KTH Industrial Engineering
and Management

Cluster Dynamics and Industrial Policy in Peripheral Regions

A study of cluster formation as a local development process.

Cali Nuur

A dissertation submitted to the Royal Institute of Technology (Kungliga Tekniska Högskolan, KTH) in partial fulfilment of the requirement for the degree of Doctor of Philosophy

Royal Institute of Technology, KTH
Department of industrial Economics and Management
SE- 100 44 Stockholm
Sweden

Stockholm 2005

Royal Institute of Technology, KTH
Industrial Economics and Management

Cover: Nils Kölare
"Frates", (P.v.S) Acrylic on panel, 1998, 140 x 140 cm
Printed by Universitetsservice US AB

TRITA-IEO-R 2005:06
ISSN 1100-7982
ISRN/KTH/IEO/R-05/06--SE
ISBN- 91-7178-171-4

Acknowledgments

Too little space, too many distinguished academics, mentors, family and friends to thank!

PHD- research projects maybe thought of as a lonely endeavour that isolates the candidate from human interactions, but not so in my case. Throughout the course of gathering the empirical material and writing it, I have been offered invaluable academic and moral support and with the reservation of not being able to mention everyone who contributed to it, I would like to express my gratitude to the following individuals and organisations.

First and foremost, I would like to thank my supervision team at the Royal Institute of Technology (Kungliga Tekniska Högskolan, KTH) and the National Institute for Working Life (NIWL):

Professor Staffan Laestadius at KTH has greatly inspired me in my endeavour, influenced it and shaped it. During the whole journey, professor Laestadius never doubted my ability to reason, write and analyse. I have been privileged to access his enormous knowledge of industrial dynamics. The stimulating meetings I had with him over the course of my journey have indeed enhanced my knowledge of industrial dynamics, industrial policy and hopefully my academic maturity!

This dissertation would not have seen daylight without the contributions of Professor Göran Brulin and Professor Eskil Ekstedt at KTH and the University of Stockholm, respectively. Both these distinguished scholars were also stationed at the National Institute for Working Life (NIWL) that has financed my research. Professor Brulin was the first scholar to introduce me to the studies on the dynamics of the industrial districts of Gnosjö and those in Northern Italy. By contributing with his enormous knowledge, he gave my study its socio-economic flavour. Divine inspiration and an air of scholarly encouragement characterized his overall supervision during the course of this study. Professor Ekstedt engaged me in the spring of 2000 and has since then extended both academic and moral support. The benefits I have drawn from his knowledge of regional industrial restructuring in Sweden is one, which I have never been fully able to express in a few words. The formal and informal meetings in Stockholm, Uppsala, Söderhamn, Osnabruk and Durban never failed to be constructive, stimulating and encouraging!

Thank you Staffan, Göran and Eskil for keeping your doors and your telephone lines open 24/7/365! Thank you for believing in me and placing your trust in me!

Several parts of this study have been presented at various seminars. There are a number of people who have read the various draft versions, commented and suggested improvements. In doing so they have shaped and enhanced the quality of my thesis. Ph. D. Stig Westerdahl's subsequent opinions and valuable comments during the last mock seminar added to the quality of the dissertation. Ph. D. Åsa-Karin Engstrands and Ph. D. Sofia Sandgren's valuable inputs at the seminars held at the university college of Gävle and the Royal Institute of Technology where parts of the thesis were presented are much appreciated. Thank you Stig, Sofia and Åsa-Karin for your thorough reading of the various versions of the manuscript and for putting forward suggestions as to how to improve it.

In the spring of 2003, I had the privilege of spending 3 months at the Work Institute at Nottingham Trent University. Thank you Professor Peter Totterdill and your staff for making my stay such a memorable one.

Even though I was never stationed at the Royal Institute of Technology, I had positive interactions and exchanges of ideas with the doctoral students and teaching staff at the department of Industrial Economics and Management, INDEK. I would like to thank you all for making me feel like I belonged at the department, even though I sometimes felt like an outsider from the periphery.

