

Baltic Sea Region Urban Forum for Smart Cities

Concept paper



2014

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The concept paper is available online:

<http://smartcitylab.eu/buf/>

Executive summary

The concept paper of “Baltic Sea Region Urban Forum for Smart Cities” (BUF) describes the need, aim and model of the new platform for cooperation between Baltic Sea Region cities which will effectively address challenges and realise opportunities for making a green transition towards sustainable societies. The concept has been prepared in the context of the seed money application “Baltic Sea Region Urban Forum for Smart Cities” funded by the EUSBSR Seed Money Facility.

The **objective of BUF** is to form a broad network with participation of cities and towns from throughout the Baltic Sea Region. This will happen by facilitation of dialogue, experience sharing, learning and **joint action on application** of existing and new green technologies and innovations in urban areas. The need for such geographically and action oriented forum stems from the existing challenges of growing urbanization that puts strains on economic, social and environmental sustainability, forcing cities as the backbones of modern societies increasingly to take on a role in finding and applying smarter solutions for urban activities and services. In this, **BUF will play an important future role for enabling urban areas in the Baltic Sea Region to move beyond “pockets of smartness” to becoming genuinely smart.**

Although there are already quite many platforms that provide assistance to cities seeking for smart solutions, there remains a need for an initiative that would guide the cities throughout the process of identifying a need to its successful resolution, not only giving information on good practices. As a response to this, **BUF makes a substantial offer – helping to identify, adapt and multiply good practices to build capacity and exchange knowledge, thus enabling the cities to become truly smart.** Involving several substantial partners (i.e. the Union of the Baltic Cities and Baltic Development Forum), **BUF serves the interests and needs of the Baltic Sea Region cities and provides a systematized and organized platform for discussing modern challenges with those cities in the region that share similar issues as well as with those who offer innovative solutions and practitioners who have practical experience in dealing with specific challenges.**

BUF seeks to break barriers and communicate across various levels to seek, adopt and practice smart and innovative solutions. For this purpose, BUF has developed a structure where dialogue is fostered between **three levels**, starting from identifying and solving practical challenges **on the local city level**, scaling up on the **regional BSR level** and contributing to wider EU priorities in sustainability and innovation on **the third global level.** The primary

point of departure is the city level that encourages collective problem-solving through real value-added, practical and bottom-up processes. This practical level nurtures the two remaining levels, where cities' interests are pursued on a wider scale while scaling up and disseminating good practices.

BUF presents a new approach to the smart city movement by fulfilling several functions – that of a communication platform, marketplace, competence and assistance network, knowledge sharing and mentoring centre – and taking steps towards smartness in a well-grounded process from evaluating city needs and finding innovative solutions for shared challenges to assessing the results and promoting good practices in follow-up activities. Its uniqueness lies in 'holding hands' from the emergence of a problem until finding and implementing the appropriate solution that can be shared with others. Also, BUF is a structured and focused network which enables to improve the quality of services while decreasing their overall cost. Thus, in upholding the network, the participating cities will contribute to a platform owned by themselves and meant for themselves.

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Introduction

With more than a half of the world's and two-thirds of the EU population already residing in cities, it can be reasoned that urban growth is an irreversible trend. And while it tends to be the case that multi-million megacities take the limelight with their opportunities and challenges, it is expected that most of the future urban growth will actually occur in smaller towns and cities. Having less capabilities and resources to react to these changes, however, these smaller cities might be ill-prepared for what lies ahead.

In light of this, it becomes crucial for those cities to reinvent themselves by turning their smallness into smartness – tackling public issues through innovative and sustainable solutions proceeding from multi-stakeholder partnerships that take advantage of a feature unique to smaller cities – flexibility. Through flexible and smart approaches, cities can be managed more effectively, problems can be solved in a cost-effective manner and economic outlooks can be raised, thus harnessing the growth opportunities and potential that cities really have. Thus, smaller cities have great future potential – if only they are smart enough. In this, the Baltic Sea

Region Urban Forum for Smart Cities (BUF) lends a helping hand – by fostering future viability and prosperity and collectively finding out the factors of success that contribute to the well-being of citizens, cities can learn to become truly smart.

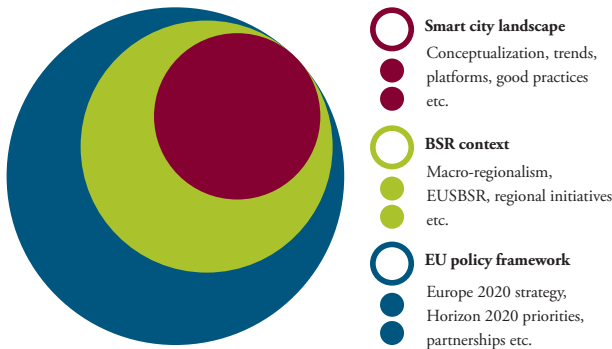
Placing BUF within a wider context

By means of an introduction, three major points of departure are presented that provide an understanding of where BUF falls in the wider context. These three dimensions from the most specific to the broadest point of departure – the smart city landscape, the Baltic Sea Region (BSR) context and the EU policy framework – correspond to BUF’s action plan that is to be introduced in this concept paper and thus serve as a justification of the platform’s rationale.

I Smart city landscape

Modern cities are no longer passive settlements, but increasingly complex ecosystems that comprise infinite numbers of interconnected actors. Along with the benefits that proceed from concentrating these interconnections in urban areas, there are also a variety of contemporary challenges related to population growth and the accompanying strains on the economic, social and environmental sustainability of cities that cannot be solved by the traditional measure of redistributing wealth any more.

