smart grids will be complemented from the side of Slovenian government with the implementation of foreseen measures for stimulation for carrying out research and development and measures for stimulation for smart grids.

For more information see
www.smartcitymaribor.si/en/Projects/Smart_Environment_and_Energy/Smart_neighbourhood_Maribor/.

- **Regional digital agendas / multiple stakeholder platforms**

One of the objectives of UPSIDE was to contribute to the further development of regional digital agendas in the participating cities / regions, building on the multiple stakeholder interaction established in the framework of the design of the UPSIDE Joint Action Plan.

In order to ensure a good comparability of the results and foster transregional interactions, a joint approach was developed, which encompassed the following steps:
1. Smart City benchmarking methodology
2. Smart city profile and benchmarking of the UPSIDE cities / regions
3. Contribution to regional digital agendas

The regional agendas have a time horizon to 2020 at least, i.e. about five years after the end of the UPSIDE project. The implementation of the contributions coming from the UPSIDE project are part of the exploitation of the project's results. For more information see D5.3.

- **Benchmarking methodology**

A Smart City benchmarking methodology was developed, aiming at helping cities to create, as a first step, an easily communicated individual Smart City/Region profile, and secondly, benchmark its position among other cities/ regions. The methodology supports outlining areas for improvements for Smart City/Region strategies and initiatives in different fields.

The goal was that the methodology developed should allow analysing smart city development based on a catalogue of key topics and indicators, enabling to offer a new view on (medium-sized) cities and regions in Europe and their respective differences, advantages and development needs in a comparative perspective and enable to:

- illustrate differences in the respective characteristics and factors,
- elaborate specific perspectives for development and positioning,
- identify strengths and weaknesses for the considered cities/regions in a comparative way.

All five UPSIDE cities/regions participated in the benchmarking exercise in order to reach a clearer, future-looking comparative perspective on the partnership as a whole. From the international cooperation partners shortlisted in the context of UPSIDE, the Montreal IT Cluster was interested in following the benchmarking process as part of the Kista / Stockholm – Montreal Cluster2Cluster collaboration. Due to time constraints, Montréal did not do a full benchmarking but has shared their smart city self-assessment with the partners of UPSIDE.

The methodology was successfully tested within UPSIDE and the benchmarking helped to better position the involved cities in a comparative perspective and also to outline and clarify areas for collaboration in the future.

The methodological framework is also available for other cities/regions to be used in a similar way as in the context of UPSIDE, as a tool to illustrate and outline key aspects of smart city development to offer a better ground for collaboration between various regions.

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The methodology will be further developed and implemented e.g. in the follow-up project URBAN INNO, co-funded by the Interreg Central Europe Programme.

For more information see D5.2.

- **Towards sustainable partnerships**

The UPSIDE project aimed at initiating sustainable partnerships among the partner clusters and further clusters to be identified in the framework of the project. Also on the level of cluster members, new trans-regional partnerships have been initiated and fostered, especially during the implementation phase of the JAP. Those partnerships shall provide the ground for a real integration of the cluster into a European innovation community.

One strong proof of the motivation to continue collaboration is the submission of 40 joint proposals by at least 2 UPSIDE partners or at least 1 UPSIDE partner and 1 mentored region.

e) Internationalisation measures

- **Internationalisation strategy**

The internationalisation strategy aimed at opening new markets for the cluster companies but also enlarged the pool of potential collaboration partners for innovation-related activities for all cluster members beyond the project lifetime. Through the implementation of the internationalisation strategy and the Joint Action Plan, the UPSIDE partners achieved mid to long-term partnerships with the targeted clusters / regions.

All UPSIDE partners have gathered rather specific market information and strengthened contacts with the internationalisation priority markets in the context of the various bilateral and joint study visits (Atlanta, U.S, August 2015; Puerto Rico, August 2015, Silicon Valley, February 2016, Hanoi & Saigon, Vietnam, October 2015, Daegu, South Korea in November 2015, Mumbai & Pune, India in January 2015 and January 2016) and through the Montréal/Stockholm collaboration. Via the UPSIDE partners that have participated in the visits, the information and contacts are also available to other partners and clusters in the UPSIDE regions.