This dissertation is the result of a nearly five years stay in the municipality of Söderhamn. I have been lucky to be part of a multi disciplinary team of Ph. D students who made Söderhamn into their office. I would like to thank my colleagues, Lotta Svensson, Ursula Hård, Marianne Westring-Nord, Maud Baumgarten, Siw Hammer, Maria Andersson, Mikael Vallström and our research leader Ph. D. Lennart Svensson, for offering me positive support and for creating the right kind of milieu for the exchange of ideas, the sharing of experiences and engagement in formal and informal interactions. Despite being located in the periphery, we managed to establish an academic environment! I would to thank Anna Karlsson, Ulrika Sutorius and Henrik Lindberg who have since left the research station. Special thanks to Gunnar Olsson and his staff at CFL (Centrum för Flexibelt Lärande) for providing my fellow colleagues and myself with the practical instruments of doing research from the periphery.

This study would not have been possible without the empirical material that I collected from Ljusdal and Söderhamn. I would therefore like to thank my respondents in Ljusdal, the Soft Center and Flygstaden. A special note of thanks to Per-Erik Mårtensson at the provincial administrative office in Gävleborg who has helped me with analysing the regional statistics. Special thanks also to Raili Dahlberg and Fredrik Pontusson who have helped me with the editing of the manuscript.

Finally, I want to thank parents, siblings, cousins and friends who provided me with help, assistance and encouragement during the journey. Even though oceans and continents separated us from each other (we are nomads in a modern day society!), your moral support has made it possible for me to write this dissertation. Last but not the least, I would like to thank my wife, Fatima, for standing by side and providing me the support with which I could write this dissertation!

Söderhamn, September 2005.

ABSTRACT

The rapid growth of the global economy in the last two decades has created a new economic reality in many municipalities in peripheral regions of Sweden. Having earlier relied on traditional industry as the source of employment, today municipalities in peripheral regions are struggling to survive in a completely changed economic landscape, with new conditions for development. The dismantling of trade barriers, accessibility of new markets for production, and faster and cheaper modes of communication and transportation have combined in changing the conditions for development. While historically peripheral regions have depended on manufacturing firms as a source of employment, indications today show that local and regional development is enhanced through the development of locally acquired relationships that promote knowledge creation and transmission. In the past, the Swedish government had put in place measures to promote a degree of regional parities. These included enticement schemes to industry and the relocation of public bodies. Faced with the global winds of change that have arisen in the last few decades, this approach is becoming unsustainable.

The overall aim of this dissertation is to contribute to the research aimed at enhancing regional economic development and to increase the understanding of as well as give insights into local economic development processes aimed at meeting global challenges in a peripheral region. In it I explore the two interrelated questions of 1) what are the mechanisms influencing location of economic activities and industrial policy in peripheral regions? 2) How do these mechanisms manifest themselves in a peripheral region?

In this study, three case studies of local development processes in the two municipalities of Ljusdal and Söderhamn, in the geographical region of Hälsingland are presented. The case studies are named the business case, the policy case and the hybrid case to reflect the mechanisms that induced them.

Keywords: Peripheral regions, Industrial Policy, Regional development policy, Cluster dynamics, Call centres, Sweden, Hälsingland.

Sammanfattning

Den globala ekonomins snabba tillväxt under de senaste två decennierna har skapat en ny ekonomisk verklighet i många svenska periferiregioner. Från att tidigare ha kunnat förlita sig på traditionell industri som grund för sysselsättningen, så måste dessa regioner idag kämpa för sin överlevnad i ett mycket annorlunda ekonomiskt landskap, med nya förutsättningar för utveckling. Avvecklingen av handelshinder, tillgång till nya produktionsmarknader samt snabbare och billigare sätt att kommunicera och transportera har tillsammans förändrat förutsättningarna för utveckling. Historiskt sett har sysselsättningen i periferiregioner varit beroende av tillverkningsindustrin, men idag finns tecken som tyder på att den lokala och regionala utvecklingen förstärks av lokalt förvärvade relationer som stödjer skapande och överföring av kunskaper. Förr vidtog den svenska regeringen mått och steg för att befrämja regional jämlikhet. Till exempel skapade man lockmedel för industrin och förflyttade statliga verk. De senaste decenniernas globala förändringar gör dessa metoder otillräckliga.