As a response to this trend, cities as the backbones of modern societies are increasingly taking on a role in introducing and advancing new technologies, essentially becoming innovation centres where smart solutions for service production are tested. After all, the economic crisis in our societies, combined with trends such as ageing populations and its consequences create huge challenges for local authorities to organize the needed services with less resources – in order



to achieve more with less while maintaining the quality. This requires innovations in the way services are organized and produced. New innovations make it also possible to provide better services to the population in a cost-effective way, thus linking sustainability closely with economics. These innovations are first and foremost fuelled by the rapid advancement of ICT solutions that are employed to the benefit of streamlining and enhancing urban activities and services, resulting in highly innovative ecosystems that boost sustainable urban performance.

However, ICT in itself cannot make a change – at the end of the day, it is the people who carry the smart city mentality and contribute to the overall liveability. Thus, human capital and citizen involvement becomes crucial, adding one extra dimension to the triple helix model, now embracing four helices of university, industry, government and civic involvement. It is the interplay of these dimensions that determines whether a city can become truly smart. A crucial driver of citizen involvement is thereby data availability – cities that provide open access to information engage its citizens to think, decide and contribute on their own, thus building up a truly smart city from bottom up. Proceeding from this, urban settings require user-driven approaches and co-creation between various stakeholders instead of technology-driven approaches related to digital/intelligent cities.

A deep appreciation of the smart city movement therefore does not give priority to either material or intellectual aspects – it is the successful mixing of the two, from energy, pollution, transport and waste management to human, intellectual and organisational capital that makes a city truly smart. Lending a definition by

Caragliu et al.¹, a city can consider itself smart only when “investments in human and social capital and traditional (transport) and modern (ICT) communication infrastructure fuel sustainable economic growth and a high quality of life, with a wise management of natural resources, through participatory governance.” Thereby, Neirrotti et al.,² foresee the following classification of smart city domains:

- Natural resources and energy – smart grids, public lighting, green/renewable energies, waste/water management, food and agriculture;
- Transport and mobility – city logistics, info-mobility, people mobility;
- Buildings – facility management, building services, housing quality;
- Living – entertainment, hospitality, pollution control, public safety, healthcare, welfare and social inclusion, culture, public spaces management;
- Government – e-government, e-democracy, procurement, transparency;
- Economy and people – innovation and entrepreneurship, cultural heritage management, digital education, human capital management.

1 Caragliu, A. and Bo, C. D. (2012) Smartness and European urban performance: assessing the local impacts of smart urban attributes. – *Innovation – the European Journal of Social Science Research*, Vol. 25, No. 2.

2 Neirrotti, P., Marco, A., Cagliano, A. C., Mangano, G. and Scorrano, F. (2014) Current trends in Smart City initiatives: Some stylised facts. – *Cities*, No. 38.

Even more importantly for the BUF methodology, however, is that these smart city domains can be grouped into six ‘smart factors’. Namely, in 2007-2008, a project led by the Vienna University of Technology resulted in the final report ‘Smart Cities: Ranking of European

medium-sized cities³, which introduced the following typology:

3 Smart Cities: Ranking of European medium-sized cities. – Vienna UT, Centre of Regional Science. Available at [http://www.smart-cities.eu/download/smart_cities_final_report.pdf].

<p>Smart Economy (Competitiveness)</p> <hr/> <ul style="list-style-type: none"> • Innovative spirit • Entrepreneurship • Economic image and trademarks • Productivity • Flexibility of labour market • International embeddedness • Ability to transform 	<p>Smart People (Social and Human Capital)</p> <hr/> <ul style="list-style-type: none"> • Level of qualification • Affinity to life-long learning • Social and ethnic plurality • Flexibility • Cosmopolitanism/open-mindedness • Participation in public life
<p>Smart Governance (Participation)</p> <hr/> <ul style="list-style-type: none"> • Participation in decision-making • Public and social services • Transparent governance • Political strategies and perspectives 	<p>Smart Mobility (Transport and ICT)</p> <hr/> <ul style="list-style-type: none"> • Local accessibility • (Inter-)national accessibility • Availability of ICT-infrastructure • Sustainable, innovative and safe transport systems
<p>Smart Environment (Natural resources)</p> <hr/> <ul style="list-style-type: none"> • Attractiveness of natural conditions • Pollution • Environmental protection • Sustainable resource management 	<p>Smart Living (Quality of life)</p> <hr/> <ul style="list-style-type: none"> • Cultural facilities • Health conditions • Individual safety • Housing quality • Education facilities • Touristic attractiveness • Social cohesion

Indeed, cities that have implemented innovative solutions in the mentioned areas are growing in number and scope. For example, the ‘Smart Metropolitan Areas Realised Through Innovation & People’ (SMARTiP) project includes Manchester, Ghent, Cologne, Bologna and Oulu as urban testing sites for encouraging the co-production of citizen-centric Internet-enabled services. Cologne in Germany is thereby also developing e-participation into a service provided as standard by the local authority for its citizens. Oulu in Finland, having two science parks nearby and hosting many high-tech companies, is one of the key implementers of the national innovation strategy which aims at developing new interaction environments, networking with various stakeholders etc. As another example, Copenhagen-Malmö in Denmark and Sweden has grown into a region and now boasts an official guide to urban development, pioneering in the sustainable use of resources. These cases, among many others, have proven successful in adopting smarter development models and are also at the forefront of engaging users (citizens) in the innovation process.