- **Kista/Stockholm – Montréal collaboration**

As a result of a series of mutual high-level visits and setting up of the Stockholm Cluster2Cluster Stockholm-Montréal working group set facilitate, discuss, and assist in exchanges between Stockholm and Montréal within ICT, a strong collaboration framework has been established between the two cities by now. Continued understanding and dissemination of the conditions of the upcoming Comprehensive Economic and Trade Agreement between Europe and Canada can be considered a critical factor in further strengthening of the Kista/Stockholm – Montreal collaboration but also for other UPSIDE regions.

- **Karlsruhe – Pune collaboration**

A Memorandum of Understanding was developed in January 2013, a statement of Karlsruhe and the Mahratta Chamber of Commerce, Industries and Agriculture (MCCIA) that supports a very close cooperation between the two cities. In 2014, the establishment of a representative office of Karlsruhe in Pune followed, which significantly advanced Karlsruhe´s international self-positioning and understanding of the specifics of the Indian market. The Pune office of Karlsruhe can provide (because of good networking and proven partnerships in the Indian market) supportive connections, experience and direct partners to local companies from the Karlsruhe region. Furthermore, an Indo-German Network has been established in order to support the cooperation between the regions.

- **Business Roaming Agreement**

In 2014, CyberForum took over the Business Roaming Agreement (see www.clusterize.org), a platform that supports SMEs in entering in foreign countries by providing them access to clusters and their infrastructure. Since October 2014, when CyberForum took over the coordination of BRA, 8 new members from 4 countries providing 9 new locations have been gained. However, the BRA has not yet been actively used by the UPSIDE clusters. When analysing the reasons, it may be concluded that the marketing and general information provision regarding the BRA needs to be strengthened in the future.

f) Mentoring

- **Smart City Maribor Initiative**

Within UPSIDE, the Smart City Maribor Initiative (SCMI) was as research driven triple-helix cluster launched to spark sustainable development of a smart city environment, to pursue innovation in the city of Maribor, and to develop pilot

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projects that will enable the provision of smart city activities (in the field of smart services, technology and products). The initiative aims at implementing advanced projects that will improve the quality of life in Maribor and its broader region, and encourage technological, social, and organizational innovation. By launching the Smart City Initiative, Maribor joined other advanced urban environments which have recognised the advantages of intensive collaboration between the municipality, research institutions, and industries to ensure high quality living standards and technological development.

The formation of the Smart City Maribor Initiative is based on a "triple-helix" partnership, and represents a regional partnership between the Municipality of Maribor, the University of Maribor, other development institutions and the economy. The partnership was formalised by signing a Memorandum of Understanding, which turned the R&D cluster into a network of partner organisations.

SCMI will support to

- Make better use of the local ecosystem, Triple Helix collaboration and innovation potential;
- Increase the efficiency of knowledge and technology transfer and business creation;
- Share good-practices on cluster organisation and development;
- Intensify collaboration with international clusters and partners;
- Share good-practices on user involvement practices, tools and infrastructure.

First pilot project include:

- Smart Maribor technology platform, 'Exploitation of ICT technologies to support smart city activities'
- Smart neighbourhood
- online tool "Improve Maribor"

For more information see http://www.smartcitymaribor.si/en/.

- **Mentoring in the Central European, Mediterranean and Baltic areas**

The mentoring activities represent a significant part of the UPSIDE project; they aim at contributing to the development of research-driven clusters and innovation-friendly environments in numerous regions in the Baltic and Central European areas. The UPSIDE partners aim at being in a position to integrate as many of the mentored clusters and regions as possible in the measures defined in the Joint Action Plan. According to the lifetime of the UPSIDE project, it is realistic to assume that especially for the pilot environments, this integration will effectively take place beyond the lifetime of the project and then contribute to significantly extend the potential of users and new solutions generated.

On a generic level, the lessons learned during the project will be made available to the innovation community through adequate dissemination activities, thus contributing to a wider uptake and exploitation of the project results.

- **Mentoring materials**

Specific workshop materials were developed by the mentoring clusters from the UPSIDE consortium according to the needs identified and building on the knowledge available in the mentored clusters / regions.

CyberForum has prepared mentoring presentation / training material for approximately 1 week mentoring in total on different topics, e.g. cluster management, internationalisation etc.