Det övergripande syftet med den här avhandlingen är att bidra till den forskning vars syfte är att gynna regional ekonomisk utveckling och att öka förståelsen av och ge insikt i lokala ekonomiska utvecklingsprocesser som försöker möta dagens globala utmaningar för periferiregioner. Följande två sammanhängande frågor utforskas: 1) Vilka mekanismer påverkar lokaliseringen av ekonomiska aktiviteter och industriell politik i periferiregioner? 2) Hur visar sig dessa mekanismer i lokala utvecklingsprocesser i en periferiregion?

I den här avhandlingen presenteras tre fallstudier som beskriver lokala utvecklingsprocesser i de två kommunerna Ljusdal och Söderhamn, båda belägna i Hälsingland. För att reflektera de mekanismer som framkallat dem, kallas de tre fallstudierna för företagsstudien, policystudien och hybridstudien.

Nyckelord: Landsortsregioner, Industriell politik, Regional utvecklingspolitik, Klusterdynamik, Call centers, Sverige, Hälsingland.

CONTENTS

LIST OF FIGURES

LIST OF TABLES

> "We are at the very beginning of development. Most things remain to be done in the world arena of knowledge and co-operation. But if we are not to be sidelined or upstaged, we must lose no time in creating for ourselves the possibilities of a pivotal role in the global drama. For what is happening now is happening faster than ever before. And it is comprehensive" Swedish IT Commission report 8/98 "Changing times, changing conditions, p, 12."

1.SETTING THE SCENE

The coming of the new economy …

One dark evening in December 2000, twenty people gathered in the building that once housed the old railway station in Söderhamn. These people were small business owners, mainly in the IT sector, and representatives of supporting institutions, such as various business developmental agencies. Also present were a few representatives from the neighbouring municipalities of Nordanstig, Hudiksvall, Ljusdal and Bollnäs. It may be that not all of these people cheered for the same bandy team, the most popular sports attraction in the area, but what they did share was a common geography of being located in the province of Hälsingland. That night they had come to exchange views on business development.

The guest of honour, an Associate Professor from the regional university, described the many benefits of the new economy and he did not leave out the advantages of information technology. He argued that IT would revolutionise the way people think and create business opportunities. Hälsingland would be able to benefit from a plethora of opportunities, such as the emergence of new firms. Geographical distance would no longer be a critical issue. One of those who participated in this meeting was Erik Svensson, a retired member of the Swedish parliament. He knew that technology was a double-edged sword. Over the years he had seen its ability to increase production

efficiency and bring prestige to the region, but he had also seen its drawbacks in terms of lost jobs. Even so, this very night he felt optimistic.

And the forerunner 30 years ago …

About thirty years earlier, a less formal meeting took place by chance in the local swimming hall in the Ljusdal area. A winter guest from Stockholm entered into conversation with some locals who frequented the leisure centre. The winter guest turned out to be a businessman looking for a new location for his business. Among the locals were local politicians, the local councillor and the chairman of the local chamber of commerce, all interested in developing the area's business life. This meeting came to have a major impact on many people's lives, as well as the business environment in the half forgotten town of Ljusdal. Its location is peripheral. Unemployment rates were and are still high, and the population is declining. There is no university in the area. Still, in this place a cluster of call centre firms evolved – but it did not happen overnight.

Knitting the threads together

This dissertation deals with global pressures and local development processes in the two municipalities of Ljusdal and Söderhamn in the region[1] of Hälsingland. The points of departure are the challenges and opportunities created by the increasing forces of globalisation, and the strategies applied at national, local and business levels to rise to the challenges of new economic realities.

1.1 A peripheral[2] region

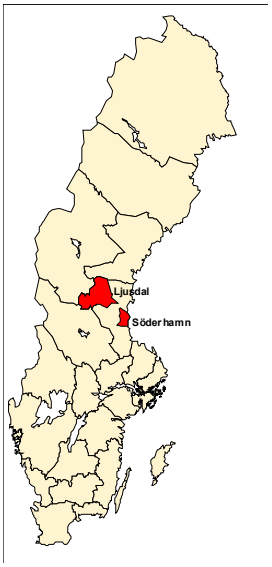
The map on the next page (figure 1.1) shows the geographical position of Söderhamn and Ljusdal in Sweden. Although situated geographically in the middle of Sweden, the region of Hälsingland, where both these municipalities are situated, is often classified as

[1] In the Swedish context, the term region has two connotations; the administrative county (*Län*) and the geographic region (*Landskap*). The borders of the former do not necessarily coincide with the latter. For example, the administrative county of Gävleborg includes the two regions of Hälsingland and Gästrikland. Unless explicitly stated, I do not discriminate between the two connotations.

