

The Smart Specialisation of Southern Kymenlaakso 2020

A preliminary study report

Tommy Ulmanen
Markus Petteri Laine



The Smart Specialisation of Southern Kymenlaakso 2020

A preliminary study report

Tommy Ulmanen, project manager

Markus Petteri Laine, project expert

Publisher: Kymenlaakso University of Applied Sciences

Copyright: Kymenlaakso University of Applied Sciences

Printing press: Juvenes Print 2016

ISBN (NID.): 978-952-306-142-2

ISBN (PDF): 978-952-306-143-9

ISSN: 1239-9094

ISSN: (e-version) 1797-5972

TABLE OF CONTENTS

1. INTRODUCTION	5
2. BACKGROUND	7
2.1 Study objectives	7
2.2 Project and steering group	7
3. A DESCRIPTION OF THE OPERATING ENVIRONMENT	8
3.1 The cities and municipalities of southern Kymenlaakso	8
4. THE POSSIBILITIES OF OPEN DATA FOR THE REGION	10
4.1 The benefits of open data	10
4.2 The social applications of open data	12
4.3 The open data situation in southern Kymenlaakso	13
5. TOWARDS INNOVATION ACTIVITIES	15
5.1 Urban regions as innovation clusters	15
5.2 Innovation ecosystems in professional literature	15
5.2.1 A methodology and operating model for building innovation clusters	16
5.2.2 Organising authentic dialogue in accordance with collaborative rationality	17
5.2.3 Co-operation between universities, businesses and the public sector	18
5.2.4 Future activities and foresight	18
5.2.5 Naming a core organisation for innovation clusters and organising the process	19
5.3. The innovation ecosystem and trial environments in southern Kymenlaakso	20
6. THE POSSIBILITIES OF SPECIALISATION	23
6.1. Study method and data analysis	23
6.1.1. Selecting a study method	23
6.1.2. Security takes precedence	23
6.1.3. Crowdsourcing data collection	23
6.1.4. Data analysis – data division structure	25
6.1.5. Data description	26
6.1.6. Data analysis	32

7. CONCLUSIONS AND ACTION PROPOSALS	33
7.1. Open data	34
7.1.1. Open data in southern Kymenlaakso	34
7.1.2. Open data efforts in other regions	34
7.1.3. A proposal to open up data in Kymenlaakso	34
7.1.4. Workshop activities	35
7.1.5. Open data training	36
7.2. Open participation and customership	36
7.2.1. Open decision-making	37
7.2.2. The developing domestic and export markets	37
7.3. Open innovation platforms	37
7.4. My data	38
7.5. Marketing	39
References	40
Appendices	41

1. INTRODUCTION

The scope of this preliminary study is limited to the development pressures and opportunities faced by the cities, municipalities, businesses and civil society of the southern Kymenlaakso region. The research project is based on a national smart specialisation strategy and an in-principle decision made by the government in 2011 to provide free access to public information assets.

The steering group of the project believes conducting a regional preliminary study on the matter is important for assessing the current conditions and developing a general understanding to serve as a basis for the development of smart urban environments and responsive transport systems in southern Kymenlaakso.

The preliminary study was administered by the Kymenlaakso University of Applied Sciences. The study was carried out between 1 August 2014 and 31 April 2015 with a total budget of 60,000 euros. The project funding was provided by the Regional Council of Kymenlaakso, the Kymenlaakso University of Applied Sciences and Cursor Oy. We are also grateful for the co-operation of SmartTrans, one of the spearhead programmes of the Technical Research Centre of Finland (VTT), as well as that of experts from the City of Helsinki, the University of Tampere, the Ministry of Transport and Communications, the IT Centre for Science (SCS), the Association of Finnish Local and Regional Authorities, and the Regional Council of Kymenlaakso.

Nine months is a short time to search for relevant answers to the challenges faced by southern Kymenlaakso due to economic and technological change. Our project team has worked for nine months to develop an understanding of the strengths and possibilities of smart specialisation available to the region. A large amount of background information and input was needed for the project – and duly provided by various expert organisations and experts who regularly contributed to solving regional challenges voluntarily. The past nine months have felt, from the viewpoint of a researcher, like a very short time to learn to understand in detail the possibilities provided by digitisation for smart community design. Yet, we will seek to identify the most relevant measures that have to be introduced in southern Kymenlaakso to enable the region to take advantage of its strengths and possibilities as efficiently as possible.

We will review the views of the task force on the most urgent regional measures based on the outcomes of a workshop organised on 17 March 2015. We will also present a literary review to familiarise readers with the concept of open data and the utilisation of innovation platforms. The report will also include proposals for the designation of trial environments. The need for innovation platforms was confirmed by the development ideas we received from regional decision-makers in the context of the workshop.

The final report of this preliminary study is only the first step towards the smart development of the region. We prefer to refer to it as a process rather than a project. Our task force hopes that the region will continue to develop in an open-minded climate of reciprocal trust.

We want to thank all parties who attended the discussions, offered expert advice or partook, in one way or another, in conducting the preliminary study. We especially want to thank the keynote speakers of the workshop and seminar as well as the residents of southern Kymenlaakso who participated in our workshop on 17 March 2015. You offered us your invaluable time and expertise. Thank you.

In particular, we want to express our gratitude to research professor **Nils-Olof Nylund** and key account manager **Karri Rantasila** from TransSmart. Your kind advice and personal assistance have allowed us to achieve so much. We hope that the results of this preliminary study can be applied further in the scope of the Kymenlaakso Smart Specialisation Strategy (KymRIS), a project administered by the Kymenlaakso University of Applied Sciences that will continue the implementation of smart specialisation in the entire region of Kymenlaakso.

2. BACKGROUND

2.1 Study objectives

Smart Cities and Responsive Transport is a preliminary study carried out in order to plan and prepare the cities, municipalities and businesses of the region to produce open data and provide free access to their information assets. The study offers information and insight regarding the possibilities of open data for the cities, municipalities and industries of southern Kymenlaakso.

We have assessed the needs of the region and, based on those needs, established tentative guidelines for the first logical measures as well as identified the suitable partners, funding instruments and tools to realise the smart specialisation of southern Kymenlaakso.

2.2 Project and steering group

The preliminary study was administered by the Kymenlaakso University of Applied Sciences. A project manager and a part-time project expert were assigned to co-ordinate the study. The responsibilities of the project manager included administration tasks, the production of results and the co-ordination of various tasks in accordance with the objectives. The responsibilities of the project expert, in turn, were related to communications, the presentation and adoption of new working methods and various steering tasks with which the success and sufficient quality of the results was ensured.

The steering group of the preliminary study convened three times in the course of the project. It included **Riitta Kallström** of the Regional Council of Kymenlaakso, **Mika Perttunen** of Cursor Oy, and **Pauli Korkiakoski** and **Mervi Nurminen** of the Kymenlaakso University of Applied Sciences. **Toomas Lybeck** of Cursor Oy served as a supplementary member of the steering group due to his experience in a similarly-oriented project, the E18 Growth Corridor.

3. A DESCRIPTION OF THE OPERATING ENVIRONMENT

Finland has a solid education system. The high education level of the population, safety of society, stability of institutions and proximity of nature unite the population and facilitate co-operation. A number of our regional strengths, indeed, apply also to society at large. Regional differences become apparent at closer inspection however. Each region has its unique industrial base and structure as well as a development and operating culture that has developed over time. These aspects together determine what type of specialisation opportunities are available to the region.

Technological development and the concentration of a skilled workforce are factors that have traditionally contributed to the specialisation and competitiveness of regions. Development has shaped local institutional structures and working methods. The ability of people and businesses to learn to utilise and apply new information and technologies has emerged as a primary competitive factor. It is crucial for co-operation how people are able to trust each other and how they receive and share information. The nature of the entrepreneurial climate in the region is determined largely by the prevalent culture of interaction.

3.1 The cities and municipalities of southern Kymenlaakso

Southern Kymenlaakso comprises the municipalities of Pyhtää, Miehikkälä and Virolahti as well as the cities of Hamina and Kotka. It is located on the shore of the Gulf of Finland in the region of Kymenlaakso, close to the border with Russia, and is cut through by Highway E18 as it connects Helsinki with St. Petersburg. The distance between Helsinki and Kotka is 121 kilometres.

The Vaalimaa Border Crossing Point provides great access to St. Petersburg – a city with five million residents – and elsewhere in Russia. The logistical importance of the region is enhanced by the ports of Hamina and Kotka, which together form the largest joint port in Finland.

Global networks are vital for the success of the region. Its location at the crossroads of east and west provides excellent preconditions for developing the business community.

Hamina and Kotka together form the eighth-largest population centre in Finland. The sub-region is one of the medium-sized urban regions in the country with a population of approximately 90,000.

The local economy has developed relatively positively in spite of a dramatic decline in employment in the forest industry. The size of the working-age population, however, has continued to diminish sharply in the sub-region of Kotka-Hamina as a result of population ageing and net migration loss.

The business community of the sub-region comprises businesses the success of which has been a precondition for the livelihood of local residents. The development of the sub-region has been largely contingent on the port cities and manufacturing industries created by the forest industry.

The global economic crisis has posed a challenge for the industrial structure of Kotka-Hamina. The economic slowdown has had its repercussions for all key industrial sectors in the sub-region but especially for the manufacturing industries, wherein net sales and staff numbers have both begun to decrease. The industrial structure of Kymenlaakso as a whole has been buoyed by a cluster susceptible to economic fluctuations and market price swings – the forest cluster. No stone has been left unturned in the fight against recession: for example, the region has been marketed as a suitable location for international businesses. There have been some successes, aptly exemplified by the decision of Google to move into a former paper mill in Summa, Hamina.

The share of ICT jobs may remain low in the region, but the decision to create a profile as a region with a skill-intensive information and technology industry sector is seemingly on track to becoming an important strength in the future.

Other possibilities available to the region are related to the living and natural environment, with the proximity of the sea representing a particularly important competitive edge. The diversity of nature, the sea and the archipelago, the River Kymi, the forests and the rural landscape as well as the cultural environment with its industrial milieu and maritime history form the prerequisites for developing a fine and unique living environment (Cursor Oy, 2010).

4. THE POSSIBILITIES OF OPEN DATA FOR THE REGION

The concept of open data refers to the unrefined data amassed by public administration, organisations, businesses and citizens that is openly accessible also to parties outside the organisation for free. The concept is therefore dissimilar to that of public data. Public data are accessible to everyone through, for example, websites or the city register. Open public data, in turn, refers to the idea of citizens and businesses having equal opportunities with the public administration to utilise and refine machine-readable data for their own purposes (HRI, 2015).

The utilisation of public data is one dimension of the spearhead projects on sustainable growth, employment and competitiveness laid out in the government programme. The principles of opening public information assets were approved in a resolution issued by the Finnish government on 3 March 2011. The European Commission has submitted a proposal to amend the directive on the re-use of public sector information in an attempt to make all public sector information, with certain legal exceptions, available for commercial and non-commercial re-use. Open data and open data ecosystem development are part of the recommendations set forth in the public sector ICT strategy and proposals made by the ICT 2015 Working Group (Ministry of Finance, 2015).

4.1 The benefits of open data

The benefits of open data are sought from three perspectives:

1. **Benefits for the national economy:** Open data are raw material for services. Free access to information assets creates new possibilities for product development, new business concepts and, consequently, jobs, innovative services and tax revenues.
2. **Social transparency and democracy:** Open data improve the transparency of government operations and the possibilities for civic participation and information collection by making it possible to verify information through public information assets. They can also encourage the public to form an understanding of social issues as well as develop new understanding and services by amalgamating and visualising data.

