
**WHAT IS THE ROLE OF A CLUSTER IN THE BUSINESS
CO-OPERATION DEVELOPMENT?**



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ABSTRACT

Clustering is a recognised way to enhance productivity, innovation and competitive performance of companies. Clusters can allow small companies to combine advantages with various benefits. Hence, the clusters are important operators in a region's economic growth.

The commissioner of the thesis is Forssa Region Development Centre and its regional development unit. The reason behind this study was to take a broader look at the cluster business, and to see how a cluster affects business co-operation development. Forssa region has six clusters. Some clusters are vibrant, some newer and finding their way in the cluster world. Some make the cluster work seem easy and uncomplicated when others work out to create networks, trust and activities.

The aim of this study was to find out the benefit of business co-operation and its development within cluster. Study includes a research survey that was sent to all Forssa region cluster businesses but also to some potential new cluster companies.

The research objective is defined in the research question: What actions could benefit companies in cluster co-operation? The purpose of course is to find out what a company can benefit when joining to a cluster.

The main results were that co-operation is important and it should be even increased. Some worries about the commitment of companies were presented, but the benefits of being part of the cluster are impressive and should convince companies in doubt.

The development part of the thesis brings out issues to focus on cluster development; the strongest emphasis is laid on the cluster facilitator.

Keywords Cluster, facilitator, cluster initiatives, cluster development, Forssa region

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TIIVISTELMÄ

Klusterointi on tunnistettu tapa parantaa tuottavuutta, innovaatioita ja yritysten kilpailukykyä. Klusteri eli toimialayhteistyö auttaa pienyrityksiä yhdistämään etuja saavuttamalla erilaisia hyötyjä. Siksi toimialayhteistyö on tärkeä tekijä alueen taloudellisessa kasvussa.

Opinnäytetyön tilaaja on Forssan Seudun Kehittämiskeskus Oy:n aluekehitysyksikkö. Opinnäytetyön ajatuksena oli katsoa laajemmin toimialayhteistyöhön ja siihen kuinka klusteri vaikuttaa yritysten yhteistyön kehittämisessä. Forssan seudulla on kuusi klusteria. Toiset niistä ovat vilkkaasti toimivia, toiset uudempia ja etsivät vielä toimintamuotoaan. Toisten kautta toimialayhteistyö vaikuttaa helpolta ja mutkattomalta, kun taas toiset etsivät keinoja uusien verkostojen luomisessa, luottamuksen saavuttamisessa ja klusterin toiminnoissa.

Lopputyön päämääränä oli selvittää edut, joita yritysysteistyö ja sen kehittyminen tuo klusterissa. Työhön sisältyi kysely, joka lähetettiin kaikille Forssan seudun klusteritoiminnassa mukana oleville yrityksille sekä mahdollisille tuleville klusteriyrityksille. Tutkimuksen tavoite on määritelty tutkimuskysymyksessä: mitkä toimenpiteet hyödyttäisivät yrityksiä klusteriyhteistyössä. Tarkoitus oli ymmärtää, mitä yritys hyötyy liittyessään mukaan klusteritoimintaan.

Päätuloksena todetaan, että yhteistyö koetaan tärkeäksi ja sitä pitäisi lisätä. Joitain huolia esitettiin yritysten sitoutumisesta, mutta klusterityössä mukana olleiden mainitsemista hyödyistä vakuuttuvat varmasti myös epäilijät.

Opinnäytetyön kehittämisosassa esitetään kohtia, joiden avulla pitäisi fokusoida klusterin kehittämistä, suurin painoarvo on asetettu klusteriaktivaattorille.

Avainsanat toimialayhteistyö, klusteri, klusterin kehitys, aktivaattori, Forssan seutu

Sivut 63 s. + liitteet 26 s.

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1 INTRODUCTION

To study economic growth and business development one cannot pass clusters and clustering. Clustering has always been a part of history of the economic activity, but it has attracted increased attention during the last 15 years. The most cited definition of clusters has been developed by Michael Porter. His original idea was developed only in 1979. Porter's (1998a, 266.) short definition on cluster in his book "On Competition" is as follows: "A cluster is a system of interconnected firms and institutions the whole of which is greater than the sum of the parts". Porter's notion of industrial or business clusters has become a dominant concept in the research of clusters (Porter 1998, Martin & Sunley 2003, Teräs 2008). Clustering has become a recognised way of co-operation and economical development between businesses.

The Cassell Concise Dictionary (1997, 274.) defines cluster as "1) a number of things of the same kind growing or joined together; 2) a bunch; 3) a number of persons or things gathered or situated close together; 4) a group, a crowd". The verb clustering is defined as "to come or to grow into a cluster or clusters; or to bring or case to come into a cluster or clusters".

Ifor Ffowcs-Williams is one of the globally known persons involved in cluster development and training. He is also the founder of Cluster Navigators Ltd, a consultancy company that takes the cluster approach to the nurturing and upgrades competitiveness agendas. In his power point presentation for TCI Ottawa 2004 (The Competitiveness Institute), his message is that "clusters occur naturally, but cluster development is a deliberate intervention to accelerate growth".

Clusters are affecting economic growth. Competition of course continues, but being part of the cluster gives so many benefits rather than continuing business alone. Within a cluster's co-operation, one has access to specialized inputs and information on employees. For example benefits in lower-cost access to components, machinery, business services and personnel. Cluster sourcing provides information on outsourcing companies, information and complementarities. Talking about complementarities, weakest link affects to whole cluster. Like in tourism, a visitor's experience does not only form of hotel room or the services in hotel, but also the experiences received in restaurants, souvenir outlets and in transportation services. If one of these fails badly and leaves a negative experience mark, it affects to whole tourism cluster. That is why trust and communication within cluster is highly important.

It is obvious that being part of cluster, company benefits. However, one has to remember that the company receives benefits only if it is actively involved in the work. Time and resources affect to companies commitment. The more company invests, more it gets.

1.1 Why clusters?

The reason behind this study was to take a broader look into the cluster business: how a cluster affects on business co-operation development and what cluster actions can benefit the businesses. The most logical place to start searching the matter is in my home region. Forssa region had 2010 six different clusters: construction material, electronics, environment, food, metal engineering and wellbeing.

Clusters connect and develop businesses of same field. This study explains clusters quite simply: a certain area, (Forssa region) similar businesses (environmental businesses) are co-operating and developing their businesses and services jointly (forming environmental cluster). Cluster holds regular joint meetings called upon by the cluster activator, whose role is to “look after” the cluster, bring new ideas (benchmark), to open discussion, find ways to improve co-operation, hold seminars, find suitable targets for joint marketing, improve competition etc. Activator’s role is extremely important. How cluster grows and develops is mainly up to the activator.

Clusters do change from inwards as they grow and develop. Also, changes happen due to the outwards pressure to the structure to remodel them. Cluster Navigators Ltd has developed a model cluster development: in power point presentation (2005) “Five phases, twelve steps” and in step two – identifying local clusters, the founder Ifor Ffowcs-Williams emphasizes cluster identification to more specific specialisation. “Not wood processing, but chairs; not electronics but mobile communications; not food processing but airline catering”.

Cluster business is still new area for most of the “players”. Entrepreneurs understand cluster and its operation differently, hence the co-operation is not always as fruitful as it could. Here again the role of the activator is the key role, since activator’s job is to “sell” the cluster idea to the businesses, so that the businesses can trust and co-operate openly in competed area within region and gain jointly the benefits of cluster work.

1.2 Forssa region clusters

In the Forssa region clusters case, restructuring happens in 2011. Environment businesses were part of the environment cluster, i.e. businesses involved in waste treatment and recycling services like contaminated soil, electronic and electric equipment waste, glass, biowaste, sludge, energy waste, municipal solid waste, construction waste and metal scrap (Envitech, 2011). The same businesses are still involved but in 2011, the cluster name is more defined. The new cluster is called as “environment and energy”. New energy forms (bio energy from biowaste etc.) are understood to be very important part of environmental business and these grow and develop further in the future, hence the name energy in the cluster.

The same structural change is happening to other clusters as well. Instead of having six different clusters, now the focus is on four clusters. The other three clusters are green logistics, wellbeing and technology.

The cluster definitions in Forssa case are not as specific as Ffowcs-Williams in his examples points out, but the renaming is based on more to a targeting resources and focussing to main cluster areas. Hence the technology cluster holds still electronics and IT, but also metal engineering.

There is a diverse amount of literature on clusters. According to Teräs (2010) much of the recent literature on clusters focuses on the incremental processes of innovation and learning within selected growth regions and clusters, offering “snapshots” of regional success rather than considering the capacity of particular clusters to sustain growth over time by successfully adapting to economic change (Chapman, MacKinnon, Cumbers. 2004).

To find literature that focuses only on business co-operation development in a cluster was harder to find. Cluster literature is often wide, covering diverse issues. Co-operation development – or rather benefits to co-operation were included in the material, source handling the matter on its own was not found. Here the survey helped since it provided direct feedback from entrepreneurs on co-operation matters.

The aim of this study was to find out the benefits of business co-operation and its development within cluster. Study includes a research survey that was sent to all Forssa region environmental cluster businesses but also to other cluster companies. Some businesses that are not involved in cluster work at present, received the questionnaire as well.

To get more local information, two different interviews were made. One was with Mr. Timo Vauhkonen, the cluster project manager, a person who managed the whole cluster project that included all six clusters. The other interviewee was Mr. Pasi Kaskinen, an environmental cluster professional, person who has been involved in the work almost from the beginning of cluster start. These interviews are attached to the material of this study and they reflect on some of the questions asked in the survey.

1.3 Research questions, objectives and commissioning organisation

The research objective is defined in the research question: What actions could benefit companies in cluster co-operation? The purpose of course is to find out what a company can benefit when joining to a cluster.

The main objective of the study is to understand the effect of a cluster in business co-operation development. The major research task is to understand the role of a cluster, the benefits of business co-operation within a cluster, the actions performed within the cluster to benefit companies, emphasise the importance of trust and communication, and to prove the importance of the co-operation to economic growth of a cluster.

The commissioning organization is Forssa Region Development Centre Ltd (FSKK), owned by five municipalities Forssa, Humppila, Jokioinen, Tam-mela and Ypäjä. It creates excellent operational conditions for diverse businesses and for the active development of the Forssa region.

The main roles of the Development Centre are to act as advisers for industry, regional economic planning and implementation in cooperation with the municipalities and businesses, marketing the Southern-Häme region and undertaking development projects. FSKK employs 10 people of which five work in projects.



Figure 4 Illustrative picture of Forssa region

Regional Development Manager, Mr. Hannu-Heikki Saarinen has approved the subject for this thesis. Mr. Timo Vauhkonen, the Cluster Project Manager, (no longer at FSKK), was also another person to take interest to this study. The content of a survey, i.e. research questions were jointly agreed with the men mentioned above.

Regional development plays a notable role in the Forssa region. Forssa region is vital and competitive region, success based on industry, entrepreneurship and knowhow. The region is located in the middle of the Finnish growth, only about an hour's drive from South and West Finland's major cities.

The region is known nationally as significant electronics, environment, food, metal engineering and construction materials business concentration. The interaction between town and surrounding countryside as well as tight co-operation between municipalities ensure diverse and high quality services, activity rich leisure time and safe, enjoyable and supporting living environment.

The new business development strategy of the Forssa region is based on a "bright green" approach, focusing on business activities that are environmentally friendly and support sustainable development. Our goal is that, in the near future, residents, businesses, communities and decision-makers will recognise the environmental impacts of their actions and make a commitment to reduce them.

There are different programs implemented in the Forssa region that develop the region mainly through different projects. The Regional Cohesion and Competitiveness Program, COCO is coordinated by Forssa Region Development Centre.



Figure 5 Logo of Forssa region COCO program

As explained in the website of the Ministry of Employment and Economy, COCO is the Government's special program for regional policy for the programme period 2010–2013. The Ministry of Employment and the Economy is responsible for the national coordination of the programme. The national COCO works nationwide as a strategic tool for supporting regional development and promot-

ing coordination in order to meet the national development objectives defined under the Government's decision. The aim is to enhance the competitiveness of all regions while balancing regional development through supporting the interaction and networking of key operators in regional development.

Regional development entails enhancing the prerequisites for the independent development of regions, based on the regions' present or potential strengths. Development is intensely based on competence and deeper regional profiling. The intention to make Finnish regions attractive for enterprises and residents alike requires the broad-based development of innovation and living environments (Ministry of Employment and Economy, 2011).

In Forssa region, there are various programs and projects, which are financed partly with public funds. These projects are approved by the board of Forssa Region Development Centre. The complete list can be seen on the website of FSKK (www.fskk.fi), but to give some sort of idea, there are at the moment 41 different projects going on. Most of the projects are very local, some of them national.

Good examples of local projects would be "the guidance service for starting and developing businesses". Anyone wanting to be an entrepreneur can have advice free. On the other hand, if already a business owner and anyone else wants to develop business, for example, with investments, skills etc., this project provides help and professional guidance.

Good example affecting the whole region is a joint marketing project, coordinated by Hämeen Matkailu and implemented regionally in Forssa, Hämeenlinna and Riihimäki. Forssa region's main focus is "Bright Green Forssa Region". This project promotes local environmental businesses and helps in marketing. Project is under guidance of FSKK, and concrete work is been done with the environmental cluster. Year 2011 introduces also other local clusters to this marketing co-operation.

Bright Green Forssa Region – project is also a good example of a project that works tightly with a cluster. The bright green strategy is based on the view that a green approach is profitable and desirable from both environmental and economic perspectives. Achieving bright green objectives naturally calls for significant investment (Bright Green Forssa Region brochure 2010).

The Forssa region's preparedness for environmental business is realised in the good availability of business premises, business subsidies, supply of education and training, labour, expertise and a strong expert network. There are also investments in education, research and development: HAMK University of Applied Sciences, MTT Agrifood Research Finland, Faktia (Forssa Adult Education Centre) as well as development organisations and companies in the region promote green business for their part, and chart the opportunities and preconditions for bright green business activities in the region through various projects and studies.

Forssa region environmental cluster is also using the Bright Green Forssa Region name, getting the benefits of the marketing efforts and creating value for the environmental businesses.

Forssa region facts are:

- Five municipalities: Forssa, Humppila, Jokioinen, Tammela, Ypäjä
- Total population approximately 36 000
- 55 % of the Finnish population live within 150 km of the region
- Located on highways 2, 9, 10
- Turku–Toijala–Tampere railway
- International airports and harbours approximately one hour away
- Municipalities in the region customise plots of land according to need

1.4 Thesis structure

The theoretical part of the study focuses on reviewing the most relevant literature on clusters and their development. The empirical part of the study includes the current analysis on local clusters.

The main objective of the study was to understand the development of business co-operation within a cluster. The survey included 20 questions related to research topic. Questions were “open” questions to receive as much as possible new information, instead of giving ready-made options to limit the answering. Open questions are always more challenging, when answering this type of questions, the person answering really need to focus and think and give input.

Now there are about 50 companies and organisations included in cluster work in Forssa region – companies and organisation that are involved in the work by signed contract. The survey was sent by email – a link to get to the questionnaire. First emailed batch included all the environmental cluster businesses as well as municipalities, development and educational organisations. After few days, when there were only few answers, another email was sent, again all the environment cluster businesses but also to other businesses involved in other clusters.

The third reminder was sent out another week later and this time it was sent also to businesses, which are not yet involved in cluster work but would be ideally part of a cluster. (Clearance: email sent to all six Forssa region cluster companies already involved with the work and some potential new companies).

After the final reminder was sent, the result was 30 answers. There were a few persons who reacted immediately after receiving the questionnaire and explained that since they are not involved in a cluster work at present, they did not feel to be the right respondents to the questionnaire.

In total 100 different recipients did receive the questionnaire. The result of answers was 30 %.

1.5 Overview of the study

The thesis is divided into six chapters. Chapter 1 handles the introduction that includes the background information and the reason for the study. The research question and the aim of the thesis are explained also in chapter 1.

Chapter 2 is about current cluster theory and cluster development. Here the approach is divided into theory and practical matters. In chapter 3 focus is on the clusters in Forssa region and the survey results.

Chapter 4 is about problems in the survey and study as well as problems in the cluster field. Chapter 5 focuses on development plan for cluster already in action. Finally, chapter 6 is conclusion of the thesis.

2 THEORY OF A CLUSTER, CLUSTER INITIATIVES AND CLUSTER DEVELOPMENT

2.1 Cluster theory

Many authors, thinkers, societies and development organisations define a cluster. In this study, the focus is on a business cluster. For example, in the internet, Wikipedia (2011) defines business cluster as follows:

“A business cluster is a geographic concentration of interconnected businesses, suppliers, and associated institutions in a particular field. Clusters are considered to increase the productivity with which companies can compete, nationally and globally. In urban study, the term agglomeration is used. It is also a very important aspect of business strategies.

This term industry cluster, also known as a business cluster, competitive cluster, or Porterian cluster, was introduced and the term cluster popularized by Michael Porter in *The Competitive Advantage of Nation* (1990). The importance of economic geography, or more correctly geographical economics, was also brought to attention by Paul Krugman in *Geography and Trade* (1991). Cluster development has since become a focus for many government programs. The underlying concept, which economists have referred to as agglomeration economies, dates back to 1890, and the work of Alfred Marshall.”

As stated above in Wikipedia’s definition, the first one to talk about agglomeration economies was Mr. Alfred Marshall in 1890. Currently we find that there are two main philosophers in the cluster business: Professor Michael Porter as theoretic and Mr. Ifor Ffowcs-Williams as practical promoter.

Michael Porter is considered the leading thinker in the cluster business and in his book “On Competition” (1998, 266) he defines cluster as follows:

“A cluster is a system of interconnected firms and institutions the whole of which is greater than the sum of the parts. Clusters play an important role in competition, and these raise important implication for companies, governments, universities, and other institutions in an economy. Clusters represent a new and complementary way of understanding an economy, organizing economic development, and setting public policy. Understanding the state of clusters in a location provides important insights into the productive potential of its economy and the constraints of its future development. Paradoxically, then, the most enduring competitive advantages in a global economy will often be local.”

Porter is well known in this subject. He is a cluster strategist, who is quoted very often. Porter is also famous of his diamond model that is an economical model. In his approach, the competitiveness of one company is related to the performance of other companies and other factors tied together in the value-

added chain, in customer-client relation, or in a local or regional contexts (Wikipedia 2011). Below the picture of the diamond model by Porter.

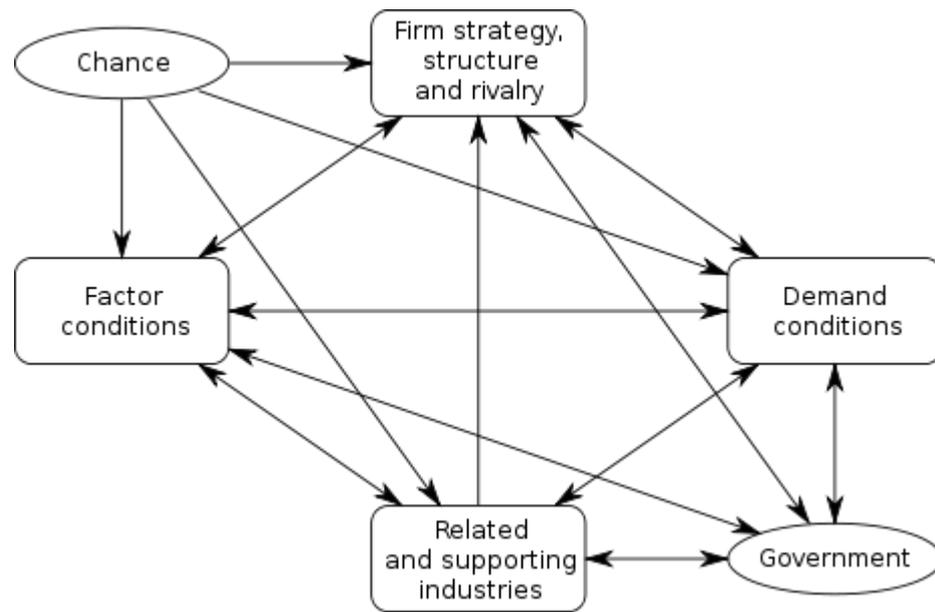


Figure 6 The diamond model by Michael Porter, Source: Wikipedia 2011

Although the theory is very important, the focus of this thesis is more to the practical issues. Hence, we concentrate on the work of Ifor Ffowcs-Williams. Before heading to Ffowcs-Williams' theory and practice, here are a few words about cluster initiatives.

Concerning cluster formation, many authors emphasize the need to do more analytical and empirical efforts to understand the conditions and process leading to the emergence of new technology-based cluster. According Bre-schi and Malerba in their book "Clusters, Networks, and Innovation" (2006, 8), much of the existing literature largely overlooks this question, by focusing on the study of well-accomplished regional systems, like Silicon Valley. As an example, the authors point out that new clusters have been tried to be replicated locally by setting the conditions found in existing successful regions. Instead, the strength and innovation should come from the region specialities, not by copying a model.