[2] The terms "lagging" (Polése 1999) "inferior" (Myrdal 1957) and "peripheral" (Thomas 1969) are used synonymously by students of regional development to describe economic disparities.

peripheral and located in the "north". It is one of the many regions in Sweden that have undergone major industrial restructuring[3] over the years, brought about by technological improvements in production and by market forces (Andersson 1981, Ekstedt 1999, Lindberg 2000). Today, it finds itself on the threshold of a changing process of adapting to the demands of new economic realities. At least in the contemporary industrial development debate, Hälsingland belongs to those regions in the northern part of the country that have the unfortunate characteristics of a peripheral region.

Figure 1.1 The contextual setting



According to regional economic indicators in Sweden[4], regions with diversified economic structures and knowledge creation infrastructure, such as universities, have the upper hand in achieving development. In the Swedish context, if I may simplify, on the one hand, the winners appear to be regions such as Stockholm, Gothenburg and Malmö. During the past few decades, these three cities and their surroundings have had a relative

[3] Industrial restructuring is often caused by the intertwined factors of efficiency in resource allocation (labour, capital, human capital and natural resources) and improvements in product/processes due to technological improvements. These factors have had long-term affects on the industrial structure of Swedish regions See Åke E.Andersson (1981) for a thorough analysis of how these factors have interplayed.

[4] See for example the report of ITPS, the Swedish Institute for Growth Policy Studies, *The state of the regions 2003*.

increase in the number of inhabitants and a relatively lower level of unemployment as compared to the rest of the nation, with the exception of Malmö. Together with other towns that are home to universities, these three relatively large cities seem to constitute the core areas that can achieve industrial development.

At the end of the spectrum, the losers in terms of economic development are the peripheral regions, lacking the prerequisites for modern business development such as the presence of institutions of higher education. These regions are rural areas, mainly in the hinterland in the north of the country and even including the coastal towns in the north, which in the past were dominated by firms in the traditional sectors of forestry and manufacturing. Most of the municipalities[5] of Hälsingland fall into this category. The number of people working in a forestry-related field, such as cutting and transportation of wooden products, has significantly fallen during the last decades. Now these regions are the true victims of the structural changes that took place in the last century. Although these regions are diverse, one commonality is the relatively high level of unemployment and a decreasing population.

There are also regions that do not fall into the simplified classifications above. One of these regions is Småland, which is situated in the southeast of Sweden. This region is home to municipalities such as Gnosjö and a few others that present an interesting development paradox. On the one hand, they share common traits with the peripheral regions, e.g. a traditionally low level of educational attainment, but, on the other, they have a rich culture of entrepreneurialism (Brulin 2002; Johanisson 2002). For the purpose of this study, "a peripheral" region refers to those regions which historically have housed firms in the traditional sector of the economy (forestry and manufacturing) and which lack proximity to institutions of higher education.

1.2 Local dynamics to offset global challenges

Regional development in Sweden, in general, and in peripheral regions, in particular, is undergoing a challenge in rising to the demands of a borderless economy that is

[5] The geographic province of Hälsingland consists of the six municipalities of Bollnäs, Hudiksvall, Ljusdal, Nordanstig, Ovanåker and Söderhamn.

characterised by interconnections and interdependencies (Porter 1998, Castells 1999, Archiburgi & Lundvall 2001, Raines 1999). The general term *globalisation* has become part and parcel of the business development debate in the world. In Sweden, it is used to depict the new challenges facing regions such as Hälsingland and regional development in general. However, globalisation of economic activities is not a totally new phenomenon. For example, cross border trading has been occurring for centuries. And global[6] sourcing of production to benefit from cheaper costs has occurred for decades (cf. Adám 1975, Laestadius 1980).

The forestry cluster of Hälsingland has undergone internationalisation for nearly a century and global trading is thus not a new phenomenon in this region. Nevertheless, the deepening impacts of faster transcontinental flows of capital, outsourcing of goods and services and the patterns of global economic integration including the speed and pace of information have certainly given new potency to the old phenomenon (Castells 1999).