But in order to enjoy the fruits of a truly smart city, it first has to be mastered how to mobilize resources, coordinate various stakeholders, harmonize policies and embrace cutting-edge solutions. Hereby, several rather recently emerged platforms provide assistance to cities. For example, Citymart.com seeks to build a global marketplace for urban innovations so that cities could become real-life laboratories. As an example of an industry coalition, the Smart Cities Council seeks to lower barriers by supporting, educating and accelerating smart cities.

Moving from a global to the European level, the Commission-driven EU Smart Cities initiative aims to develop formalized information on technology solutions, linked with a transparent database. Also, a group of European cities have gathered under the EURO CITIES initiative with the aim of developing contacts with city colleagues, exchanging experience and ideas, forming common projects and innovative working methods as well as strengthening the role of cities in EU decision-making.

However, proceeding from the current smart city landscape, it can be concluded that there remains a need for a more focused initiative that would guide the cities throughout the process of identifying a need to its successful resolution, not only giving information on or access to good practices as is the main function of existing wide level platforms. As a response to this, BUF seeks to foster cooperation among cities so to shape a common urban platform for smart development, testing and implementation.

II Baltic Sea Region context

With the realization that issues are better solved in smaller, more coherent settings, the recent trend towards macro-regional cooperation in the EU has seen the rise of the Baltic Sea Region as a model where new ideas can be tested and implemented more effectively owing to the circumstance that the countries in the region share many common resources and demonstrate considerable interdependence. As the countries that make up the BSR face several common challenges, the potential that lies in mobilizing resources and coordinating policies has also been understood.

Hand in hand with this, the EU Strategy for the Baltic Sea Region has been devised for saving the Sea, connecting the Region and increasing prosperity – in essence a litmus test for a new mode of governance. As cities around the BSR also concentrate the largest proportion of highly educated people, they are without doubt at the forefront of implementing the regional strategy that aims to boost innovativeness. And indeed, many cities are already adopting a number of initiatives to accelerate the transition towards more sustainable societies. As a result, the knowledge pool of good practices and solutions is growing with cities playing an increasingly important role in knowledge accumulation and dissemination. This setting, in turn, would benefit from platforms and forums for information sharing, learning and dialogue – including on context adaptation for the transfer of known and proven innovations and solutions in specific cities with their particular sets of challenges and opportunities.

Indeed, the BSR is already home to many versatile initiatives that seek to promote innovation and sustainability. To start with, the Council of the Baltic Sea States (CBSS) with its Unit Baltic 21 is leading the Horizontal Action Sustainable Development in the EUSBSR Action Plan that seeks to move towards a low-carbon and climate-resilient economy in the BSR by promoting sustainable growth, climate-resilient investments and the creation of new jobs. The BaltAdapt Strategy promotes an opportunity for enterprises to develop innovative adaptation measures to be implemented within and beyond the region in cooperation with policy-makers and the scientific community. As another example, the Baltic Sea States Subregional Cooperation (BSSSC) Work Plan for 2013-2014 foresees promoting the development and use of renewable energy sources, supporting and contributing to the implementation of the HELCOM Baltic Sea Action Plan and continuing cooperation with Baltex and Baltic 21. The Nordic Council of Ministers has also taken on the role of promoting sustainable development within the region. All of these initiatives imply that sustainability-related issues are in the limelight and increasingly addressed.

The problem is, however, that cities, which are responsible for the provision of services, whether they are produced by themselves, the private sector or third sector producers, have no organized way of discussing their modern challenges with those who are developing innovative solutions. A threat to this lack of communication and mutual action is that smartness might be used as a modern buzzword promising economic, social etc. gains, but the vague idea of what it means to be smart hinders a deeper

appreciation of the mentality. Also, a study on smart city networks⁴ stresses that in itself, the smart city concept focuses on the local urban setting and does not account for global urban interdependencies. The question thereby arises – if a city is not systematically linked with other centres of production and consumption, how can it truly become a learning territory that holds high capacity for innovation? It is thus felt that a more ambitious, open and BSR-wide forum is needed that would tackle the modern urban challenges that the cities of the region increasingly face in a bottom-up process.

As a response to this, BUF makes a substantial offer – helping to identify, adapt and multiply good practices to build capacity and exchange knowledge, thus enabling the cities to become truly smart. After all, smart cities are not necessarily the cities that spend more on ICT solutions and launch more initiatives – a true indicator of city performance is its practical and smart mentality. Hereby, BUF offers an alternative by connecting BSR cities by information flows that undermine traditional borders, but at the same time underline urban interdependencies and benefit the cities as participants of that network, and thus as members of the region.

BUF especially contributes to realizing the aims of the Horizontal Action Sustainable Development under the EUSBSR Action Plan, and in particular to the aims related to (i) the establishment of networks and dialogue to improve the knowledge bases, methods and strategies for making a green transition to sustainable societies, and (ii) consolidation of findings and

dissemination of good examples and practices to a larger audience with a view to facilitating follow-up activities and policy discussions and policy alignment. Also, the project will support the CBSS-led initiative BSR Platform on Energy and Resource Efficiency and to the implementation of the EUSBSR flagship project ‘Create a network of sustainable cities and villages’.

The regional emphasis of BUF is a response to the understanding that successful urban performance cannot be replicated in a generalized manner – context-specific factors and local peculiarities determine the life quality to a large part. Similarly, a recent study on the current trends in smart city initiatives⁵ revealed that the evolution patterns of a smart city depend on its local context factors. In particular, it is asserted that the diffusion of smart city initiatives in countries with different needs and contextual conditions makes it difficult to identify shared definitions and common current trends at a wider scale. In a global sense, it would only be possible to single out the practices that are the absolute pre-conditions for an economic ecosystem to grow. The regional level, however, enables to take a step further and account for a variety of local qualities that the countries in the region share owing to cultural, environmental etc. ties. **That is exactly why BUF concentrates on a shared region – a region with similar values and features equals more transferable practices and thus cost-effectiveness.**

4 Tranos, E. and Gertner, D. (2012) Smart networked cities? – Innovation – The European Journal of Social Science Research, Vol. 25, No. 2.