When talking about cluster formation, one of the critical conditions for the growth of new cluster is the availability of a highly skilled labour force and of university-trained human capital. Key ingredient for a successful cluster is a pool of skilled workers. In theory, this sounds very simple, but forming a cluster is more than the skilled labour.

BGI (Business Growth Initiative) on their website (2011) define cluster as follows:

"A cluster is a group of geographically linked firms generating external economies. Clusters include firms in one or more core value chain,

along with the firms providing services to them. Clusters also include organizations such as trade associations, universities and vocational schools, financial institutions, and local and national government agencies.

Cluster strengthening and cluster development initiatives began to gain popularity as tools for economic development in the 1980s. Since the late 1990s, cluster development and promotion programs have been applied with success in the developing world and are starting to take hold in Africa. The cluster approach emphasizes collaboration amongst cluster members to achieve objectives that are beyond the capability of individual firms, or even value chains.

Cluster development works to take advantage of the economies of scale that can be achieved between companies in the cluster. The cost-savings that can be generated by synergizing common operations oftentimes lead to greater efficiencies benefiting members of the cluster. The higher productivity achieved by the cluster as its members are able to become more specialized oftentimes leads to higher profits or more capital to invest in innovation.”

It was important to include the whole quote, since in this theory section clusters, cluster initiatives as well as cluster development are discussed.

2.2 Cluster initiatives

Wikipedia states that cluster development (or cluster initiative or Economic Clustering) is the economic development of business clusters. According to The Cluster Initiative Greenbook by Sölvell, Lindqvist and Ketels (2003, 9), cluster initiatives (CIs) are organised efforts to increase growth and competitiveness of clusters within a region, involving cluster firms, government and/or the research community. When cluster develops, CIs are the way to create more economic competitiveness.

In this study, it is pointed out that cluster initiatives have become a central feature in improving growth and competitiveness of clusters. So when talking about clusters and their development, one has to focus also on cluster and competitive initiatives. The Cluster Initiative Greenbook also describes and analyses CIs in detail. The Greenbook offers a new model to understand clusters, to analyse and evaluate CIs.

So what is the role of cluster initiatives in modern economic policy? In the Greenbook initiatives, it is said to be a central part of policymaking across the developed world. CIs play an important role in rejuvenating ailing clusters and regions and in promoting the emergence of new science-based industries. There are some common elements like an increased focus on microeconomic business environment, a long-term agenda to improve competitiveness of clusters, an emphasis on regional and local areas, improved networking among cluster firms, a balanced input of resources from government and industry, just to mention few.

According to Ffowcs-Williams (2000), “clustering initiatives are an intervention designed to identify areas of market failure that can be effectively addressed by collaborative action. These initiatives are not designed to create clusters, but to support the acceleration of existing clusters; to move passive clusters to active clustering”.

The Mitchell Group in the report of “Promoting Competitiveness in Practice“, prepared for USAID 2003, describe each competitive initiative as unique. Their review of the practice of competitiveness initiatives has revealed that competitive initiatives also have a lot in common. According to the report “the core elements of competitiveness initiatives are best described in terms of: (i) their guiding principles; (ii) their key components; and (iii) the process or approach used to implement competitiveness initiatives.” To understand better competitive initiatives, we have picked the major points from the report.

According to the report (i) the guiding principles are a core set of principles or concepts that serve as the foundation for their work. The report highlights guiding principles as:

- Individual firms cannot become competitive and stay competitive in the global market on their own; building competitiveness involves sustained change throughout the value chain.
- Geographic proximity is important, especially in an increasingly global economy.
- Competitiveness initiatives are about building connections and relationships among firms and institutions that have traditionally acted in isolation.
- Building these connections requires major shifts in thinking and behaviour, shifts that are not easily achieved.
- While the focus is global, the momentum for change must be local.
- A participatory strategic planning process is the starting point.

When reading the guiding principles one could compare a cluster development program by Ffowcs-Williams. Same phrases, same issues are dealt in this point of view.

In the report, (ii) key components of a competitiveness initiative are another way to understand what defines the core elements of a competitiveness initiative. Five typical components of competitiveness efforts are:

- cluster development to re-position industry
- strategic reforms of policies, laws and regulations
- changing the dialogue
- partnerships
- improving understanding and support for competitiveness.

The third core element according to the report is the approach used in cluster-based competitiveness initiatives. The desk assessment of USAID’s worldwide competitiveness efforts reveals that the methodologies used by USAID contractors to implement competitiveness initiatives exhibit an overall consistency of approach. The general approach to competitiveness initiatives used by USAID contractors is:

- Phase 1: Conducting Initial Competitiveness Diagnostics
- Phase 2: Identifying Clusters
- Phase 3: Crafting Cluster Strategies
- Phase 4: Implementing the Cluster Strategies
- Phase 5: Sustaining the Cluster Initiative

2.3 Cluster development

Dr Christian Ketels from Harvard Business School states in “The Development of the cluster concept – present experiences and further developments” (2003, 2) that cluster-based economic development has become an increasingly popular topic for researchers and economic development professionals. The increasing interest in clusters is only one aspect of a broader re-orientation of research and economic policy towards the microeconomic foundations of prosperity and growth.

There is an increasing interest in clusters, but not all researchers agree that this is a positive development. Some critics argue that the definition of clusters is too vague and the concept thus a problematic source of policy advice (Martin & Sunley. 2003, 15). Others see cluster-based development as a useful approach, but are concerned about its actual use in projects bearing little resemblance to the original framework. These projects are in danger of creating a serious backlash against this approach when the results of so-called cluster efforts fail to live up to their sometimes lofty promises.

Practitioners, however, are under such intense pressure to develop a new, more effective approach to economic development that they cannot afford to wait for these theoretical disputes to be resolved (Ketels. 2003, 2).

So what to believe? Cluster development is currently on the right track or is the definition of clusters problematic and hence the development is not on the right track? Looking into this view from the local field, Forssa region, with the information received and read, we would point out that the development is already moving fast with good examples. Maybe there is some work to be done on the theory, perhaps the definition of a cluster needs to be more accurate but the actual cluster work is already working well in many destinations.

In The Cluster Policies Whitebook by Andersson, Serger, Sörvik and Hansson (2004, 1), the authors have looked into the opportunities and issues that arise in the development of clusters. Whitebook identifies that clustering is something that has been happening spontaneously throughout time, but is currently taking place on an even larger scale. Whereas clusters are associated with a range of potential benefits, clustering also involves costs and risks.

So clustering is not a piece of cake. However, when it is done properly, it works. The next part of practical cluster development by Ffowcs-Williams is the most concrete we could relate to and find it very important.

In the beginning phase, a cluster is a geographically proximate group of interconnected companies in a particular field and associated institution, linked by commonalities and complementaries, as Michael Porter (1998, 1999) refers to it. However, cluster, when developing, is not necessarily anymore just a geographically proximate group. Mr. Ifor Ffowcs-Williams of Cluster Navigators Ltd has developed five phases, twelve steps, for cluster development. Moreover, in the final steps, Ffowcs-Williams introduces the linking the cluster, which means that the clusters should be linked with other clusters within the region, nationally and internationally.

When this linking takes place, automatically the cluster develops. When clusters develop, some of them also become global. In the beginning and through its lifecycle cluster is local, that is how it all starts. It is also action orientated. Taking Ifor Ffowcs-Williams' text from his power point presentation in TCI Annual Conference (2005) as an example, a local cluster can be a local development like seafood, marine engineering and tourism clusters in Isafjord Iceland, where population is only 3000. When the cluster development has reached its linking stage, first Reykjavik Seafood and Reykjavik Tourism cluster could link within the region. The next step would be national linking, e.g. Reykjavik and other Icelandic seafood cluster. The international link in this example could be e.g. Reykjavik and Nelson, New Zealand. When the international linking takes place, the cluster has automatically developed – learned new ways of functioning, received data and information vital for the cluster, has new marketing forms, etc.

2.4 Cluster development theory

To understand cluster and its development, Cluster Navigators Ltd (2004) definition of cluster development “five phases and twelve steps” looks very interesting. We shall study the process next to identify the clustering phases.

To understand the beginning phase of a cluster and defining cluster development, one needs first to identify a cluster. Clusters occur naturally and are local. Cluster development, where Ffowcs-Williams has focused his approach, is a deliberate intervention to accelerate growth (Ffowcs-Williams, 2004). When looking into cluster development, one needs to identify the region's priority clusters, like Forssa region has done.

2.4.1 Phase A – Mustering Support

The first phase is **mustering support**, which includes the two steps of introducing relevance and identifying, prioritizing clusters. Here the main points are to introduce the relevance of cluster to potential funders, like public sector agency. Important facts to remember are that cluster development is a long term, when making strategy use sustainable development, give enough time. Nothing happens in a short time. Focus on what can be done and what cannot. Over promising is easy, but to actually fulfil the promises or not be able to do it, can result into lack of trust.

Ffowcs-Williams also points out that the cluster facilitator is a key figure. Facilitator builds a collaborative culture on two fronts: firstly amongst businesses and secondly between businesses and public infrastructure.

Cluster facilitator's role is challenging and not easy. Facilitator's role is to act as a change agent and catalyst. Facilitator is also a networker and relationship builder. Someone who really knows the area of business, but ideally is not the cluster's Project Manager. Facilitator also carefully establishes the Leadership Group.

Since the role of the facilitator is vital, this person should have excellent skills to motivate and empower. The qualities should include building relationships and enthuse. Facilitator's knowledge is important – as said before, someone who knows the key players, is familiar with the processes and can identify the resources to support the cluster. Facilitator has to be also credible and have excellent integrity. As said, role is challenging, but also to find excellent facilitator, can be very challenging.

When local clusters are being identified, short listed cluster should draw on the region's strengths and specialisations. It can centre on a specialised capability, a cultural strength or a technology, like in Sweden the Telematics Valley draws on GPS, ICT, and sensor and auto activities. On the other hand, the famous Silicon Valley in the USA, it draws on silicon chips, also home of thousands of headquarters of high technology companies.

Forssa region environment cluster draws on an area's strengths of environment businesses. Forssa municipality has made extremely successful plans decades ago and created the area, now known as Envitech area, for environmental businesses. Since most of the "main players" are either in this area or very nearby, the cluster's strength is the closeness, supporting businesses, diversity and easier access for the environment businesses to the area, while the environmental authorities required permissions are taken care of already in the planning process. More about this in the next chapter.

The short listed cluster should also already generate export income, have a range of businesses and very importantly, have an appeal for funders. Cluster identification is all about gathering hard data, which includes ranking the most successful businesses in the region. One can measure by employees, turnover, exports etc. Input-output analysis is needed as well as employment statistics and location quotients. These identify large, mainstream clusters. Cluster identification forms also from workshops, discussions and interviews. Qualitative, "wise-person" insights are also valuable.

When cluster identification has been made, like Ffowcs-Williams stated earlier, defining specific specialisation is important. "Not wood processing, but chairs; not electronics but mobile communications; not food processing but airline catering" (Ffowcs-Williams 2005). Also gaining private and public sector support is important.

In mustering support phase, clustering should be positioned as a centre stage strategy for economic development. Initial resources need to be obtained to

prioritise the local clusters. Then engage in their development proactively. Here the author also wants to point out that this cluster development is much more than an academic exercise.

2.4.2 Phase B – Building the base

The next phase - building the base - includes initial analysis step as well as a leadership group-formation step.

In the initial cluster analysis step, there are two thrusts: initial competitiveness diagnosis, where cluster's current situation is diagnosed. This means thorough diagnosis of what is the structure, scale, what are the opportunities, constraints (SWOT analysis), culture, and how it affects etc. The other thrust is establishing a platform for action. With this the process is introduced, the key players are identified and their support gained and the potential leaders are identified.

The next step is the leadership group formation. Active clustering needs commitment from preferred leaders. Ideal is to find a group with a balance of skills and what is able to work as a team. Here the facilitator has a key role when establishing the group. The leadership group's members are the cluster's movers and shakers. The facilitator invites for the group, usually invitees are the members of a cluster. Group is formed from private and public sector representatives, but should not be dominated by the public figures. There are usually less than 10 members in a group. Leadership group should follow the private sector culture even there might be financiers among the public members. Government should be the supporter, but not the sole implementer. The members should be initially senior stakeholders.

When establishing the group, it is not necessary to have the full group in place immediately. Leadership group can be extended through temporary teams with issue focuses. In addition, facilitator should pay attention to volunteer burnouts. There are people who become excited about new ideas, groups, projects, and easily volunteer as a member. The facilitator should select the group knowing and understanding the potential members life cycles – how deeply still in actual business, how much there are leisure time, what other roles the potential member has already committed.

2.4.3 Phase C - Creating Momentum

In creating the momentum phase there are three steps: preferred future, stepping-stones and immediate action agenda.

Step five introduces the preferred future. Here setting up the vision is important. Focus in how should the cluster built on the current competitive position, with a challenge, so that vision includes a stretch factor.

Walt Disney stated: "If you can dream it, you can do it". Ffowcs-Williams uses as an example Cold Ocean Engineering, in Newfoundland, Canada.

Their preferred future is “We will make St. John’s, Newfoundland an international destination of choice in ocean technology.”

Another example is from Bangladesh knitwear sector 2010. Their preferred future is “Bangladesh is a world-class supplier of quality knitwear. We have earned a reputation for service, product innovation and market understanding. Exports have doubled to \$5-6 billion, with strong growth in the US market.”

In the Forssa region, the environment cluster that also functions as the Envitech group stated in their strategy a few years ago that Forssa Envitech is Finland’s most attractive environmental business concentration by 2015.

The sixth step is stepping-stones. Here identify the key stepping-stones to achieve the vision. One should be able to look back from the future i.e. back casting. If one continues the present, then it is forecasting. Ffowcs-Williams’ example is again from the Newfoundland Ocean Engineering where their stepping-stones are defined as leadership, cluster culture and teamwork. Also continuous skills upgrading, aligning industry the needs with university. Marketing is also part of stepping-stones by branding the cluster and enhancing the market development. Important stepping-stones are also R&D and technology transfer as well as finance and venture capital. With these stepping-stones Cold Ocean Engineering, in Newfoundland, Canada will achieve their preferred future: “We will make St. John’s, Newfoundland an international destination of choice in ocean technology.”

In step 7, the immediate action agenda is the focus. Cluster should focus on issues between crucial and marginal as well as easy and hard to do. To define what is immediate priority. In Newfoundland Ocean Engineering cluster, this has been opened as follows: stepping-stone is branding the cluster and enhancing the market development. Action is to create cluster web site, a portal where all the necessary information is to be found. Also inward/outward missions, proactive media coverage and airport signage are important actions to branding the cluster.

2.4.4 Phase D – Extending the Base

The fourth phase, extending the base includes steps of launching the cluster and formalising the cluster. In launching a public event is needed, the information needs to be delivered locally for as many as possible and nationally to strengthen the brand. In the beginning stage, this cluster launch should be done 3-6 months after final workshop. In the launch event, highlight some success from initial actions. Also the forward agenda, what next, what are the goals, the vision etc. should be publicly announced.

The ninth step is formalising the cluster. There needs to be a home, a formal organisation for the cluster. This is where facilitator steps in. Formalising may take 1-2 years to establish and it may be a clutter of existing organisations. Facilitator should remember that the structure must fit with the strategy. As leadership group is now elected, it is time to introduce the membership fees. Without fees, the cluster will fade away. When fee is paid, more attention to money and the result is paid.

The trend is – at least in Finland – to start up a publicly funded project with the project manager. Some project money exists and the cluster businesses are taught to expect the money from the public funds. In the beginning this is understandable, but when the cluster starts to perform, all the beginners difficulties are past, leadership group elected, maybe brand already established, then it is up to the cluster members to develop the cluster as well as finance it.

2.4.5 Phase E – Sustaining Momentum

In the last phase, sustaining momentum, steps are: upgrading the strategic agenda, process review and linking the cluster.

Step 10 focuses on upgrading the strategic agenda. Here the cluster is moving beyond the initial activity. Longer term and more substantive initiatives. Since the cluster is already functioning, it is important to understand the competitive position and the local specialisation. These need to be re-valued and upgraded to the strategy. One effective way to compare cluster work is to benchmark other clusters, find ideas, look for difficulties and use best practises. The wheel needs not to be invented again.

Personal relationship building is one of the focus items in this step. Personal relationships can ease immensely clusters development – all you need to know is the right people. On the other hand, if not having personal relationship, at least knowing who they are and where to meet up or contact. Cluster needs to move up the integrity ladder, so use no short cuts or shady contracts. When developing the cluster, the trust and communication between members are important. Also when creating the brand, base it in sincerity and trust.

Cluster should get involved also with incubation centres and technology parks to get new ideas, businesses, R&D, work force, etc.

The step of cluster process review is often done 12-18 months after the launch. In this review, all successes and failures are dealt with. It is important to get the pay-offs from the clustering process. The review should be done by an independent, external reviewer. Too often, cluster project manager or even the facilitator is asked to do the review. When using external source, some facts that are taken for granted can be raised up or on the other hand, local good ideas, that are valued and praised, may not be so good, when external reviewer looks at them.

Also on effective way is to have an annual business survey – to really find out what the businesses in the field think about the cluster work. Only a small number of members run too often clusters and leadership groups, hence their views and values are emphasized more. The real input from the field is crucial. This annual survey should also include same questions to collect relevant data and see how the cluster develops. Other surveys can be made – focusing on special issues, but not too many. The best way is to have the facilitator to have good nose-to-nose relationships with each member businesses of the cluster.

In cluster process, review slow initiatives should be dumped. These just tie up the resources and if nothing happen, why to force them. Also at this point, the leadership group's structure and members should be reviewed.

The final step in cluster development is linking the cluster. Here clusters should link with each other. Earlier in the text was the same example of linking. Starting with local clusters, for example Reykjavik Seafood and Reykjavik Tourism clusters. Next step would be national linking, for example with Reykjavik and other Icelandic seafood cluster. The international link in this example could be for example Reykjavik and Nelson, New Zealand.

Linking is important for a cluster. Local cross-cluster linkages – like in the Forssa region environment and electronics or electronics and wellbeing clusters can create interface activities. Electronics cluster businesses can create products that help environment or well being cluster, for example measurement equipment for bio energy or aid equipment for the elderly.

Between clusters the R&D also gets new meaning, since these needs for example measurement equipment are real, not created by electronics businesses just to provide products consumers might need.

As an example of national linking, the Forssa environment cluster businesses would benefit from the Finnish Cleantech cluster that is a national “player”. Cleantech technologies include renewable energy generation, energy storage, energy efficiency, bio fuels, cleaner fossil fuel processes, water purification and management, wastewater treatment, recycling, pollution reduction and advanced materials (including nanotechnologies). International projects are ongoing and a remarkable list of success stories exists. Although the sizes of these two clusters are quite different, benchmarking would be a good idea to start more challenging phase for the cluster.

International linkages provide more information on cultures, habits, employees etc. These are also important but more challenging to get involved. A cluster needs to have proper language skills in its organisation to be able to communicate and start the work. In addition, the knowledge of other cultures helps, since we do not all work “the Finnish, straight into action, no small talk” –way!

These phases and steps are important part of cluster formation. As said earlier, clusters form naturally, but this cluster development strategy by Cluster Navigators Ltd provides the cluster thrive and makes it more professionally taken care, lengthens the life cycle.

Below is the figure of all the phases and steps to understand different parts that affect on cluster development.

