

Digital Baltic

*Digital Innovation in Open Data and Public Sector Information
for the Baltic Sea Region*



Background

Against the background of the financial crisis and the many social and environmental challenges Europe and the Baltic Sea Region (BSR) are facing, new innovative and smart solutions are needed for the future, in order to stimulate economic growth and to increase social inclusiveness. ICT can be an important tool and enabler in the development of new innovations that address these challenges and at the same time produce sustainable products and services that meet citizens' demands and needs. In order to do so, information and policy gaps between countries and regions in the BSR need to be reduced in the move towards a digital society. The Digital Agenda for Europe (DAE) is one of the seven flagship initiatives of the EU 2020 Strategy; thus of great importance for the development of a digital BSR society.

In 2012, Baltic Development Forum (BDF) compiled the report *Priorities towards a Digital Single Market in the Baltic Sea Region*, with the idea that the BSR has a unique opportunity to spearhead a new digital single market in Europe. The report identified four key drivers to make this possible in the BSR. One of those is Public Sector Information (PSI) and Open Data. Today, PSI re-use in Europe is strongly underutilized and the economic value is high. It is estimated that if PSI policies were open, direct PSI use and re-use activities could increase by up to €140 billion for the EU27. Hence, there is a huge economical potential for the BSR to spur innovation within this field, especially for SMEs.

With this in mind and with experience from previous and present projects, with connection to digital innovation and public administration, the idea of Digital Baltic was born; to stimulate digital innovation in PSI and Open data.

Aim with the project

Digital Baltic was a one year project (2014) and co-funded by the Swedish Institute.

The aim with Digital Baltic was to spur digital innovation in PSI and Open data from a citizen perspective, thus to establish the BSR at the forefront in the development of a digital single market for Europe.

The short term objective was to ensure new innovations in the PSI and Open Data sector by using the Quadruple Helix method. The Interreg IVB North Sea Region Project DANS came up with the DANS model; which is an innovation model that emphasizes the importance to work according to a Quadruple Helix method within the field of the DAE. Hence, Digital Baltic captured this result and ensured, by using the Open Space theory as a working method, the involvement of citizens when encouraging digital innovation in PIS and Open Data.

The long term objective was (and still are) to develop this project idea and partnership towards the next program period in the Baltic Sea Region 2014 - 2020, with the aim to place the BSR at the forefront and set a good example for the rest of Europe towards a single digital market.

Partnership

The partnership of Digital Baltic consisted of four main partners: Värmland County Administrative Board (SE), Võru County Government (EE), Kaunas Regional Development Agency (LT) and Hedmark County Council (NO) and eight supporting partners: Compare Karlstad Foundation (SE), CERUT- The research centre at Karlstad University (SE), Örebro County Administrative Board (SE), The Information Technology Chair of Võru County

Vocational Training Centre (EE), KTU Regional Science Park (LT), Hedmark Kunnskapspark (NO), Foundation of Innovative Initiatives (PL) and Baltic Development Forum (DK). Värmland County Administrative Board was the lead partner for the project.

All main partners in Digital Baltic have been involved in all project activities, thus responsible for implementing the project's results in their regions. They have also been responsible for arranging an Open Space workshop in each region; as a co-financing to the project.

The supporting partners have all been involved in the project in one or another way. Some attended the kick-off in Stockholm, others the regional workshops, the Public Conference in Kraków or the final meeting in Brussels. To be a supporting partner means that they all have had their own interest in participating in this project, hence supporting the project's aim and objectives. The supporting partners are also very important actors and stakeholders in a continued cooperation.

The supporting partners Foundation of Innovative Initiatives (FII) and Baltic Development Forum (BDF) are both very important for the partnerships continuation in a strategic way. To be successful in a Baltic Sea perspective it is important to include Polish actors in to the cooperation. FII has played a great role to do this during this project and will also do that in a future cooperation. BDF is the leading think-tank and network for high level decision-makers from business, politics, academia and media in the Baltic Sea Region. One of their main Key Areas is ICT – with focus on making BSR at the digital forefront and set a good example for the rest of Europe towards a single digital market.

What is Open data and Public Sector Information (PSI)?

Open data is, according to opendefinition.org, *“A piece of content or data is open if anyone is free to use, reuse, and redistribute it – subject only, at most, to the requirements to attribute and share – alike”*

The EU refers to the idea that certain data should be freely available for use and re-use when talking about Open data. The European Commission's work in the area of Open data is focussing on generating value through re-use of a specific type of data.