5 Neirotti, P., Marco, A., Cagliano, A. C., Mangano, G. and Scorrano, F. (2014) Current trends in Smart City initiatives: Some stylised facts. – Cities, No. 38.

III EU policy context

The recognition that competitiveness and sustainability are largely driven by innovation in products and services has also made it high on the wider EU agenda. This has been especially the case after the smart city concept was included in the mechanisms of EU research funding (e.g. the Seventh Framework Programme for Research and Technological Development). The reasons for this were apparent – with almost three quarters of Europeans living in cities, consuming 70% of EU's energy and traffic congestions costing EU 1% of its GDP annually⁶, the potential of smart technologies was turned for as a major engine for tackling many urban challenges.

Most notably, the Europe 2020 framework has been put forward to foster smart, inclusive and sustainable growth in Europe, thereby tackling major societal challenges like climate change and energy efficiency. The key priorities directly addressing sustainable growth under the strategy include protecting the environment, introducing new green technologies, harnessing EU-scale networks and improving ways of production (through improved business environments) and citizens' ways of consuming (including by enabling well-informed choices) in light of the understanding that cities and towns in cooperation with citizens and the private sector are key in identifying and demonstrating green technologies, innovations and solutions. Also,

6 Commission launches innovation partnership for Smart Cities and Communities. – Brussels, 10 July 2012. Available at [http://europa.eu/rapid/press-release_IP-12-760_en.htm].

the Smart Cities and Communities European Innovation Partnership was set up in 2012.

The Horizon 2020 work programme for 2014-2015⁷ similarly acknowledges that new technologies, knowledge and innovations can turn contemporary challenges into opportunities. Thereby, growth potential is seen to be proceeding from many new sources unutilized before, including smart cities. Horizon 2020 seeks to capitalize on this huge potential and, by addressing societal challenges, provides a strong connection with society. Based on this, the programme will, among others, concentrate its efforts to supporting innovation, developing new knowledge and skills, boosting the industrial deployment of enabling technologies, closing the research and innovation divide, reinforcing partnerships with Member States and focusing on the parts of the societal challenges with high potential for sustainable competitiveness, innovation and growth.

From the EU policy perspective, it is stressed that the aim should no longer be convergence – instead, a recent report⁸ advises that place-based policies should rather be aimed at locally selected goals within a set of higher priorities by taking into account place-specific characteristics. Linked to this, the Barca report⁹ addresses the

7 Horizon 2020 Work Programme for 2014-2015. Available at [http://ec.europa.eu/research/participants/portal/doc/call/h2020/common/1597683-part_01_introduction_v1.1_en.pdf].

8 Caragliu, A. and Bo, C. D. (2012) Smartness and European urban performance: assessing the local impacts of smart urban attributes. – *Innovation – the European Journal of Social Science Research*, Vol. 25, No. 2.

9 Barca, F. (2009) An agenda for a reformed cohesion policy. – Available at [http://www.dps.tesoro.it/documentazione/comunicati/2010/report_barca_v0306.pdf].

need to select “in each region a limited number of sectors in which innovation can most readily occur and a knowledge base built up. [This] approach [is] defined in the current policy debate as ‘smart specialization’.” **In response to this, BUF fosters a regional network in which the participating cities themselves define the topics, essentially serving as the areas that should and can be improved collectively.**

Also, the mentioned report asserts that the success of a region is largely dependent on its local institutions that, again, rely upon the local characteristics and are therefore path dependent. Thus, place-based policies should be enacted, within a set of general guidelines and priorities, by local actors with specific knowledge of the peculiarities of the region. Similarly, a study on smart networked cities¹⁰ argues that the smart city policy agenda should be informed by and address transnational urban networks as this increases the efficiency of the respective policies. The underlying logic is that cities do not exist in a vacuum, but on the contrary – urban development is heavily based on urban interdependencies found on wider levels, especially as distance and borders are no longer a hindering factor. **In this, BUF serves as a platform concentrating know-how from across the region so that a comprehensive approach could be shaped to boost urban performance, bearing in mind the regional specifics.**

10 Tranos, E. and Gertner, D. (2012) Smart networked cities? – Innovation – The European Journal of Social Science Research, Vol. 25, No. 2.

Conclusion: Placing BUF within a wider context

By means of a conclusion to BUF’s points of departure, one could ask how the new platform fits into the already existing smart city landscape in the regional and EU-level context. As part of the Commission communication on smart cities and sustainability¹¹ as well as a background paper on smart cities¹², the following tight spots in the current situation are identified along with BUF’s response to them:

11 Smart Cities & Sustainability. – Commission communication. Available at [<http://ec.europa.eu/dgs/connect/en/content/smart-cities>].

12 Smart Cities: Background paper (2013) – Department for Business Innovation and Skills. Available at [https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/246019/bis-13-1209-smart-cities-background-paper-digital.pdf].