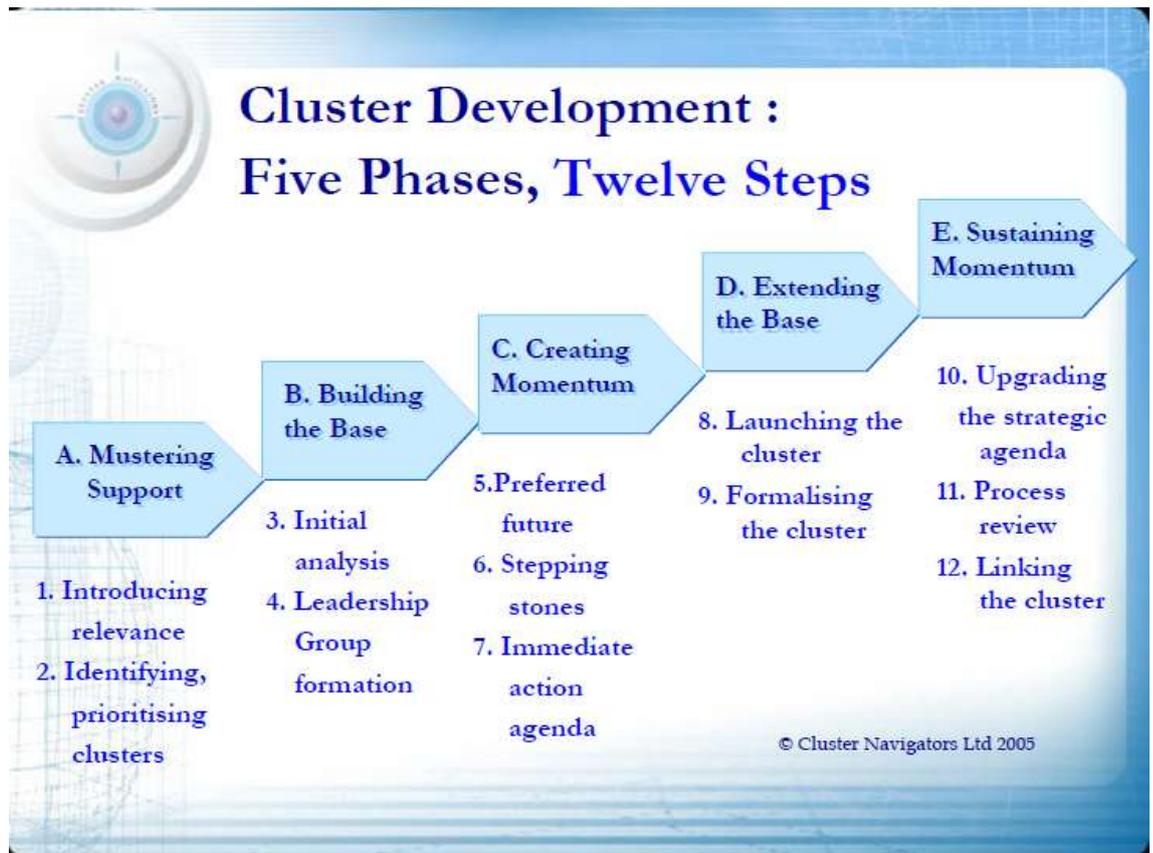


Figure 4 Five phases, twelve steps (Cluster Navigators Ltd, 2005)

3 CLUSTERS IN FORSSA REGION AND THE SURVEY

Forssa Region Development Centre (FSKK) runs Forssa Region Cluster Program. The Project Manager is in charge of six different clusters. Each cluster has an activator to take care of the cluster development. The Cluster program started in 2008 and the project will finish by the end of 2011. There is already a new cluster project under development and it will have changes to the current program. For example, six clusters change into four. The new future clusters will be: environment and energy, technology, green logistics, and wellbeing.

The current clusters are presented in The Forssa Region –website. This website has been established to promote the entrepreneurship in the region. It is also logical place for the clusters to have their “home pages” (www.forssaregion.com).

The website describes the region’s cluster activity through entrepreneurship. The entrepreneurship in the region is valued and encouraged. The Forssa Region Development Centre provides business counselling and development and is the source that updates the site. In FSKK premises, there is also the pre-incubation centre. The development centre’s role is to help entrepreneurs in every cycle of the business. Logically when dealing with businesses, also the clusters and their activities are important to FSKK.

Forssa region has identified the specialisations and the strengths of the region. The following text regarding cluster activity is adapted from the website. One way to promote the region is to list the most well known products. In Forssa region these businesses are the windows of Fenestra, food products by HK-Ruokatalo, Helsingin Sanomat newspaper printed in Häme Printing house, Forssa salads by Atria, bathrooms and cruise ship cabins by Parmarine, building insulations for thermal and acoustic insulation applications by Saint-Gobain. The knowhow of the region can be seen also in the North America’s professional ice-hockey league, NHL. The most famous Bauer Nike, CCM, KOHO and Reebok ice-hockey sticks are made in the Forssa region.

In the environmental business area, the cluster is significant. Its annual turnover is already about 40M euro and steadily rising. Region has very good growth and development possibilities for environmental businesses. Entrepreneurship and knowhow are nowadays greatly high tech emphasized.

3.1 The Cluster Program of Forssa Region

The website of Forssa region defines the aim of the Forssa region Cluster program project to be “to develop the region's competitiveness in the long term, improving the condition of activity in the businesses, competent workforce availability, adding innovation activities, internationalization and the strengthening the networks between businesses”. Areas of priority in the cluster development are food, electronics, environment, metal engineering, construction materials and wellbeing clusters.

The main tasks are divided:

- to develop business in clusters by activators
- to secure business programs for growth and competitiveness
- to develop innovation actions and commercializing in different fields of business

New business areas:

- new growing enterprises
- knowhow networks
- co-operation and networking
- interfaces between business fields
- dynamics
- business development
- internationalization
- business networks
- logistics
- new concepts

3.2 Forssa region Clusters

There are six clusters in Forssa region. In alphabetical order, they are construction materials, electronics, environment, food, metal engineering and wellbeing. Some of these areas of businesses had already co-operation going on before the cluster project started. Good examples are electronics and environment businesses. When the cluster project started, it was easier to implement due to the previous co-operation. Business areas like food and wellbeing were harder, since some of the businesses are big, national operating businesses, some small local businesses, not necessarily looking for growing too much. The next subtitles introduce the clusters as they have been introduced on www.forssaregion.com.

3.2.1 Construction Materials Cluster

There are three new clusters in Forssa region next to "old ones": electronics, food and environment. One of the new ones is construction materials. The clusters annual turnover is proximately 500 M€ and it employs about 1100 people. There are 60 companies in the cluster.

In addition, the educational organizations like Forssa vocational institute (FAI) and Forssa vocational adult education centre (FAKTIA) are tightly involved in the cluster's co-operation.

3.2.2 Electronics Cluster

The total turnover of the cluster is about 40 million euro. The cluster employs about 400-500 persons and it consist of 20 companies.

The electronics cluster has set up the electronics club. In the club the companies and educational organizations of the region can change their experiences as well as develop together the electronics cluster. One of the achievements in the area of co-operation is a company Eleforss Oy.

In June 2008, established Eleforss Oy continues the work of Eleforss research and education factory started by Häme University of Applied Science in Forssa unit.

Eleforss Oy is responsible for developing and advancing the electronics cluster in Forssa region's cluster program project. "In the cluster activity it is extremely important to get the region's companies involved in developing the sector with the educational organizations and the regional development centre. The aim is for example to advance the conditions of activity in the sector and affect positively to the amount of jobs as well as availability of labour force", points out the previous managing director Mr. Antti Aaltonen, who is also the president of the regional electronics club.

The most significant electronics and IT companies in the region like DA-Desing Oy, SSP Oy, Mitron Oy, Oy Nelcomp Ltd and HAMK University of Applied Science are involved in Eleforss Oy. Extensive ownership base allows good starting points to develop further the Eleforss concept.

Products of the electronics companies in Forssa region are:

- Equipment for the automotive and engineering industries.
- Mechanical and electrical equipment for demanding engineering and electronics industry companies.
- Station Software, Platform Displays, Stop Displays, Monitor Displays
- Space Technology Components
- Electromechanical and Electro Hydraulic Solutions for vehicle Industry

The most of companies are certified to comply with the requirements of ISO 9001/9002 quality assurance systems and ISO 14001 environmental assurance system.

3.2.3 Environment Cluster

Forssa Envitech Business Area, located 110 km from Helsinki in Finland, is one of the most developed and multimodal environmental knowhow centres in Europe. Envitech includes products and supply solutions for wide variety of environmental and waste management services. It operates both in the domestic and international markets. The Envitech cluster is concentrating on six strategic business areas:

- Waste Management Services
- Recycling and Treatment operations
- Recycled Raw Materials
- Environmental Technology
- Education and Consultation
- New Business Operations

Envitech is a significant operator in Finland

The Envitech Business Area has implemented several recycling operations in Finland that have been pilot projects for the whole Finnish environment cluster, even in the European and global scale. The versatility of the operations in the same environmental business park makes Forssa Envitech internationally unique and interesting. Envitech is a market leader in Finland in the field of treatment of glassware. It has great volumes also in electric and electronic waste, contaminated soil and biowaste treatment. The market share of recycling of the glassware is nearly 100 % in Finland. Electronics operations are provided also in the Baltic countries. The growing biogas and wastewater technology solutions are provided in several countries in Europe and the US.

The Forssa Environment cluster includes about 20 operating organizations and the cluster is continuously seeking for partners for development projects in the field of waste treatment and service product implementations. Also the waste based raw materials, for example plastic and rubber are among interesting co-operation items.

The central location, strong infrastructure and networking of environment business group as well as the co-operation with business and R&D organizations has made the cluster competitive. The area has been developed as a significant centre of material flows in Scandinavia and Northern Europe. The annual material flow is about 500 000 tons. The competence of the specialists makes the valuable ground for information sharing and co-operation at the international projects. The integration of new technologies (Electronics & ICT) to the environmental processes opens possibilities for international growth.

In the region, a dynamic co-operation has been implemented with the University of Applied Science of Häme (HAMK), Science Park Agropolis and MTT - Agrifood Research Finland including the international educational and R&D organizations. The aim of networking across the clusters, ICT, Environment, and Metal & Electrical Engineering is to create new businesses and success stories.

Strategy 2015

Envitech Business Area introduced a strategy with strong emphasis on growth and development in 2007. The vision of the cluster is to be the most attractive centre of environmental business operations in Finland in 2015. The aim of the strategy is to multiply the volumes and turnover of the companies, which operate in the area. International operations will expand in to the new markets. Several new business operations will be launched annually according to the strategy. One important area in the strategy is to attract new operators, technologies and investors.

3.2.4 Food Cluster

The Food Cluster in the Forssa Region is very prominent industrial knowhow and operational centre. It comprises of about 25 enterprises and 900 employ-

ees. The annual turnover is 340 million Euros. In the region there are also located research and development activities and bodies, which are unique of its nature in Finland, MTT, Agrifood Research Finland and Science Park Agropolis Ltd.

Agropolis Science Park is a unique cooperation coalition and the biggest knowledge centre in the Nordic countries and the only one in Finland, which produces and disseminates research data for rural areas, the agrifood industry and the environment industry. Agropolis Science Park, which integrates the data into services, products and business activities, is a unique network in many ways in Finland.

The values of Agropolis Science Park are based on the wellbeing of humans and nature. Challenges and opportunities are connected to the improvement of food safety, locally produced and traceable food, the production of bio energy, the closed circulation of waste as well recycling materials, and enterprise resource planning (ERP) using the latest technologies. Our activities are local, regional, national and international.

Agropolis Science Park consists of four independent main operators. A consulting and business development company Agropolis Ltd., which is a private non-profit body operating in the agricultural and food sectors; MTT Agrifood Research Finland is an expert body operating under the Ministry of Agriculture and Forestry; HAMK University of Applied Sciences and ProAgria Association of Rural Advisory Services that is an agricultural expert organisation.

3.2.5 Metal Engineering Cluster

The total turnover is about 276 million euro; the amount of employees is 1.400 persons. The activity comprises of 130 companies. The main products are the subcontracting products to the main Finnish Flagships, international metal engineering companies like Metso, Kone, Aker Yards.

Products:

- Cutting, punching, bending, welding, assembly and surface finishing of steel sheeting products
- Special lifting platforms for paper industry, security booths and special counters and sales shelves for shops
- Equipment for the automotive and engineering industries; mechanical and electrical equipment for demanding engineering and electronics industry companies
- Sheet work and assembly for heavy industrial machinery
- Station Software, Platform Displays, Stop Displays, Monitor Displays
- Space Technology Components
- Electromechanical and Electro Hydraulic Solutions for vehicle Industry

The most of companies are certified to comply with the requirements of ISO 9001/9002 quality assurance systems and ISO 14001 environmental assurance system.

3.2.6 Non cluster businesses

Forssa region has also other strong businesses that do not necessary belong to any of the six clusters mentioned earlier.

Forssa region is known of its printing companies. ActiaPrint (used to be Forssan Kirjapaino Oy) and Hämeen Paino (prints Helsingin Sanomat newspaper) are located in the region. Local advertising agencies are also high quality agencies.

Other strong areas are tourism and retail sale. Specific expertise can be found for example in the engineering design area (3 D and animations).

3.3 The survey

The aim of this study was to find out the benefits of business co-operation for companies and its development within cluster. Study bases on a research survey that was sent to all Forssa region environmental cluster businesses but also to other cluster companies. Some businesses that are not involved in cluster work currently, received the questionnaire as well. Public organisations, like development and educational organisations as well as municipalities received the survey as well.

The survey included 20 questions related to the research topic. Ten of the questions were “open” questions to receive as much as possible new information, instead of giving ready-made options to limit the answering. Open questions are always more challenging, when answering this type of questions, the person answering really need to focus and think and give input.

In this survey part, we shall not go through all of the answers, but raise some issues reflected in answers. The complete survey is attached as appendix 3.

Cluster program has about 50 companies and organisations included in cluster work in Forssa region – companies and organisation that are involved in the work and have signed a contract. The survey was sent by email – a link to get to the questionnaire. First emailed batch included all the environmental cluster businesses as well as development organisations and educational organisations. Second email was sent to the entire environment cluster businesses but also to other businesses involved in other clusters.

The amount of received answers was not significant, so third email was sent and this time it included businesses that are not yet involved in cluster work but would be ideally part of a cluster. (Clearance: all six Forssa region cluster companies already involved with the work and some potential new companies in the clusters but also business areas outside current cluster program).

After the final email, the result was 30 answers. In total 100 different recipients did receive the questionnaire. The result was about 30 %.

3.4 Questions

Q1 - The company/organisation I represent belongs to a cluster of

The first question was about the businesses related to clusters.

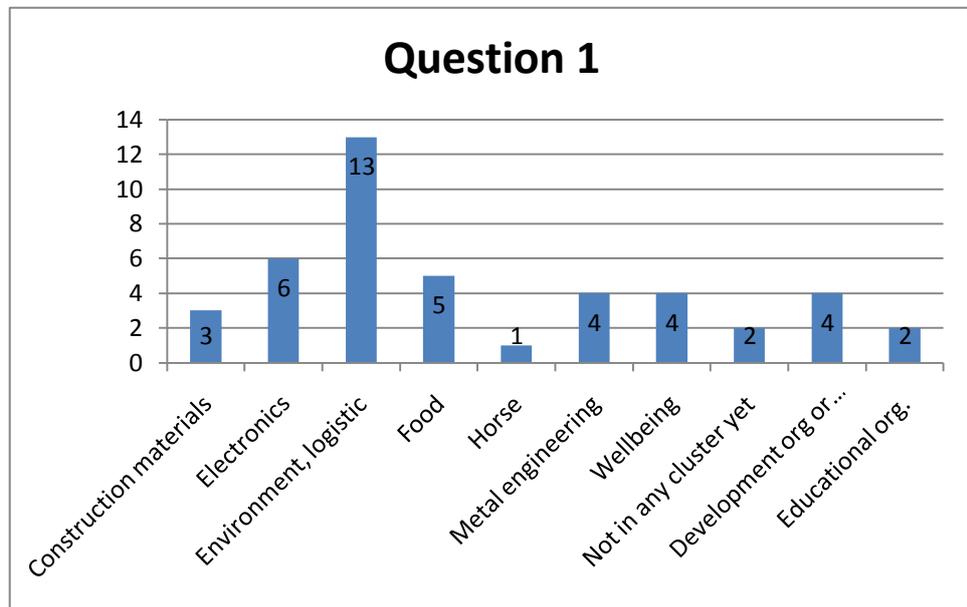


Figure 4 Question 1: In which cluster my company belongs

Note! Users could select more than one option, so percentage can raise over 100%.

The Forssa region environment cluster was strongest represented in the survey. One has to remember that it is also the “oldest” cluster in our region, maybe the cluster issues are better understood in this cluster due to strong co-operation.

Q2 – We have been involved in cluster work for..

The second question was related to the length already involved in cluster work.

As a result of this question, unfortunately new comers i.e. less than a year involved in cluster work are none. Alternatively, it can be seen, that all the potential companies have been involved already when the cluster project started in 2008 and hence involvement has lasted less than 2 years.

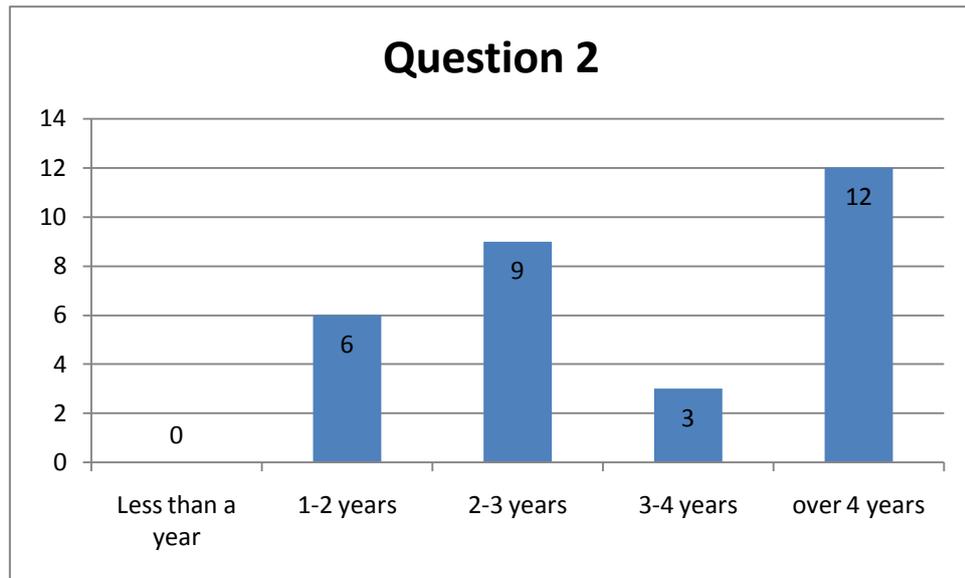


Figure 5 Question 2: How long the company has been involved in cluster work

Q3 – Are you satisfied with cluster work so far?

The third question asked about the cluster work satisfaction.

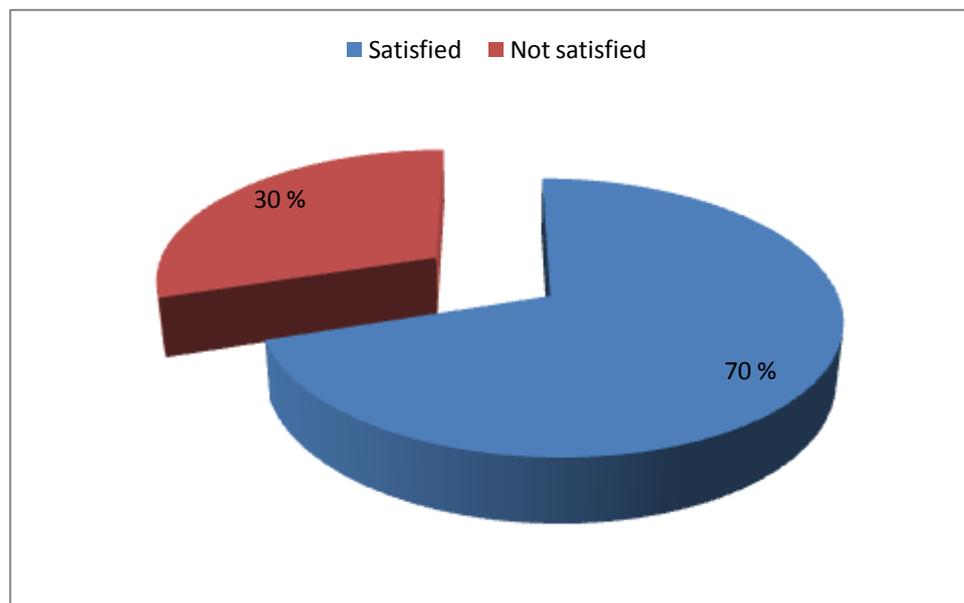


Figure 6 Question 3: Are you satisfied to cluster work so far?

As one can see, majority of the persons answered that they are satisfied with the cluster work. Worrying is the 30% though. The next question enlightens this percentage.

Q4 – If you answered to previous question no, please explain why you are unsatisfied?

The fourth question asked people to explain why they were unsatisfied. Below some of the feedback received:

- "Cluster activators do not operate like the original idea was. It has been difficult for FSJK to coordinate the project and activators, because activators are in different organisations. Cluster manager has no impact means to other organisation employees."
- "Cluster work does not serve at the moment the development of a business as I understand it. The time required to deal with the cluster work goes too much for the certain public bureaucracy discussions. On the other hand it is maybe justified, but the proportional amount should be much smaller."
- "The metal engineering cluster has been working below standard - obviously due to the activator's reluctance."
- "Companies in the cluster work should be more active."
- "We have not received any concrete use."

This feedback will be dealt more in the chapter of problems in the survey.