3. **Internal governmental efficiency:** Enhancing the transparency of information assets is a means to improve the efficiency, productivity and effectiveness of internal governance. Providing free access to information facilitates inter-administrative operations, reduces overlap and improves the quality of information based on user feedback.

Free access to information forms the basis of governmental efficiency and transparency. The benefits generated by waiving fees or transitioning to access permit fees outstrip the revenues derived from data charges, according to both national and international studies. Studies commissioned by the European Commission indicate that the benefits of opening up information assets amount to roughly 40 billion euros a year in the European Union. The indirect economic benefits derived from the re-use and application of public sector information amounted to an estimated 140 billion euros (a memorandum released by Ministry of Finance, 2013). Small and medium-sized enterprises, especially, will benefit from the lower charges.

Our high-quality information assets are a social resource we can ill-afford to waste. The approach taken by our preliminary study is to review the few literary attempts to visualise an open data ecosystem for Finland.

Citizens, private sector clients and non-governmental organisations have yet to be utilised sufficiently in the development of information assets, as they have been perceived rather as the end users of information. Citizens, businesses, organisations and research institutions are important producers and users of open data in the governmental sector, and their experiences should be taken advantage of.

In their work for the Ministry of Transport and Communications, *Public Data – an introduction to opening information resources* (QR-code 1), the pioneers of open data in Finland – **Antti Poikola**, **Petri Kola** and **Kari A. Hintikka** – argue that the volume of data produced by public sector operations could be utilised more effectively.



The information assets of private entities are seldom freely accessible, but we are confident that more and more businesses will find operational justification for opening up their information assets in the future. It is worth bearing in mind that a notable portion of the information managed by businesses is not sensitive and could be indirectly valuable to the entire operational ecosystem.

Poikola, Kola and Hintikka believe the maintenance of high-quality information assets requires that the entities collecting, updating and sharing information have access to permanent resources that guarantee the continuity of services. Public trust in officials as well as their willingness to respect data security and the associated legislation is necessary and should for that reason be protected under law (Poikola et al. 2010).

QR-code 2



QR-code 3



An important conceptual counterpart has also been coined for open data: my data. My data refer to data on an individual collected and stored by a public or private entity that are accessible and manageable by the individual in question (QR-code 2). My data, as a concept, is regarded as a very important system innovation from the viewpoint of civil rights and its implementation is currently under preparation both at the national and EU level (QR-code 3).

A number of legitimate concerns have been voiced about the ability to guarantee the high quality of data administration in the debate over access to free and open data. Resources must also be guaranteed in the event of data being accessible for free. Open and widespread distribution must not erode the credibility of information producer by, for example, threatening privacy protection (Poikola et al. 2010).

Development projects can achieve the best results by seeking background information from similarly-oriented studies, learning from mistakes and proceeding one step at a time while remaining ready to steer the course at short notice. One should also bear in mind that someone has to become a pioneer and pave the way for others (Poikola et al. 2010).

4.2 The social applications of open data

The applications of open data are varied, according to Poikola, Kola and Hintikka (2010). The applications can be divided broadly into four categories: 1) **mash-up services**, 2) **education, research and product development**, 3) **process automation** and 4) **co-operative user productions**.

Mash-up services: Mash-up services is an umbrella term for open data applications founded by public sector bodies, businesses or citizens that amalgamate information from various sources according to principles defined by the founder. Mash-up services satisfy a number of needs by, for example, facilitating daily activities or enhancing the transparency of policy-making.

Education, research and product development: The ease of access to information enables research institutions to carry out high-quality research. Information can be utilised as means of visualisation in education. The objective is not to develop a mash-up service that facilitates daily activities or enhances governmental transparency but to generate completely new information or optimise operations based on volumes of data. Traffic measurements, public transport utilisation statistics and various regional statistics, for example, provide a basis for designing optimisation strategies for urban traffic systems or optimising the service point networks of private operators.

Automation: Information can also be utilised in the field of automation to control or enhance certain processes. It is easy to imagine heating or air-conditioning units that are able to utilise information on weather conditions or grid capacity to automatically reduce electricity consumption and, especially, to even out peaks in the demand for electricity (Smart Grid).

Co-operative user productions: Another aspect of the benefits of open data is the improvement and compilation of data collectively and reducing overlapping efforts by means of co-operative information assets. The term crowd-sourcing has specifically been coined to describe the new ways to organise efforts begot by the Internet. One typically looks for the best possible solution, which can be presented by virtually anyone, or to collect, classify, categorise, generate and refine information collectively. A fitting example of crowd-sourcing in the public sector is Fillarikanava, a pilot service launched by the City of Helsinki allowing cyclists to post and store their observations about cycling routes as location data that can be taken into account in design and development projects concerning the areas in question.

Experts in open data have argued that the administrators of open data ecosystems are, at least, serviceable suppliers and promoters of information. The provision of information free-of-charge for a variety of applications also allows for the refinement and specialisation of roles. The task force on the smart specialisation of southern Kymenlaakso considers open data an element of the infrastructure of an information society. Open data enables the development of services with a higher degree of processing as well as social innovations.

4.3 The open data situation in southern Kymenlaakso

Most data in southern Kymenlaakso are siloed in a non-machine-readable format by businesses and institutions developing their own portals. The trend is regrettable from the viewpoint of local residents and businesses, as they have to spend time locating the data, transferring it from paper to computer, learning how to use the various portals, reading meta-data and amalgamating data from a number of sources.

The task force recommends that the businesses and urban environments in southern Kymenlaakso boldly open real-time raw data – or, unprocessed data – for public use to enable service providers to develop applications based on the data. A possible publication platform for the data could be the location data depository, lounaispaikka.fi, the state-owned open data portal, avoindata.fi, or the European Union Open Data Portal. The data should naturally be accessible through local service channels, such as the websites of cities and municipalities.

It is also advisable to transition actively from rigid administrative structures towards flexible, network-like operating models that promote smart specialisation. New online working methods and open collaborative development, along with open data, encourage the development of increasingly faster and efficient operating environments that also take the needs of individuals better into consideration.

The preliminary study group itself took advantage of various methods and platforms of online working that facilitated the creation of an open and confidential working climate. A prerequisite for such a shift was commitment to a new operational culture and the rejection of old negotiating and registration practices. Several online tools and joint memos, for example, proved effective. Modern working methods are part of the operational culture of open data (QR-code 4).

QR-code 4



The Helsinki and Tampere regions have succeeded in the development of new service concepts that facilitate the activities of citizens and businesses, promote information sharing and bring citizens, businesses and the administration closer to each other. One should acknowledge that a number of these services take advantage of public information in a new way while simultaneously processing it further. A key element of such a trend is that citizens not only actively participate in the development of but also launch new service models.

The task force recommends that theme-specific workshops be organised to shift towards open data. Measures such as this will encourage the creation of an innovative service culture in southern Kymenlaakso in a flexible and cost-efficient way. The experiences and learnings of non-governmental organisations at the forefront of the development, such as **Open Knowledge Finland** and the **Centre for Open Systems and Solutions (COSS)**, and the most advanced urban areas – Helsinki, Oulu, Tampere and Turku – can also serve as invaluable input for the project.

Innovative service solutions can be adopted at a short notice if access to the regional data ecosystem is provided. An agreement with the City of Tampere was reached on 17 January 2015 on open collaboration in sharing innovative solutions, best practices and experiences with the urban areas of southern Kymenlaakso.

The efforts to increase the amount and utilisation of open data also translates to the development and piloting of new service concepts. Innovation platforms are a means to gauge the potential for societal effectiveness, to engage in collaboration across the deep-rooted silos and promote the proliferation of the consequent best practices and services.

5. TOWARDS INNOVATION ACTIVITIES

5.1 Urban regions as innovation clusters

An innovation ecosystem or innovation cluster refers generally to a region or municipality with an exceptional amount of competences and innovativeness. We employ the term *innovation platform* in the context of this preliminary study to refer to a desirable form of co-operation. The term is employed in a similar fashion in the Six City Strategy (QR-code 5), a development project launched by the largest cities in Finland, the objectives of which are analogous with those of the Smart Specialisation of southern Kymenlaakso.



5.2 Innovation ecosystems in professional literature

Locality is employed to underscore the geographical location and territorial limits of innovation clusters. Creativity signifies two aspects in this definition, according to Hautamäki and Oksanen (2012): the ability to create innovations and the ability to generate value in global value networks.

Innovation clusters are also associated with other noteworthy features. The clusters boast globally-renowned competences and business activities founded on those competences as well as create new information and technology that is followed across the world. The clusters consequently attract businesses that are able to utilise experts and expertise on a global scale.

Hautamäki and Oksanen (2012) believe innovation clusters are reliant on the ability of cities to attract a skilled workforce with their services. Another key factor determining the location of business activities is the infrastructure of the cities. Services, a positive climate and strategically targeted procurement activities can promote the creation and operational preconditions of innovative businesses. The preliminary study task force recommends that innovation platforms be taken advantage of actively in problem-solving, updating the service infrastructure and optimising the preconditions for business activities.

5.2.1 A methodology and operating model for building innovation clusters

There are various approaches to building innovation clusters. Hautamäki and Oksanen (2012) believe the process is also dependent on how one chooses to define an innovation cluster. Building a cluster of expertise established around a certain special competence and driver, for example, differs from building a multi-sectoral innovation cluster where higher education institutions play a key role.

Hautamäki and Oksanen (2012) forward a methodology and model that promotes the development of diverse innovation clusters that exhaustively utilise the competences and resources of their regions under the conditions present in Finland. Collaborative rationality and authentic dialogue are the reinforcing elements at the core of the methodology, while the main operators are higher education institutions, businesses and public administration, according to the triple helix model.

Future activities that give rise to key strategic alternatives and measures are also necessary to steer investments within innovation clusters. A core organisation is required to co-ordinate the development, the co-operation between the main operators and support the creation and utilisation of development spaces.

The four pillars of the methodology are:

1. Organising authentic and open dialogue to achieve collaborative rationalism
2. Co-operation between higher education institutions, businesses and the public administration
3. Future activities and foresight
4. Naming a core organisation for the cluster and organising the process

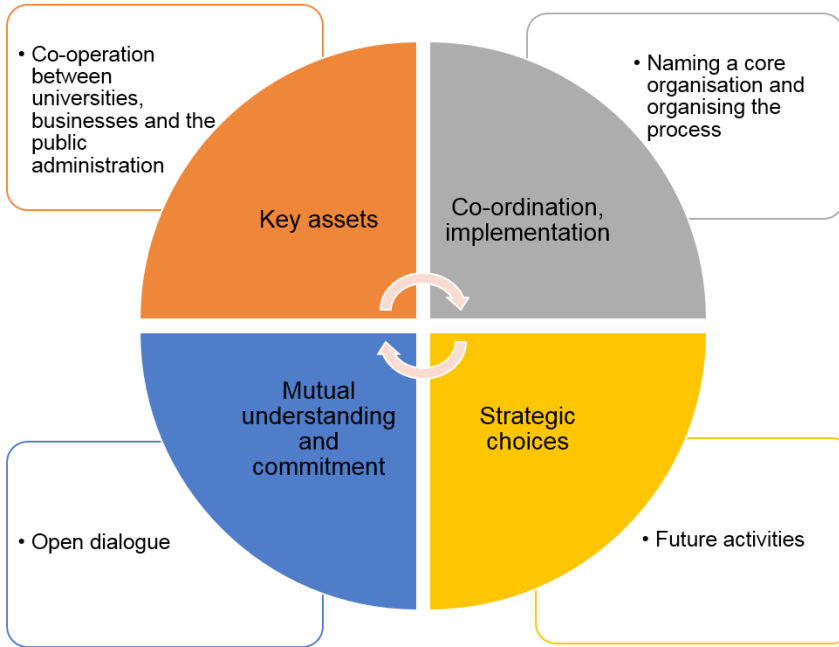


Image 1. The methodology of building an innovation cluster

5.2.2 Organising authentic dialogue in accordance with collaborative rationality

A fundamental tool for collaborative rationality is dialogue between all stakeholders. The activities of innovation clusters must be based on communicative operations: all stakeholders must be heard in order to interpret and understand their views. Authentic dialogue allows for various views but strives for joint decision-making. Certain fora, for example, are significant for transparency and the consolidation of various views but insufficient for generating new information and processing ideas. What is needed are practices that allow for the realisation of creativity, idea flows and genuine dialogue. The primary motivation for participating in the dialogue is the co-dependence of all operators: they all face a problem that none of them can resolve alone (Hautamäki & Oksanen 2012).