2   Publishable results and outlook on future dissemination

The UPSIDE partners developed the following publishable results:
- Methods Inventory for User-driven Participatory solutions (WP4)
  https://docs.google.com/presentation/d/1mHVfkTxaksihxHGTAagz9bks8m8bQ2BTirdiF0O8jQE/pub?start=false&loop=false&delayms=3000&slide=id.p
- Final report on the implementation of the Joint Action Plan (WP5 – D5.2)
- Five regional digital agendas related to the priorities of the project (WP5 – D5.3)
- Report on mentoring activities, including materials from the workshop and status of development of the mentored clusters (WP7 – D7.4)
- Progress report on setting up of a research-driven cluster in Maribor (WP7 – D7.1; D5.2)
- Webportal for Maribor mentoring cluster with pilot tools (WP7 – D7.2, http://www.smartcitymaribor.si/en/)
- 6 Newsletters http://www.upside-project.eu/newsletter/

The UPSIDE website shall remain online at least 12 months after the end of the project.

As the pilot test beds and many Joint Actions will go beyond the lifetime of UPSIDE, dissemination activities will accompany their further development and implementation as described before.

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3   Measures towards Sustainability

This chapter outlines how the impact of the Pilot Test Beds and Joint Actions will be assured as well as which concrete measures and activities will support the mid-term sustainability.

- *Pilot Test Beds*

Karlsruhe: Smart Quarter

- The concept SmartQuarter Karlsruhe is part of the superior Integrated City Development Concept Karlsruhe 2020, i.e. the project will have an impact on the further development of Karlsruhe. In the context of UPSIDE and SmartQuarterVision KA 2030+, only the first step of the iterative process of SmartQuarter Karlsruhe could be implemented (urban requirements analysis). The implementation of the further steps of the concept will be targeted by applying for further funding, e.g. for phase 2 of the federal contest "Zukunftsstadt" and in other appropriate funding programmes not targeting exclusively on the topic Smart City but on related topics (e.g. in the areas energy, mobility, environment) covering aspects of a Smart City.
- The successful developed and implemented participatory methods will be used by the Office for Urban Development in order to contribute to an improvement and/or enhancement of future citizen participation processes in the context of urban development in Karlsruhe.
- Furthermore, the abstract concept "City District of the Future", derived from the two quarter visions comprising the approach for developing a future vision for city districts as well as general aspects to be considered in different fields of action (e.g. environment, energy, mobility, housing, social life…) will be considered at the construction of new city districts in Karlsruhe.

Kista/Stockholm: Urban ICT Arena

- The Urban ICT Arena was set up in large part thanks to the UPSIDE project, but its leadership is not dependent on UPSIDE and will live beyond the end of the UPSIDE project. It will be officially inaugurated in September/October of 2016.
- A form is available for companies wishing to test their solutions. This measure ensures openness and is a start for having outside partners join.
- The triple helix organisations supporting the Urban ICT Arena ensure that the testbed will continue to operate well beyond the end of the UPSIDE project.
- The Urban ICT Arena was one of the topics discussed within the cluster2cluster Stockholm-Montréal exchanges. Montréal is setting up a mirror initiative in Canada and the long-term plan is to enable and facilitate companies using the testbeds in both countries.
- The first mayor meeting between the Mayor of Montréal Denis Coderre and Mayor of Stockholm Karin Wanngård took place on 26 April 2016 and promises to strengthen the smart city relation between the two cities.
- The World Café, Innovation Workshops and TopClass methodologies, as well as the participatory methods inventoried and practiced within UPSIDE will contribute to further workshops and discussions in Kista/Stockholm.

Tartu: Smart City Lab

- Key staff Smart City related competences and experiences increased.
- Increased networking with European and global players in the area of Smart City.
- Increased visibility and role in Estonian Smart City ecosystem.

Eindhoven: Sustainable Living Labs Approach

- The pilot Healthy Living Lab will be implemented involving crucial stakeholders in the Brainport region.
- The pilot will be part of a wider project Cross Care, a European project with testbeds in the Netherlands and Belgium. Through the European network 'Cross Care', stakeholders from the region are invited to join and bring in their innovations. Results will be shared in the regional multi helix. In this way a sustainable living lab construction in the Eindhoven region will be build.
- The project started in June 2016 and thus goes beyond the end of the UPSIDE project.
- The implementation strategy of the Province of North-Brabant continues (at least) until 2020 with a focus on 'lifetech, Health@Home and Live&Health' in which Living Labs play a central role.