Current smart city challenges

BUF's response

Many fragmented initiatives with sometimes insufficiently clear goals, other than deployment of infrastructure, and too little attention to commercial viability and, thus, eventual scale-up.	Coordinating various initiatives and their efforts into a common platform of exchanging knowledge, ideas and experience with clear and practical goals set and solved by the stakeholders themselves.
Lack of cross-sectoral business models and attention to synergies e.g. through joint uses of infrastructures (physical and digital).	Breaking barriers and promoting effective synergies between industry, university, government and civic involvement for innovative, sustainable and cost-effective solutions.
Fear of lock-in to vendors/technologies as well as absence of well-tested template solutions put cities off investing.	Fostering transferable practices based on similar regional challenges, finding suitable solutions for each practical need collectively.
Lack of metrics/performance indicators for smart city projects to assess environmental and other benefits, and return on investment.	Using a common methodology for benchmarking as well as using both expert and peer reviews for finding out what works and what does not.
Lack of interoperability of solutions, i.e. missing adaptability to new user requirements and technological change.	Revealing region-specific smart solutions that can be transferred from one context to another thanks to involving the respective experts with practical experience.
Growing energy requirements of ICT (linked to proliferation of data and data storage requirements).	Promoting overall effectiveness and efficiency by devising a transferable smart solution once and coordinating the related efforts.
Insufficient attention to citizen needs and inclusiveness.	Bottom-up process concentrating on the needs of cities and their citizens.
Replicating ideas and claiming smartness as a buzzword, threat of going overboard with scrutinizing citizens through real-time information.	Fostering a deeper understanding of the essence of being smart, bearing in mind that more ICT solutions does not always equal to more smartness – the aim is to improve the life quality of citizens through practical and sustainable solutions.
Leaving aside the frontrunners, many cities may not have much idea about how to implement smart solutions.	Assisting the cities in the whole process of coming forward with a problem and finding the suitable solutions collectively.

There is no reliable information available on the costs and potential benefits from smart solutions, or the difficulties associated with implementation.

Encouraging open and honest exchanges of information on previous success stories, the experienced hardships, setbacks and possible improvements.

The complexity of networks makes it extremely difficult for any one organization to take a lead and manage resources.

The network will be owned by each and every participating city and related umbrella organization so the stakeholders themselves will collectively manage its activities.

The inability of cities to gain first mover advantage and thus develop reference material for future activities.

Gathering cities with similar challenges and bringing them together with suitable experts so to reduce the cost of reinventing for future purposes.

The set-up of BUF

BUF is a joint initiative coordinated by the Union of Baltic Cities, the Baltic Development Forum, the City of Turku and Tartu Smart City Lab that proceeds from a deep appreciation of BSR cities as highly potential engines for making a green transition towards sustainable societies. Instead of being exclusively technology-driven, the project serves the wider interests and needs of the BSR cities and their citizens, providing a meeting point and a platform for stakeholders from different sectors across the region. By fostering access to knowledge, connections among each other to share experience and facilitating relationships with the private sector, BUF will contribute to the cities' capacity-building in embracing the smart city state of mind. Also, BUF will foster the cities' sense of ownership of and commitment in the network through active participation. In this, the forum will become a regional beacon for showcasing green and smart urban innovative solutions and will in that effect attract attention from the media as well as public and private decision-makers from around the Baltic Sea and beyond.

Findings of 'Smart towns and cities in BSR'

Building the BUF concept has proceeded from a thorough research that resulted in the overview 'Smart towns and cities in BSR', focusing on the current status of the smart city activities in the BSR. From studying different smart city policies, concepts and models, **it appeared that the most critical aspect in many cities is the lack of organized cooperation.** Many cities are emphasizing the importance of cooperating across regions and with enterprises who are partners to them, but there is not specific cooperation models defined between the cities themselves.

Most smart city models are driven by the need to provide a better life environment for the citizens. The focus is thus placed on particular problems, whereas cities are not used to learning from other cities' experience or cooperating with them systematically. **To improve the learning process and knowledge sharing, it is important to pay attention to substantive cooperation between smart cities.** At the moment, the

lack of organized cooperation between cities can be mainly attributed to insufficient funding models and to the lack of resources in projects. After all, in today's complicated economic circumstances, **all project partners are looking for projects which will most likely provide real economic benefits to the partners.** Therefore, building different networks between cities seems a worthwhile contribution only if it creates visible economic benefits in the near future, whereas it is important that the value of the benefit can be measured. For that reason, any new initiative has to be relatively compact, with clear and measurable deliverables.

In relation to BUF, there are quite clear expectations: it will be focused on specific topics and create clear and measurable deliverables. BUF will be useful for, and serve the cities in the region, meaning that the needs of the cities will be the starting point when launching the urban forum and the ambition is to make BUF demand-driven as opposed to technology-driven. As the region is first and foremost characterized by small and mid-sized cities, this should also define the scope of the urban forum. Also, it is foreseen that **BUF will build the capacity of the BSR cities in applying the smart city concept by providing access to knowledge, connect them with each other in order to share experiences, and facilitate relationships with the private sector.** The urban forum has the potential to bring benefits on both the city level as well as the regional level. Cities will gain access to knowledge and support in improving their performance. This could be achieved, for example, by setting an objective for BUF to move the BSR cities up the ranking in smart/sustainable indexes. The urban forum

could also help sell the BSR as a smart region. There are already many good initiatives in the region, but there is a need to market them more effectively – both globally and towards the EU. This type of branding will also help to promote the existence of a regional market in the BSR and increase international competitiveness.

It is also acknowledged that the smart city concept requires integrated solutions and decision-making. In order to reach the smart state, there is a need to break silos and communicate across administrative boundaries – both within cities and on the regional level. The possible fields that could thereby benefit from smarter solutions include health and social affairs (e.g. the ageing population), smart solutions for energy (e.g. renewable energy and energy efficiency in housing and transportation), smart solutions for mobility/transportation (both on the local and the regional level), Baltic Sea pollution and water quality, efficient use of natural resources and social capital.