Q5 - Do you find the co-operation between businesses and organisations necessary?

All the answers were yes, so co-operation is found useful and necessary. This question was needed since there are a still idea thrown around that co-operation is impossible due to envy and hard competition. Now it seems that even if the businesses might be thinking that way, at least it is understood that co-operation is necessary. The easiest way to "sell" the co-operation idea is to provide good examples. Examples provided as stories are easier to understand and adapt.

Q6 – Please explain why? (reference to previous question)

The sixth question required a justified answer to the previous question i.e. why or why not the co-operation is necessary.

Some of the feedback was as follows:

- "Working together can be achieved something, one cannot do alone"
- "Especially in a small region like this everyone should combine the efforts if you want to keep the lights in the windows. Municipalities are also too small and weak to act alone, on the other hand there are no big enterprises who could manage alone. With the networks we can create synergy."
- "The task and the goal of the societies is to support regional businesses and their development."
- "In the environment side, it looks like it is advancing the new businesses establishing in Forssa."
- "To change ideas and visions is important."
- "Cost savings and joint marketing power."
- "Only co-operating we can develop the region and create a win-win situation. "
- "Both should be aware of the different starting points of activities, co-operation & synergy benefits, new ideas and ways to work, to be able to influence to matters and a vision of them widely than just concerning own business."

What is the role of a cluster in the business co-operation development?

- “Small businesses do not have skills to apply for public development money. If businesses are active, they can influence even to HAMK and other educational organisations educational content.”
- “Regional co-operation is important to develop larger entities and through this to local companies business opportunities improvement.”
- "Educational organisation's task is to educate students to meet the working life needs and only through dialogues can those degree programs and professional optional parts be chosen to serve the needs of the businesses as well as possible. Always the insights are not quite convergent, because educational organisation cannot answer to many narrow field business knowhow needs but these matters need to be seen widely.”
- “For my business it is necessary to involve with other businesses and for example with municipalities, otherwise there is no work.”
- “For example in construction materials industry there are problems/opportunities: 1) Companies are operatively in bad shape due to the 'old culture' clientele i.e. builders and 2) if they were in better shape and worked together, they could get even to increasing markets of Russia.”

After this question, it has to be said that these “open” questions really are important. In addition, those who really take the time and give the feedback, the results are extremely good. The diverse way of even to be able to think all the issues business owners and other organisation representatives have, is impossible.

Q7 - What could be the subject of co-operation?

Marketing is one of the issues entrepreneurs are not so good at. When starting a business, if working with tight budget, usually marketing is the first place where entrepreneurs reduce money. The results of this question, it can be seen, that it is regarded as one of the most important co-operation methods along with the new business operation. Marketing also requires money, resources and perseverance, which would be the most logical thing to do within a cluster. Sufficient marketing can eat up the budget quickly, but jointly done, the cost is not too big, impact much bigger.

Out of the list there were also mentioned education, benchmarking and personnel mobility as other options.

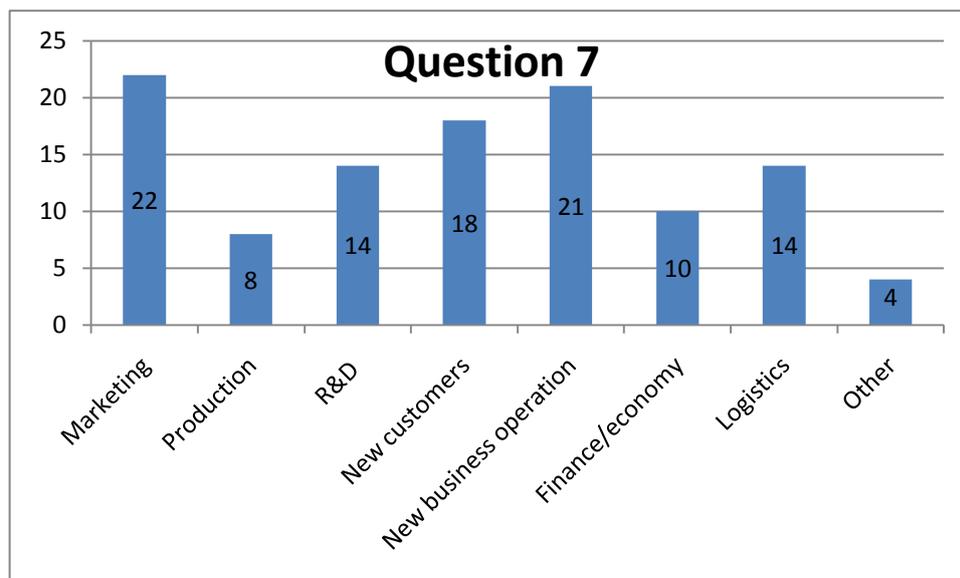


Figure 7 Question no 7: The subject of a co-operation could be?

Q8 - Has your company and other related businesses had already co-operation before the cluster?

Seventy percent of answers stated yes, 13 % no.

Curiously, 17 % said that they do not know. In a way that is curious, since Forssa region is not that big of an area and it seems everybody already know everybody. Would one explanation be that the person answering the questions is so new in the job that the history of a company is not known, or is it the definition of co-operation that was not clear?

Q9 - Would the co-operation between you and the businesses related had developed without cluster?

Answers: “60 % answered yes, 20 % no and 20 % did not know. Of course environmental and electronics businesses are a strong part of the 60% in this question, since they did have a good co-operation going on before the cluster program even started.

Again, that 20 % of not knowing, puzzles. Makes one wonder who these 20% are. What areas of businesses they are, is it so competed business area that the co-operation seems impossible or is there issues with administration. Sometimes “older” administration stresses the individual approach – we will do this by ourselves, we do not need help. The newer management style acknowledges the co-operation and its values.

Q10 – Can the businesses do wide co-operation without cluster activity?

In the 10th question was asked if the businesses could do wide co-operation without cluster activity? 60% said yes, 40% no. Here the 40% is quite high and the reasons behind this interest. The explanations come next.

Q11 – Explain your previous answer

The 11th question was to clarify the previous question. Either yes or no answer, we asked to explain why. Some of the answers below:

- “Doing alone one cannot get new ideas. Have to get out of the house to meet other people and discuss. This brings on its best new innovations and business to the region.”
- “Businesses find, when needed, a suitable business partner always when they will gain from it and they need a partner. Cluster activity is a good supplement, it may increase and speed up the co-operation, businesses can do joint marketing outside of the region, promote development projects etc.”
- “Cluster provides noticeably wider field to act and due to a cluster activator’s impartiality a real co-operation foundation that all could trust.”
- “In smaller scale Mitron, Nelcomp, DA and Eleforss would have found in any case production models.”
- “Companies work primarily to develop and sustain their own business. Co-operation enables partly to reach these goals.”
- “My opinion is that the region’s SME-companies are so busy that co-operation starting from their initiative hardly exists. It is good to have external body to pull companies in to the action, since the benefit is certainly mutual. (electronics cluster has been very active though, in marketing of secondary degree education. Otherwise the co-operation has been more to labour market training, and professional competence audit related matters).”
- “Yes, but new business area surveys have had help from cluster activity (Pöyry).
- “To gain work for the entrepreneurs without co-operation from municipalities, decision makers, other related businesses would be almost impossible. Everyone trying to get into the business must know himself or herself how to network. Cluster of course helps and makes it easier, but it is not necessary, not at least from the point of small entrepreneur.”
- “Has to have an outsider as an activator, who has not vested interests.”
- “I own one person company (Vemo Oy) that is focussed on organisation activity development. Hydro Aluminium Salko Oy from Forssa received this year a central labour confederations honorary mention “Round Table” due to developing productivity with the personnel. I was myself as an outsider consultant in that project. Forssa received unofficial Finnish Championship award in increasing the productivity. We are also involved in TRIO-project, where the whole subcontractor network activity is been developed. Companies involved are Fenestra Oy, units from Forssa and Kuopio, Pilkington Finland Forssa unit and above mentioned Hydro Aluminium Salko Oy. TRIO has been in motion for a year and a half and the results have been amazing.”

Q12 - What kind of benefits your company/organisation has gained from the cluster activity?

To get more feedback on cluster activity, the 12th question asked about the cluster activity benefits. Again open question and below some of the answers:

- "Häme University of Applied Science is involved in many co-operational networks. In the cluster meetings one gets to discuss of jointly interesting matters, one gets to know people and it is easier to call afterwards when you know the person."
- "We have received bigger projects on the region when through the co-operation a better name for the project application was created."
- "We have managed to improve our public image, which has helped among other receiving funding."
- "Improving the relationships and widen the relationship network. Improving the familiarity."
- "Nothing"
- "Increasing the customer contacts and making own activities known – getting the own strengths on the surface."
- "Co-operation with the companies increased, received new assignments."
- "Same message to several companies at the same time. Extensive discussion to refine results better compared to processing alone."
- "Training, marketing, new customers, new events, to be part of developing new."
- "One meeting was set up locally with a big operator and I had a chance to be involved without costs in quality buying catalogue."
- "I don't know yet, I have been postponing bankruptcy for 30 years."
- "I have done the cluster work of course to develop my own business. It has created new customers in Forssa (loosing Parmarine Oy, possible gaining FSTKY.) Still I see great opportunities to upgrade business-operating methods in Forssa region and management to this decade. Active working cluster would benefit greatly my business but even more greatly the Forssa region."

To try to predict these answers is very difficult since each company reflect to the cluster activity through their own company needs. That's why it is important to have surveys with open questions where people can describe themselves the good and the bad, make suggestions as well as give critical feedback on certain issues. The challenge of an activator is to pay attention to a smaller feedback, to listen with a sensitive ear and try to bring these issues to a wider audience so that all can give their input in the matter. The more open the activator role is, the more trust is given.

Q13 - What kind of problems there are in cluster type development?

In the survey we wanted to open up some problem issues too. On the list the answers do vary a lot.

- "Envy, fear in companies that someone else might gain more."
- "Development and knowledge is centralised to few only, when the development of a cluster is given to project manager."
- "Inefficiency"

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- "It can be stiff and bureaucratic. Also some meetings useless."
- "Companies own goals in own business life do not always serve the need of a cluster."
- "At the moment the commitment is not real – some kind of envy is still forming!"
- "Getting companies involved and committed. Thinking of a sole company, the benefit should be something very acute, immediate and instant, benefit focusing to own business, so that it can be seen as the cluster activity benefit to join in. Also, those participating to development actions, grouping is important. When the group is too wide, sometimes matters can stay on too general level. The matters have to be taken forward in a bigger group though, but to think carefully who are really committed."
- "No bright goals with clusters, meetings are a good place to exchange information, but follow-up measures are hard to find a activator."
- "No prospects, superficiality, non-commitment. Too much superficial reports and marketing nothing. Really little of "wools".
- "Regional co-operation in Forssa region is challenging due to the local business culture."
- "Operational concept is okay, but the busy life of companies and commitment and giving time something else than own core business must be challenge."
- "Possible conflicts of the participators".
- "The key success factor in my opinion is the real interest of the companies and the insight of the needed co-operation. If that is missing, no cluster co-operation can be built. And it would be good, if somebody from the companies would take the engine role and make things move faster forward."
- "They (clusters) are never planned customer orientated. They are based into same models and companies are not joining in. Still it would bring great possibilities."

Q14 – Can you give concrete examples of the co-operation induced by cluster activity?

In answers there were examples listed, which we find are good way to show what cluster work can achieve. Quite often the education and marketing was mentioned, these two seem to be important for the businesses. On the other hand, not all were able to list examples.

- "Well being cluster: new supply chain of wellbeing –project under development; Green logistics and environmental cluster: environmental theme year 2010; Electronics cluster: new intelligence-TV – project under development; Voorumi-educational cluster: new Voorumi2 –project under development; Green logistics: HEA-concept and electric cars."
- "There are new projects and financing through them to this region, promoting region's road survey, rail survey and, logistics and airport surveys."
- "Envi Grow Park, different surveys, which are being done for the base of development."

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- “Joint marketing, Envitech and Envitech strategy, these have quite obviously affected when new companies have establish in the region.”
- “Marketing, company brochures (for example construction engineering cluster).”
- “Electronics cluster planning marketing model (not yet in use).”
- “Different reports that serve company action, like energy, marketing, logistics.”
- “We have received new customers; have exchanged the knowhow and new projects in co-operation with cluster companies are running.”
- “I refer again to Pöyry. And fairs, although this has been done before environment cluster. But with the cluster we have also municipalities and related public operators.”
- “During Envitech co-operation, the region’s environmental companies have done marketing that they could not have done alone. (Stands at the fairs are very expensive). Envitech morning coffee meetings have been unofficial forum, that has brought together businesses, education, municipality, development organisations and even research.”
- “Construction engineering cluster has suffered the lack of participants, so I think no worth mentioning co-operation has taken place.”
- “In operative point of view, the TRIO business group is in much more better state than it was before the beginning of co-operation. We can improve noticeably the productivity, quality and secure delivery.”

Q15 – What kind of co-operation is needed between companies/organisations?

Here is again an open question to get as many good ideas as possible for the development of the cluster work. We have not listed all the answers, but will look to them deeper when talking about the development plan.

- “Cluster work to business level, example Hamburg aviation cluster.”
- “Deeper, open discussion and spirit and action of doing together.”
- “Naturally there should be supporting win-win working principle.”
- “Similar than now – basic stuff and for example joint markets run by development centre or municipality.”
- “Joint commitment and real regional development – let’s look forward.”
- “Concrete co-operation. In education co-operation we need practise jobs for students, project ideas etc. these are useful for the businesses as well. Research information quickly to the field for the entrepreneurs, so that they can reflect.”
- “Committing and committed, co-operation based on product development. Start with creating proper base and not endless surveys and meaningless marketing.”
- “Clear assignments/projects, where coordinator presents accessible possibilities, goals and frames of co-operation.”
- “Cross-coffeeing that has already happened with electronics and environmental clusters.”
- “The municipality leaders and elected decision makers will and commitment to environmental business related decisions. For example planning and permission related matters as well as other positive entrepreneurship supporting action.”

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- “For example benchmarking is one very important area. Also could get 1-15 companies and copy Hydro Aluminium Salko Oy’s project to everyone = success granted. Project could possible get public funding because it would be reusing the best practises elsewhere.”

Q16 - What kind of cluster led work you would like to have for business co-operation development?

With this question, we wanted to get ideas, if there are other similar activities that could be included to cluster work. Answers were:

- “Cluster’s role is to focus more to the direct development of business, what is clearly frightened, due to public funding guidelines.”
- “Meetings, brain storming, maybe joint new customer presentation events.”
- “The strategies of clusters should be clear and goal orientated. Cluster co-operation can create concrete benefits. To utilize the region’s research organisations. Development organisations role is clear in cluster activities.”
- “Proper, expertise cluster leadership, committed co-operation even with smaller volume than to try to cover it all, but very loose discussion level co-operation.”
- “Active activator to achieve cluster benefits.”
- “Co-operation between clusters”
- “Customer orientated”

Q17 – How wide the cluster work should be? For example how many companies/organisations there could be?

Sometimes there is a debate, how many companies and organisations should be involved in cluster work. This question clears the situation. From eight to as many as can be interested, gets over 70 % of answers.

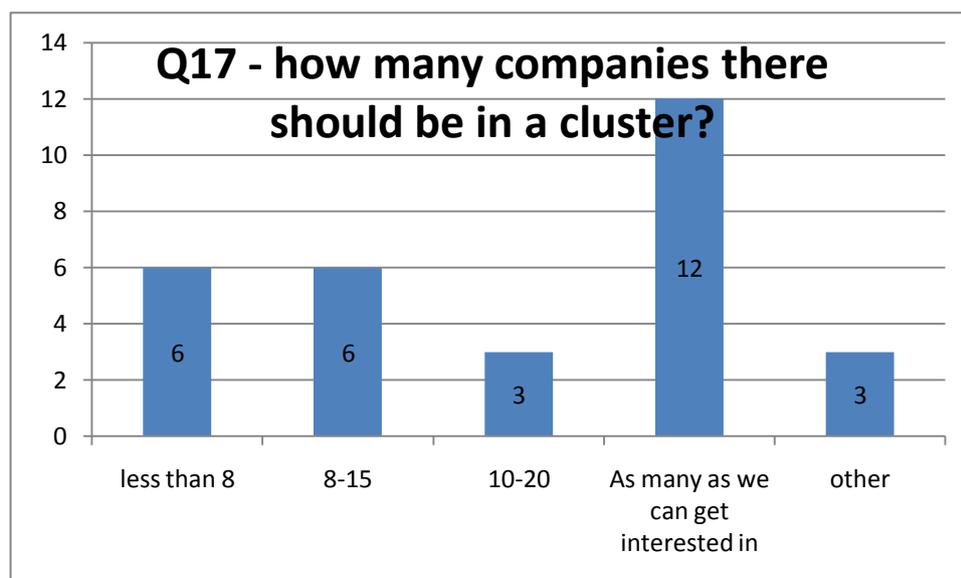


Figure 8 Question no 17: How many companies should be involved in cluster work?

Q18 – Should the cluster activities be restricted to one cluster field only?

With this question, the idea was to find, could there be clusters that have more than one field of businesses working at the same time. Clusters are not working actively jointly, so this question wanted to find out, if it is desired or not. A major part of the answers was supporting the idea of joint cluster work, which is good for the development of cluster.

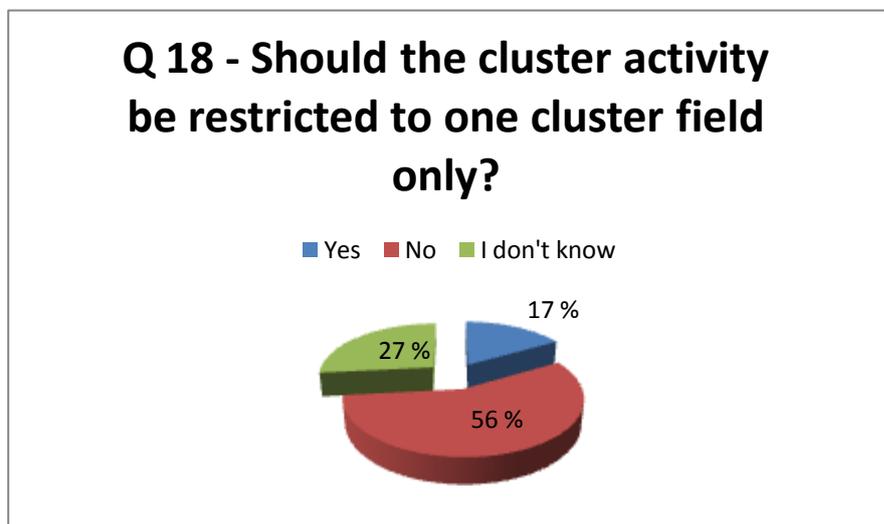


Figure 9 Question no 18: Should the cluster activity be restricted to one cluster field only?

Q19 – If you answered to previous question no, how would you develop the co-operation between clusters?

- "If new innovations are wanted, people have to talk with people who think differently. There should be different meeting possibilities among different themes and invite widely people to join"
- "Practical actions and the synergy benefits resolve"
- "There are still several areas to develop. For example wellbeing/energy and environment/logistics"
- "Increase the cluster co-operation"
- "Of course not, because then the most innovative clusters interface would keep out"
- "Different clusters supplement others, if the target is for bigger results (like local water supply project) fulfilment"
- "The new way to thinking – someone's waste can be someone's material > Envor/Isover – one has to think big, material can also move two way"
- "Joint benefits and possibility to support actions and after that gained additional value"
- "Versatility needed"
- "If, for example, FSKTY's vision is to know, when and what kind of apartments to elderly people, why not local construction business exploit it?"

Q20 – Cluster work or companies own co-operation, what is the most important aspect in co-operation from the point of your company?

With this question, we wanted to find out what the companies value and what they find most important in co-operation. Answers help to develop the cluster

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co-operation so that companies get such benefits through the cluster work to make them committed. Below listed some of the answers:

- “Meetings and changing ideas, new projects”
- “Dialogue and interaction, taking matters forward together, towards same goal. Self interest seeking and selfishness are out of this picture”
- “The fact, that cluster work serves the development of a company more than own actions the development of a cluster.”
- “To find common development targets – to create co-operative network.”
- “I think 99% of everything can be found on Forssa economic region and the activities can be developed together to develop the region.”
- “Knowledge transfer and new approaches”
- “Innovativeness, commitment, openness, concreteness”
- “Our goal is to get local business through cluster activity.”
- “Good, trustworthy, personal relationship with cooperation partners”
- “Regional resources and joint growth goals, employment and profitable business.”