5.2.3 Co-operation between universities, businesses and the public sector

The triple helix is a basic model of co-operation between higher education institutions, businesses and the public administration. Universities and other knowledge-intensive institutions are creating a so-called knowledge space by creating and introducing new competences to the system. It is the responsibility of businesses to utilise these competences and, often, develop an innovation space. The public sector, meanwhile, serves as a facilitator of an innovative operating environment. The term quad helix is used instead of triple helix if users are regarded as stakeholders in the model along with businesses, research institutions and the public sector (Hautamäki & Oksanen 2012).

Human centricity supplements the development process with genuine living environments and circumstances and, thereby, contributes towards authentic dialogue. Co-operation between stakeholders can, and often is, informal, although long-term co-operation necessitates agreements and joint investments. The introduction of users represents a challenge that can be answered on a project-by-project basis by establishing more systematic forms of interaction through, for example, social media (Hautamäki & Oksanen 2012).

5.2.4 Future activities and foresight

The future process is founded upon an examination of the current state, possible creation of future scenarios, determination of a desired future and formulation of an action plan. The stages comprising the process are subject to variation, and every future process is ultimately unique. The stages presented in this report are based on a future process of five stages carried out under the guidance of Olli Hietanen (Hautamäki & Oksanen 2012):

A preliminary understanding of the operators and current state of the innovation cluster is formed in the first stage of the process based on various background materials, themed workshops, assessments and discussions.

The future challenges of sustainable and job-rich growth and visionary forecasts are drafted in the second stage of the process with the help of a broad future workshop.

The future scenarios and visions are developed further, and take form, in themed workshops organised in the third stage. New experts are also invited to participate in the future activities.

The future scenarios produced in the previous stage are clarified and evaluated further in the fourth stage by sending a participatory questionnaire to various operators and organising a customer panel for businesses. Spearhead themes are selected and action proposals drawn up in an attempt to realise the desired future.

The emphasis of the fifth stage is on pilots, experiments and future project launches. The multi-stage future process delves deeper into the future knowledge of experts and networks stage by stage.

Examinations of regional innovation, strategy and programme processes indicate that the problem is not a lack of knowledge but rather the lack of taking action. The stakeholders in southern Kymenlaakso have been relatively well aware of the reasons for the changes in the local operating environment, their repercussions and the measures they necessitate. Problems have instead been encountered in how quickly and efficiently the necessary measures have been carried out. The fact that measures set forth in strategy papers take as long as years to implement can render the measures inapplicable due to the constantly changing operating environment. Reducing the response times is a challenge to becoming a precursor and achieving sustainable growth. The results of the preliminary stages should consequently be presented to business and operators that are able to initiate experiments and further projects during the future process. Development processes must be transparent and iterative. Speed is power.

A variety of concepts and methods can be taken advantage of in building foresight. What is relevant is the multi-stage process, not the measures themselves: recognition, interpretation and action. Such a triple helix operating model is the means to creating constant reform, precursorship, competitiveness and sustainable, job-rich growth.

5.2.5 Naming a core organisation for innovation clusters and organising the process

One aspect of the triple helix model is building a consensus space to serve as both a concrete and virtual platform for co-operation. It brings together all participants in the collaborative model to discuss, evaluate and promote issues that none of the participants could achieve alone. A variety of ideas and viewpoints come together and are developed further in the consensus space. A crucial step towards building the space is naming a core organisation – or a *regional innovation organiser* as per the triple helix model – for the cluster (Hautamäki & Oksanen 2012). The management can take a number of forms, but it is important that the core organisation has a clearly-defined position and mandate to operate in the region.

The core organisation is responsible for co-ordinating the jointly agreed measures and objectives and promoting the development process by organising it into projects and obtaining further funding. The organisation derives its mandate from regional operators, and a joint negotiating committee of the operators – or another similar body that is able to make decisions – is required for this very purpose. The ownership structure of the core organisation must be unambiguous. All regional operators, regardless of power relations, contribute towards fulfilling the objectives (Hautamäki & Oksanen 2012).

Hautamäki and Oksanen present four concepts in an attempt to summarise the methodology and operating model of innovation clusters:

1. **Dialogue:** Open dialogue to form common views and objectives
2. **Co-operation:** Broad and long-standing co-operation between higher education institutions, businesses and the public administration
3. **Future activities:** Aligning regional strengths with future changes and markets, offering investment options and making strategic choices
4. **Co-ordination:** Naming a body responsible for devising and implementing concrete measures, co-ordinating projects and promoting dialogue

A requirement for successfully building an innovation cluster is that all of the aforementioned development measures are implemented in concert with one another. The methodology presented is our attempt to encourage and boost the building of innovation clusters in Finland.

5.3 The innovation ecosystem and trial environments in southern Kymenlaakso

The strategic development and growth objectives of southern Kymenlaakso are founded upon innovativeness. The objective has been set forth in the regional programme of the Regional Council of Kymenlaakso (Regional Council of Kymenlaakso 2014) and in the growth programme of Cursor Oy (Cursor 2010). Developing an understanding of the current state and prevalent trends of the region as an innovation cluster is a challenging task. It is not the objective of this preliminary study to lay out a strategy for smart specialisation but rather to offer recommendations for and viewpoints on smart specialisation in the region. The results derived from the preliminary study support the strategic choices made by the Regional Council of Kymenlaakso and the focal points forwarded in the growth programme of Cursor Oy.

Southern Kymenlaakso has access to globally renowned special expertise – such as expertise in the ICT and games industry, data storage (Google), chemical and logistics industry, as well as in various segments of the clean-tech and forest industries. There is consequently no shortage of strengths. The number of start-ups, and research and development projects is also on the rise due to, for example, a new funding programme. It is necessary to attract more businesses with global operations to the region despite the positive developments.

The higher education and upper-secondary education institutions in the region are developing new operating models and technologies in co-operation with businesses. The single greatest challenge for the region is global market penetration.

The requirements of innovation clusters	A lot of opportunities	A good situation, despite some problems	Further investments needed	Obstacles to development
Globally renowned special expertise	X			
...and business activities founded upon those competences		X	X	
The creation of new information and technologies that are of worldwide interest		X	X	
Attract foreign experts...			X	X
...and investments		X	X	
Businesses with global operations take advantage of the competences		X	X	

Table 1. Southern Kymenlaakso as the cluster of an innovation ecosystem

A brief analysis indicates that southern Kymenlaakso has the preconditions for building a relatively strong innovation ecosystem. A number of the regional strengths have yet to be realised in full. Notable efforts are required especially to expand the international dimension and to refine regional competences into abilities and, thereby, into profitable business activities.

A cluster is a geographically delineated region or zone wherein businesses and higher education institutions – universities, universities of applied sciences and research institutions – engage in co-operation. A cluster driven by higher education institutions is an area not dissimilar to a campus established around edu-

cation institutions. A cluster driven by technology businesses, in turn, is an area wherein technology businesses are key for developing the so-called business and industry parks. The industrial parks in Hamina and the Port of Hamina are examples of such an area in southern Kymenlaakso.

The task force proposes that the designer outlet village under construction at Kotka Old Port be regarded as a possible trial environment. The area is particularly well-positioned from the perspective of sustainable development to profile itself as a potential environment for clean-tech businesses. The task force recommends that innovative and responsible procurements, which encourage the adoption of solutions complying with the principles of sustainable development, are taken into consideration in regional planning and construction activities. The industrial parks adjacent to the ports of Hamina and Kotka also allow for experiments with innovation platforms in the domain of the industrial Internet.

The refinement of volumes of data to promote business activities, launch activities based on communication between factory equipment, and develop production and service processes represents an opportunity especially for the forest, chemical and logistics industries.

The functioning of transport systems and, on the other hand, flexible mobility contribute significantly to the functioning of urban structures. Land use and traffic management must be a part of the development in building an innovative, competence-based infrastructure.

The Regional Council of Kymenlaakso began its work overhauling the regional transport strategy in February 2015. It will draft a development programme for the transport system based on the shared willingness of operators that lays out the development measures necessary for the daily movements of citizens, package deliveries and competitiveness. The measures laid out in the development programme are linked to ideas refined at the workshop held as part of the preliminary study.

The public transport system of Kotka-Hamina was re-organised under a single passenger transport service provider on 1 January 2014. The service provider is responsible for co-ordination and statistical tasks related to traffic safety as well as co-operation with other traffic safety authorities.

The City of Kotka is presently mulling over setting up a transport centre at the old port – a decision that would naturally promote the trip-chaining of commuter traffic and the operations of the outlet village under construction. The task force proposes that trial environments for smart transport be designated in southern Kymenlaakso in order to respond to the changes faced by the traffic infrastructure and guarantee the quality of services. The trial environments must take into account the ongoing transition, rural areas, users, service providers and the public administration.

6. THE POSSIBILITIES OF SPECIALISATION

6.1 Study method and data analysis

6.1.1 Selecting a study method

We recognised at an early stage of the preliminary study that the vast complexity of the research subject was a key problem for us and decided, as a result, not to gather data to support our existing views on an appropriate direction of development but rather to identify the core questions that were regarded by decision-makers as preconditions for smart specialisation in the region. However, in order to ensure our study is anchored in the real-world development debate, we divided the theoretical framework into four domains already defined in the regional programme: 1) a safe and functional business and knowledge environment, 2) a high-quality, clean and comfortable living and operating environment, 3) main traffic routes, transport connections and border traffic, and 4) industrial sectors utilising the Northern Growth Zone and their interfaces (QR-code 6).



6.1.2 Security takes precedence

It became apparent as the objectives of the preliminary study began to take form that the transition towards open data necessitated by smart specialisation could stir up data security concerns. We asked for, and were presented with, a roadmap of the regulations and practices associated with open data from the Ministry of the Interior and the Ministry of Defence. The preliminary study on smart specialisation in southern Kymenlaakso was carried out in compliance with the act on public sector information security adopted on 15 January 2015, number 10/2015 in the Statutes of Finland (QR-code 7), as well as with the information security instructions (QR-code 8) issued by the Ministry of Finance and the recommendations concerning the national security auditing criteria (QR-code 9).



6.1.3 Crowdsourcing data collection

The post-digital world is so complex with its challenges and opportunities that no one is able to control it alone or from a single industrial or administrative sector. We decided therefore to utilise crowdsourcing in collecting development

QR-code 10



ideas from the region. We sought to collect the development ideas and formulate the key questions as soon as possible by devising an online questionnaire (QR-code 10) and by setting up a discussion group on Facebook, **Open Data Kymenlaakso** (QR-code 11).

QR-code 11



The questionnaire was sent by e-mail to local civil activists, entrepreneurs and members of the public administration (QR-code 12). Although it was marketed in conjunction with a number of workshop invitations, the response rate was extremely modest: 3/111 (results: QR-code 13).