The suggested activities through which BUF will meet its objectives include:

- Activities related to communications, networking and capacity-building:
 - Website
 - Working groups
 - Joint project development
 - Mentoring systems
 - Facilitating cooperation between smaller and larger cities
- Creating dialogue with individual cities and citizens in relation to their needs in city development and technology.
- Testing existing methodologies for smart city indexes in the region. Assessing the cities in

order to provide them with a basis for developing their own action plans.

- Developing a smart city marketplace where actors from private and public sector can meet.
- Assisting with the scaling up of pilot projects to larger scale implementation. This includes looking at how solutions that were developed locally can be generalized in order to apply them in a larger regional market.
- Implementing pilot projects.
- Developing policy recommendations.

Who are already involved in BUF?

Union of the Baltic Cities (UBC) is a voluntary, proactive organization based on annual fee-paying member cities, mobilizing the shared potential of over 100 member cities for democratic, economic, social, cultural and environmentally sustainable development of the BSR. It is the largest, best organized and most influential organization of local authorities in the BSR, in which much of the work is done in its 13 thematic Commissions. UBC has committed to sustainable development in its strategy and as a sign of this, the organization has adopted and implemented the UBC Sustainability Action Programme 2010-2015. The UBC Good Practices Database was also developed to answer to the need of local authorities to find practical examples complemented with suitable tools. The practices cover sustainable urban development, including all topics from transport to health and from the social aspect to economic instruments.

Baltic Development Forum (BDF) is an independent non-profit networking organization with members from large companies, major cities, institutional investors and business associations in the BSR. BDF works with a range of partners, including businesses, governments, regional organizations as well as research and media institutions. BDF is involved in city cooperation through e.g. the Baltic Metropolises network and in a number of energy and sustainability projects – including and EU-funded BSR project on energy efficiency and renewable energy together with partners from Kaliningrad, Finland, Sweden and Denmark. BDF reaches

out to more than 7,000 decision-makers from all of the region and beyond. Its mission is to promote the BSR as an integrated, prosperous and internationally competitive growth region.

Tartu Smart City Lab is a development platform for companies, R&D institutions and cities that seeks to develop and implement new, innovative and competitive smart solutions for cities. Within BUF, Tartu Smart City Lab represents the whole network of the Union of the Baltic Cities and ensures the cities' participation in the work. Smart City Lab is supporting companies in the fast development, testing and production of new tools and services that are assisting cities in becoming more efficient, transparent and energy efficient.

City of Turku is centrally located at the crossroads on the Baltic Sea, being a gateway to Scandinavia and the world. It has systematically promoted cooperation in the BSR through twin city relations, multilateral networks and practical projects. Turku is committed to the EU Strategy for the Baltic Sea Region and is involved in several of its initiatives (PA Tourism, PA Nutrients, PA Ship and HA Neighbours). For reinforcing its position as a sustainable city, Turku aims to decrease greenhouse gas emissions, focuses on developing areas which are under transformation, concentrates the increasing density of the city's urban structure while strengthening the attractiveness of sustainable housing and urban life and actively develops regional transport and energy solutions. In the Urban Infrastructure Initiative, Turku is the first pilot city in a global programme for advancing sustainable development, serving as a model city for others.

Besides already existing partners in BUF initiative and linkages to above mentioned networks the aim of the BUF will be **to include further BSR towns and cities** looking for smart solutions and hands-on guidance from each other and from experts from different sectors in order to respond to the current challenges BSR cities face.

Moreover, BUF will also work with, and benefit from other existing networks such as the BSR Platform on Energy and Resource Efficiency (EFFECT) led by the CBSS. Synergies are also sought with networks and projects like BaltMet (the Baltic Metropolises Network) aiming to promote innovativeness and competitiveness in the BSR by engaging cities as well as academics and business partners to develop and deliver better e-services to citizens and businesses in the North Sea; EUROCITIES, the network of major European cities which brings together the local governments of more than 140 large cities in over 30 European countries; and European Smart Cities, which supports medium-sized cities and their perspectives for development – as well as with regional, national and EU-funded programmes, projects and initiatives on smart solutions. As a number of cities and towns have already managed to implement and benefit from different kinds of smart urban solutions, these pioneers will have a key role to play by showcasing their solutions and supporting their transfer and the resulting multiplication of solutions in other urban areas in the BSR.

Baltic Sea Region Urban Forum for Smart Cities



How does BUF work?

In order to reach the smart mentality and reality, BUF seeks to break barriers and communicate across various levels to identify, adopt and practice smart and innovative solutions. For this purpose, **dialogue is established between (i) the city level, (ii) the regional BSR level, and (iii) the global/European level.**

1. The city level

The city level of the platform stems from the understanding that BUF should encourage real value-added, practical and bottom-up processes based on the actual needs of cities and citizens. **The main objective is to identify, develop and deploy replicable, balanced and integrated solutions regarding alternative energies, public transport, efficient logistics, urban planning and digital infrastructures, thereby reinforcing partnerships between citizens, city administrations, industries and research.** By reinforcing city-to-city communication and

collaboration, BUF seeks to identify and utilize the cities' comparative advantages and at the same time exchange know-how for further improvement.