PSI, sometimes also referred to as government data, is all the information that public bodies produce, collect or pay for. Examples are: geographical information, statistics, weather data, data from publicly funded research projects, and digitised books from libraries. PSI Directive (Directive 2003/98/EC) is an EU directive that encourages EU member states to make as much public sector information available for re-use as possible. Previous to the creation of this directive this area was left to member states to regulate. This directive now provides a common legislative framework for this area.

The Directive on the re-use of public sector information provides a common legal framework for a European market for government-held data (public sector information). It is built around two key pillars of the internal market: transparency and fair competition. The revised PSI directive requires: information to be made openly available at (max) marginal costs as a default rule; information and metadata to be made available in machine-readable and interoperable data formats (wherever possible); and all legally public documents to be re-usable for commercial or non-commercial purposes.

Why is innovation in Open data and PSI important?

Innovation is a driving force of economic growth and welfare and contributes to increase the standard of living. Advances in ICT have profoundly changed the way we do business, develop products, act as consumers and interact as humans. Technology has played an important role as a driver of innovation but is gradually becoming more of an enabler of innovation.

Recent studies (*Open Data as a Foundation for Innovation, Kallberg, Lakomaa, 2013*) have shown that public sector Open data is in many cases essential in the innovation for web-based applications and information services. Open data influences the innovative process in many ways, and the absence of Open data slows the innovative process or prevents the initiation of entrepreneurial innovation. The social benefits from this economic activity and contribution to information markets could translate economic growth and increased efficiency.

The study also showed that public open data access has a direct impact on future IT entrepreneurs' perception of ability to execute their business plans. Using high quality survey data from 138 Swedish IT-entrepreneurs, they found that access to public open data is considered very important for many IT-startups; 43% find open data essential for the realization of their business plan and 82% claim that access would support and strengthen the business plan.

According to a survey on existing findings on the economic impact of PSI conducted by the EU Commission in 2011, the overall direct and indirect economic gains are estimated at € 140 billion throughout the EU. Increase in the re-use of PSI generates new businesses and jobs and provides consumers with more choice and more value for money. Hence, there is a huge economical potential for the BSR to spur innovation within this field, especially for SMEs.

The report by Baltic Development Forum, *Priorities towards a Digital Single Market in The Baltic Sea Region* (2012), states that there is a need for dialogue between data holders and potential re-users of that data to improve PSI in the BSR for the future. Thus, PSI initiatives should be coordinated with innovation-driven procurement.

Introducing the Quadruple Helix

In order for the Digital Agenda for Europe to be successful, all stakeholders need to be involved, including civil society. Introducing the citizen, as a fourth helix alongside the traditional combination of innovation actors, public authorities, industry and academia in an innovation process, will improve the performance and help to create innovations that can be turned into businesses and jobs that increase Europe's competitiveness.

The Digital Baltic project believe that citizen and user involvement creates more usable, useful products and services both for the private and the public sector, which generate extra added values as faster-time- to-market, higher acceptance and usage among stakeholders, stronger brands and increased sales.

Who is the Citizen? The citizen is a user or a prospective user of ICT. As a fourth player in the Quadruple helix model, "citizen" can vary from the individual to the organizational levels, from individual citizen, consumers, workers, entrepreneurs, independent contractor, to non-profit organizations or associations. The degree of involvement of citizens in the development

process has a crucial role if the citizen can be considered as a fourth player in the innovation model or as a background figure in a Triple Helix model.

Involving citizens in the innovation process is important from a demographic perspective as digital participation and engagement is created. It will also offer the possibility for the citizen to influence products and services that are affecting their private and professional lives, providing the innovation process a bottom up perspectives a counterweight to the to the otherwise prevailing top-down perspective, thereby also democratizing the innovation process. Therefore, it is important to bring together all stakeholders with different skills who themselves would not have worked together to address these issues.

When outlining the idea for Digital Baltic the partnership used successful results from pervious European projects. One of the results that Digital Baltic wanted to capture was the result of the DANS innovation model from the Interreg IVB North Sea Region Project DANS. The DANS innovations model aims to inspire and integrate the citizen as a fourth helix in the regional ICT innovation process and policies to promote the implementation of the Digital Agenda for Europe towards a digital society. This is what the Digital Baltic partnership wanted to use, thus to ensure a Quadruple Helix perspective in the innovation process. To guarantee Quadruple Helix participation the project arranged four regional Open Space Workshops in Värmland (SE), Võru (EE), Kaunas (LT) and Hedmark (NO) in May and June 2014.