QR-code 12



The workshop was contrastively a success, with 30 out of the 111 people invited being in attendance at the Kotka Steam Brewery (attendance list: QR-code 14). We also managed to attract some of the foremost experts of the country to shed light specifically on topics we predicted would be of particular interest to local visionaries (QR-code 15).

QR-code 13



The workshop was facilitated by **Markus Petteri Laine** and **Tommy Ulmanen**. The opening remarks were delivered by the chairman of the Regional Council of Kymenlaakso, **Juha Haapaniemi**, who presented the four focal points of regional development we had utilised in drafting the preliminary questionnaire and organising the workshop activities. **Hanna Niemi-Hugaerts** of Forum Virium, an innovation unit organised under the City of Helsinki, then introduced the attendants to the possibilities of smart urban services. **Karri Rantasila** of VTT continued with his review of the proliferation of smart transport in the domain of road passenger transport and freight traffic, while **Hannele Ahvenniemi**, also of VTT, concluded the presentations by offering insights into the industrial Internet and smart urban technologies generated by the Smart Cities project.

QR-code 14



QR-code 15



Image 1. The workshop on 17 March 2015, Kotka Steam Brewery

The objective of the workshop was to collect concrete ideas on how smart technologies should be applied to the service infrastructure of southern Kymenlaakso and which services are in demand in order to identify relevant priorities for smart and open data development through real-world needs and strengths. Numerous ideas were collected under each of the development areas proposed in the aforementioned regional programme by four expert-led task forces:

1. **A safe and functional business and knowledge environment:** 60 ideas (QR-code 16).
2. **A high-quality, clean and comfortable living and operating environment:** 71 ideas (QR-code 17).
3. **Main traffic routes, transport connections and border traffic:** 91 ideas (QR-code 18).
4. **Industrial sectors taking advantage of the Northern Growth Zone and their interfaces:** 58 ideas (QR-code 19).

QR-code 16



QR-code 17



QR-code 18



6.1.4 Data analysis – data division structure

A total of 279 unprocessed development ideas were collected. The participants truly demonstrated their ability to come up with ideas. It is a fact that new ideas are the main driver of growth and development, although implementation plays a key role as well. The bulk of data proves that there is no shortage of ideas on smart development even if it remains difficult to draw long-reaching conclusions on its basis (QR-code 20). We decided therefore to review the data in order to determine how they should be divided to illustrate the interrelations of the material, avoid overlap and recognise development ideas that support each other.

QR-code 19



QR-code 20



We began by applying the data in accordance with the traditional industry division but noticed immediately that virtually all of the development ideas collected represented a cross-section of the traditional division of regional industries: from tourism to transport and from logistics to media and manufacturing. In other words, expertise from more than one industrial sectors was required for the implementation of practically each idea. The traditional industry division also fails to take into account the development pressures faced by public administration. We included the traditional industry classifications in the data summary – more than one for sections for which we were able to identify a direct or implicit interest group (QR-code 21).

QR-code 21



The term *media business* is employed in the local industry classification to refer to the creative industries. Creative industries have been defined, somewhat broadly, to refer to “commercial activities founded upon the generation and utilisation of information in all its forms” (QR-code 22).

QR-code 22



Industries in order

1. Media: 229 ideas
2. Tourism: 158 ideas
3. Logistics and transport: 139 ideas
4. Manufacturing: 137 ideas
5. Other: 50 ideas

Table 1. The number of development ideas per industry

Due to the restrictions associated with the industry classifications, we ultimately arrived at a new quadrisection that grouped the ideas organised under the four frameworks of the regional programme based on the following themes:

1. **Economy and business** (103),
2. **Public administration** (112),
3. **Sustainable development** (39)
4. **Civil society** (20)

6.1.5 Data description

We identified yet another quadrisection under the aforementioned sub-topics:

1. Development ideas grouped under **Economy and business** were arranged further into ideas on domestic markets (31), export markets (24), services (27) and innovations (23) (QR-code 23).



Domestic markets

Domestic markets are developed actively and updated digitally in an attempt to secure self-sufficiency in the management of everyday life with functional marketplaces and services. The digital market environment, an innovation ecosystem, facilitates new forms of co-operation between consumers and small business-owners, and the harnessing of group power to promote sustainable business activities in the region.

The proactive and iterative development of the transport system, its future energy production methods and service ecosystems was regarded as a logical development target.

Smart technologies should be applied and untapped potential utilised in a determined fashion in the domain of water tourism and port logistics. Smart technologies should also be applied to value-added services to support the logistics sector.

Several localities have supplemented their transport systems with rational applications that take advantage of open data. The task force is of the opinion that providing free access to the data generated by the public transport system is one potential priority that can be managed cost-efficiently and will contribute towards outcomes that benefit the entire region.

Export markets

The digitisation of health, logistics and tourism services for consumers from Russia as well as the facilitation of Russo–Finnish start-up ventures was considered an opportunity for southern Kymenlaakso.

The active and global marketing of regional process industries and services was deemed a precondition for a sustainable economy.

The joint development of digital water tourism services both regionally and nationally, as well as joint marketing investments in target markets, was believed to boost tourism in the region.

The task force recommends that service providers and tourism businesses in the region set up a joint innovation platform to facilitate negotiations with other coastal regions and Finnish Lakeland over how to utilise digitisation to transform the largest archipelago in Europe into an attractive holiday destination.

Services

The results of the workshop suggest the digitisation of supply and demand could promote the development of service markets. Free access to information allows for increasingly flexible, ecological and cost-efficient movement. The co-ordination and opening of data on passenger and freight traffic, along with the development of hybrid services, would especially boost and invigorate rural regions. The efficiency and stability of logistics networks could be enhanced by means of collective data collection and publication. The task force recommends that a joint innovation platform be established for logistics providers operating in the region to examine the collection and publication of data in more detail.

Innovations

Participants in the workshop voiced their doubts not only about how start-ups and traditional process industries are able to take advantage of open data but also about how businesses can be convinced to provide free access to their information assets.

Open data and the industrial Internet are both means to optimising operations and delivery chains and, thereby, to reducing costs and the use of natural resources. No third-party can provide the operators in southern Kymenlaakso with a straightforward recipe for generating revenues, saving time and improving the quality of life. Each economic sector is positioned to benefit from technological advancements in a unique way. However, only the sectors that are able to apply the advancements will survive. An observation that emerged through the course of the workshop was that open data and location data-based innovations are necessary to allow water and mass tourism service providers to implement the services they have developed.

The task force urges regional businesses to engage in an active and open co-operation in creating applications for the industrial internet and maximising benefits. Narrow-mindedness, protectionism or seeking agreements through closed expert task forces will not promote the development of a sustainable societal infrastructure.



2. Development ideas grouped under **Public administration** were arranged into the following five sub-categories: infrastructure (32), facilitation (31), services (31), interaction (15), and learning and expertise (5) (QR-code 24).

Infrastructure

The European Commission has adopted the five-year objective of creating a digital single market within the 28 member states of the European Union. It is appropriate to ask how southern Kymenlaakso will utilise its own competences in light of this objective?

The task force perceives public sector data generated with tax revenues as an infrastructural element that can be utilised with new services. The public administration can illustrate the benefits of open data by providing free access to its information assets and facilitating the joint efforts of the civil society, industries and foreign operators. Providing free access to information assets is seldom a priority for private businesses because its benefits are typically indirect.

The extent to which digital ecosystems can be developed is defined largely by the quantity and quality of available data. If information assets are closed, the ecosystem will remain underdeveloped; if the assets are open, the opportunities will increase. An open data ecosystem is like a modern-day berry patch: every member of a democratic society must have equal right to access and utilise data.

The logistics infrastructure was identified as a regional strength in the workshop, whereas the development of pedestrian and cycling routes as services was nominated as a particular challenge.

The task force recommends that information assets be opened for public use on a joint innovation platform in collaboration with local development projects, education institutions, entrepreneurs and civil society.

Facilitation

The public administration of southern Kymenlaakso was perceived as an active facilitator and the public sector as a natural facilitator in the fields of logistics, special legislation, business development projects, export promotion, education development, community and regional design, and regional marketing. The task force recommends that open innovation platforms be utilised to identify, research and implement meaningful co-operation and operating methods. The accumulation of precursorship and competences provides a competitive advantage in relation to regions with sluggish economic growth across social sectors. Public administration can adopt measures and demonstrate that value-based leadership can facilitate the development of concrete applications and administrative cultures by drawing together various stakeholders, regardless of their generation, industrial sector, organisational background and nationality.

The task force proposes that an open innovation platform be established for the cities and municipalities of the region to develop and implement the practices of customer-oriented interaction design.

Services

The digital dimension was nominated as a significant factor for delivering societal services to end customers and improving the efficiency of their coordination. Health and social care, and security and maintenance services, for example, were estimated to be poised to utilise innovations in computer sciences efficiently.

The participants called for service development to expedite and simplify permit procedures and to enhance the transparency of tendering and procurement register practices in the region. They also demanded that the need for development projects at suburban service centres be canvassed.

Public transport provoked the most development ideas, with the participants calling for dynamic, user-oriented service structures for both exit and regional traffic.

Interaction development

Interaction development is rich with the spirit of local culture. Interaction is a means to either facilitate or complicate matters. A characteristic of a solution-oriented community is a lack of prejudices towards matters and people.

The participants generally agreed that local residents should be able to easily participate in all phases of local development. They proposed that a digital dimension be introduced to the municipal decision-making process to allow local residents to monitor and contribute towards development from the preparatory phase to decision-making.

The task force recommends that the decision-making interface in use in Helsinki and Jyväskylä, Open Ahjo, be adopted as a platform for publishing data pertinent to decision-making.

Learning and expertise

The topic of learning and expertise was designated as a single development area on the grounds that it was considered an absolute precondition for the development, implementation and administration of smart service structures.

The participants estimated that investments in education are vital, for example, for guaranteeing the digital competences of small and medium-sized enterprises and promoting the proliferation of start-up activities. Learning and expertise was also regarded as means to encourage awareness of the regional knowledge environment and facilitate international and research co-operation at the grass-roots level. The authors of the preliminary study do not comment extensively on the development of learning and expertise in the region but hope that further studies would examine the issue in more detail.

3. Development ideas grouped under **Sustainable development** were arranged into the following sub-categories: ecological sustainability (22), economic sustainability (15), social sustainability (2) and cultural sustainability (2) (QR-code 25).

QR-code 25



Ecological sustainability

The use and refinement of renewable energy forms was deemed a crucial future factor in southern Kymenlaakso. An abundance of development opportunities were also identified in the fields of emissions-free public transport and logistics services. The participants voiced their confidence in demand from abroad for recycling technologies and smart waste management applications. Applications of the industrial Internet and open data ecosystems were regarded as key for resource management, also in the process industries. The composites and elements of wood construction were identified as a possible competitive advantage factors in the construction markets.

Economic sustainability

The economic sustainability of southern Kymenlaakso is according to the participants dependent on functioning transport connections to nearby areas. The participants expressed their willingness to invest in Russian-language services and to take advantage of existing references in marketing the region as a convenient environment for development co-operation between Russia and the European Union. User-driven service structures, the adoption of new technologies, the exports of wood construction materials and expertise, and the development of tourism services were identified as the means to invigorate the local markets. The efforts to rejuvenate city centres should be stepped up in the field of regional design. The recognition of the Russian capital circulating in the region and its utilisation for regional development was considered another important factor.

Social and cultural sustainability

The workshop yielded only a handful of development ideas on social and cultural sustainability, most likely due to its technocratic orientation. The participants did consider it important, however, to call attention to the social and cultural dimensions to ensure they can be addressed as part of the formulation of sustainable smart strategies in the future. They also called for the development of high-quality leisure services and pedestrian and cycling routes, while voicing their concerns about the airfield and aviation hobbyists in Kymi.