Maribor: Smart neighbour-hood Maribor

- The project will be continued after the end of UPSIDE and start in September 2016 at the latest.
- As the project has not started yet and at the moment it is not yet decided which cities will cooperate in the project, specific measures towards mid-/long-term sustainability cannot be listed at the moment.

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- *Joint Actions*

JA 1 World Cafés for User-Driven Participatory Solutions for Smart Cities/Regions

- Based on the approach, results and lessons learned, CyberForum was able to improve the concept SmartQuarter Karlsruhe for the City of Karlsruhe. This concept is part of the superior Integrated City Development Concept Karlsruhe 2020, i.e. the project will have an impact on the further development of Karlsruhe.
- CyberForum prepared a manual for planning and implementing World Cafés and provided it to the UPSIDE partners via Dropbox. Furthermore, lessons learned of the approach have been shared with the other UPSIDE partners and will contribute to improved citizen participation processes in the other UPSIDE regions.
- The City of Karlsruhe will use the approach and the results for
  o applications to appropriate funding programmes not only targeting exclusively the topic Smart City but also related topics (e.g. in the areas energy, mobility, environment) covering aspects of a Smart City
  o an adaptation of the Integrated City Development Concept Karlsruhe 2020 of the Office for Urban Development Karlsruhe. Furthermore, the abstract concept "City District of the Future", derived from the two quarter visions comprising the approach for developing a future vision for city districts as well as general aspects to be considered in different fields of action (e.g. environment, energy, mobility, housing, social life…) will be considered at the construction of new city districts in Karlsruhe
  o an improvement and/or enhancement of future citizen participation processes in the context of urban development.
- The used methodology will be further developed and used by UPSIDE partners, in the Central Europe project URBAN INNO which started in June 2016 (CyberForum, E-zavod, MOM, inno, mentored regions) and, if the proposal is successful, through the Danube Transnational Programme (step 2 proposal of the GENESYS project has been submitted in May 2016).
- CyberForum e.V. (together with FZI Research Center for Information Technologies Karlsruhe) successfully applied for the establishment of a "Digital Innovation Center" for the German Federal State of Baden-Wuerttemberg in Karlsruhe (http://digitalisierungszentrum.com). CyberForum´s efforts resulted in the integration of the leading topic "innovation" as essential part of the centre. CyberForum will UPSIDE results (e.g. the inventory of user-driven participatory methodologies or the established internationalisation strategy) to emphasize the importance of the topic innovation particularly for SMEs.
- With the establishment of the Digital Innovation Centre, the federal state will create a platform for the implementation of actions recommended in the regional Digital Agenda „Baden-Wuerttemberg 2020+" as well as the further and sustainable development of this agenda. In this way, UPSIDE impacts on the continuous and successful implementation and further development of a German regional digital agenda
- Since the main goal of DIZ is to support SMEs (in DIZ context: end users) on their way to digitalize their business, DIZ will use dedicated Open Innovation and participatory methods developed/evaluated in UPSIDE in order to jointly develop end user driven digitalization strategies with companies requesting digitalization support.

JA 2 Sustainable living labs

- The UPSIDE partners plan to continue a comprehensive exchange on Living Labs also beyond UPSIDE.
- At the end of the UPSIDE project a new international project starts, based on the sustainable living labs approach developed in UPSIDE.
- The new project will allow to further implement valorisation, exploration and co-creation, testing and validation.
- Brainport Healthy Living Lab will be developed as a sustainable living lab and will be part of the international sustainable living lab collaboration.

JA 3 Development and Pilot Testing of the Smart City/ Region Assessment and Benchmarking Methodology

- The general benchmarking methodology and related template for compiling smart city profiles for the benchmarking exercise that were developed in the UPSIDE project and tested/piloted by the UPSIDE cities can in the future also be applied elsewhere, in a wide range of other cities.
- In addition to Europe, the methodology can be used in an international context for in-depth comparative perspective for (potentially) partnering clusters.
- The existing profiles of the UPSIDE cities can be used as input for various future analyses as well as for general communication of the position of the UPSIDE cities as smart cities. This is relevant for both future activities of the UPSIDE partners as well as to the local and regional administrations for further development of their smart city strategies.
- The methodology itself can also be further validated and potentially advanced in future projects. It is already planned to apply it in the Smart City lighthouse project Smarten City (involving Tartu) and the INTERREG project URBAN INNO (involving CyberForum, inno, E-Zavod and four mentoring regions)

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JA 4 Innovation workshops

- The "UPSIDE Innovation Workshop" instrument shall be integrated in the "toolbox" for establishing new partnerships and joint projects. Thereby, the instrument will be further developed and used in the future.
- The "Guide to UPSIDE Innovation Workshops" will be useful for all partners and allow a broad application of the instrument.