Some background information was also asked about the survey participants:

First the relation to the company

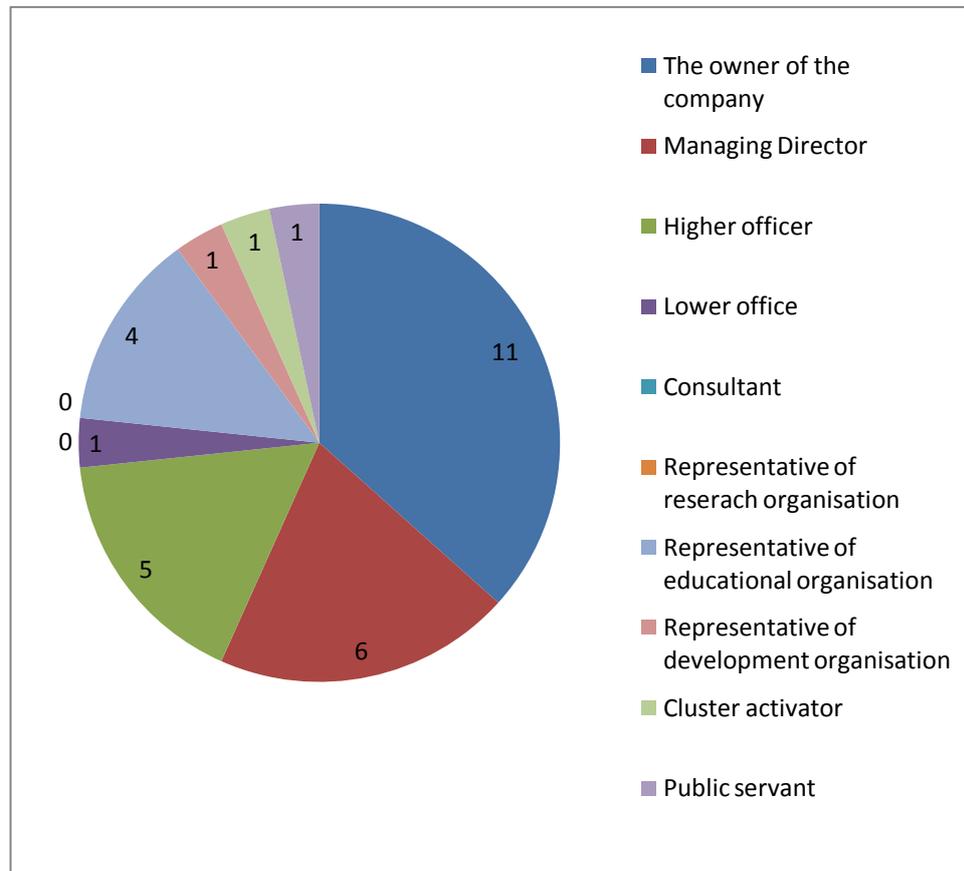


Figure 10 Relation to the company

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we was pleased to notice that the biggest group of respondents were the owners of the company and managing directors, since they are the operating decision makers. Sadly, only one cluster activator participated to this survey. Forssa region has six activators and their role in developing, motivating and organising the cluster is also very important. We were hoping to get more of their input.

Persons representing public service tend to be more active and present in meetings, where companies should be. In this survey, though, four were educational organisation representatives, one development organisation representative and only one public servant. Of course, we would have welcomed more answers, but with this distribution, we find it to be enough.

Gender distribution

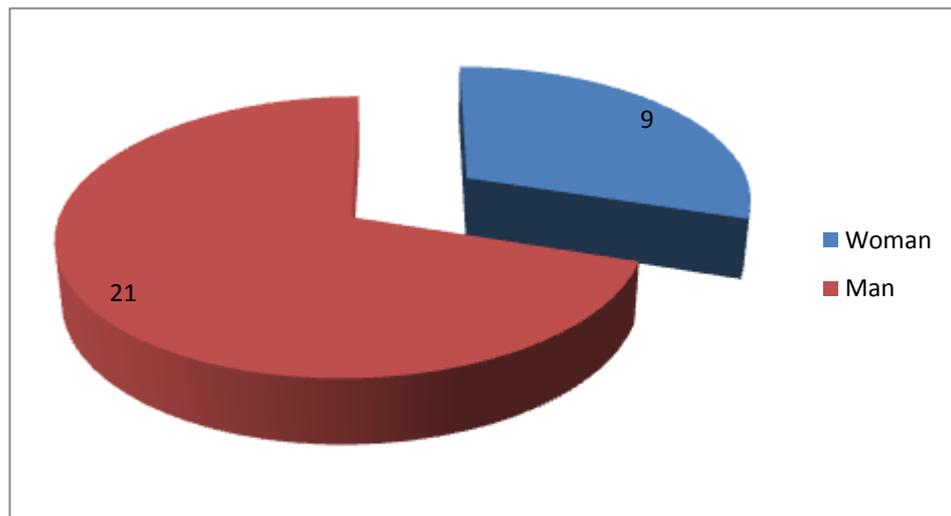


Figure 11 Gender distribution

As can see from the gender distribution, majority of respondents were men. Below cross-referenced the gender and position in a company.

What is the role of a cluster in the business co-operation development?

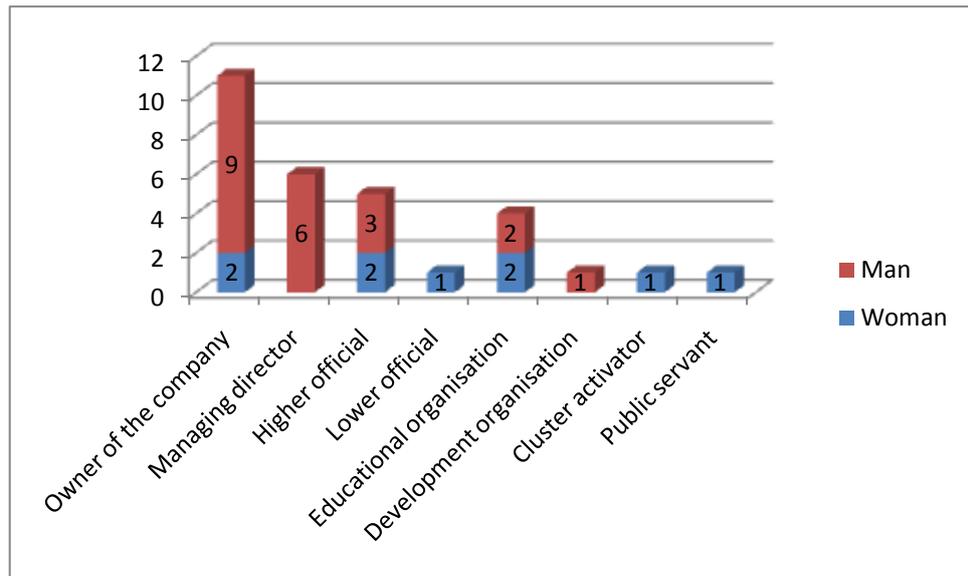


Figure 12 Gender and position cross referenced

Age distribution of respondents

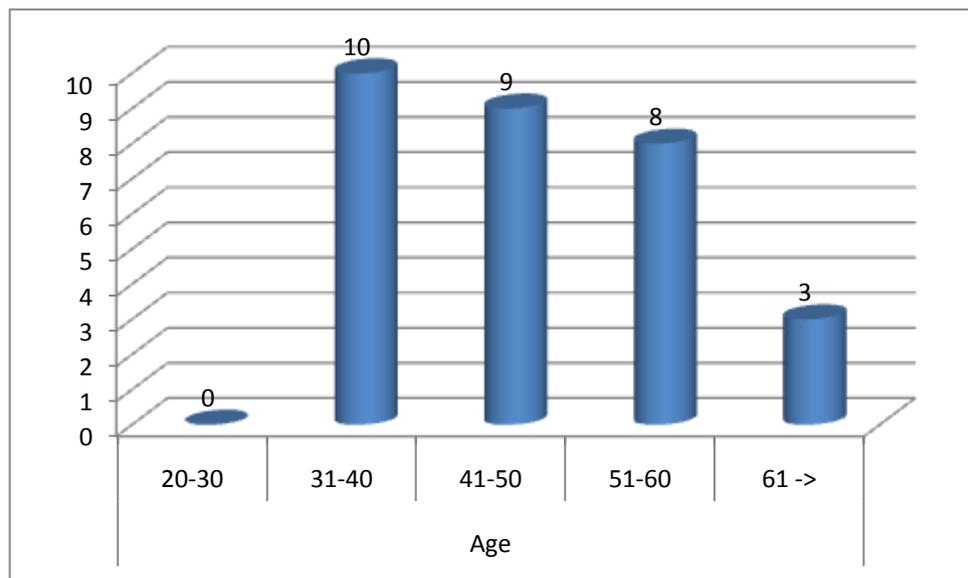


Figure 13 Age distribution

4 PROBLEMS IN CLUSTER SURVEY

4.1 Problems with the survey

When setting up the questionnaire for the survey, we had 15 questions to begin with. After discussing these questions with the representatives of the commissioning company, The Forssa Region Development Centre's Mr. Hannu Saarinen Regional Development Manager and Mr. Timo Vauhkonen Cluster Project Manager, we agreed to increase the number to 20. Some specifications regarding future projects were added. It was agreed, that the results would be given straight to commissioning company as soon as the survey was done.

The main objective of the study was to understand the development of business co-operation within a cluster. The survey included 20 questions related to research topic. Most of the questions were "open" questions to receive as much as possible new information, instead of giving ready-made options to limit the answering. Open questions are always more challenging, when answering this type of questions, the respondents really need to focus, think and give input.

It was discussed when making the questions that since the most of questions are "open" questions; the result might not be that many answers. However, this was well thought process, since using open questions; we could get information that is much more valuable regarding the cluster work.

There are about 50 companies and organisations who have signed a cluster work contract and are included in cluster work in Forssa region. The survey was sent by email to all of these contacts – as a link to the questionnaire. The questionnaire was located on the FSKK website.

First emailed batch included all the environmental cluster businesses as well as development organisations and educational organisations. When the answers were only few, another email was sent, again all the environment cluster businesses but also to another businesses involved in other clusters.

After the second email the amount of received answers were not that many, so a third reminder was sent and this time businesses, which are not yet involved in cluster work but would be possible cluster companies were included. (Clearance: email was sent to Forssa region's six clusters - the companies already involved with the cluster work - and some potential new companies).

After the final reminder was sent, the result was 30 answers. Few persons reacted immediately after receiving my questionnaire and explained that since they are not involved in a cluster work now, they did not feel the questionnaire was meant really for them.

In total 100 different recipients did receive the questionnaire. The result of answers was then 30 %.

Therefore, the first obstacle in the survey was the open questions and the second – the amount of replies.

After receiving the replies and analyzing the answers it became quite clear that the companies think so differently about the questions asked.

To try to predict these answers is very difficult since each company reflects the cluster activity through their own company needs and experiences. That's why it is important to have surveys with open questions where people can describe themselves the successful and not so successful issues, make suggestions as well as give critical feedback on certain issues.

It became obvious when reading the answers that the challenge of an activator is to pay attention even to a smaller feedback, to listen with a sensitive ear and try to bring these issues to a wider audience so that all can give their input in the matter. The more open the activator role is kept, more trust in it is given, and more issues are dealt with. When the operation is open there will not be issues laying underneath and eating away trust and communication.

In addition, replies vary a lot, some answered with long sentences giving lots of input, then some only with a few words. All of the answers were important, especially the long ones because of valuable info, but also the short sentences, because that gives feedback between the lines.

Maybe the short answers were reaction to open questions. Perhaps these short answers were typed just to get to the next question. Alternatively, maybe there were time issues when answering. On the other hand, the worst scenario, maybe the respondent was not interested at all about the survey.

The survey structure was questionable also. Perhaps it would be a good idea to mix questions so that one has to answer to open question every second or a third time and have "easy" – either multiple choice or to choose from a list - questions between to keep the interest towards the survey.

Cluster survey was challenging also because people understand cluster definition and the work differently. How much can be explained in the beginning not to lose the respondents. If the introduction to a survey is longer than half a page, one has lost already 50 % of respondents. Without saying, it is important to let a respondent know how many questions there are and how long the answering will take. Otherwise, there might be respondents who quit before finishing the survey. My opinion is that the beginning of the survey should look easy, to encourage to participating.

As said, the original idea was to send the questionnaire only to environmental cluster companies and organisations. Since the amount of recipients was increased and even some without any cluster work experience was included in, the questions might have needed restructuring. If one has not been involved in cluster work, it might be hard to give ideas how to improve the co-operation.

As the feedback was important, we decided not to do any restructuring. If the questionnaire had been restructured, the whole survey would have needed to start from the beginning. Since the respondent activity was not that high, it was agreed to leave it as it is. By the end of the October, the survey was over and the replies were given to Regional Development Manager.

Analyzing the questions proved problematic, due to the diversity of answers. Some questions do bring out specific problems that are easy to include in development part of this thesis, like more co-operation in marketing. Generally, answers were not that much in line that one could draw attention to a certain fact or suggest common problem solving. Some answers were so different, that to point out general theme or suggesting one way to approach a problem is just not possible. Hence, in chapter three where the answers were listed, it was safer to bring out diversity of answers instead of just few.

4.2 Problems in the field

When thinking about the survey and research results, feedback was good due to the proper input. Generally can be said, that only few of the answers were negative, majority mainly positive. That leads to conclusion that cluster work interests and it has brought high hopes for the economic development as well.

In general, we Finns have tendency of adapting foreign words. Cluster is translated as “klusteri” in Finnish. The problem with these adapted words is that they do not open to bigger public. Of course, those people dealing with the issues on daily basis understand the meanings behind the words, but one problem especially with “klusteri” has been that criticism due to the adapted word weakens the actual work done in the field. Of course, in this case, “klusteri” (cluster) is much easier to use than “toimialayhteistyö” (co-operation within certain business field). In the future, we should pay more attention to proper Finnish words instead of these adapted words, if we wish to have proper acknowledgement as well as people to understand the work behind the words.

We decided to focus into some of the negative issues. To process these answers, they might help clusters in similar situation to recognise the atmosphere. Since these are quite often single answers, one cannot say that general idea of cluster work is as described. On the comments -paragraph one respondent pointed out, that if he had had the time to answer; maybe his answers would have been more described than now. Open questions need time and commitment, if one does not have that, the result is short answers and maybe no answers at all.

The problems in the field are that companies do not have enough resources or time to be involved in cluster work. One has to remember that there are also other co-operation partnerships than companies commit to.

In addition, the respondents did point out that the companies should be more active. In a way, it is curious that companies recognise the lack of resources and time; on the other hand, it is very often stressed out that the companies should be more active. Dilemma here is how to be active without resources?

There was also a comment that the commitment of the companies to cluster work is not genuine. This needs to be analyzed. Does this mean that company is on a free ride – joined in but not really interested? Alternatively, maybe if the cluster work brings benefits, then the company is already involved. On the other hand, the worst scenario: “I am not telling you what/how I do, but I want to know what/how you do it!”

One of the critical feedbacks was the role of an activator – it is understood to be challenging. An activator should be impartial to gain trust, activator should activate, develop the businesses and the cluster. In future cluster formations, more focus on activator need to be set. In addition, activator’s role needs to be openly defined.

The cluster strategies need to be more open, clear and focused to the activities. The Finnish basic characteristic – envy – was mentioned few times. The fear that someone else might benefit more is still valid trait. If everyone wins, more than doing the job on their own, why it still matters if the other company wins 20 % and your company only 15%? This is something Finnish, hopefully a dying feature.

Some companies hoped that the selfishness should be over and the cluster work could focus more to the development of region and through there to companies.

The networks are understood to be important, alone cannot achieve same as being part of cluster work or another cooperation partnership. This is not a negative thing, but very positive. Hopefully, this thinking can override envy.

How to get companies more active in the cluster work - that is the real question. To activate companies, they have to feel they really are gaining from the co-operation as well as cluster work. Maybe one way would be to change the good examples and benefits into stories. Everyone remembers a story better; stories are practical, more intimate. Stories educate and entertain.

Cluster related problem was also the centralized information. One answer brought out the fear of not getting the information. Someone mentioned that cluster work is inefficient and bureaucratic – depends of the activator and the companies involved, but these can be also issues of worry; especially when these characteristics are often linked to public service. In addition, public organisations are heavily involved in cluster work.

The cluster work should also bring new approaches, not the dwell on the old systems and ways. Here the role of an activator is again emphasized. The new approach would benefit of modern management. One comment also pointed out, that the cluster development is too high science and nothing to do with local SMEs and practicality.

As said, these were single issues picked out from different parts of the survey. To make a single conclusion based on these answer is difficult due to the diverse answers, but genuinely can be said that the cluster work creates inter-

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est and there are certain expectations, especially on benefits that the companies receive.

In the next chapter, the focus is on development plan through problems and then to find new approaches and ways to develop cluster work to serve better the entrepreneurs needs.

5 DEVELOPMENT PLAN

While reading the material and constructing this development plan, it became clear that all the advice in the development plan can be used to any cluster. There are some major points that need to be solved. Each cluster has its own speciality areas that need to be understood, but mainly the companies involved in the cluster work demand similar results and benefits, no matter which field of business. Some may focus more to the R&D, others joint marketing or networking.

Below the development plan is created so, that it brings out the general issues to be solved and focused in cluster work. Any field of business can find some or most of the issues relevant; the plan is not tied to a certain cluster. The key role in cluster and its development is facilitator/activator. Focus in the development plan to activators role is heavy.

Some of the answers in the questionnaire gave good in-depth ideas how to develop cluster work. The research question focused on what actions could benefit companies in cluster co-operation. Here are listed different issues, some concrete, some more based on theoretical issues that would be worthwhile thinking regarding cluster development and bring benefits for the companies.

The biggest challenge is to get companies involved and committed. First of all the entrepreneurs and representatives of different companies and organisations need to understand what cluster is. The focus and the goals of the cluster have to be so clear that they are easy to understand. To enhance the commitment of the companies, one good way is dress the successes into stories. In the survey, one of the respondents pointed out that it is easier for an entrepreneur to get involved and commit when they know the facts and the experiences from other entrepreneurs. To dress these experiences into stories means they are understood better, adapted and remembered.

To involve companies, the future benefits need to be explained. Facilitator can do the sales speech but he/she cannot over promise in order to interest the companies. Companies have to understand also the fact that more they input to cluster work, i.e. resources as attendance to meetings and events, more they gain from it. It is obvious, if a company is active, and their representative is present in every meeting and events, they get their message better through. This means that they can affect to development, future education, the cluster agenda etc. If another company does not invest in meetings and other events, they are the one complaining of not receiving anything out of cluster work.

The companies require also results. It is important to let the network know, what is being planned, what are the goals, how it is done and in what time frame. The ways to measure actions are also important because everyone understands facts. When the results are received, the communication is important, even if the results are not quite what are expected. Cluster needs to communicate to other clusters and networks too, not only its own field. The active image comes from open communication and the drive.

One cannot underestimate the importance of communication and trust in the cluster work. As we see it, cluster activator is the one affecting to trust formation through his work manners. Also, the companies affect the cluster's trust by their behaviour. Trust is such a sensitive issue, when lost, it is very difficult to get back. One way to create trust is an open communication. Communication within cluster and to outside too makes or breaks the cluster work. If cluster is active in its communication, more information is transferred internally and externally, more publicity is received. Good image in the public eye helps project work with authorities.

If cluster does not have active communication, goals and daily matters are not known perhaps within the cluster, but certainly not externally. Cluster may seem to be doing nothing, hence active communication in websites, as articles, news, in meetings – even blogs if activators are very active, enhances the clusters working environment.

Cluster should enhance the co-operation in certain fields like marketing, education, new business operation and new customer markets. These were the top four also in the survey. Companies need concrete action to enhance their business. When this is provided, the step to join cluster work with commitment is smaller. As an example, for a company to train personnel, the smaller the amount of people, more expensive the quote. If cluster companies jointly order training, the quote will be much affordable – hence the amount per company smaller.

Since the public operators are heavily into the cluster work, sometimes the real entrepreneurs can be missing. This deviates from the cluster goals. Public organisations like municipality, education or development organisation should be part of the cluster work, but not dominate it. The most important input should come from entrepreneurs. They are the ones the cluster work is based on.

Sometimes it feels that cluster work is taken for granted. It just happens and we, as a company do not have to take a big part in it. When developing clusters it would be a good idea to create an entrance fee. That way those companies who understand the importance of a cluster would join the work and those willing to go for a free ride would stay out. Also, when company invests money in a cluster work, they tend to look after it better, at least demanding results.

Facilitator's role is the key role and quite often even the personal relationships define the interest. In facilitator's role the personality and knowledge really matters.