Today, there are indications that many employers in the traditional manufacturing sector, which make up the landscape of peripheral regions in Sweden, have been provided with opportunities to access lower cost production sites elsewhere or face competition from foreign firms with access to such low-cost sites. In their place, policy makers anticipate the emergence of small- and medium-sized companies in the service sector to complement the activities of the large employers and to provide new jobs.

The global diffusion of multinational firms, the importance of knowledge[7] as a factor in achieving development and the 'footlooseness' of production (Castells 1999, Epstein

---

6 In most of the literature on location, the terms global and globalisation are used synonymously. Scholars from various different academic backgrounds define the concept of globalisation in different ways. Though for the purpose of this study, I am going to use the two terms synonymously. While the term global signifies a worldwide process of economic activities and social integration of people, the term local is used to define localities, such as cities and regions (see for example Amin et al, 1995).

7 Knowledge has both a linguistic and a philosophical connotation. Since the primary point of departure of this dissertation is regional development, I intend to adopt Storper's definition of knowledge as "institutionalized, embedded social practices, conventions, and rules, or memes, which are essential elements of economic coordination in the sectors of the economy" (Storper 2000a p.57).

2003, Storper 2000b Archiburgi *et al,* 2001), often the underpinning of the globalisation debate, has put under scrutiny the conditions for the location of economic activities. Despite the proliferation of ICT, manifested for example in digital technology, the geographical location of economic activities is gaining significance as an arena that needs to be developed (Porter 1998, Audretsch 2000a). Increased globalisation has reinforced the vitality of the local milieu as an arena of interdependency where firms and organisations exchange relationship based assets to generate human resource-based competences including skills development and resources inputs, and thus become outwardly competitive (Isaksen 2001, Porter 1998, Porter 2000, Storper 2000a).

There is a relationship between the global nature of economic activities and what mechanisms are put in place at the local and regional levels to promote development. Geographic proximity facilitates knowledge creation, diffusion and transfer, such paramount mechanisms determining the competitiveness of individual firms, but also the locations in which they function. Innovations and learning, considered essential elements of competition are facilitated by local dynamics, which take place through interaction between geographically proximate actors in systems that, are institutionally linked in the form of clusters (Porter 1990) and innovational systems (Lundvall 1990). Consequently, collective knowledge spillover between different actors in geographic proximity results in new products and/or services and the improvement of the existing ones and in that way it enhances regional development (Audretsch 2000a, Maskell & Malmberg 1999, Porter 1998).

Despite the increasingly global nature of economic activities, the local environment is where institutional factors such as unique sets of norms, values and conventions needed to become competitive are created and transmitted. Moreover, knowledge creation and relationship building do not occur on their own or on a global basis. Instead, these capabilities, which are seen as vital factors to meet the challenges of the global nature of economic activities, are the result of cumulatively learned actions and attitudes that are locally produced and transmitted (Maskell *et al,* 1999, Amin *et al,* 1995, Asheim 2000).

1.3 Aim and outline

The local environment, and what takes place in it, is undoubtedly a key factor for study and the point of departure for this dissertation. Since knowledge creation, a vital mechanism of development, takes place in a geographic setting and results from long-term interactions between economic actors in geographic proximity with one another (Sölvell & Birkinshaw, 2000), it plays a vital role in shaping industrial dynamics. In most cases, knowledge is produced in conjunction between companies and/or between companies and supporting public organisations (Audretsch 2000b).

Thus, identifying and influencing the "hows" and "wheres" of knowledge generation and diffusion has become an important task that has not only attracted the attention of social scientists, but also developmental agencies[8] as well as national, regional and local politicians. In the light of this, we are witnessing how various territorial concepts that depart from the dynamics of the local environment in fostering development not only become academic issues, but equally also part of developmental strategies to improve national, regional and local competitiveness. Examples of such concepts are, "industrial districts" (Marshall 1920)[9], "science parks" (Saxenian 1994), and "clusters" (Porter 1990). Although the time dimension as regards when these concepts were introduced could differ, the underlying theme is that what takes place in a location matters and that relationship-based dynamics between proximate actors are vital aspects for achieving development. Furthermore, these concepts mean a departure from the notion that geographic proximity is a facilitator of learning, innovation and knowledge, and an arena that promotes institutionally acquired assets (Isaksen 2001).