4. Development ideas grouped under **Civil society** were arranged into the following sub-categories: legal topics (2), influence (5), media (6) and free-time (7) (QR-code 26).

Civil society

The smart development of civil society was approached from the perspectives of justice, influence, media and free-time. The participants considered it their right to know and influence how big data is utilised. Time-banking trials were proposed as means to combat loneliness and improve elderly care services. The lack of a digital, solution-oriented local media was perceived as a development opportunity that can be utilised in the marketing and participatory aspect of next-generation services. Social media, meanwhile, was identified as a medium for developing local communities and the decision-making practices of housing companies. The participants also expressed their willingness to support sports and social clubs, called for investments in the digital and physical facilities of outdoor fitness areas, and floated the idea of setting up a regional fishing service centre.

6.1.6 Data analysis

A relatively large quantity of development ideas was generated over the course of a single workshop. The task force believes it is vital to emphasise, however, that the ideas generated in the course of the preliminary study offer but a glimpse of the genuine potential of the region. We hope that the data we collected can serve as an indicator and foundation for future examinations of regional strengths. The report offers no in-depth quality assessments but states simply that the collected ideas correlate relatively well with both national and international smart development trends. We are of the opinion that the quality assessments should be conducted by the regional task force that is investigating the topic in the scope of the KymRIS project. We will instead draw a few conclusions based on the collected data to allow for an analysis of the concrete measures necessitated by the desired smart development of the region.

7. CONCLUSIONS AND ACTION PROPOSALS

The challenges associated with smart development are hardly unique to southern Kymenlaakso. The largest cities in the country engage in active co-operation in order to encourage similar developments in the context of 6Aika (QR-code 27). The project has recognised that each region has its own strengths and that no excessively detailed recommendations for the utilisation of smart appliances should be made in joint strategies as local operators are better-equipped to make decisions on technology applications. The regions do have in common, however, a handful of catalyst technologies and administrative innovations that, upon utilisation, can spur the emergence of regional strengths, such as **open data, open participation and customership, and open innovation platforms.**



The task force considers it essential to apply the outlines drawn up as part of 6Aika. The data we collected indicate that an absolute majority of development ideas on smart specialisation necessitate active measures to implement the focus areas of 6Aika, also in southern Kymenlaakso.

We analysed the development ideas not only in light of the focus areas of 6Aika but also in light of two additional categories. A conclusion drawn by our task force is that a large data pool and distributed data verification system are prerequisites for the development of open data applications – an observation that enhances the significance of my data as an information structure going forward. We also determined that marketing, despite being a key element from the viewpoint of sustainable development, is often absent from public administration-driven processes, causing even good innovations to linger on the drawing board. Society at large must be able to take steps forward simultaneously on a number of fronts.

7.1 Open data

QR-code 28



QR-code 29



Helsinki Region Infoshare, a national pioneer of open data, defines open data as the unprocessed data accumulated by public administration, organisations, businesses or individuals that has been made openly available to third parties for free. (QR-code 28). A vast majority, 93.5 per cent (216/18), of the development ideas we collected would either require access to open data or be able to utilise open data as defined above. The remaining 6.5 per cent of the ideas were distributed evenly across categories. All data collected in the course of the preliminary study have been published in open data formats (QR-code 29).

7.1.1 Open data in southern Kymenlaakso

The preliminary study found that the data accumulated in southern Kymenlaakso have yet to be made freely available, with the exception of certain location data depositories accessible through lounaispaikka.fi.

7.1.2 Open data efforts in other regions

The open data efforts of other urban regions have typically begun with location data. The first services utilising open location data to gain widespread popularity have been public transport development projects as well as route and timetable services. Concrete results have been achieved relatively quickly and cost-efficiently as the services are based on open-source applications that are available in southern Kymenlaakso.

7.1.3 A proposal to open up data in Kymenlaakso

The task force proposes that the urban regions and businesses of southern Kymenlaakso open up real-time data to enable service providers to refine them into services. Most of the data are currently siloed in various businesses and institutions developing their own portals for different databases. The trend is regrettable from the viewpoint of local residents and businesses, as they have to spend time locating the data, learning how to use the various portals, reading meta-data and amalgamating data from a number of sources. The region has yet to establish a so-called data catalogue to grant service providers access to open data.

7.1.4 Workshop activities

Opening up information assets is advisable not only in theory, but also in practice. Strategic efforts are a relatively inefficient means of encouraging the shift to open data – unlike decisions and practical measures. The task force proposes that open data workshops be organised for a number of target groups. We also warmly recommend that the Open Finland Roadshow (QR-code 30) is invited to Kotka-Hamina and Lappeenranta in the third quarter of 2015. Invitations to the event should be extended to, for example, the Kotka Main Library, local tourism promotion agencies, education institutions, project teams, businesses and public sector experts. The task force believes the open data experiences of the urban regions leading the way in Finland, Helsinki and Tampere, could prove beneficial for southern Kymenlaakso.



The task force proposes the following concrete measures to take advantage of open data:

1. Cities and municipalities in southern Kymenlaakso should adopt an open data resolution and designate an agent with expertise in data administration within each of the organisations as a facilitator of open data.
2. The cities and municipalities should designate platforms for the publication of open data. The task force recommends the use of existing services, such as avointieto.fi, lounaispaikka.fi and the EU Open Data Portal, and that attractive and cohesive links to the data are provided through local service channels, such as the websites of cities and municipalities.
3. The region should initiate co-operation with JulkICTLab, Open Knowledge Finland and COSS to have access to peer support and to take advantage of previous work in the field fully and cost-efficiently.
4. The data to be published should be licensed as Creative Commons 4.0 in accordance with Public Administration Recommendation (JHS) 189
5. It should be determined which information assets or databases are already in a compatible format and how to produce the most immediate benefits by opening up the data. Providing free access to an existing piece of data, such as an Excel file, is a good first step towards opening up information assets.
6. The data should be published in an open, standardised format, such as CSV or XLS, and whenever possible be made accessible via an interface.

7. The majority of public sector data are public under the act on the openness of government activities. It is nevertheless advisable to determine whether copyright regulations impose any limitations on the publication and whether the publication infringes privacy regulations.
8. The publishers of data should strive to participate actively in the debate on social development with the private sector, public sector and civil society. Interaction is not only a means to develop the methods of producing and opening data but also to encourage their utilisation.
9. The open decision-making interface, Open Ahjo (<http://dev.hel.fi/apis/openahjo>), should be adopted to promote the democratic development of the region.
10. The task force recommends also that the creative application of open data is encouraged by organising regular training opportunities in southern Kymenlaakso.

7.1.5 Open data training

The task force proposes that training to open up and creatively apply open data be launched in order to secure the competitiveness of the region despite the structural change. Courses on the development of open data and data administration should be part of the curriculum of the Kymenlaakso Open University of Applied Sciences to allow anyone to apply.

7.2 Open participation and customership

Our task force recommends that open innovation platforms be utilised to intermix the traditional organisational and societal structural silos. Innovation platforms, as defined by 6Aika “are environments that enable the development of new products, services and markets, allowing the entire city community to work together to create new services, solutions and businesses. In other words, innovation platforms are tools that cover the entire life cycle of a service, from idea to testing and from testing to product.” (QR-code 31).

Out of the development ideas we collected, 98.9 per cent (276/3) would benefit directly or indirectly from the utilisation of open innovation platforms. The remaining 1.1 per cent of the ideas, which would not benefit from innovation platforms, required no co-operation because they were either so general or already concretely in place.

QR-code 31



7.2.1 Open decision-making

The task force recommends that Open Ahjo, a decision-making interface in use in Helsinki and Jyväskylä, be adopted to publish decision-making data (<http://dev.hel.fi/apis/openahjo>). The provision of free access to the data accumulated by the urban regions is also an indication that the regions are striving towards transparency, and a stronger interactive and democratic culture.

7.2.2 The developing domestic and export markets

A solution-oriented approach and the respect for human beings that is typical of civilisations are prerequisites for the development and harmonisation of digital service structures. Problem-solving situations are usually so complex that they are difficult to solve in a climate of reciprocal disrespect and escalating power struggles. Leading autocratically is becoming increasingly difficult and, on the other hand, a greater emphasis on customer-orientation is required to optimise the competitiveness of service structures in a world of digital and global development. Creating a culture of open participation and customer-ship as well as implementing tools requires resolute efforts from both public and private sector operators. We should challenge each other to work on joint innovation platforms.

7.3 Open innovation platforms

Our task force recommends that open innovation platforms be utilised to intermix the traditional organisational and societal silos. Innovation platforms, as defined by 6Aika, “are environments that enable the development of new products, services and markets, allowing the entire city community to work together to create new services, solutions and businesses. In other words, innovation platforms are tools that cover the entire life cycle of a service, from idea to testing and from testing to product.” (QR-code 32).



Out of the development ideas we collected, 98.9 per cent (276/3) would benefit directly or indirectly from the utilisation of open innovation platforms. The remaining 1.1 per cent of the ideas, which would not benefit from innovation platforms, required no co-operation because they were either so general or already concretely in place.

From the perspective of global development, southern Kymenlaakso is a small, sparsely populated but technologically advanced area of civilisation with a long tradition of international trade courtesy of its old port cities.

The region has a number of strengths and operators that it must inspire in order to engage in unprejudiced co-operation. The analysis conducted by the task force shows that southern Kymenlaakso has the preconditions to create mid-strength innovation platforms. The ongoing development projects should take part in an open dialogue to promote efficient team play.

Based on its findings, the task force proposes that three innovation platforms be established:

1. **An innovation platform for international trade, creative industries and tourism services**, which would serve as an environment for promoting marketing co-operation, for testing and developing commercial service innovations and systems, and for creating a culture of cross-scientific and artistic experimentation.
2. **An innovation platform for the public administration and regional interaction development**, which would serve as an environment for building sustainable democratic regional development, and sustainable ecological and social well-being, as well as an active and participatory society.
3. **An innovation platform for logistics and public transport**, which would serve as an environment for developing the industrial Internet and world-class logistics service innovations, as well as a functioning and diverse transport system.

The innovation platforms function as the focal points of specialisation: **A) international trade, creative economy and tourism, B) open administration and interaction, and C) logistics and public transport**. The focal points were identified based on a quantitative and qualitative classification of a relatively light and unambiguous set of data, but we are confident that the findings are a positive approximation that is duplicable and compatible both on a national and international scale.

7.4 My data

The concept of my data refers to data collected from citizens or customers that can be accessed and managed by the citizen or customer in question. A variety of open innovations require the public utilisation of detailed customer data. The published customer data must simultaneously be both verifiable and distributed in order to take advantage of them in a credible and anonymous manner. The difficult equation is made possible by the concept of my data, despite the fact that it remains in its infancy both in Finland and abroad. My

data represent according to the task force a genuine opportunity for the region as the ability to apply such data early on can prove a significant competitive advantage for local operators.

Out of the development ideas we collected, 88.2 per cent (246/33) would benefit directly or indirectly from the utilisation of my data. The remaining 11.8 per cent of ideas would not be able to utilise my data primarily because they are related to completely open and public data.

The task force urges data administration, marketing and community design experts from both the public and private sector to familiarise themselves with the report published by the Ministry of Transport and Communications: *My Data – an introduction to the human-centric utilisation of personal information* (QR-code 33).