JA 5 Joint application to collaborative research and innovation funding schemes

- Some of the submitted project proposals have already been positively evaluated and build the basis for a continuation of the collaboration in UPSIDE and further implementation and development of its Pilot Test Beds and Joint Actions.
- UPSIDE partners shared the most important topics for their organisations and regional stakeholders, supporting the screening for relevant funding opportunities and future consortium building.
- Several proposals included further use of the methodologies developed within UPSIDE, like World Café and several other participatory methods.
- The Benchmarking (JA 3) revealed additional possibilities for joined collaboration.

JA 6 TopClass eHealth

- The development of the TopClass pushed the topic of eHealth on the regional agenda and led to the development of a diversity of initiatives that will be implemented also beyond UPSIDE.
- The guide on the methodology of the TopClass will be useful for all partners for a broad application of the instrument and will also be used in the development of classes about other topics.

JA 7 eHealth Regional Mapping and JA 8 Participatory e-Governance solutions and public services

- Crowdsourcing eHealth mapping and information on medical services allows value creation performed by the citizen network (users populate platform content and leverage existing services to a wider online community). This ensures a simple model for sustainability and expansion, as it relies on a peer-to-peer network.
- Measures in place to design and maintain trust within the online community (privacy, proper language, safe content, etc.).
- Measures in place to follow up on future digital public service infrastructures and enabling tech, such as eID.
- User feedback forms for usability and monitoring of platform to ensure satisfaction among users.

JA 9 Maribor cluster set-up

The following sustainability measures are set:
- Continuation with regular communication with cluster stakeholders through update of SCM website, social media, invitation to collaboration in different events, initiatives, project proposals etc. will be ensured by the Municipality of Maribor.
- The Municipality of Maribor adapted a Sustainable Urban Development Strategy in beginning of 2016, official paper, identifying key policies in the smart development areas. A detailed action plan will be further developed in the framework of the URBAN INNO project (co-financed by Central Europe Programme, starting in June 2016).
- Besides cluster members (organizations), Maribor city administration wanted to involve also citizens in the city development. The developed on-line tool 'Let's Improve Maribor' was very well received by citizens; therefore the Municipality will invest in a 2nd upgrade of the tool to expand cooperation with citizens to open discussions on bigger development projects in urban areas.
- Engaging different target groups in urban development will be tested also in the framework of mentioned URBAN INNO project.

JA 10 Mentoring emerging research driven clusters

- UPSIDE partners cooperated with candidate cities/regions/clusters in 3 project proposals (1 Alpine Space, 1 Central Europe and 1 Danube programme). In May 2016, the project URBAN INNO was confirmed for co-financing, therefore sustainability of further development, pilot project testing and capacity building of new clusters will be ensured through this project cooperation. An additional possibility is the project proposal GENESYS – waiting for 2nd step evaluation (results expected in autumn 2016).

JA 11 Study visits to facilitate international collaboration (non-EU countries)

- Collaboration between Stockholm and the City of Montréal will continue within the framework of the C2C meetings as well as within the Urban ICT Arena and potential exchanges there.
- Collaboration between Stockholm and the Ottawa, Canada was also initiated within UPSIDE but will be further investigated after the end of the UPSIDE project.
- CyberForum will continue to coordinate the BRA, increase the partner network and further develop the offered services.

JA 12 Staff Exchange Programme between UPSIDE partners

- Staff exchanges were particularly relevant for building relations and learning from other clusters on a more personal and detailed level.
- Staff exchanges allowed partners to showcase new ideas/products/services and to get feedback on what works for different ICT clusters.
- Staff exchanges facilitated further collaboration on proposals for new projects, which will outlive the UPSIDE project.
- Staff exchanges allowed a better understanding of both partners/regions and this paves the way for future networking and exchanges.

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