The underlying logic is that the city level gathers specific needs and creates dialogue through which suitable solutions are found and then communicated to the wider regional level. Whether it will be a single city searching for workable solutions or a group of towns tackling similar problems and seeking smart ways to organize the local life, problems can be jointly solved in the context of BUF. Participating in BUF should enable a city to come out of this city level process with a new workable idea and solution to some particular challenge it is facing (e.g. street lighting, street cleaning, public space planning etc.). For this purpose, **a five-step process will be introduced**, keeping in mind that BUF stands for an integrative approach that coordinates efforts and combines best practices; thus, each city searching for smart solutions to particular challenges will undergo a similar process so that a holistic model for sustainability could be shaped:

- **Starting phase** – Creating and evaluating city profiles with the help of external evaluators in order to identify the strengths and weaknesses as a smart city, mapping the overall situation, finding mutually attractive topics and common issues from which to proceed. A common methodology (e.g. the one created by the PLEEC project¹³) will be used for benchmarking.

13 Available at [<http://www.smart-cities.eu/model.html>].

- **Intervention and consultancy** – Encouraging engagement, gathering the cities with similar challenges, collectively finding the potential smart solutions, technologies and business models through engaging businesses, researchers, experts and involving practitioners with hands-on experience from the cities.
- **Action** – Creating practical added value by conducting joint procurements and collectively assessing the implementation. For rooting this stage, 3 pilots will be launched during the development and testing of the BUF concept in 2014-2016 to showcase the process and its benefits and to form the overall BUF platform, including its organization and business model for the future.
- **Evaluation** – Assessing one another's results, using experts and peer reviews to ensure a wider usage of the solutions and help promote the idea, encouraging an honest exchange of experience and information on what works and what does not, thus resulting in an atmosphere of open feedback.
- **Follow-up and promotion** – Further promotion of what BUF stands for and disseminating the results and good practices e.g. in Baltic Sea Region-related events, thereby encouraging the release of public reusable data. This is the stage which also feeds the BSR and global level of BUF.

2.

The Baltic Sea Region level

On the BSR level, BUF proceeds from embracing regional priorities regarding green and sustainable growth and from the recognition that there are already a wealth of organizations and platforms existing within the regional setting, thus making it crucial to avoid proliferation and rather coordinate and harmonize efforts systematically. As such, BUF will identify the common regional issues that will engage the BSR cities in smart solution-seeking and thus increase their overall capacity and competitiveness by fulfilling several roles:

- **Communication platform** – BUF will encourage its participants to come forward and communicate their needs and interests in relation to the challenges that the cities face. The platform will serve as a systematic tool for bringing together cities and countries that share a common issue with existing knowledge, experience and innovations, thereby creating dialogue on consensus-based or ad hoc topics related to both hard (energy, lighting, transport, healthcare, waste etc.) as well as soft domains (welfare, social inclusion, education, culture, economy, e-government).
- **Marketplace** – BUF will create actual added value by involving various stakeholders (cities, experts, researchers, businesses, citizen groups) in active dialogue and solution-providing through a virtual platform similar to the Citymart.com ideology, but even more focused on certain topics and geography. Once a solution has been agreed upon

and implemented, the cost of reinventing will decrease considerably for the next time a city finds itself in a similar tight spot.

- **Competence and assistance network** – By including various stakeholders, BUF will enable its members to fill in their information and competence gaps and transfer the identified best practices from one setting to another, thereby promoting respective research for possible generalizations and applications within and beyond the region.
- **Knowledge sharing and mentoring centre** – BUF seeks to encourage honest and open information exchange, sharing practical experience on both what has and what has not worked effectively. In order for the smart solutions to truly take root and succeed in the region, the cities will be able to consult with experts previously involved in similar problem settings. The knowledge-sharing is organized in both virtual online formats and in the form of events (forums, fairs, workshops), bringing together the stakeholders.

3.

The European Union and global level

One the widest level, BUF aims to contribute to moving closer to EU policy objectives and fosters a deeper understanding of the smart city movement, connecting and networking with both global and EU level stakeholders and initiatives for the purpose of both extracting knowledge and experience from other contexts as well as promoting BUF's own interests and disseminating the success stories on behalf of its participants. The experience gathered from participating cities and expert knowledge from already implemented projects allows BUF to present the BSR as one of the most innovative regions in the EU and the world, serving as a model for other regions. In order to do so, the innovation potential of the cities has to be mapped and benchmarked first so to identify their strengths and weaknesses. This enables to go with the flows of European and global competition more effectively and to play a more significant role on the wider level. Also, interconnectedness with the wider EU level ensures that the local practices and innovations comply with wider strategic aims. As such, BUF will also contribute to the successful participation of BSR countries' in various EU-level programmes and partnerships addressing sustainability and innovation.

The BUF business model and organization

The business model and the organization will be developed in detail during the pilot project in 2014-2016. The key principles are the following:

- **The organization is owned by the stakeholders** or by their umbrella organizations (like the Union of the Baltic Cities, Baltic Development Forum etc.).
- **Cooperation with stakeholders must be transparent** – all supporters and cooperation partners are treated equally and the cooperation principles are public.
- **The organization and the business model must be sustainable** – the main income of the organization is earned from the services and cooperation projects with the interested stakeholders.
- **Participating cities and other organizations must have a clear incentive to participate and benefit from the process and projects** – the money spent on consultancy, joint procurement and other activities will enable the cities to significantly cut down on the expenses related to providing services in the future.
- **The use of EU funds is welcome** (especially during the pilot phase), but it should be focused towards developing innovative solutions, not subsidizing the organization's running costs.

Why is BUF unique?

On the whole, **BUF presents a new approach to the smart city movement by placing a worldwide trend into a regional context.** This enables to solve problems collectively in urban testing fields in countries that share common climatic, environmental, cultural etc. peculiarities.