QR-code 33



7.5 Marketing

Finnish society is developed largely on the shoulders of the traditional process industries, which account for an estimated 90 per cent of all exports and add 30 billion euros to the tax coffers every year. (QR-code 34). It is imperative, however, that growth is also sought by meshing the so-called new and old industrial activities due to the challenges brought about by structural changes. **Matti Pohjola**, a professor at Aalto School of Economics, estimated in his report to the Federation of Finnish Industries – *Towards Finland rising anew – ICT and digitisation as the sources of productivity and economic growth* – that the widespread introduction of the industrial Internet could generate economic growth of up to 2 per cent (QR-code 35). Tests and applications of the industrial Internet and other smart applications are intriguing especially when they are supported by marketing efforts.

QR-code 34



QR-code 35



The data we collected indicate that one hundred per cent (279/279) of the development ideas would benefit from marketing either directly or indirectly. Whether or not we are able to adjust our mindsets accordingly is another question entirely.

Our task force proposes that, in order to be able to enjoy the fruits of open data ecosystem development as early as possible, the results of all development projects are marketed actively and that marketing is taken into consideration already in the early stages of development projects, regardless of whether services are being developed for the private or public sector.

We believe successful innovations and the results of successful trials should also be marketed abroad. No society can really afford to have this much value lying on the drawing boards of regional development teams. Products utilising smart technologies are usually applicable on a global scale.

References

Cursor Oy. 2012. Kotkan – Haminan seudun seutustrategia 2010–2015. Accessible: http://www.cursor.fi/seudun_kehittaminen/seudun_asiakirjat/muut [accessed on 22/3/2015].

Hautamäki, Antti & Oksanen, Kaisa. 2012. Suuntana innovaatiokeskittymä. Jyväskylä: University of Jyväskylä. <http://bit.ly/1yrwl1G> [accessed on 17/3/2015]

Kymenlaakson Liitto. 2014. Kymenlaakson maakuntaohjelma 2014–2017. Accessible: http://www.kymenlaakso.fi/export/sites/www.kymenlaakso.fi/liitteet/aluekehitys/maakuntaohjelma_2014-2017_lopullinen.pdf [accessed on 15/3/2015]

Poikola, J. Kola, P. and Hintikka, K. 2010. Public Data – an introduction to opening information resources. (LVM) Edita Prima Oy, Helsinki. Accessible: <http://www.julkinendata.fi/> [accessed on 15/3/2015]

Ministry of Finance. 2013. Hallinnon ja aluekehityksen ministerityöryhmän kokouksen taustamuistio 18/4/2013 <http://bit.ly/1Dj4urR> [accessed on 24/3/2015]

Appendices

1. An invitation to a workshop on 17/3/2015



cursor



trans

An invitation to a workshop on the smart specialisation of southern Kymenlaakso!

Time: 17/3/2015, 9:00 - 14.30

Place: Kotka, Steam Brewery, (Metsontie 41)

The Kymenlaakso University of Applied Sciences (AMK), Cursor Oy and TransSmart, one of the spearhead programmes of the Technical Research Centre of Finland (VTT), will organise a workshop titled *Southern Kymenlaakso as part of smart specialisation 2020* on 17 March, 2015. We will have the privilege of listening to presentations on smart urban services, city planning and smart transport during the course of the morning. The presentations will serve as an introduction to the afternoon's workshop in which we will define the focal points of smart specialisation in Southern Kymenlaakso while bearing in mind the E18 Growth Zone.

The regional community consists of the local residents, research and education institutions, and the public administration. The innovation platform and focal points function as environments that promote the development of new products, services and markets while allowing the entire urban community to create new solutions and business concepts.

We appreciate transparency, community-minded thinking and a solution-oriented approach. We welcome you to participate and contribute, as a torch-carrier, to the smart specialisation of southern Kymenlaakso.

Further information: kasvukaista.fi and Open Data Kymenlaakso.

You can kick off the smart specialisation of Southern Kymenlaakso by responding to [this questionnaire](#).

Tommy Ulmanen
Kymenlaakso AMK

Toomas Lybeck
Cursor Oy

Karri Rantasila
VTT

Markus Petteri Laine
Aaltomo

[Link to the registration form](#)



cursor



trans

THE FOCAL POINTS OF SMART SPECIALISATION IN SOUTHERN KYMENLAAKSO – THE CURRENT STATE: “THE REGION IN 2015”

09:00–09:15	Coffee break	
09:15–09:20	Speaker introductions	Markus Petteri Laine, Aaltomo
09:20–09:40	Opening remarks and strategic choices in the regional programme	Juha Haapaniemi, Kymenlaakson Liitto
09:40–10:20	The possibilities of smart urban services	Hanna Niemi-Hugaerts, Forum Virium Helsinki
10:20–10:40	Smart technologies in public and freight transport	Karri Rantasila, VTT
10:40–11:00	Smart city – IoT and other smart technologies in cities	Hannele Ahvenniemi, VTT
11:00–11:45	Lunch break	

THE FOCAL POINTS OF SMART SPECIALISATION IN SOUTHERN KYMENLAAKSO – THE FUTURE: “THE REGION AS PART OF SMART SPECIALISATION 2020”

11:45–12:00	Opening remarks for the workshop:	Tommy Ulmanen, Kymenlaakso AMK
12:00–13:00	1. A safe and functional business and knowledge environment	TR1, Toomas Lybeck, Cursor Oy
	2. A high-quality, clean and comfortable living and operating environment	TR2, Hanna Ahvenniemi, VTT
	3. Main traffic routes, transport connections and border traffic	TR3, Karri Rantasila, VTT
	4. Industrial sectors utilising and strengthening the Northern Growth Zone and their interfaces	TR4, Hanna Niemi-Hugaerts, Forum Virium Helsinki
13:00–13:15	Coffee break	
13:15–14:00	De-briefing, discussion	Markus Petteri Laine and Tommy Ulmanen
14:00	The workshop ends	

We reserve the right to change the schedule.

2. An invitation to a seminar on 31/3/2015



cursor

smart
trans

An invitation to a seminar on the smart specialisation of southern Kymenlaakso

Time: 31/3/2015, 10:00–15.30

Place: Kotka, Maritime Centre Vellamo

Developing a digital infrastructure matters. Well-managed smart development is a precondition for the creation of an increasingly efficient operating environment and convenient public services. We will have the privilege of listening to speeches from leading experts in digital community design from the viewpoints of digital infrastructure, smart transport and interaction design. We will not simply theorise but also provide direct contacts to funding agencies and ongoing collaborative projects that will offer you both the instructions and tools to support the smart development of southern Kymenlaakso.

The results of a preliminary study on the smart specialisation of southern Kymenlaakso will be unveiled at the seminar. Join us in updating the big picture!

We appreciate transparency, community-minded thinking and a solution-oriented approach. You are welcome to participate and contribute, as a torch-carrier, to the smart specialisation of southern Kymenlaakso.

Further information: kasvukaista.fi and Open Data Kymenlaakso.

[Register for the free seminar here.](#)

Tommy Ulmanen
Kymenlaakso AMK

Karri Rantasila
VTT

Markus Petteri Laine
Aaltomo



Kymenlaakson Liitto
Regional Council of Kymenlaakso



cursor

smart
trans

THE FUTURE OF SOUTHERN KYMENLAAKSO: "A PART OF SMART SPECIALISATOIN 2020"

10:00-10:15	Registration	
10:15-10:20	Opening remarks for the first part of the seminar and speaker introductions	
10:20-10:40	Smart development as a factor fostering competitiveness and well-being in southern Kymenlaakso	Sirpa Paatero, Minister for International Development
10:40-11:20	Political mindset and measures to support smart regional development	Kirsi Miettinen, Ministry of Transport and Communications
11:20-11:40	Open data and smart building as part of the economic vitality policy of municipalities	Jarkko Huovinen, the Association of Finnish Local and Regional Authorities
11:40-12:00	Smart and low-carbon transport	Karri Rantasila, VTT
12:00-12:45	Non-complimentary lunch	
12:45-13:00	Opening remarks for the second part of the seminar	
13:00-13:20	The development environment for digital public sector services	Kirsi Pispä, CSC – IT Centre for Science
13:20-13:40	The second revolution of transport – smart transport services	Jukka Lintusaari, University of Tampere
13:40-14:00	Interaction design in societal processes – the case of Helsinki Central Library	Virve Inkeri Miettinen, City of Helsinki
14:00-14:20	Break	
14:20-14:40	Open data education in the urban region of Kotka-Hamina	Anni Anttila, Kymenlaakso University of Applied Sciences
14:40-15:00	The structure of the innovation ecosystem for smart specialisation in southern Kymenlaakso	Tommy Ulmanen, Kymenlaakso University of Applied Sciences
15:00-15:30	Panel discussion: Smart growth and the focal points of specialisation in southern Kymenlaakso	Petteri Laine, Kirsi Miettinen, Jarkko Huovinen, Karri Rantasila, Kirsi Pispä, Virve Inkeri Miettinen and Jukka Lintusaari
15:30	The seminar ends	



Kymenlaakson Liitto
Regional Council of Kymenlaakso

PUBLICATIONS OF KYMENLAAKSO UNIVERSITY OF APPLIED SCIENCES

SERIES B Research and Reports

- B 1 Markku Huhtinen & al.:
Laivadieselien päästöjen vähentäminen olemassa olevissa laivoissa [1997].
- B 2 Ulla Pietilä, Markku Puustelli:
An Empiral Study on Chinese Finnish Buying Behaviour of International Brands [1997].
- B 3 Markku Huhtinen & al.:
Merenkulkualan ympäristönsuojelun koulutustarve Suomessa [1997].
- B 4 Tuulia Paane-Tiainen:
Kohti oppijakeskeisyyttä. Oppijan ja opettajan välisen ohjaavan toiminnan hahmottamista [1997].
- B 5 Markku Huhtinen & al.:
Laivadieselien päästöjä vähentävien puhdistuslaitteiden tuotteistaminen [1998].
- B 6 Ari Siekkinen:
Kotkan alueen kasvihuonepäästöt [1998]. Myynti: Kotkan Energia.
- B 7 Risto Korhonen, Mika Määttänen:
Veturidieseileiden ominaispäästöjen selvittäminen [1999].
- B 8 Johanna Hasu, Juhani Turtiainen:
Terveysalan karusellikoulutusten toteutuksen ja vaikuttavuuden arviointi [1999].
- B 9 Hilikka Dufva, Mervi Luhtanen, Johanna Hasu:
Kymenlaakson väestön hyvinvoinnin tila, selvitys Kymenlaakson väestön hyvinvointiin liittyvistä tekijöistä [2001].
- B 10 Timo Esko, Sami Uoti:
Tutkimussopimusopas [2002].
- B 11 Arjaterttu Hintsala:
Mies sosiaali- ja terveydenhuollon ammattilaisena – minunko ammattini? [2002].