Open Space

“Open Space Technology is a meeting methodology that enables individuals and groups become more effective in work environments that are rapidly and constantly changing by developing their skills as lifelong learners and collaborative problem solvers. It creates the conditions so that the maximum potential of the individual and the organization can be realized. Open Space Technology captures the knowledge, experience and innovation in the organization that is not captured through less open processes.” Billie Alban and Barbara Bunker, Large Group Interventions, Jossey-Bass, 1997

The method was developed by the organizational consultant Harrison Owen from Potomac, Maryland, USA in 1983 and is an efficient working method which encourages the participants’ knowledge, experience and ability of new innovations; thus it can ensure a close collaboration between citizens, industry, academia and public sector.

There are four principles and one law for conducting an Open Space meeting which enable the participants to stay focused on the event at hand and acknowledges that the wisdom to resolve the issue is present in the room. The four principles are:

- Whoever comes, are the right people (reinforces that the wisdom to achieve solutions is present in the room and the group is not to worry about who is not present nor to panic about who is)
- Whatever happens is the only thing that could have (keeps the attention on the best possible effort in the present, not worrying about what we “should have done”)
- Whenever it starts is the right time (reminds people that creativity cannot be controlled)

- When it is over, it is over (encourages people to continue their discussion so long as there is energy for it. This may result in a short session not filling the entire time allotted, or it may result in a session longer than the time allotted)

The Law of Mobility states that if participants find themselves in situations where they are neither learning anything or contributing anything, they are responsible for moving to another place, for example to another group meeting. The principles and law enable people to participate in ways that are most meaningful to them.

Project Results

The thematic focus of the four Open Space workshops was *Digital Innovation in Public Sector Information and Open data*. “Digital Innovation” was not specified by the partnership of Digital Baltic, this to create an open mind of the participants in the Open Space workshops to be creative. This is also why the result differs from region to region. The four Open Space workshops were seen as a pilot to test the idea of the Quadruple Helix Model, thus to spur innovation in PSI and Open data.

Kaunas Region (LT)

The Open Space meeting in Kaunas region took place on May 15-16, 2014 in Druskininkai. This town, approx. 120 km from Kaunas, was selected in order to take participants away from their everyday life and make them thinking only about PSI and Open data. 24 persons with various background participated. The result from the day was the following digital innovations:

- Tourism routs - web page and telephone application helping to plan travel and visits to tourism places within Kaunas region.
- After school activities for children and adults - web page and telephone application helping to find information about extra curricula activities for children and after work activities for adults (ideas for leisure time - clubs, sports, arts, etc.).
- Information for investors - database of investment objects in Kaunas region.
- Database of projects and strategic documents database of projects carried out in Kaunas region and strategic documents existing in Kaunas region municipalities.
- Situation on Kaunas region roads (accidents, construction, traffic jams) - telephone application helping drivers to plan trip avoiding problems on the road.
- Open data portal (database) for Kaunas region - a basic which is needed for Kaunas region at the moments, a starting point.

Võru County (EE)

Võru County Government organized an Open Space workshop on 15 May 2014. Participants were students, retired people, ICT specialists, civil servants and representatives of public and private sector; altogether 25 persons. The aim of the workshop was to collect ideas how to improve the life of local people by using different digital applications. During the short period of time (about 5 hours) many interesting topics were discussed such as “what kind of e-services would make people happy” and “how could the young people that travel around the world be helpful for local entrepreneurs”. The most wanted digital innovations were:

- Võru County Database – website that holds all local information (services, contacts, events, job offers, sales advertisements, info for mentally disabled people, farmers calendar etc).

- E-Trans service – people request a machine for travelling and buying goods by inserting information in a web application or sending text message.
- Application for speech synthesis – system that converts normal language text into speech that allows to, for example, work when driving a car (e.g. paper document is being converted into speech; you do not have to read but can listen).