This development plan is for existing cluster. If one wants to have a development plan for cluster that has not yet been established, we strongly advise to read Ifor Ffowcs-Williams' text the Five Phases, Twelve Steps from Clusternavigator's site. These steps give an idea, what need to be taken into consideration. Also benchmarking existing clusters is a method not to be underestimated. When setting up a cluster there is no use of repeating same mis-

takes as the clusters before. At least in Finland there is a culture of explaining the cons and pros, so make sure you ask the right questions.

When cluster has already formed, the key issue is to find best possible facilitator or as we in Forssa region use the term, activator. This role so important that we will start the development plan from the point of an activator. This is also one of the cluster actions that benefit the companies. As explained earlier in chapter two, the phases and steps of Ffowcs-Williams (2004a), here is the facilitator part again.

5.1 Facilitator

Ffowcs-Williams (2004a) points out that the cluster facilitator is a key figure. Facilitator builds a collaborative culture on two fronts: firstly amongst businesses and secondly between businesses and public infrastructure. Facilitator's role should be seen as a major role in the cluster, hence part-time role is not recommended. The facilitator's role should be as any job in an organisation, from managing director to a secretary – focus on the facilitator job only. Forssa region has had activators as part time roles and it has not worked properly. A financial compensation of a required work is in today's business life impossible to control. Too many other areas require attention, work load is increasing, not decreasing and to take care the demanding role of facilitator as part of normal work, just does not work!

We could say that the in first couple of years we have been practising how to do the job properly. Now the facilitator i.e. activator's role needs more attention, from recruiting to follow-up and from supporting to demanding results.

Cluster facilitator's role is challenging and not easy. Facilitator's role is to act as a change agent and catalyst. Facilitator is also a networker and relationships builder. Someone who really knows the area of business, but ideally is not the cluster's Project Manager.

Facilitator also carefully establishes the Leadership Group. There are difficulties of course when choosing the Leadership Group. One should include the representative of funding, some leading figures of leading companies, some municipality authorities and some representatives of other development organisation and some so called "important people".

What cluster facilitator has to remember is that when he chooses the leadership group, it has 6-10 committed people. This commitment should be looked from preferred leaders. Ideal is to find a group with a balance of skills and group that is able to work as a team.

Here the facilitator has a key role when establishing the group. The leadership group's members are the cluster's movers and shakers. The facilitator invites for the group, usually invitees are the members of a cluster. The group is formed from private and public sector representatives, but should not be dominated by the public figures.

There are usually less than 10, ideally 6-8 members in a group. Leadership group should follow the private sector culture even there might be financiers among the public members. Government should be the supporter, but not the sole implementer. The members should be initially senior stakeholders.

Leadership group can be extended through temporary teams with issue focuses. In addition, facilitator should pay attention to volunteer burnouts. There are people who are excited about new ideas, groups and projects and easily volunteer as a member and then cannot cope with the busy and demanding life of the meetings etc. Alternatively, people who just want to have one more status member.

Facilitator should select the group knowing and understanding the potential members life cycles – how deeply they still are in actual business, how much there is leisure time, what other roles the potential member has already committed.

Since the role of the facilitator is vital, this person should have excellent skills to motivate and empower. The qualities should include building relationships and enthuse. Facilitator's knowledge is important – as said before, someone who knows the key players, is familiar with the processes and can identify the resources to support the cluster. Facilitator's role should be on a long-term basis, the person is neutral broker, who has responsibility for instigating cluster development programs, and ensuring that the initiatives continue to be upgraded. Facilitator has to be also credible and have excellent integrity. As said, role is challenging, but also to find excellent facilitator, can be very challenging.

Ffowcs-Williams' paper on Cluster development: Green Lights and Red Lights (2004b), points out a list of good practises for cluster facilitator. List of do's and don'ts is a good reading for everyone included in clusters, so here is a list of the headlines.

Don'ts:

- **don't take too broad a definition of the cluster**
 - avoid broad descriptors such as "IT" or "light manufacturing"; identify specific competencies specialisations: "office furniture", "outdoor apparel", "automotive engineering".
- **don't be parochial over cluster boundaries**
 - cluster boundaries may extend to neighbouring regions, even neighbouring countries
 - collaboration may be needed with neighbouring EDAs
 - boundaries will evolve as the cluster evolves
- **don't allow paralysis by analysis**
 - analysis simply provides platform for action
 - move early into action, identify the "low hanging fruit", establish a portfolio of projects
 - prioritise by passion

- **don't underestimate the central role of the Economic Development Agency**
 - establishing a long term relationship with the key clusters, the region's wealth creators
 - EDA needs to maintain flexibility, move at the speed of business
 - link cluster development with other programs, e.g. investment attraction as a cluster "in-fill"
 - identify cross-cluster/systemic issues from the ground up and address
- **don't view cluster as a static process**
 - vibrant cluster groups may sub-divide, merge
 - go for early action with a tight feedback loop, then review priorities
 - tailor program for each cluster
 - some small "clusters" should be supported as "networks"

Do's:

- **do empower private sector leadership**
 - ensure the early establishment of the cluster's Leadership Group; empower private sector CEOs
 - understand their drivers
 - use their strengths, resources, commitment and connections
- **do resource cluster facilitation for the long haul**
 - cluster development is not a quick fix; a primary requirement is a relationship builder, not an analyst. A neutral corner who builds teamwork, alignment
 - central is knowledge of the key companies and the public support infrastructure
 - the facilitator is much more than a "project manager"
- **do build a collaborative culture on multiple fronts**
 - a high performance cluster is perforated with networks, alliances, supply chains
 - collaboration between local government, universities, secondary schools and government R&D organisations
 - do gather resources from public agencies to support your cluster
- **do celebrate success**
 - beat your cluster's drum
 - provide forums that acknowledge the success of cluster members
 - view the media as a partner
 - involve politicians, funders of the clustering initiative
- **do bed down the key companies within your community**
 - all clusters start small
 - remove the isolation of key companies
 - upgrade local suppliers to meet their needs; provide local training

Facilitator is not in a cluster to maintain status quo. The facilitator is there to make changes and who is comfortable in breaking rules. The facilitator has to be hungry and needs some resources. Facilitators should have a portfolio like a venture capitalist and understand that not all things end up in success. Mainly most of the tried actions fail, but those few that succeed, they really bring the good for the cluster.

The facilitator should also look for the deviance in the cluster and be prepared to take risks. Facilitator should be a bit chaotic, to get some creativity, without limitations, to approach with new way. The cluster should have good, flexible strategic agenda. Agenda, that defines main lines where the cluster wants to be in the next five, ten years. Agenda that can be able to develop all time instead of confining the cluster work into certain limitations. The agenda does not need to have answers how to get there, but create ambition with new ways. (interview Waeltring & Ffowcs-Williams 2010)

As pointed out, the facilitator is the key figure in cluster work. When a good facilitator has been employed, the question is: what's next?

5.2 Developing preferred future

When the cluster analysis has been done, strengths and weaknesses recognized, opportunities and threats listed (basic SWOT analysis), next thing to do is an initial analysis on preferred future, a vision. Firms tend to be very modest, but when developing cluster or any other business, ambition level should be high. How high the cluster wants to aim? No modesty helps here. Better to set up goals very high, since the goals are not necessary to achieve in a year but it can take from five to ten years. Goals are important because when the cluster has clear goals for everyone to understand it is easier to commit to these goals. Goals can change too when cluster activity develops.

Means to get to the goals are not necessary to list, but try to find innovative, creative, borders breaking approaches, something that has not tried before. Be bold, go for unimaginative approaches. Try to think outside of the box, be unconventional.

In cluster development, one can also identify the stepping-stones, like Ffowcs-Williams in his cluster development plan (2005). Stepping-stones are the key issues in cluster work that are understood and committed jointly. Stepping-stones bring the preferred future closer. Identifying these issues for example through a workshop are more powerful than having an independent view or consultant, academic or facilitator recommendations.

Through brainstorm or a workshop there can be ten to twenty extremely good issues, jointly cluster should choose three to six aspects as priorities and concentrate on these.

Benchmarking is an effective way to develop cluster work and it never should be underestimated. There are so many good examples in Finland but also in Europe and in the rest of the world, that at least some of these should be investigated. Finland has some good and strong clusters, but the preferred

benchmarking should be done in a different culture since that teaches also how to think differently. There might be same issues but how the issues are tackled could be completely different approach, as we would do in Finland.

Cluster can contain a small or large number of enterprises: some small, some large-sized in different ratios. For a cluster, it is important to have both. The information transfer, different strategies, different way of looking into matters, resources to be used, personnel pool, best practises – all of these and many more develop the cluster. When cluster develops, new business will be established, new jobs are set up, more knowledge brought to the region, new inhabitants, as a result when cluster is doing fine, the whole region is doing fine.

5.3 Best practises

One can find best practices in cluster development as well, for example easiest from the internet. All the actions do not need to be reinvented but copied to the own needs. When developing cluster, below are some good practises:

As the cluster is being developed, keep in mind the following (from the website of e4oncompetitiveness.com on Cluster development in 12 steps):

- Aim for multiple sources of funding so no one benefactor is able to unduly influence the cluster's development agenda. The clustering initiative should not be beholden to others, especially the agendas of the national/state agencies or an 'old boy's club' from within the cluster.
- Open up the clustering initiative to multiple hierarchies. Identify talent within the cluster; allow natural leaders to emerge; they will not need formal authority to mobilise others.
- Do not debate new agendas for the cluster that are backed by passion, just test them. Engage the positive deviants working at the fringes of the cluster.
- Move on from a Strategic Plan for the cluster to a Strategic Agenda with severe stretch ambitions.
- Innovation is not a solo activity; facilitate co-specialisation amongst the cluster's firms.
- Take time in selecting the cluster's facilitators; these are the key people who will provide the neutral corner, bringing competitors together, pooling firms and R&D providers, linking often a dysfunctional clutter of national and state agencies to support the development agenda of the cluster.
- Facilitators need to move quickly on to early action, avoiding paralysis by analysis. Overload the facilitators so they empower others and do not end up as the project manager for every initiative.

The Competitiveness Institute (TCI) Delhi workshop in December 2010 listed the good, the bad and the ugly practises in cluster development as follows:

Good practices in cluster development

- Industry led cluster initiatives
- Light touch, flexible and responsive interventions
- Clear articulation of the demand for public services
- Importance of connections, establishing them and bridging gaps
- Focusing on relationship building
- Sharing resources, ideas
- Leveraging strengths
- Critical mass-based strategy
- Stakeholders involvement – full Triple Helix engagement
- Cluster platform for cross-sectoral cooperation
- Emergence of natural leaders
- Facilitating spinoffs, generation of new products and services
- Professional cluster facilitation and management
- Agreement on where to collaborate
- Identifying common risks and barriers to businesses growth

Bad practices in cluster development

- Government funding – bureaucracy overload – inappropriate incentives for participation
- Too much focus on funding versus strategy/results
- Too much supply-side input
- Only carrot: promotion – government funding
- Insufficient evaluation/results indicators
- Too much focus on personal agendas vs. shared vision
- Time pressure - too little time to work together
- Lack of trust
- Limited inclusiveness
- Promote short-term business opportunities
- Failure to find and map common ground
- Developing the action plan without proper diagnosis and trust building
- Focus only on global trends instead of regional strengths
- Facilitators lose neutrality, and micro-management by facilitators
- Absence of neutral, professional cluster managers
- Failure in understanding whose cluster is it
- Failure to engage international stakeholders in the clustering process
- Cluster politics
- Inability to communicate with key stakeholders
- Being open on what competitors hate about other competitors

Two points came through as really UGLY practices in cluster development:

- Excessive government control
- Overemphasis on reports, planning & structure; under emphasis on action & results

In the same workshop, a small group discussion was held on subject of: “What is your essential advice to a new cluster facilitator?” Answers are:

Essential advice to a new cluster facilitator

- Listen!
- Build relationships, make connections
- Establish informal relationships at all levels
- Learn how to play golf!
- Patience; Persistence; Pragmatism; Passion; Perception; Perspective;
- Positive; Productive
- Research and read about cluster management
- Be patient
- Be transparent
- Mediation skills
- Keep a smile on your face
- Be non-political
- Be prepared, do your homework
- Analyse and initiate
- Facilitate formation of goals, creating buy-in
- Demonstrate ability to get things done
- Create benefits
- Acknowledgement of parties
- Listen for 80% of the conversation
- Find the cluster champion(s) that others trust
- Start with what requires low trust and familiarity
- Tell the hard times
- Be a friend, philosopher and guide to the cluster
- Be neutral, professional and time management
- No exclusion
- Energise
- Long term orientation to goals and strategies

Best practises in Forssa region are easy to find too. At this point, the most public attention received best practise is joint marketing project. Häme marketing organisation has done co-operation already since 2000 and promoted the regions through professional marketing. This has not been tied to any local cluster work until 2010 when the Bright Green Forssa Region –concept was created. As a best practise, this is easy to adopt in any cluster work, all it takes is the joint goal, investment and some resources. The results are extremely good.

As best practises of local clusters, one could emphasize the joint co-operation between clusters. Intelligent TV for elderly is a good project joining electronics and wellbeing together. Also, the benefits for elderly people are priceless.

5.4 What actions could benefit your business in cluster co-operation?

Without saying, the role of the activator is the key element for any cluster. Activator can make or break the cluster. Whatever the term, activator or facilitator, this role cannot be underestimated.

From the survey it is easy to draw the conclusion that co-operation between the companies is needed and valued. However, the commitment is harder to get. To make entrepreneurs understand the value of cluster to business, emphasis could be on the meaning of stories. Tell the story and it is remembered, the benefits understood and concept approved. Since stories are important, below is an article of Annie Gray. She has interviewed companies involved in cluster work and they describe the benefits what a company can receive. We believe this article sums up the benefits, and why to develop and commit to cluster work.

In an article of Annie Gray “What clusters can do for your business?” (2002, The CBS Interactive Business Network 6.2.2011) she points out what businesses benefits. Below is the complete article with examples, since there are different benefits to different cluster companies:

Clustering proponents say the benefits are enormous and can give businesses critical mass in key areas leading to successes not possible working in isolation. Her example is Castel Gofreddo in Italy. This tiny town in Northern Italy with a permanent population of around 7000 souls supports 200 small sock-related businesses and believe it or not, produces some 60 percent of the socks worn by the 378 million people in the European Union.

Cartel Gofreddo, says Ifor Ffowcs-Williams, is a great example of what clustering can offer an individual business. That is an example of a high performing cluster consisting almost totally of small businesses. What you get in this kind of high performing cluster is that businesses become highly specialised focusing on the thing they do best.

As Ffowcs-Williams points out this type of very niched specialisation can make companies vulnerable to competition. Nevertheless, the Cartel Gofreddo companies reduce their vulnerability because they are able to work with, trust and cooperate with their competitors to produce and export their products. Simultaneously there is strong competition between the firms, which is central to driving innovation.

However, says Ffowcs-Williams, it is really only in the last 10 years, since Micheal Porter "upped the ante" that countries (including New Zealand) have come to understand the importance of clusters.

What about your business?

So what could a cluster do for your business specifically?

Clare Nolan, of the Regional Economic Development Agency (REDA) in Wellington, says there are numerous advantages for businesses. She says one of REDA's key focuses for any cluster is *commercial success*. Unlike other industry organisations, clustering is about commercial success and that, she says, is part of *what drives cluster members to keep working together*.

She cites the Wellington Creative Cluster (see NZB March 2002) as a good example of where smaller companies (three-person companies through to around 50 people) have been able to *collaborate to win big museum contracts* in Singapore.

Nolan says clustering can give companies the *resources to be able to enter a new market, to research that market and to have a presence in the market on an ongoing basis* that they would not have been able to afford either financially or staff-wise otherwise. Another benefit is that *smaller companies can achieve commercial gains on the coattails of other, probably larger, successful companies*.

Industry New Zealand's manager of cluster development, Alan Koziarski, says the rationale behind clustering of companies or regions is to *build on existing strengths*; lifting the game in R&D terms; in building scale and critical mass among the SME sector. Koziarski says the *key point about clustering is that location matters*. And, in the end, economic development is about company development.

"Companies employ people and generate growth and profit. Clustering is about nurturing the environment to enable companies to develop. In addition, that applies whether that environment be the national environment (tax and compliance issues); the sectoral environment (ICT, biotech, marine) or the regional environment (which provides the workers, the raw materials, the R&D and the innovation and informal networks).

"Place really does matter. Industry New Zealand has to help on a regional basis as we can't do it for every [individual] company."

The biggest clustering programme in New Zealand is the Wellington Regional Economic Development Agency, with 11 clusters. Nolan says REDA, which is funded by the four local councils, has focused on clustering as the councils' cornerstone of economic development activity since 1997. Some 500 companies region-wide are now involved in one of the 11 clusters.

Moreover, the *councils' \$1.5 million investment* since 1997 is paying off. Nolan says that in total more than \$10 million of work has been won through the cluster arrangements in the past two years. That is

new money; contracts for projects secured from offshore that none of the companies involved would have been likely to secure on their own.

Over the next five years, Nolan believes there will be several hundred million dollars worth of work coming out of the clusters. The Creative Cluster alone has identified some \$100 million of work in Singapore and Hong Kong that it can bid for. The Earthquake Cluster has also identified several hundreds of millions of dollars of work over the next few years.

The message to business, says Nolan, is that there is real value for companies in participating in clusters.

Clustering, says Koziarski, is about *fostering innovation*. Ffowcs-Williams says active clustering should not only consist of the major industry players, but also the universities, polytechnics, secondary schools and Crown Research Institutes, which specialise in that area.

At first glance in today's more connected and global society it might appear you do not need to be close but, he says, *being close is particularly important* in a knowledge intensive industry where a casual discussion can lead to cross-overs between companies not previously thought of.

Koziarski says that essentially, what clusters can bring is a strong local economy that can have a global reach. They should build on existing strengths of the regions; not try to invent new industries but build on what is already there.

Moreover, the Government is picking up the cudgel. The Industry New Zealand cluster group, which Koziarski heads, has been actively involved in facilitating clusters for a year. The department has been funding a pilot programme since December and in July, another \$1 million was awarded by Government to INZ to be devoted to cluster work.

At present around 80 percent of clusters have been established by local EDAs, although a few such as the Whangarei shipbuilding group have developed under their own steam.

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Developing cluster can bring so many benefits to companies involved in cluster work. What actions could benefit your business in cluster co-operation? Clustering when operated well, brings commercial success, trust and co-operation, collaboration, resources to enter markets where there is no business to be alone but also strong competition between the firms, which is central to driving innovation. Other benefits are presence in the market, building on ex-

What is the role of a cluster in the business co-operation development?

isting strengths, developing the company and its growth in a faster time frame, get outside funding (local government), outside investments, strong local economy and above all understanding.

6 CONCLUSIONS

In this thesis, the role of a cluster in company co-operation development is investigated. The findings in the survey were heterogeneous, only some issues were recognised as general cluster work related issues. It became obvious that companies reflect differently to cluster issues, depending on their own status. To make companies understand better the cluster work's importance, the benefits that companies receive, must be enhanced.

While co-operation is understood to be important, still some work needs to be done on company activity and commitment. Co-operation brings benefits to companies, opens doors, lowers barriers to enter the cluster work and other joint events, creates good personal relationships and networks. Without co-operation, many problems would have to be faced repeatedly. Many new wheels would have been invented – but with big R&D costs and lost time.

Cluster work is important part of region's economic growth, employment creation and innovation as well as development. Alistair Nolan in his article of Subnational Authorities and Entrepreneurship: Policy on Business Incubators, Enterprise Clusters and Networks (2000, 8) refers business networks similar to clusters and explains that business networks operate with varied forms and objectives. Some aim at general sharing of information, while others tackle goals that are more specific.

He continues that networks can allow rapid learning - and small companies often favour the peer-based learning that networks permit. Networks can also facilitate the reconfiguration of relationships with suppliers. In some instances, networks have led to a new division of labour in a group of firms, allowing individual companies to reap economies of scale and scope. Moreover, networks can help exploit the benefits of collective action.

His example is from Mirandola, Italy, the neighbouring town of Bologna and also known as home to one of Europe's largest grouping of biomedical companies. In Mirandola SMEs share the cost of expertise in quality assurance, costs considered excessive for individual companies. Networks have spurred co-operation issues as diverse as training, technological development, product design, marketing, exporting and distribution.

Co-operation is good foundation of cluster work. Co-operation is not the right of cluster, since it happens without clusters as well. The emphasis must be laid in wide co-operation, more that just one or two partner's co-operation.

In the title of this thesis, "What is the role of a cluster in the business co-operation development?" business co-operation development is the key issue and its role in a cluster. To answer the title's question, the role of a cluster is door opening. While accessing the data and collecting the information it became quite clear that no matter which field of business is in question, the cluster work has similar problems and similar solutions to develop the co-operation between businesses. There are some businesses that will work together, even if the cluster exists or not, but that circle is small, usually based on good personal relationships.