---

[8] In Sweden, creating an infrastructure that facilitates knowledge production and relationship building to meet the demands of the borderless economy is gaining utmost priority from development agencies, including Nutek (the Swedish Board for Industrial and Technical Development) and Vinnova (the Swedish Agency for Innovation Systems).

[9] Alfred Marshall is frequently quoted or referred to in this thesis. His "principles of Economics" was originally published in 1890 and was continuously modified. All my references relate to the eighth edition published in 1920 and reprinted several times since then. For details in this life long process see Laestadius (1992).

Against this background, the overall aim of this dissertation is to contribute to the research aimed at enhancing regional economic dynamics and to increase the understanding of as well as provide insights into local industrial dynamics in a peripheral region. More specifically, the following interrelated questions are explored:

The first question is a general one and concerns the prerequisites for the location of economic activities and the role of regional industrial policy in enhancing development. It is formulated as: What are the mechanisms that influence location of economic activities and industrial policy in peripheral regions?

The second question is a specific one and empirical in nature. It relates to understanding the extent to which the general mechanisms affect local development processes. It is formulated as: How do the mechanisms that influence location of economic activities and industrial policy manifest themselves in local development processes in a peripheral region?

The general mechanisms that influence the location of economic activities and industrial policy are explored; because from the perspective of Hälsingland and other peripheral regions, the role of traditional sources of employment, such as firms that extracted natural resources and transformed them into goods, which made it and other peripheral regions of today so prosperous in the past – i.e., determined the location of economic activities - is certainly diminishing. Instead, contemporary regional development scholarship contends that regional development is enhanced by competitive advantage based on locally developed mechanisms promoting relationship building and knowledge creation between proximate actors (Storper 2000a; Aurchibugi *et al* 2001). In contrast to the previous conditions, which were gained by factor endowments, the new conditions for development at the local, regional and national level emphasize the vitality proximately acquired dynamics. These are assets that are accessed through human interactions so as to achieve development (Audretsch 2000a; Lundvall 1992).

Furthermore, regional development in peripheral regions cannot be understood or analysed without discussing industrial and regional policy[10] strategies. In modern times, Swedish regions have been characterised by uneven development in terms of employment rates, level of migration and the general conditions of development (Fredriksson 1999, Bergström 1998). To reduce regional disparities in economic development and to uphold the welfare state's basic foundation of maintaining parity in terms of employment opportunities, the Swedish Government has over the years pursued various top-down uniform incentive programmes: These included an enticement scheme to promote the location of large manufacturing firms, and more recently service firms, in peripheral areas. To compensate regions and municipalities that have suffered job losses due to industrial transformation that resulted in subsequent firm closures, the Government has also looked into ways of locating or relocating government-run agencies in peripheral areas (SOU 2000:36).

In this dissertation**,** I will provide insights into industrial policy and the location of economic activities by presenting three case studies of cluster formations in the two municipalities of Ljusdal and Söderhamn, in the Swedish region of Hälsingland. The reason why I have chosen this area is that during the last two centuries it has undergone an industrial restructuring that can be considered typical for several peripheral regions in Sweden. The case studies are named the *business case*, the *policy case* and the *hybrid case* to reflect the mechanisms that induced them. In the *business case*, I have analysed the mechanisms behind an industry-led approach that contributed to the development of a call centre cluster in the municipality of Ljusdal. What are the mechanisms that influenced the development of this cluster? What kind of activities do these call centres perform? In the *policy case* and the *hybrid case*, I have analysed policy-induced initiatives to revitalise the local economy in the municipality of Söderhamn. Both the policy and hybrid cases have

[10]Industrial policy refers to government interventions, measures and strategies to promote the growth/development of potential of specific sectors of the economy or general measures to enhance the competitiveness of companies. Regional industrial policy regards either promoting new industries or influencing old industries to adapt to new conditions (Audretsch 1993, Raines 2001). In terms of regional development the two are intertwined and therefore, unless stated otherwise, I intend to use industrial policy and regional industrial policy synonymously.

the municipality of Söderhamn as their contextual setting. Söderhamn is situated approximately 250 kilometres north of Stockholm. Its history shows several good examples of Swedish regional development policy in practice. Following the industrial restructuring in the last century and the subsequent losses of job opportunities, the municipality has tried to attract companies and government agencies to establish in the area. However, in recent years, Government incentive programmes and compensation measures for lost jobs have not been sufficient to solve the economic crisis either in Söderhamn or in other peripheral municipalities (Lindberg 1999).