To give an example, street clearing in various climate conditions from snow and extreme cold to extreme heat is an issue that all the BSR cities have to tackle one way or the other. As a shared problem in the region, it therefore makes sense to communicate on the best available practices and mutually suitable solutions concerning e.g. the respective cutting-edge technology, possible environmental effects, smart procurement, management as well as quality monitoring of services. In turning these common issues into common goals and actions, BUF lends a helping hand by providing a structured, focused and systematized network which enables to improve the quality of services while decreasing their overall cost. By the same token, the participating cities could find solutions for other practical issues by e.g. making traffic run smoother or reducing strains on evening peak energy use. Thus, in upholding the network, **the participating cities will contribute to a platform owned by themselves and meant for themselves**, whereas the related costs will be significantly outweighed by the resulting cost-effectiveness that the cities will be able to achieve in their service-providing.

As such, BUF shares similarities with, but **differs essentially from other consulting organizations and platforms.** Namely, as BUF functions through common problems, it benefits many, not just one individual contracting

entity for which a solution is devised while bearing in mind profit-maximization. For commercial reasons, private sector consulting would hereby refrain from sharing the practices that have proven successful along with the ones that have not, whereas BUF encourages to take a step further, learn from the experience of others – be it positive or negative – and figure out the way to innovative solutions collectively, not providing context-specific and ready-made answers which hinder a deeper understanding of what it means to be smart. Moreover, other platforms might promote the exchange of knowledge and experience, but nevertheless lack a feature unique to BUF – ‘holding hands’ from the emergence of a problem until finding and implementing the appropriate solution that can be shared with others. **The aim is thus to collectively identify and solve problems, making BUF a network that does not aim for profit, but smart solutions in a self-sustainable system.** Thereby, it has to be borne in mind that smartness is not just a lofty goal – it is necessary in today’s urbanizing world so to retain sustainability.

Taking everything into account, the relevance of BUF in fostering the smart city state of mind within the BSR thus includes the following aspects:

- **Benchmarking** – assessing each other’s performance and benchmarking the smart city profiles with other centres of excellence.
- **Branding** – selling the BSR as a genuinely smart region, thereby promoting the existence of a regional market and boosting international competitiveness.
- **Civic involvement** – embracing citizens as the key players in improving the provision

of services and thus placing their needs at the forefront.

- **Comprehensiveness** – bringing together actors from more than a hundred cities in ten countries (including policy makers, public and private green economy and innovation practitioners and experts) and coordinating the efforts of many existing initiatives, thus creating synergies.
- **Continuity** – facilitating continuous bottom-up approaches and processes, not exhausting resources on one-time events.
- **Encouragement** – reassuring the cities in the process of defining their urban challenges, coming forward and finding like-minded cities in devising the suitable innovative solutions.
- **Engagement** – motivating cities to support the network as a platform of cooperation with both the region as well as the EU, engaging the citizens in user-driven innovation by using the latest approaches in social media and incentivizing enterprises to capitalize their creativity.
- **Hands-on experience** – sharing the best practices and putting together experts with real experience on certain issues.
- **Focusing** – revealing region-specific smart solutions that can be transferred from one setting to another owing to cultural, environmental etc. ties, thus enabling smart solutions to take root more effectively.
- **Fine-tuning** – providing input and analysis for improving policy at the local, national, regional and EU level by making the necessary changes to further promote the smart city movement.
- **Openness** – promoting an honest exchange of ideas, experience and knowledge and a mentality of learning from each other and embracing new business models, new approaches and new solutions.
- **Partnering** – enforcing strengthened cooperation on green growth and sustainable development between all actors of the four helices in the BSR.
- **Pooling** – supporting the competitiveness and green growth of BSR cities with a vast knowledge pool of the available technologies, innovations and proven smart city concepts and solutions for further implementation.
- **Scaling** – looking at local solutions in order to make generalizations, devise modular solutions and foster larger-scale implementation on the regional market.
- **Self-sustaining** – aiming for viability beyond the initial (subsidized) project phase through the cities' demand for good practices and effective solutions.
- **Sharing** – promoting and explaining the innovative products and services from the companies, successfully implemented in the BSR cities.

Conclusions

The rapid advancement of ICT in all sectors, new environment-friendly solutions, integrated water and energy systems and multi-model mobility planning, among a variety of other new areas of thinking, provide cities and towns with an increasing set of new innovation opportunities: to generate, transmit and use energy with less pollution; to support citizen mobility by better and cleaner solutions in transportation; to communicate, discuss and co-create with citizens on the future of cities through online platforms; to create services that are better reached and tailored etc. In a nutshell, cities have a number of opportunities to be smarter both as consumers of resources and producers of services – they can become smart cities.

However, smart solutions are still not adopted as everyday practice. In tackling this, cities also need to embrace the mentality of learning from others besides using their competitive advantages to stand out from them. And what better way to learn than from cities with a similar background. The formation of an international and regional space for cities to discuss those issues, learn from each other and share the best practices will help to turn the desire to be smart into reality. Thereby, the questions to be answered through BUF are: How to be smart? How to implement smart city innovations and approaches in policies and service delivery in cities and towns throughout the BSR? What can we learn from each other? What practices are transferable and adaptable to other cities and how to roll out of these practices at scale and with speed in the BSR?

For this purpose – identifying, adapting and multiplying good practices in being smart about urban development – BUF will be launched with the aim of shaping urban environments that facilitate collective contributions from business, the public sector and citizens, serving as a coordinator of ideas, stakeholders, knowledge and good practices.