The survey helped to see into Forssa region matters, to face the hottest issues at hand. Some answers were in-depth, some very short. From the survey answers, it was easy to see, who was investing the time needed for the survey's questions and who found the survey too time consuming.

What interests the companies most, are of course concrete benefits. Feedback on gained benefits on cluster work was diverse:

- new networks
- interesting meetings and discussion
- easier to contact person afterwards since the face is familiar
- refining ideas with larger crowd
- bigger projects received
- improved public image and through that received funding
- improved relationships
- increased customer contacts
- managed to get own activities better known
- learned to know SMEs mental life
- getting new assignments
- marketing benefits
- received updated information
- new customers
- joint training and marketing
- learning has become quicker.

The list above is impressive. For those companies that have received the benefits, there is no doubt on the need of cluster work. Those companies who did not receive any benefits, either they are not suitable for the cluster work, for example either too big to gain any new ideas or are already national/global players. Now is the time to look into mirror, weight the input and output, think about the invested resources and then evaluate again, why the cluster work has not brought the hoped results.

Not every company benefits hugely of cluster work, but it is important to understand the cluster work, the expectations of it and then value the received benefits. To gain 10 % commercial success with cluster instead of 5 % alone, We would claim, most entrepreneurs would accept the bigger success. Of course, one has to remember that there are companies that are just happy as they are, with no need to grow; but these are a minority.

Clustering is a phenomenon that will increase. The stronger clusters respond to competition and the weaker clusters try to survive. The government level has recognised the importance of clusters and some incentives or supportive actions will increase. Also, the linking of clusters will increase; today regional or national cluster, tomorrow a global operator.

The survey did help understand the issues underlying the cluster work. Success stories are of course enjoyable, but the focus should be also on the problem issues and try to find out, if the problem is linked with a certain company or the whole cluster work. For the future, it would be a good idea to repeat the survey, maybe once in a year. It would be also important for the clusters

to have continuous feedback from the field. Regarding survey technique, to learn from the mistakes in survey itself to improve the answer percentage would be important.

The new approach to the cluster work is also important. To find new ways to break limits, to be bold to try new ways, to look outside the box and understand that not every new idea brings success, but those few that will, are well worth it.

This thesis includes different theories of cluster work. Some current theories will help with cluster work and they are presented in this thesis. The main focus is on Ifor Ffowcs-Williams and his cluster development of five phases, twelve steps. The stages are impressive, with concrete examples. Ffowcs-Williams and this thesis emphasize cluster facilitator and this role has received a lot of attention in this thesis.

The thesis subject was interesting and sometimes it seemed that there is continuously new material to be read. The subject needed to be restricted to a certain aspect; otherwise, the theories and current concrete work examples would carry on and on. Anyone interested in the subject will find more than enough to read from the internet but also from various books.

Cluster development is challenging but interesting and rewarding and one could say that the limit of cluster work is in one's imagination.

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INTERVIEW WITH MR TIMO VAUHKONEN

What is the role of a cluster in the business co-operation development?
Case: Forssa region environment cluster

Interview with Mr. Timo Vauhkonen, the project manager of cluster project, Forssa Region Development Centre

Interview date: November 11th 2010 at 9.30

1) Have you been dealing with clusters before?

- I have been working as a program manager in the South Pohjanmaa metal cluster. We had over 600 companies involved, annual turnover about 1,4 M€

2) Would you describe the Forssa region cluster work

- The cluster project has started well, especially electronics and environment clusters are doing well.

3) What are your expectations of the cluster project?

- I would like to see increase in knowledge transfer. Forssa region is a small area, businesses are not necessarily aware what the other business is doing. I also would like to see more regional networking

4) You have been working with the clusters now 2,5 years, how does it seem now?

- Some of the clusters have moved strongly forward, there are now good co-operation going on and also work has started on the cluster interface like wellbeing cluster and electronics are working together

5) Would you tell something about the companies in the clusters

- At the moment we have 120 companies related to clusters but through the projects we have 45 committed

6) The most challenging cluster?

- Construction materials and metal engineering clusters are challenging due to the cyclical economic situation. These clusters have faced the heavier effect of recession

7) You said that the strongest cluster is electronics, why?

- The technological area is well defined, knowhow level is high and the businesses talk same language. This is also the most quality and standard guided area.

8) Have you figured out why businesses are not so keen on joining the cluster co-operation?

- SM enterprises do not have enough resources, for example planning, marketing and development personnel is not strong. SME's have to

develop their production and technical sales. Unfortunately company and product marketing has not enough resources.

9) Your views on Finnish envy

- Finnish envy does raise its head sometimes. Problem is that companies do not see the joint goals. We lack the win-win thinking. Also people tend to be unsatisfied and this is due the envy and the inadequacy of their own input.

10) How can we change the thinking mode?

- In my opinion it is all about training and education. Entrepreneurs learn through practical examples.

11) Forssa region cluster structure is wide, your views about this

- Yes, I think it is too wide, I'd say 2-4 would be enough. The service sector can be attached to other clusters, it does not have to be on its own. I'd say energy and environment could be one cluster, wellbeing another and it is already quite wide. The third would be the technology and the fourth green logistics. Like we have lined in the strategies.

12) Could you describe the environment cluster?

- It is growing business and they have good projects going on. Possible to get innovative customers through public image. This cluster has also a lot of investments going on, which will produce results in five years. And it is growing promisingly already. The businesses should go more out i.e. invest more to marketing and public image. Also competition is very hard on national level. Unfortunately we are not part of the national Centre of Expertise Program, the big towns of Helsinki, Oulu, Lahti and Kuopio are part of this national environment cluster and I feel we should too.

13) The strengths of environment cluster?

All the facts mentioned in the Envitech strategy which are for example existing and diverse business operations, capital (€), Envitech Club, Envitech brand, material knowledge, marketing, Finland's first environmental incubation centre, R&D services, research (MTT), new environmental education program (HAMK), entrepreneurship readiness of students, attraction of location, strong base infrastructure and planning, environmental permits for companies, synergy benefits, logistics connections, international networks

14) Why should companies join the clusters?

- There are some very good reasons like comparison: what is their relevant knowhow, competitive edge. And together it is easier to find more customers – the bigger is usually taken more seriously. Plus I think on of the important facts is information exchange: one gets updated information which is important.

Interview done face-to-face at FSKK by Ms Heidi Cavén

INTERVIEW WITH MR. PASI KASKINEN

What is the role of a cluster in the business co-operation development?
Case: Forssa region environment cluster

Interview with Mr. Pasi Kaskinen, Communications Director, Loimi-Hämeen Jätehuolto Oy (Municipal waste management company)

Interview date: November 2nd 2010 at 9.30

1) Please introduce the company you work for and describe your duties at LHJ

- Loimi-Hämeen Jätehuolto Oy (LHJ) is a municipal waste management company and its responsibilities are basic waste management, advise and communication. In LHJ Group my responsibilities are in marketing, but in LHJ I'm in charge of communications. I also deal with groups arriving to the Envitech area.

2) How do you see the co-operation between companies?

- Utmost important, we are small operators and we make louder noise and are more visible together. The visibility and familiarity are easier to achieve together.

We have also the morning coffee meetings and other co-operation which I find good. These have helped in the promotion of the fluent communication.

Company co-operation is strong and the activities in the Envitech area has kept the ball rolling. We have, for example, helped to develop new educational programs in the region. The University of Applied Science of Häme, Forssa unit, actually asked from the entrepreneurs, what the content of the education should be. That created joint strategy in 2007 focused on 2013. The goals of the strategy are already achieved and even exceeded.

3) Has cluster work decreased or increased the existing co-operation between companies, why?

- The lack of resources can be seen, since the cluster work is voluntary
- I'd say this is not a project but a natural operation that involves also education. The project has clusterised automatically. The Forssa Region Development Centre has a strong input to the strategy work so the existing co-operation has certainly not decreased. Maybe the co-operation between companies has decreased due to own angst's and conflicts. The competitive operation does has its affect.

4) How the cluster work would be most productive?

- The cluster work would be most productive when in the business co-operation we would try to find new innovation and it would lead to new business development. As an example, Ekoport did land in the area. If no activity had been here, they would not have come. Also the

wind energy is another new business operation that has landed due the activities.

5) The advantages, challenges, weaknesses of cluster work?

- The advantages: the basic idea of Envitech club was to bring people around the same table, so we can create something together. Education benefits through company co-operation, the companies benefit of the students. There is synergy between companies and we can provide more together.
- The challenges: if no clear results turn out, the starting enthusiasm will end. How to motivate sole operators to co-operation? Also important to avoid conflicts.
- The weaknesses: Companies are so enthusiastic into many different issues, that there are too many meetings and brain storm events to go to; when we do something, we try to unify. We should have more seldom but better events.
- We started with ecstasy stage. We have accomplished a lot. So many ideas were so close to come to true, now new ideas are needed

6) Case environmental cluster: how did you get involved in?

- Already since 1996 there has been four small operators involved. The Envitech name was adapted already in 1997. The co-operation started to develop in Kiimassuo (nowadays Envitech) area. Envitech marketing co-operation was established in the spring of 2004 and all the establishment work started from a fair, where we used to go together. Later the co-operation became tighter and more fluent. Envitech club was started and we planned to establish Envitech Oy too. The basic idea was to deepen the co-operation and develop it. I have been involved since 2001.

7) How it all started?

- There has been environmental business in the region and starting point was the completion of a new municipal landfill. Ex municipal mayor Mr Timperi was a visionary and understood the future needs. He knew reserved enough space for the environmental companies. Also there has been strong visionaries like Mr Immo Sundholm, Mr. Mika Laine and the Stenberg family building up developing the environmental business.

8) At what stage the co-operation changed into cluster work?

- The co-operation has existed since the beginning of Envitech area and the co-operation changed into environmental cluster naturally

9) How did it affect to previous co-operation?

- Before the cluster we did all the actions with our own money, the costs were divided. Since the cluster project started, it has brought money in too and possibilities to held seminars, to strengthen the image. There are challenges and weaknesses but it is nice when I don't

have to coordinate everything on my own. I cannot satisfy all the players, and there are conflicts over small matters.

10) How do you see the co-operation now?

- We are in the serene transformation stage and one peak is behind. Now we are heading to a new rise. Strong personalities make co-operation more challenging in every cluster field, also in ours.

11) What about the future?

- Cluster work has produced and developed activities, environmental sector has received extra resources which is good thing. Co-operation with the present group continues now and in the future. The bright green and cluster work feel attractive and brings in new operators. Anyone can now perceive themselves bright green. Environmental field cannot own this idea. Also the environmental field might move into more coherent, where the big companies rule i.e. they buy out the small companies. The local operators are getting bigger. The field is widening in Finland. So who ever is the owner, we hope the operation stays in Envitech area.

12) If you could turn the time backwards, what would you do differently and why?

- I do not worry about the past. We have not done anything badly and nothing worries me. Everything is at the moment okay. If we had been able to establish Envitech Ltd, I wonder what its meaning would be today. The environmental business field has moved forward, new business operations have been done, new operators have joined in.

13) Thinking of environmental cluster, which other cluster would be the most interesting co-operation cluster in the future?

- Any cluster can be a possibility and opportunity. Environmental sector can bring added value to any activities for supply change management businesses. Also from the point of manufacturing industries businesses can benefit. And electronics cluster can benefit also from environmental cluster

Interview done face-to-face at Scandic hotel by Ms Heidi Cavén

SURVEY QUESTIONS AND ANSWERS

Q1 The company/organisation I represent belongs to a cluster of:

- 1) Electronics cluster, Food cluster, Wellbeing cluster, Environmental cluster
- 2) Environmental cluster, logistics
- 3) Environmental cluster
- 4) Environmental cluster
- 5) Electronics cluster
- 6) Metal engineering cluster
- 7) Electronics cluster, Food cluster, Wellbeing cluster, Metal engineering cluster, Construction materials cluster, Environmental cluster
- 8) Horse cluster
- 9) Development organisation = to all
- 10) Electronics cluster, Wellbeing cluster, Environmental cluster
- 11) Food cluster, Environmental cluster
- 12) Food cluster
- 13) Environmental cluster
- 14) Environmental cluster
- 15) Development organisation
- 16) Educational organisation
- 17) Environmental cluster
- 18) Wellbeing cluster
- 19) Environmental cluster
- 20) Environmental cluster
- 21) Construction materials cluster
- 22) Electronics cluster
- 23) Construction materials cluster
- 24) Metal engineering cluster
- 25) Metal engineering cluster
- 26) Not yet to any cluster
- 27) Electronics cluster
- 28) Food cluster
- 29) Environmental cluster
- 30) Not yet to any cluster

Q2 We have been involved in cluster work for:

- 1) over 4 years
- 2) 1-2 years
- 3) over 4 years
- 4) over 4 years
- 5) over 4 years
- 6) over 4 years
- 7) 2-3 years
- 8) 1-2 years
- 9) 1-2 years
- 10) 1-2 years

- 11) over 4 years
- 12) over 4 years
- 13) 3-4 years
- 14) over 4 years
- 15) 2-3 years
- 16) 3-4 years
- 17) 2-3 years
- 18) 1-2 years
- 19) over 4 years
- 20) 3-4 years
- 21) 2-3 years
- 22) 2-3 years
- 23) 1-2 years
- 24) over 4 years
- 25) over 4 years
- 26) over 4 years
- 27) 2-3 years
- 28) 2-3 years
- 29) 2-3 years
- 30) 2-3 years

Q3 Are you satisfied with cluster work so far?

- 1) Not satisfied
- 2) Satisfied
- 3) Not satisfied
- 4) Satisfied
- 5) Satisfied
- 6) Not satisfied
- 7) Not satisfied
- 8) Satisfied
- 9) Satisfied
- 10) Not satisfied
- 11) Satisfied
- 12) Not satisfied
- 13) Satisfied
- 14) Satisfied
- 15) Satisfied
- 16) Satisfied
- 17) Satisfied
- 18) Satisfied
- 19) Satisfied
- 20) Satisfied
- 21) Satisfied
- 22) Satisfied
- 23) Satisfied
- 24) Not satisfied
- 25) Not satisfied
- 26) Satisfied

- 27) Satisfied
- 28) Satisfied
- 29) Satisfied
- 30) Not satisfied

Q4 If you answered to previous question no, please explain why you are unsatisfied?

- 1) Cluster activators do not operate like the original idea was. It has been difficult for FSKK to coordinate the project and activators, because activators are in different organisations. Cluster manager has no impact means to other organisation employees.
- 2) Cluster work does not serve at the moment the development of a business as I understand it. The time required to deal with the cluster work goes too much for the certain public bureaucracy discussions. On the other hand, it is maybe justified, but the proportional amount should be much smaller.
- 3) We have not gained any benefits for the company
- 4) The metal engineering cluster has been working below standard - obviously due to the activator's reluctance
- 5) Companies in the cluster work should be more active.
- 6) Results are too few
- 7) We have not received any concrete use.
- 8) We have not received any concrete use.
- 9) I think Forssa region has great potential at least in construction industry and the cluster work has not worked in any way in practise.

Q5 Do you find the co-operation between businesses and organisations necessary

- 1) Yes
- 2) Yes
- 3) Yes
- 4) Yes
- 5) Yes
- 6) Yes
- 7) Yes
- 8) Yes
- 9) Yes
- 10) Yes
- 11) Yes
- 12) Yes
- 13) Yes
- 14) Yes
- 15) Yes
- 16) Yes
- 17) Yes
- 18) Yes
- 19) Yes

- 20) Yes
- 21) Yes
- 22) Yes
- 23) Yes
- 24) Yes
- 25) Yes
- 26) Yes
- 27) Yes
- 28) Yes
- 29) Yes
- 30) Yes

Q6 Please explain why?

- 1) Working together can be achieved something, one cannot do alone.
- 2) Especially in a small region like this everyone should combine the efforts if you want to keep the lights in the windows. Municipalities are also too small and weak to act alone, on the other hand there are no big enterprises who could manage alone. With the networks we can create synergy.
- 3) The task and the goal of the societies is to support regional businesses and their development.
- 4) In the environment side, it looks like it is advancing the new businesses establishing in Forssa.
- 5) To change ideas and visions is important.
- 6) Cost savings and joint marketing power.
- 7) Only co-operating we can develop the region and create "win-win" situation.
- 8) Both should be aware of the different starting points of activities, co-operation & synergy benefits, new ideas and ways to work, to be able to influence to matters and a vision of them widely than just concerning own business.
- 9) Small businesses do not have skills to apply for public development money. If business is active, it can influence even to HAMK and other educational organisations educational content.
- 10) To ensure the effectiveness it is necessary
- 11) Regional co-operation is important to develop larger entities and through this to local companies business opportunities improvement.
- 12) We cannot afford to loose any resources, we have to exploit all.
- 13) Educational organisation's task is to educate students to meet the working life needs and only through dialogues can those degree programs and professional optional parts be chosen that serve the needs of the businesses as well as possible. Always the insights are not quite convergent, because educational organisation cannot answer to many narrow field business knowhow needs but these matters need to be seen widely.

- 14) For my business it is necessary to involve with other businesses and for example with municipalities, otherwise there is no work.
- 15) To widen the network. To increase knowledge.
- 16) Because SME's resources are not enough for example to sufficient marketing efforts. Because unofficial networking can really create such ideas, that the company cannot find alone nor be able to implement
- 17) Nowadays networking is the hot topic. Entrepreneurs should understand the meaning of networking of their own field.
- 18) To increase competitiveness, networking, increasing co-operation, new ideas/approaches, together we give more to customers.
- 19) Through the society leaders we get more and updated information for example on available incentives
- 20) Both can benefit of co-operation
- 21) One meets people from the same area and possibilities to co-operation
- 22) For example in construction materials industry there are problems/opportunities: 1) Companies are operatively in bad shape due to the "old culture" clientele i.e. builders and 2) if they were in better shape and worked together, they could get even to increasing markets of Russia.

Q7 What could be the subject of co-operation?

- 1) marketing, new customers, new business operation, logistics
- 2) marketing, new business operation, finance/economy, logistics
- 3) R&D, new customers, new business operations, finance/economy issues
- 4) marketing, new business operation, other: education
- 5) marketing, new customers, new business operations, finance/economy, logistics
- 6) marketing, new customers, new business operations, logistics
- 7) marketing, new customers, logistics
- 8) marketing, R&D, new customers, new business operation, finance/economy
- 9) marketing, new customers, new business operation
- 10) marketing, productions, R&D, new customers, new business operation, finance/economy, logistics
- 11) R&D, new business operation, logistics
- 12) R&D, new customers, new business operation, finance/economy
- 13) New business operation, finance/economy
- 14) marketing, R&D, new customers, new business operation, logistics
- 15) marketing, production, R&D, new business operation, other: education
- 16) marketing
- 17) finance/economy
- 18) production, R&D, new customers, other: personnel mobility

- 19) marketing, R&D, new customers, new business operation
- 20) marketing, new business operation, logistics
- 21) marketing, production
- 22) marketing, production, R&D, new customers, new business operation
- 23) marketing, new customers, new business operation, finance/economy
- 24) marketing, production, R&D
- 25) marketing, production, R&D
- 26) new customers
- 27) marketing, new customers, new business operation, logistics
- 28) finance/economy, logistics
- 29) marketing, R&D, new customers, new business operation, logistics
- 30) marketing, production, R&D, new customers, new business operation, logistics, other: Benchmarking

Q8 Has your company and other related businesses had already co-operation before the cluster?

- 1) I don't know
- 2) No
- 3) Yes
- 4) Yes
- 5) Yes
- 6) Yes
- 7) I don't know
- 8) Yes
- 9) Yes
- 10) I don't know
- 11) Yes
- 12) Yes
- 13) No
- 14) I don't know
- 15) Yes
- 16) Yes
- 17) Yes
- 18) Yes
- 19) Yes
- 20) Yes
- 21) No
- 22) I don't know
- 23) No
- 24) Yes
- 25) Yes
- 26) Yes
- 27) Yes
- 28) Yes
- 29) Yes
- 30) Yes

Q9 Would the co-operation between you and the businesses related had developed without cluster?

- 1) I don't know
- 2) Yes
- 3) Yes
- 4) Yes
- 5) Yes
- 6) No
- 7) Yes
- 8) I don't know
- 9) I don't know
- 10) Yes
- 11) I don't know
- 12) Yes
- 13) I don't know
- 14) No
- 15) Yes
- 16) Yes
- 17) Yes
- 18) Yes
- 19) Yes
- 20) I don't know
- 21) No
- 22) No
- 23) Yes
- 24) Yes
- 25) Yes
- 26) Yes
- 27) Yes
- 28) No
- 29) Yes
- 30) No

Q10 Can the businesses do wide co-operation without cluster activity?