The policy case describes the creation of a "soft centre", a software-based concept that was initiated, designed and implemented by policy. The hybrid case describes a policy-induced initiative run by two individuals in co-operation with business actors in the private sector. Before the presentation of each case study, I will provide a background picture of these municipalities and the region, as well as the contextual setting.

Apart from this introductory chapter, the dissertation consists of eight chapters with the following contents:

- In Chapter 2, I provide some of the literature on location of economic activities and industrial policy. I discuss mechanisms that influence territorial development and I describe the core-periphery aspect of regional development, location as a matrix of competition by discussing dynamic industrial districts, a shift in the mechanisms that determine regional competitiveness and the concept of clusters.
- In Chapter 3, I describe the methodological choices and the research approach that I have made in collecting the empirical data of the dissertation.
- Chapters 4 to 8 form the empirical foundation of this study. In chapter 4 and 6, I present background information on the two municipalities and put the empirical cases into a contextual perspective.
- Chapter 4 describes the contextual setting of the business case, which is the

municipality of Ljusdal. Chapter 6 describes the contextual setting of the policy case and the hybrid case, which is the municipality of Söderhamn. The three case studies are presented in Chapters 5, 7 and 8. Chapter 9, finally, concludes the dissertation and discusses the results of this research journey.

> "Many various causes have led to the localization of industries; but the chief causes have been physical conditions; such as the character of the climate and the soil, the existence of mines and quarries in the neighbourhood, or within easy access by land or water." (Marshall 1920, p.268)

2. MECHANISMS THAT INFLUENCE LOCATION OF ECONOMIC ACTIVITIES AND INDUSTRIAL POLICY

What are the mechanisms that influence territorial development? What kind of approach ought to be taken when considering how industrial policy is to promote the location of economic activities? We find the theoretical points of departure in the literature on these mechanisms in concepts that have been developed to understand regional variations and the importance of the dynamics of the territory for the concentration and dispersion of production. Much of the literature that discusses the mechanisms that influence territorial development and industrial policy depart from the importance of *cluster dynamics* as a catalyst of development. To this end, several intertwined concepts (e.g. Growth poles, Industrial districts and clusters) have been developed to understand cluster-based relationships between local industrial dynamics and competition. These concepts discuss how the interplay of technology, innovation and relationships in a given location shape local industrial dynamics and allow for the development of a territory. With negligible variations, the underlying theme of this literature is that what takes place in a location affects the competitiveness of host firms, the working life and industrial policy measures. Notable contributions in the importance of cluster dynamics as a facilitator of development have been provided by Marshall (1920), Pérroux (1950), Myrdal (1957) and in recent years Porter (1990). The aim of this chapter is to discuss the literature on the mechanisms that influence location of economic activities and industrial policy.

This chapter is divided into five major sections. In the first section, I provide a discussion of the earlier literature on why there are peripheral regions and the policy dimensions of the earlier literature. Section 2 looks at the subject of location as a matrix of competition and the evolution of dynamic districts. In section three, I discuss the new shift in regional and national development policy. Section 4 discusses the concept of clusters, which is becoming an important element of the national and regional development debate. The chapter concludes with a summary and concluding remarks.

2.1 From logistic circles to growth poles

As a subject of inquiry, the development of core and peripheral regions in terms of economic development has captured the imagination of scholars in various fields of the social sciences. One major reason is that economic development is a dynamic process, bringing both virtuous and vicious repercussions to geographic locations. However, too often, what turns out to be a peripheral region could in the long-term become a core region and vice versa. In the early nineteenth century, long before the advent of faster transportation modes like jets, cars and trains, and ICT, the German economist Johan Heinrich von Thünen[11] (1780-1850) devised a circular model to describe the location of economic activities. This core-periphery model focused on the minimisation of transport costs and the time to reach the market. Pioneering optimum land use theory, Von Thünen drew four rings around his estate to illustrate the relationship between the supply of his dairy products and the demand (Beckmann 1974, Clark 1976).