Hedmark County (NO)

The Open Space event in Hedmark took place on 14 May 2014 at Hedmark Knowledge Park. 22 persons with different background joined the event and had various settings with Open Space, all together and in small groups. The group was very innovative and came up with many digital solutions for PSI and Open data:

- Knowledge Forum - Knowledge Games/novelty games with local content, local history, social knowledge, to date on local knowledge and what happens where you live. The conclusion is that the college and the local newspaper will work on the project.
- Geo-play Hamar - Quiz, treasure hunts, mini games. Entice people to establishments, companies etc. Let users create private content linked to existing systems (google maps ect).
- Public Info Apps - "Fix my street": An app where one can notify about tasks to be done in the neighbourhood. Is there any app for Public roads? Info app for what plans the local authority. And what is the status of ongoing projects. Map Overview/map data
- Transport from A to B - Goal for the teamwork was a desire to collect all types of transport into a common app. Includes GPS coordinates for bus, train etc. Includes the whole county. Correspondence. All the way ticket (A > B). Similarly solutions are ongoing in Gothenburg and Oslo: solutions already exist, but not in our region. Responsibility: the public. Should require that this type of solution shall be prepared by tender. Make it easier for all passengers. Think environmental benefits. Do it simple!
- Volunteering - Record what you need by using: Description of roles, those attending can record information that is important to pass on, sharing experience, numbers, statistics and procedures. Associations can provide reviews, points and value to volunteers, Facebook events, LinkedIn, calendar, reminders and get support/sponsors from larger voluntary environments.
- Sports - Openness and data sharing. Messaging to what you want info about, App for how to add up a training day for an athlete, but tailored for the individual sport (football, athletics, skiing, etc.).
- What happens in Hamar - Time is luxury goods, must be able to plan ahead. Something like Finn.no with different categories. National or local? Hamar news has a database that is not used. Whether to gather all events from different actors, who are responsible? Important credibility. Visit Hedmark is secluded but ok updated. Possible to take this further? Could subscribe to events and get reminded about what happens, where and when. Posters should get it digitized. Easy ticket solution for events.
- Health App motivation and monitoring of patients and users - diet and physical activity. One framework with applications Modular Follow up rehabilitation, A Norwegian version of "My Fitness Pal" (free dietary app) and "Run keeper" (free exercising- app).
- Learning Arena - Learning app for homework like in the form of, for example, quizzes and games. Access for both students and teachers. Theoretical vs practical knowledge,

how we learn best? Netiquette, social - challenges learning strategies, How can parents help?

Värmland (SE)

In Värmland the Open Space workshop was held 4 June and 14 people participated during the whole day. The day started with an information meeting about PSI and Open data as it came to the project's knowledge that the competence on the topic is quite low in the region. As mentioned before, Digital Innovation, were not specified so this group of people focused on how PSI and Open data can be communicated better and how cooperation between actors can help to stimulate innovation in the field.

- Arrange a Hack for Värmland, according to the model of Hack for Sweden. This to disseminate good innovations in PSI and Open data. This arrangement will make actors cooperate around the thematic area.
- Start a regional network among actors that work/want to work with PSI and Open data. This to share experiences and good practices in the field.
- Initiatives to increase the competence in PSI and Open data – conferences, projects etc.

Note: A regional network has been started in Värmland on PSI and Open data as a result of this workshop. The network has formally been approved by several Public Authorities directors.

Analysis of the model

The Digital Baltic partnership think that the Open Space Theory is a useful model to create creative thinking in a mix group of people, thus spur innovation. However it is very hard to expect a special result from the workshop method. The method makes the group totally self-organising which makes it possible to people to interpret the aim with the thematic focus in another way that the facilitator/organiser of the event hoped to achieve. One of the aims with the Digital Baltic project was to collect 20 digital innovations, as a result of the four Open Space workshops. To have an exact number when it comes to Open Space is not ideal. If projects wish to have measurable result according to an application this theory is not the best to use. This is also the advantage with the model if the aim is to use it for creative thinking.

The added values for the partnership regions are several. In Võru (EE) the organiser thought that the process was effective because it united people from different fields of life and different age groups. Many good ideas were introduced and future cooperation plans were made. Furthermore, interests and needs of the different target groups were mapped. In Kaunas (LT) the reflections are that although participants were a little bit afraid of “open data”, because it was a new concept for them, the Open Space method helped participants to understand that they can contribute with the experience they already have. The method is not a “lecturer-participant” way of event, but in case of Open Space, participants were free to move from one topic to another and contribute/learn. In Hedmark (NO) the Open Space workshop created a unique opportunity to influence new solutions for future communities so they can be as open and transparent as possible. The result of the Open Space can help to change and influence the result of the developments now being started. In Värmland (SE) the day resulted in several spin-offs, for example that Open Data was prioritized in the Regional Digital Agenda and better cooperation and formalized regional network within the field of Open Data and PSI.