- 1) No
- 2) Yes
- 3) Yes
- 4) Yes
- 5) No
- 6) No
- 7) No
- 8) No
- 9) Yes
- 10) Yes
- 11) Yes
- 12) Yes
- 13) Yes
- 14) No

- 15) Yes
- 16) No
- 17) Yes
- 18) Yes
- 19) Yes
- 20) Yes
- 21) Yes
- 22) Yes
- 23) No
- 24) No
- 25) No
- 26) Yes
- 27) Yes
- 28) No
- 29) No
- 30) Yes

Q11 Please explain your previous answer

- 1) Doing alone one cannot get new ideas. Have to get out of the house to meet other people and discuss. This brings on its best new innovation and business to the region.
- 2) Businesses find, when needed, a suitable business partner always when they will gain from it and they need a partner. Cluster activity is a good supplement, it may increase and speed up the co-operation, businesses can do joint marketing outside of the region, promote development projects etc
- 3) Normal approach in developing companies is networking.
- 4) Both parties benefitting co-operation does not require "outsider" as an instigator
- 5) Companies do not have time to invest in co-operation without coordinating level.
- 6) Cluster provides noticeably wider field to act and due to a cluster activator's impartiality a real co-operation foundation that all could trust.
- 7) Yes and no - it depends on the companies and their willingness to develop. Companies in horse cluster are micro companies and the field is very labour demanding, so I believe it will restrict the entrepreneur's voluntary operation development in co-operation with others. But there are always exceptions and smaller scale co-operation exists.
- 8) Depends much on the clusters and persons
- 9) In smaller scale Mitron, Nelcomp, DA and Eleforss would have found in any case production models.
- 10) It all comes to will and desire, clusters do not work without these.
- 11) Depends on company's own activity, knowhow and resources.
- 12) Companies work primarily to develop and sustain their own business. Co-operation enables partly to reach these goals.

- 13) Everybody's help is needed when developing the operation.
- 14) They can and they do, work is only slower and requires more personal relationships.
- 15) My opinion is that the region's SME-companies are so busy that co-operation starting from their initiative hardly exists. It is good to have external body to pull companies in to the action, since the benefit is certainly mutual. (electronics cluster has been very active though, in marketing of secondary degree education. Otherwise the co-operation has been more to labour market training, and professional competence audit related matters).
- 16) Yes, but new business area surveys have had help from cluster activity (Pöyry)
- 17) To gain work for the entrepreneurs without co-operation from municipalities, decision makers, other related businesses would be almost impossible. Everyone trying to get into the business must know himself or herself how to network. Cluster of course helps and makes it easier, but it is not necessary, not at least from the point of small entrepreneur.
- 18) Dictated by the need
- 19) Yes, if you mean with cluster work like cluster project, organized external activity of the companies. Good example is the start of Envitech-co-operation and perennial activity business driven, without their external resources.
- 20) Might do, but better chances for wider and profitable action is in the cluster.
- 21) Now Yes, when everyone knows everyone's knowledge matrix better. Easier to start discussion when they have learned to know each other through cluster work.
- 22) Has to have an outsider as activator, who has not vested interests.
- 23) Usually cannot find the activator/leader
- 24) Usually cannot find the activator/leader
- 25) we do not necessarily need clusters
- 26) networking is wise
- 27) Of course they can, but not as efficiently as through clusters.
- 28) I own one person company (Vemo Oy) that is focussed on organisation activity development. Hydro Aluminium Salko Oy from Forssa received this year a central labour confederations honorary mention "Round Table" due to developing productivity with the personnel. I was myself as an outsider consultant in that project. Forssa received unofficial Finnish Championship award in increasing the productivity. We are also involved in TRIO-project, where the whole subcontractor network activity is been developed. Companies involved are Fenestra Oy, units from Forssa and Kuopio, Pilkington Finland Forssa unit and above mentioned Hydro Aluminium Salko Oy. TRIO has been in motion for a year and a half and the results have been amazing.

Q12 What kind of benefits your company/organisation has gained from the cluster activity?

- 1) Häme University of Applied Science is involved in many co-operational networks. In the cluster meetings one gets to discuss of jointly interesting matters, one gets to know people and it is easier to call afterwards when you know the person.
- 2) We have received bigger projects on the region when through the co-operation a better name for the project application was created.
- 3) We have managed to improve our public image, which has helped among other receiving funding.
- 4) Improving the relationships and widen the relationship network. Improving the familiarity.”
- 5) Nothing
- 6) Increasing the customer contacts and making own activities known – getting the own strengths on the surface.
- 7) Networks, tight co-operation, improving the operation condition
- 8) Increased knowledge, also practical measures
- 9) Learned to know SME's mental life
- 10) Increased co-operation with companies, getting new assignments
- 11) In relation to input, quite few
- 12) Nothing yet
- 13) Networking, marketing, delegating co-operation in material handling and transport.
- 14) Same message to several companies at the same time. Extensive discussion to refine results better compared to processing alone.
- 15) I haven't receive any new information, but I feel being wrong person to answering this
- 16) Received new information on ongoing projects, events even though I have not been actively involved
- 17) This way we can produce wider services to customers
- 18) Training, marketing, new customers, new events, to be part of developing new.
- 19) One meeting was set up locally with a big operator and I had a chance to be involved without costs in quality buying catalogue.
- 20) Nothing yet
- 21) Nothing yet
- 22) I don't know - I have been postponing bankruptcy for 30 years.
- 23) Learning becomes quicker
- 24) New contacts and new business operation development ideas
- 25) I have done the cluster work of course to develop my own business. It has created new customers in Forssa (loosing Parmarine Oy, possible gaining FSTKY.) Still I see great opportunities to upgrade business operating methods in Forssa region and management to this decade. Active working cluster would benefit greatly my business but even more greatly the Forssa region.

Q13 What kind of problems there are in cluster type development?

- 1) Envy, fear in companies that someone else might gain more.
- 2) Development and knowledge is centralised to few only, when the development of a cluster is given to project manager.
- 3) Inefficiency
- 4) It can be stiff and bureaucratic. Also some meetings useless.
- 5) Companies own goals in own business life do not always serve the need of a cluster.
- 6) At the moment, the commitment is not real – some kind of envy is still forming!
- 7) Getting companies involved and committed. Thinking of a sole company, the benefit should be something very acute, immediate and instant, benefit focusing to own business, so that it can be seen as the cluster activity benefit to join in. Also those participating to development actions, grouping is important. When the group is too wide, sometimes matters can stay on too general level. The matters have to be taken forward in a bigger group though, but to think carefully who are really committed.
- 8) No bright goals with clusters, meetings are a good place to exchange information, but follow-up measures are hard to find a activator.
- 9) For at cluster work would be interesting to companies we need always new approaches for the work, cannot stay only to run old stuff. The most challenging thing is to keep companies active.
- 10) No prospects, superficiality, non-commitment. Too much superficial reports and marketing nothing. Really little of “wools”
- 11) Regional co-operation in Forssa region is challenging due to the local business culture.
- 12) Everybody must commit to joint action
- 13) Companies cannot always see their own interest but think they are working for someone for free
- 14) Operational concept is okay, but the busy life of companies and commitment and giving time something else than own core business must be challenge.
- 15) If envy confuses the motivation of companies to participate
- 16) to get people to participate, to get them in at the same time to develop and discuss. Cluster goals/projects/events seem sometimes a bit far fetched and do not talk to normal small entrepreneur.
- 17) Possible conflicts between participators
- 18) The key success factor in my opinion is the real interest of the companies and the insight of the needed co-operation. If that is missing, no cluster co-operation can be built. And it would be good, if somebody from the companies would take the engine role and make things move faster forward.

- 19) It is hard to make the entrepreneurs understand the meaning of a cluster
- 20) Sometimes cluster companies' participation to events and meetings. Only one cluster field.
- 21) to make entrepreneurs interested of cluster work
- 22) Should be concrete, all beneficial targets
- 23) Should be concrete, all beneficial targets
- 24) Entrepreneur's time is really tight, lots of work and one has to do it when it exists.
- 25) Companies not much involved
- 26) They (clusters) are never planned customer orientated. They are based into same models and companies are not joining in. Still it would bring great possibilities.

Q14 Can you give concrete examples of the co-operation induced by cluster activity?

- 1) Wellbeing cluster: new supply chain of wellbeing –project under development
 - Green logistics and environmental cluster: environmental theme year 2010
 - Electronics cluster: new intelligence-TV –project under development
 - Voorumi-educational cluster: new Voorumi2 –project under development
 - Green logistics: HEA-concept and electric cars
- 2) There are new projects and financing through them to this region, promoting region's road survey, rail survey and, logistics and air-port surveys.
- 3) Envi Grow Park, different surveys, which are being done for the base of development
- 4) Joint marketing, Envitech and Envitech strategy, these have quite obviously affected when new companies have establish in the region.
- 5) I don't know!
- 6) Marketing, company brochures (for example construction engineering cluster)
- 7) New approaches in marketing
- 8) Electronics cluster planning marketing model (not yet in use)
- 9) Different reports that serve company action, like energy, marketing, logistics
- 10) No
- 11) We have received new customers; have exchanged the knowhow and new projects in co-operation with cluster companies are running.
- 12) Joint marketing, education, to get more visibility to cluster
- 13) I cannot

- 14) I refer again to Pöyry. And fairs, although this has been done before environment cluster. But with the cluster we have also municipalities and related public operators.
- 15) Cannot think of anything
- 16) During Envitech co-operation, the region's environmental companies have done marketing that they could not have done alone. (Stands at the fairs are very expensive). Envitech morning coffee meetings have been unofficial forum, that has brought together businesses, education, municipality, development organisations and even research.
- 17) Construction engineering's buying guide, construction and metal website
- 18) New customers through whom the turnover has grown. Education. Joint marketing
- 19) Construction engineering cluster has suffered the lack of participants, so no worth mentioning cooperation has taken place.
- 20) New customers
- 21) energy report, logistics report, laboratory services
- 22) Better relations to customers
Uudet rahoitusmallit omalle toiminnalle.
- 23) In operative point of view, the TRIO business group is in much more better state than it was before the beginning of co-operation. We can improve noticeably the productivity, quality and secure delivery.

Q15 What kind of co-operation is needed between companies/organisations?

- 1) Cluster work to business level, example Hamburg aviation cluster
- 2) Deeper, open discussion and spirit and action of doing together
- 3) Naturally there should be supporting win-win working principle
- 4) Similar than now – basic stuff and for example joint markets run by development centre or municipality
- 5) joint commitment and real regional development – let's look forward
- 6) Concrete co-operation. In education co-operation we need practise jobs for students, project ideas etc. these are useful for the businesses as well. Research information quickly to the field for the entrepreneurs, so that they can reflect.
- 7) Cluster activators should have also financial decision power. If public money is related to ideas of a cluster, so that process is way too slow for companies
- 8) Interaction, signals from companies to action
- 9) Involving and committed, co-operation based on R&D. Start with proper foundation establishing and not ever lasting reports and useless marketing.

- 10) Clear assignments/projects, where coordinator presents accessible possibilities, goals and frames of co-operation
- 11) Open discussion and from that concrete action. Gazing technique is not working
- 12) From the point of educational organisation, the companies could be involved more to marketing of education, now presenting the education fields is almost solely done by the educational organisation (exception electronics cluster)
- 13) Involving and committed, co-operation based on R&D. Start with proper foundation establishing and not ever lasting reports and useless marketing.
- 14) Discussion about delegation, the rules of co-operation and calculations how for example the municipalities could save by exploiting entrepreneurs knowledge. Cluster activator could be the impartial clearance person for example when valuing cost effectiveness and quality.
- 15) Open
- 16) Cross-coffeeing that has already happened with electronics and environmental clusters.
- 17) Construction engineering cluster's goals are good, nothing to add
- 18) Developing co-operation is needed because frequently the companies and societies have different goals and language.
- 19) Open interaction and defining the joint goals within a cluster, like for example joint marketing events.
- 20) For example benchmarking is one very important area. Also could get 1-15 companies and copy Hydro Aluminium Salko Oy's project to everyone = success granted. Project could possible get public funding because it would be reusing the best practises elsewhere.

Q16 What kind of cluster led work you would like to have for business co-operation development?

- 1) Aren't clusters already doing this?
- 2) Cluster's role is to focus more to the direct development of business, what is clearly frightened, due to public funding guidelines
- 3) I think Mr. Vauhkonen has already good resources and attitude to keep the work going.
- 4) Meetings, brain storming, maybe events presenting joint new customers
- 5) The openness of cluster members in problem situations.
- 6) The strategies of clusters should be clear and goal orientated. Cluster co-operation can create concrete benefits. To utilize the region's research. Development organisations role clear in cluster activities.
- 7) Proper, expertise cluster leadership, committed co-operation even with smaller volume than to try to cover it all, but very loose discussion level co-operation

- 8) Active activator to achieve cluster benefits
- 9) Tighter networking
- 10) Probably co-operation between clusters
- 11) For example personnel use could be divided, even though nowadays we have had it. Maybe also the companies would benefit, when they'd have same service contract templates, possibly even same service planning forms in use or at least a chance to use some "generally good noticed" templates. Entrepreneurs do not have time or cannot cope to think these things.
- 12) General advocacy: planning, investment incentive possibilities, joint marketing
- 13) Hopefully companies feel they benefit from Bright Green -type general region's branding and marketing.
- 14) "commercialization and financial services"
- 15) fairs, events of the field, getting to know bigger construction sites and at the same time market the region's construction knowhow to big operators.
- 16) Can't answer at the moment - efficient and sturdy action
- 17) Presentations of different financial models and development projects
- 18) Customer orientated

Q17 How wide the cluster work should be? For example how many companies/organisations there could be?

- 1) As many as we can get interested in
- 2) As many as we can get interested in
- 3) other: active operators involved
- 4) As many as we can get interested in
- 5) less than 8
- 6) As many as we can get interested in
- 7) As many as we can get interested in
- 8) 10 - 20
- 9) As many as we can get interested in
- 10) less than 8
- 11) 15
- 12) less than 8
- 13) 15
- 14) 15
- 15) As many as we can get interested in
- 16) As many as we can get interested in
- 17) 8 - 15
- 18) as many as we can get interested in, essential joint operating benefits.
- 19) 8 - 15
- 20) as many as we can get interested in.
- 21) 8 - 15
- 22) less than 8
- 23) less than 8

- 24) as many as we can get interested in
- 25) less than 8
- 26) 20
- 27) as many as we can get interested in
- 28) 20

Q18 Should the cluster activities be restricted to one cluster field only?

- 1) No
- 2) Yes
- 3) I don't know
- 4) Yes
- 5) Yes
- 6) Yes
- 7) No
- 8) No
- 9) I don't know
- 10) No
- 11) No
- 12) No
- 13) No
- 14) I don't know
- 15) No
- 16) I don't know
- 17) No
- 18) I don't know
- 19) I don't know
- 20) No
- 21) No
- 22) No
- 23) Yes
- 24) I don't know
- 25) I don't know
- 26) No
- 27) No
- 28) No
- 29) Yes
- 30) No

Q19 If you answered to previous question no, how would you develop the co-operation between clusters?

- 1) If new innovations are wanted, people have to talk with people who think differently. There should be different meeting possibilities among different themes and invite widely people to join in
- 2) Practical actions and The synergy benefits resolve
- 3) Through natural development projects

- 4) There are still several areas to develop. For example wellbeing/energy and environment/logistics
- 5) Our field equine industry links in naturally to different fields, for example to wellbeing cluster
- 6) Between clusters there is the grey area, that can touch clusters (like electronics and wellbeing)
- 7) To increase the cluster co-operation
- 8) Of course not, since the most innovative clusters interface would be completely excluded.
- 9) Different clusters supplement each other, if the target is for bigger results (like local water supply project) fulfilment
- 10) Cluster independent action, people to solve problems in mixed teams.
- 11) The new way to thinking – someone's waste can be someone's material > Envor/Isover – one has to think big, material can also move two way.
- 12) Joint benefits and possibility to support actions and after that gained additional value.
- 13) Hopefully the clusters the cross coffee meetings, that where planned during spring time, have been started?
- 14) In the point of view of marketing and productisation
- 15) Cross-coffeeing that has already happened between electronics and environmental clusters. Joint projects, concrete action.
- 16) Versatility is needed...
- 17) More joint meetings
- 18) If, for example, FSKTY's vision is to know, when and what kind of apartments to elderly people, why not local construction business exploit it?

Q20 Cluster work or companies own co-operation, what is the most important aspect in co-operation from the point of your company?

- 1) Meetings and changing ideas. New projects.
- 2) Dialogue and interaction, taking matters forward together, towards same goal. Self interest seeking and selfishness are out of this picture.
- 3) The fact, that cluster work serves the development of a company more than own actions the development of a cluster.
- 4) Joint action - getting to know people in companies, joint projects
- 5) Cost savings and bigger sales force
- 6) To find common development targets - to create co-operation network. I think 99% of everything can be found on Forssa economic region and the activities can be developed together to develop the region.
- 7) To improve operation conditions (the whole cluster and at the same time own society)
- 8) Knowledge transfer and new approaches
- 9) To get to know people in companies and production processes
- 10) Developing concrete joint doing

- 11) Innovativeness, commitment, openness, concreteness
- 12) Our goal is to get local business through cluster activity
- 13) Starting networks and open knowledge transfer
- 14) To listen company voices regarding the education
- 15) Positive will of doing, regions joint good, not just own navel.
- 16) Good, trustworthy, personal relationship with cooperation partners
- 17) Networks, added value to customer
- 18) Regional resources and joint growth goals, employment and profitable business.
- 19) To make our operation/service known as widely as possible, also outside of our territory
- 20) The economic benefit that comes with it
- 21) The economic benefit that comes with it
- 22) Real influencing and not only EU-money hunting
- 23) Benefit
- 24) Sharing new information and knowledge among other operators, so we can avoid unnecessary mistakes in operation.
- 25) For me personally it is important to get more volume for my operation and on the other hand benefit the development of Forssa region

Background questions:

My relation to the company is

- 1) Representative of educational organisation
- 2) Public servant
- 3) The owner of the company
- 4) Higher office
- 5) Higher office
- 6) The owner of the company
- 7) managing director
- 8) Higher officer
- 9) Lower officer
- 10) the representative of educational organisation
- 11) managing director
- 12) Higher officer
- 13) managing director
- 14) Higher officer
- 15) representative of development organisation
- 16) Representative of educational organisation
- 17) The owner of the company
- 18) The owner of the company
- 19) managing director
- 20) Cluster activator
- 21) Representative of educational organisation
- 22) managing director

- 23) The owner of the company
- 24) The owner of the company
- 25) The owner of the company
- 26) The owner of the company
- 27) managing director
- 28) The owner of the company
- 29) The owner of the company
- 30) The owner of the company

Gender

- 1) Woman
- 2) Woman
- 3) Man
- 4) Man
- 5) Man
- 6) Man
- 7) Man
- 8) Woman
- 9) Woman
- 10) Man
- 11) Man
- 12) Woman
- 13) Man
- 14) Man
- 15) Man
- 16) Woman
- 17) Woman
- 18) Woman
- 19) Man
- 20) Woman
- 21) Man
- 22) Man
- 23) Man
- 24) Man
- 25) Man
- 26) Man
- 27) Man
- 28) Man
- 29) Man
- 30) Man

Age

- 1) 41-50
- 2) 41-50
- 3) 41-50
- 4) 31-40
- 5) 31-40
- 6) 61 ->

- 7) 51-60
- 8) 31-40
- 9) 31-40
- 10) 41-50
- 11) 51-60
- 12) 51-60
- 13) 31-40
- 14) 31-40
- 15) 41-50
- 16) 51-60
- 17) 41-50
- 18) 31-40
- 19) 41-50
- 20) 31-40
- 21) 31-40
- 22) 41-50
- 23) 51-60
- 24) 61 ->
- 25) 61 ->
- 26) 51-60
- 27) 51-60
- 28) 41-50
- 29) 31-40
- 30) 51-60

Comments

- 1) Good luck with the thesis :)
- 2) Hopefully, we get something out of your work so that we get another small step forward.
- 3) Thank you
- 4) Equine cluster program just starting even there has been co-operation between the companies. This made answering difficult in many questions: Should I reflect to what we have got or what we hope to achieve with the work?
- 5) Well done
- 6) Sturdy questions
- 7) As a representative of education I don't feel I am a good cluster expert, since co-operation might have happened in my organisation by other people (teachers)
- 8) From wellbeing cluster I hope useful concrete help to ease operational matters. Just seminars and meetings are not enough to move professional people. Municipality co-operation for wellbeing entrepreneurs is vital condition; this should be used in cluster work when luring entrepreneurs to joint development voluntary work :)
- 9) Outside operator might find easier the joint interests
- 10) Hope these answers were helpful
- 11) Good luck with studies.

- 12) It is a shame, I did not have enough time for written comments
- 13) My contact information is: Jarmo Koivisto, Vemo Oy Karkkila
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