- B 12 Päivi Mäenpää, Toini Nurminen:
Ohjatun harjoittelun oppimisympäristöt ammatillisen kehittymisen edistäjinä – ARVI-projekti 1999–2002 [2003], 2 p. [2005] .
- B 13 Frank Hering:
Ehdotus Kymenlaakson ammattikorkeakoulun kestävän kehityksen ohjelmaksi [2003].
- B 14 Hilikka Dufva, Raija Liukkonen
Sosiaali- ja terveysalan yrittäjyys Kaakkois-Suomessa. Selvitys Kaakkois-Suomen sosiaali- ja terveysalan palveluyrittäjyyden nykytilasta ja tulevaisuuden näkymistä [2003].
- B 15 Eija Anttalainen:
Ykköskuski: kuljettajien koulutustarveselvitys [2003].
- B 16 Jyrki Ahola, Tero Keva:
Kymenlaakson hyvinvointistrategia 2003–2010 [2003], 2 p. [2003].
- B 17 Ulla Pietilä, Markku Puustelli:
Paradise in Bahrain [2003].
- B 18 Elina Petro:
Straightway 1996–2003. Kansainvälinen transitoreitin markkinointi [2003].
- B 19 Anne Kainlauri, Marita Melkko:
Kymenlaakson maaseudun hyvinvointipalvelut – näkökulmia maaseudun arkeen sekä mahdollisuuksia ja malleja hyvinvointipalvelujen kehittämiseen [2005].
- B 20 Anja Härkönen, Tuomo Paakkonen, Tuija Suikkanen-Malin, Pasi Tulkki:
Yrittäjyyskasvatus sosiaalialalla [2005]. 2. p. [2006]
- B 21 Kai Koski (toim.):
Kannattava yritys ei menetä parhaita asiakkaitaan. PK-yritysten liiketoiminnan kehittäminen osana perusopetusta [2005]
- B 22 Paula Posio, Teemu Saarelainen:
Käytettävyyden huomioon ottaminen Kaakkois-Suomen ICT-yritysten tuotekehityksessä [2005]
- B 23 Eeva-Liisa Frilander-Paavilainen, Elina Kantola, Eeva Suuronen:
Keski-ikäisten naisten sepelvaltimotaudin riskitekijät, elämäntavat ja ohjaus sairaalassa [2006]
- B 24 Johanna Erkamo & al.:
Oppimisen iloa, verkostojen solmimista ja toimivia toteutuksia yrittäjämäisessä oppimisympäristössä [2006]
- B 25 Johanna Erkamo & al.:
Luovat sattumat ja avoin yhteistyö ikäihmisten iloksi [2006]
- B 26 Hanna Liikanen, Annukka Niemi:
Kotihoiton liikkuvaa tietojenkäsittelyä kehittämässä [2006]

- B 27 Päivi Mäenpää
Kaakkois-Suomen ensihoidon kehittämisstrategia vuoteen 2010 [2006]
- B 28 Anneli Airola, Arja-Tuulikki Wilén (toim.):
Hyvinvointialan tutkimus- ja kehittämistoiminta Kymenlaakson ammattikorkeakoulussa [2006]
- B 29 Arja-Tuulikki Wilén:
Sosiaalipäivystys – kehittämishankkeen prosessievaluatio [2006].
- B 30 Arja Sinkko (toim.):
Kestävä kehitys Suomen ammattikorkeakouluissa – SUDENET-verkostohanke [2007].
- B 31 Eeva-Liisa Frilander-Paavilainen, Mirja Nurmi, Leena Wäre (toim.):
Kymenlaakson ammattikorkeakoulu Etelä-Suomen Alkoholiohjelman kuntakumppanuudessa [2007].
- B 32 Erkki Hämäläinen & Mari Simonen:
Siperian radan tariffikorotusten vaikutus konttiliikenteeseen 2006 [2007].
- B 33 Eeva-Liisa Frilander-Paavilainen & Mirja Nurmi:
Tulevaisuuteen suuntaava tutkiva ja kehittävä oppiminen avoimissa ammattikorkeakoulun oppimisympäristöissä [2007].
- B 34 Erkki Hämäläinen & Eugene Korovyakovsky:
Survey of the Logistic Factors in the TSR-Railway Operation – “What TSR-Station Masters Think about the Trans-Siberian?” [2007].
- B 35 Arja Sinkko:
Kymenlaakson hyvinvoinnin tutkimus- ja kehittämiskeskus (HYTKES) 2000–2007. Vaikuttavuuden arviointi [2007].
- B 36 Erkki Hämäläinen & Eugene Korovyakovsky:
Logistics Centres in St Petersburg, Russia: Current status and prospects [2007].
- B 37 Hilikka Dufva & Anneli Airola (toim.):
Kymenlaakson hyvinvointistrategia 2007–2015 [2007].
- B 38 Anja Härkönen:
Turvallista elämää Pohjois-Kymenlaaksossa? Raportti Kouvolan seudun asukkaiden kokemasta turvallisuudesta [2007].
- B 39 Heidi Nousiainen:
Stuuva-tietokanta satamien työturvallisuustyön työkaluna [2007].
- B 40 Tuula Kivilaakso:
Kymenlaaksolainen veneenveistoperinne: venemestareita ja mestarillisia veneitä [2007].
- B 41 Elena Timukhina, Erkki Hämäläinen, Soma Biswas-Kauppinen:
Logistic Centres in Yekaterinburg: Transport – logistics infrastructure of Ural Region [2007].

- B 42 Heidi Kokkonen:
Kouvola muuttajan silmin. Perheiden asuinpaikan valintaan vaikuttavia tekijöitä [2007].
- B 43 Jouni Laine, Suvi-Tuuli Lappalainen, Pia Pauku:
Kaakkois-Suomen satamasidonnaisten yritysten koulutustarveselvitys [2007].
- B 44 Alexey V. Rezer & Erkki Hämäläinen:
Logistic Centres in Moscow: Transport, operators and logistics infrastructure in the Moscow Region [2007].
- B 45 Arja-Tuulikki Wilén:
Hyvä vanhusten hoidon tulevaisuus. Raportti tutkimuksesta Kotkansaaren sairaalassa 2007 [2007].
- B 46 Harri Ala-Uotila, Eeva-Liisa Frilander-Paavilainen, Ari Lindeman, Pasi Tulkki (toim.):
Oppimisympäristöistä innovaatioiden ekosysteemiin [2007].
- B 47 Elena Timukhina, Erkki Hämäläinen, Soma Biswas-Kauppinen:
Railway Shunting Yard Services in a Dry-Port. Analysis of the railway shunting yards in Sverdlovsk–Russia and Kouvola–Finland [2008].
- B 48 Arja-Tuulikki Wilén:
Kymenlaakson muisti- ja dementiaverkosto. Hankkeen arviointiraportti [2008].
- B 49 Hilikka Dufva, Anneli Airola (toim.):
Puukuidun uudet mahdollisuudet terveyden- ja sairaanhoidossa. TerveysSellu-hanke. [2008].
- B 50 Samu Urpalainen:
3D-voimalaitossimulaattori. Hankkeen loppuraportti. [2008].
- B 51 Harri Ala-Uotila, Eeva-Liisa Frilander-Paavilainen, Ari Lindeman (toim.):
Yrittäjämäisen toiminnan oppiminen Kymenlaaksossa [2008].
- B 52 Peter Zashev, Peeter Vahtra:
Opportunities and strategies for Finnish companies in the Saint Petersburg and Leningrad region automobile cluster [2009].
- B 53 Jari Handelberg, Juhani Talvela:
Logistiikka-alan pk-yritykset versus globaalit suuroperaattorit [2009].
- B 54 Jorma Rytönen, Tommy Ulmanen:
Katsaus intermodaalikuljetusten käsitteisiin [2009].
- B 55 Eeva-Liisa Frilander-Paavilainen:
Lasten ja nuorten terveys- ja tapakäyttäytyminen Etelä-Kymenlaakson kunnissa [2009].
- B 56 Kirsi Rouhiainen:
Viisasten kiveä etsimässä: miksi tradenomiopiskelija jättää opintonsa kesken? Opintojen keskeyttämisen syiden selvitys Kymenlaakson ammattikorkeakoulun liiketalouden osaamisalalla vuonna 2008 [2010].

- B 57 Lauri Korppas – Esa Rika – Eeva-Liisa Kauhanen:
eReseptin tuomat muutokset reseptiprosessiin [2010].
- B 58 Kari Stenman, Rajka Ivanis, Juhani Talvela, Juhani Heikkinen:
Logistiikka & ICT Suomessa ja Venäjällä [2010].
- B 59 Mikael Björk, Tarmo Ahvenainen:
Kielelliset käytänteet Kymenlaakson alueen logistiikkayrityksissä [2010].
- B 60 Anni Mättö:
Kyläläisten metsävarojen käyttö ja suhtautuminen metsien häviämiseen Mzuzun alueella Malawissa [2010].
- B 61 Hilikka Dufva, Juhani Pekkola:
Turvallisuusjohtaminen moniammatillisissa viranomaisverkostoissa [2010].
- B 62 Kari Stenman, Juhani Talvela, Lea Värtö:
Toiminnanohjausjärjestelmä Kymenlaakson keskussairaalan välinehuoltoon [2010].
- B 63 Tommy Ulmanen, Jorma Rytönen:
Intermodaalikuljetuksiin vaikuttavat häiriöt Kotkan ja Haminan satamissa [2010].
- B 64 Mirva Salokorpi, Jorma Rytönen
Turvallisuus ja turvallisuusjohtamisjärjestelmät satamissa [2010].
- B 65 Soili Nysten-Haarala, Katri Pynnöniemi (eds.):
Russia and Europe: From mental images to business practices [2010].
- B 66 Mirva Salokorpi, Jorma Rytönen:
Turvallisuusjohtamisen parhaita käytäntöjä merenkulkijoille ja satamille [2010].
- B 67 Hannu Boren, Marko Viinikainen, Ilkka Paajanen, Viivi Etholen:
Puutuotteiden ja -rakenteiden kemiallinen suojaus ja suojauksen markkinapotentiaali [2011].
- B 68 Tommy Ulmanen, Jorma Rytönen, Taina Lepistö:
Tavaravirtojen kasvusta ja häiriötekijöistä aiheutuvat haasteet satamien intermodaalijärjestelmälle [2011].
- B 69 Juhani Pekkola, Sari Engelhardt, Jussi Hänninen, Olli Lehtonen, Pirjo Ojala:
2,6 Kestävä kansakunta. Elinvoimainen 200-vuotias Suomi [2011].
- B 70 Tommy Ulmanen:
Strategisen osaamisen johtaminen satama-alueen Seveso-laitoksissa [2011].
- B 71 Arja Sinkko:
LCCE-mallin käyttöönotto tekniikan ja liikenteen toimialalla – ensiaskeleina tuotteistaminen ja sidosryhmäyhteistyön kehittäminen [2012].
- B 72 Markku Nikkanen:
Observations on Responsibility – with Special reference to Intermodal Freight Transport Networks [2012].

- B 73 Terhi Suuronen:
Yrityksen arvon määrittäminen yrityskauppatilanteessa [2012].
- B 74 Hanna Kuninkaanniemi, Pekka Malvela, Marja-Leena Saarinen (toim.):
Research Publication 2012 [2012].
- B 75 Tuomo Väärä, Reeta Stöd, Hannu Boren:
Moderni painekyllästys ja uusien puutuotteiden testaus aidossa, rakennetussa ympäristössä. Jatkohankkeen loppuraportti [2012].
- B 76 Ilmari Larjavaara:
Vaikutustapojen monimuotoisuus B-to-B-markkinoinnissa Venäjällä – lahjukset osana liiketoimintakulttuuria [2012].
- B 77 Anne Fransas, Enni Nieminen, Mirva Salokorpi, Jorma Rytönen:
Maritime safety and security. Literature review [2012].
- B 78 Juhani Pekkola, Olli Lehtonen, Sanna Haavisto:
Kymenlaakson hyvinvointibarometri 2012. Kymenlaakson hyvinvoinnin kehityssuuntia viranhaltijoiden, luottamushenkilöiden ja ammattilaisten arvioimana [2012].
- B 79 Auli Jungner (toim.):
Sosionomin (AMK) osaamisen työelämälähtöinen vahvistaminen. Ongelmaperustaisen oppimisen jalkauttaminen työelämäyhteistyöhön [2012].
- B 80 Mikko Mylläri, Jouni-Juhani Häkkinen:
Biokaasun liikennekäyttö Kymenlaaksossa [2012].
- B 81 Riitta Leviäkangas (toim.):
Yhteiskuntavastuuraportti 2011 [2012].
- B 82 Riitta Leviäkangas (ed.):
Annual Responsibility Report 2011 [2012].
- B 83 Juhani Heikkinen, Janne Mikkala, Niko Jurvanen:
Satamayhteisön PCS-järjestelmän pilotointi Kaakkois-Suomessa. Mobiilisatama-projektin työpaketit WP4 ja WP5, loppuraportti 2012 [2012].
- B 84 Tuomo Väärä, Hannu Boren:
Puun modifiointiklusteri. Loppuraportti 2012 [2012].
- B 85 Tiina Kirvesniemi:
Tieto ja tiedon luominen päiväkotityön arjessa [2012].
- B 86 Sari Kiviharju, Anne Jääsmaa:
KV-hanketoiminnan osaamisen ja kehittämistarpeiden kartoitus – Kyselyn tulokset [2012].
- B 87 Satu Hoikka, Liisa Korpivaara:
Työhyvinvointia yrittäjälle – yrittäjien kokemuksia Hyvinvointikoulusta ja näkemyksiä yrittäjän työhyvinvointia parantavista keinoista [2012].
- B 88 Sanna Haavisto, Saara Eskola, Sami-Seppo Ovaska:
Kopteri-hankkeen loppuraportti [2013].