What is in it for the Baltic Sea Region?

The way of developing ICT products and services are consistently changing. The differences and gaps that exist between countries and regions in the BSR, when it comes to the degree of development and expansion towards a digital single market, should not be allowed to grow larger. Hence it is a critical challenge for the BSR to manage; delivering a connected and competitive BSR will not happen by itself. Collaboration between regions is central within this thematic area to overcome the challenge and make the BSR a prosperous place to live in.

To overcome the challenge towards a digital single market, there is a need to stimulate digital innovation within the re-use Open data and PSI. The Digital Baltic project believes that by applying the Quadruple Helix Innovation Model, by using for example a creative method of Open Space, can inspire citizens to come up with new innovations and ideas that will increase the re-use of PSI and Open data in the BSR region. Knowledge and information flows underpin creativity and innovation, and the relative scope and scale of Open data and PSI, particularly in small economies, make Open data and PSI important sources of raw material for innovation. *“Having this public data enables social enterprises to start up anywhere in the country, reinforcing local economies and also enabling a new generation of small businesses to be created”* (Theo Betram, Google).

The Digital Baltic project has worked to implement the EU Strategy for the Baltic Sea Region on several levels:

- 1) Establishing a framework for a digital single market in the BSR, by stimulate digital innovation in PSI and Open data, supports Priority Area 6 – to remove hindrances to the internal market in the Baltic Sea Region. Especially, within the areas of 6.1 - Remove remaining single market barriers and 6.7 - Coordinate the use of the digital dividend.
- 2) Innovation with in the field of PSI and Open data supports Priority Area 7- to exploit the full potential of the region in research and innovation. Especially, within the area of 7.3 - Develop a common Baltic Sea Region strategy to promote services innovation.
- 3) Increasing the re-use of PSI will generates new businesses and jobs and will have a positive economic effect especially for SMEs. This supports Priority Area 8 - implementing the Small Business Act in order to promote entrepreneurship, strengthen SMEs and increase the efficient use of human resources. Especially, within the areas of 8.3 - Implement the project Sustainable Production through Innovation in SMEs, 8.5 - Make the most of the European Code of Best Practices Facilitating Access by SMEs to Public Procurement and 8.8 - Cooperation between Public Employment services.

Steps and actions needed for the BSR to move towards a digital single market

The partnership of Digital Baltic concludes that the following steps and actions are needed for the BSR to move towards a digital single market, with focus on actions in the areas of PSI and Open data:

- To be successful, improved cooperation on PSI and Open data is needed, both on local, regional and international level.
- Substantial education is required to ensure that individuals and business understand the benefits and challenges of open data. The growing value of open data must also go in hand with increasing levels of responsibility and distribution.

- The implementation of the EU's PSI-directive and the marginal-cost charges in the BSR should be harmonized in the region. BSR licensing market should be established to enable the cross-border use of data regulated by licenses.
- Encouraging public sector bodies and business to use open government data as a matter of course.
- Business are unaware of the extent and depth of open data that is available. Information initiatives targeting business need to be stimulated by the public sector.
- Businesses need to recognise that their demand for open data is one of the most significant stimuli for government policy. Without it, there is a risk that it will falter and government initiatives will stall.
- Open data should be seen as proxy for democracy and bring the government closer to the citizens. According to its proponents, e-governments increases efficiency in service offering and save money for the public sector.

Conclusion

When entering the Digital Baltic project the partnership had an optimistic view that Open data and PSI was something easy to deal with. During the process of the project several things have been discovered that made the road to success more difficult than predicted. First of all, most people do not know what Open data and PSI are, at all. Communication and information activities both on international, national, regional and local levels are needed. How can business demand something when they do not know about it? Second, no one can achieve this alone. Open data and PSI re-use needs cooperation on all levels in society, thus the working method of involving all four helixes, academia, public sector, business and the citizens and essential to make this a driving force for a digital single market in the BSR. Third, the economic value of using Open data and PSI must be highlighted. Increasing the re-use of PSI generates new businesses and jobs and provides consumers with more choice and more value for money. Hence, it is a huge economical potential for the BSR to spur innovation within this field, especially for SMEs.

The Digital Baltic partnership believes that there is a great potential for the Baltic Sea Region to promote and stimulate collaboration within the fields of Open data and PSI. Cooperation is the key to success, thus to make the Baltic Sea Region in the forefront of the digital single market.