- B 89 Marja-Liisa Neuvonen-Rauhala, Pekka Malvela, Heta Vilén, Oona Sahlberg (toim.):
Sidos 2013 – Katsaus kansainvälisen liiketoiminnan ja kulttuurin toimialan työelämäläheisyyteen [2013].
- B 90 Minna Söderqvist:
Asiakaskeskeistä kansainvälistymistä Kymenlaakson ammattikorkeakoulun yritysysteistyössä [2013].
- B 91 Sari Engelhardt, Marja-Leena Salenius, Juhani Pekkola:
Hyvän tuulen palvelu. Kotkan terveystietokone hyvinvoinnin edistäjänä – Kotkan terveystietokonekokeilun arviointi 2011–2012 [2013].
- B 92 Anne Fransas, Enni Nieminen, Mirva Salokorpi:
Maritime security and safety threats – Study in the Baltic Sea area [2013].
- B 93 Valdemar Kallunki (toim.):
Elämässä on lupa tavoitella onnea: Nuorten aikuisten koettu hyvinvointi, syrjäytyminen ja osallisuus Kaakkois-Suomessa ja Luoteis-Venäjällä. Voi hyvin nuori -hankkeen loppuraportti. [2013].
- B 94 Hanna Kuninkaanniemi, Pekka Malvela, Marja-Leena Saarinen (toim.):
Research Publication 2013 [2013].
- B 95 Arja Sinkko (toim.):
Tekniikan ja liikenteen toimialan LCCE-toiminta Yritysysteistyönä käytännössä: logistiikan opiskelijoiden ”24 tunnin ponnistus”[2013].
- B 96 Markku Nikkanen:
Notes & Tones on Aspects of Aesthetics in Studying Harmony and Disharmony: A Dialectical Examination [2013].
- B 97 Riitta Leviäkangas (toim.):
Yhteiskuntavastuuraportti 2012 [2013].
- B 98 Mervi Nurminen, Teija Suoknuuti, Riina Mylläri (toim.):
Sidos 2013, NELI North European Logistics Institute – Katsaus logistiikan kehitysohjelman tuloksiin[2013].
- B 99 Jouni-Juhani Häkkinen, Svenja Baer, Hanna Ricklefs:
Economic comparison of three NO_x emission abatement systems [2013].
- B 100 Merja Laittoniemi:
Yksinäisyydestä yhteisöllisyyteen. Yhteisöllistä hoitotyötä Elimäen Puustellissa [2013].
- B 101 Kari Stenman (toim.):
ROCKET. Kymenlaakson ammattikorkeakoulun osahankkeen loppuraportti [2013].
- B 102 Hannu Sarvelainen, Niko Töyrylä:
Koelaite biomassan torrefiointiin. Biotuli-hankkeen tutkimusraportti 2013 [2013].
- B 103 Saara Eskola:
Biotuli-hanke. Puupohjaiset antibakteeriset tuotteet infektioiden torjunnassa [2013].

- B 104 Hilikka Dufva, Juhani Pekkola:
Matkustajalaivaliikennettä harjoittavan varustamon yhteiskuntaeettinen liiketoiminta [2013].
- B 105 Mirva Pilli-Sihvola (toim.):
Muuttuuko opettajuus ja mihin suuntaan? Yhteisöllisen verkko-oppimisen ja mobiilioppimisen mahdollisuuksia etsimässä [2013].
- B 106 Anne Fransas, Enni Nieminen, Mirva Salokorpi:
Maritime security and security measures – Mimic Study in the Baltic Sea Area [2013].
- B 107 Satu Peltola (ed.):
Wicked world – The spirit of wicked problems in the field of higher education [2013].
- B 108 Hannu Sarvelainen, Niko Töyrylä:
Erilaisten biomassojen soveltuvuus torrefiointiin. BIOTULI-hankkeen tutkimusraportti 2013 [2013].
- B 109 Tiina Kirvesniemi:
Ammattikorkeakouluopintoihin valmentava koulutus maahanmuuttajille – kokemuksia Kymenlaaksossa [2013].
- B 110 Jari Hyyryläinen, Pia Paukku ja Emmi Rantavuo:
Trik-hanke. Kotka, Kundan ja Krostadtin välisen laivareitin matkustaja- ja rahtipotentialin selvitys. [2013].
- B 111 Heta Vilén, Camilla Grönlund (toim.):
LCCE-harjoittelu. Harjoitteluprosessi osana LCCE-konseptia [2013].
- B 112 Kati Raikunen, Riina Mylläri:
Kaakkois-Suomen logistiikkakatsaus [2014].
- B 113 Tuomo Pimiä (ed.):
Info package of wind energy [2014].
- B 114 Anni Anttila, Riina Mylläri:
Vertailu tuulivoimapuiston meri- ja maantiekuljetuksesta – Renewtech-projekti [2014].
- B 115 Tuomo Pimiä (ed.):
Organic waste streams in energy and biofuel production [2014].
- B 116 Kati Raikunen, Mikko Mylläri:
Meritulivoimailojen logistiikka- ja markkinaselvitys Itämerellä [2014].
- B 117 Seija Aalto, Tuija Vääntinen (ed.):
Research Publication 2014 [2014].
- B 118 Anna Närhi, Marjo Parkkonen:
AVH-potilaan hoidon viiveet Pohjois-Kymen sairaalassa [2014].
- B 119 Mikko Mylläri:
Tuulivoimalan satamalogistiikan ratkaisuehdotus [2014].

- B 120 Kari Stenman:
Big thinking for small businesses. Small Business Act. Interviews in the Baltic countries [2014].
- B 121 Mervi Nurminen:
Kymenlaakson logistiikan kehitysohjelma. NELI 2007–2013 [2014].
- B 122 Kari Stenman, Juhani Talvela
Julkisen sektorin auttajaorganisaatioiden rooli pk-yritysten kehittämisessä. Boat-hanke. [2014].
- B 123 Marja Metso (toim.):
Yhteiskuntavastuuraportti 2013 [2014].
- B 124 Jouni-Juhani Häkkinen, Kari Stenman, Amanda Taka-aho (toim.):
Innovaatiotukiprosessin kehitys Kymenlaakson ammattikorkeakoulussa [2014].
- B 125 Justiina Halonen
TalviSökö. Kirjallisuuskatsaus alusöljyvahingon rantatorjunnasta talviolosuhteissa [2014].
- B 126 Soili Lehto-Kylmänen
Korkea-asteen koulutus Venäjän federaatiossa – 20 vuotta muutosta [2014].
- B 127 Patrik Ikäläinen
Olen tullut vähän rohkeammaksi. Talous ja sosiaalinen pääoma Kotkan Nuorisoteatterissa [2014].
- B 128 Valdemar Kallunki, Pekka Malvela (toim.)
Sidos 2014 – Hyvinvointi- ja liiketoimintapalvelut, uudistuvaa elinvoimaisuutta [2014].
- B 129 Osku Kiri, Talvikki Huovi, Pekka Malvela (toim.)
Learning Garden. Pedagogisia kukintoja LCCE®-mallin reunamilla [2014].
- B 130 Heidi Gåsman
Kymenlaakson ammattikorkeakoulun opiskelijoiden nukkuminen ja unen vaikutukset opiskeluun [2014].
- B 131 Hannu Sarvelainen, Marko Saxell, Arja Sinkko, Mikko Suikkanen, Erja Tuliniemi
Energiatehokkuuden kehittäminen energiakatselmuksella – Step to Ecosupport -hanke 2013–2014 [2014].
- B 132 Kari Kokkonen, Pekka Malvela (toim.)
Developing Tourism via Finnish – Russian Cross-Border Cooperation: Case studies conducted by Finnish Universities of Applied Sciences [2014].
- B 133 Harri Ala-Uotila, Tarja Brola, Nina Hartikainen, Pasi Jaskari, Ilpo Salmela, Ilkka Virolainen
Uutta elinvoimaa. Yritysvalmennuksen opas. [2014].
- B 134 Anne Fransas, Emmi Rantavuo
Uudistuneen jätelain vaikutukset HaminaKotkan Satamassa toimiviin PK-yrityksiin [2014].

- B 135 Anna Eskola, Pekka Malvela, Juhani Talvela (toim.)
KymiLabs [2014].
- B 136 Arto Ahlberg
Tehola – Kullasvaaran Yrityspuistohanke. TEKU -projektin 2. vaihe, Teholan yritysverkoston toiminnan kehittäminen [2015].
- B 137 Aleksi Sallinen
Vastaanottoprosessin kehittäminen. Case: Tools Finland Oy [2015].
- B 138 Kari Stenman & Juhani Talvela
Energian tulevaisuus. Elinvoimainen Kaakkois-Suomi 2050 [2015].
- B 139 Päivi Okuogume
EK-ARTU-hankkeen loppuraportti. Etelä-Kymenlaakson kuntien turvallisuussuunnitelman laatimisprosessi, turvallisuustyön arviointia ja kehittämisehdotuksia tulevaisuuteen [2015].
- B 140 Markku Huhtinen, Anne Jääsmaa, Pekka Malvela (eds.)
Research, Development and Innovation Activities at Kymenlaakso University of Applied Sciences [2015].
- B 141 Sari Ranta:
Koskenrinteen ergonomia. Siirtoergonomia hoitohenkilöstön tuki- ja liikuntaelinsairauksien vähentämisessä ja työolojen parantamisessa Palvelutaloyhdistys Koskenrinne ry:ssä [2015].
- B 142 Marja Metso (toim.):
Yhteiskuntavastuuraportti 2014 [2015].
- B 143 Marja Metso (ed.):
Annual Responsibility Report 2014 [2015].
- B 144 Satu Anttonen
Hyvinvointialan yrittäjyyden kehittäminen. Työohjeiden digitalisointi [2015].
- B 145 Sirpa Ala-Tommola (toim.)
Jatkuvasti kehittyvä ammattikorkeakoulu. Auditoinnit Kymenlaakson kehityksen tukena [2015].
- B 146 Tommy Ulmanen, Markus Petteri Laine
Etelä-Kymenlaakson seudun älykäs erikoistuminen 2020. Esiselvitysraportti. [2015].
- B 147 Tomi Oravasaari, Juho-Matti Paavola, Jussi Nissilä
Mahdollisuuksien meri – 23 suositusta Suomen meriklusterin osaamisen kehittämiseksi [2015].
- B 148 Päivi Mäenpää, Anneli Airola (toim.)
Sidos 2015 – Kurkistuksia Kymenlaakson ammattikorkeakoulun terveysalan ja työelämän kumppanuksiin [2015].



KYAMK

University of Applied Sciences

Publisher: Kymenlaakso University of Applied Sciences

Publications: Series B. No: 149