The Von Thünen model was based on the issue of logistics. In the core of the circle that he drew was the city centre, where many of his customers lived. Each new ring that he drew demonstrated the distance between the units (dairy and vegetables, wood, crops) of his estate and the city centre. In the first ring that encircled the core was the place of production of dairy goods and vegetables. The logic behind this was that dairy products and fresh vegetables were consumed on a daily basis and therefore should be transported

[11] The discussion on von Thünen is based on Martin Beckmann's article *Von Thünen Revisited: A Neo-Classical Land Use Model* in the Swedish Journal of Economics, 1974, and Colin Clark's *Von Thunen's Isolated State* in the Oxford Economic paper, 1967.

faster and on a daily basis. In the absence of refrigerators, the durability of dairy products certainly played a vital role in the location of this unit closer to the city. In the second ring was the zone of wood products to be used for cooking and heating. In the third ring, there were different kinds of grains for the production of bread and food. The choice of crops in the third ring rather than in the first or second ring was motivated by the durability and weight of the goods. Ironically, the animals that produced the dairy products were located in the fourth and last zone. This decision was made on the premise that the animals could walk to the dairies and on the way to the dairies transport wood.

2.1.1 Growth poles

Although von Thünen departed from the core-periphery aspect with respect to the location of his units on the estate, mainstream economists at the turn of the nineteenth century discarded the territorial dimension including regional disparities in terms of economic development and the interdependencies that could arise between proximate actors. In an attempt to construct equilibrium-based abstract models, vital mechanisms including the importance of the territory as a facilitator of human interactions that could lead to relationship building and knowledge spillovers to society in contemporary economic development were neglected. The spatial[12] models were often constructed on assumptions that economic actors had access to free information to gain the resources needed to become competitive, that they had the same kind of preferences and that they made rational choices about economic transactions. The particular firm was treated as an isolated island, in which its development was assumed to entirely rest on its internal capabilities rather than on mechanisms beyond the borders of the firm, including the benefits that the location provided (Scott 2000, Storper 2000a).

Historically, the French economist Pérroux (1950) offered valuable insights into the mechanisms that influenced the development of regions and the relationship between location and industry. Pérroux was one of the first economists who objected to the static models that purported to explain economic development in a territory and instead proposed an "economic space" that was based on linkages.

[12] Related to space

Central to Pérroux's thesis on location was the notion of cluster dynamics as an influencing mechanism of development and that the territory itself from which firms function is a socially and economically produced entity that is capable of playing a leading role in ensuring the competitiveness of firms. Rather abstractly, Perroux operationalised his ideas on location of industry and general economic theories by introducing the concept of the growth pole (póle de croissance). The 'growth poles' theory was later developed by regional development economists including; Hirschman (1958/1967), Thomas (1969), Lausén (1969) and Hansen (1972).

The key point of departure of Pérroux (1950) was that geographic space, and what takes place within it, were vital elements in understanding why a particular industry is located in a given territory, why there are core regions that survive economic recessions, and why there are peripheral regions that die when new industries emerge. Lever (1980) asserts that the notion of growth poles was based on the recognition that the geographic space is also an economic one, which is heterogeneous and characterised by vertical and horizontal linkages (relational or transactional) that shape economic developmen.

Pérroux was critical of German economists[13] like Weber (1909) who provided a model of industrial location that considered transportation costs as a vital element in the particular firm's choice of location. In devising a least-cost approach, he asserted that the particular firm pursued a triangular least-cost approach of minimising production, labour and transportation costs when deciding the location of the firm. Weber assumed that heavy raw materials that the particular firm needed to turn into finished goods were produced in markets nearby, while lighter materials were produced near the source of raw materials.

Weber (1909) also assumed that the demand market was local, and that firms could sell some or all of the finished goods in the same geographic vicinity. The location of the

[13] In addition, other scholars, e.g. Lösch, Christaller, Hoover, Isard and Hotelling have also provided theoretical frameworks in regards to industrial location. In many of their models, cluster dynamics were ignored as they were based on assumptions that did not consider territorial dynamics. For example, Christaller's central place theory assumed uniform spatial distribution of households, while Hotelling's assumed spatial distribution of price and elasticity (cited in Parr (2002), McCann (2002) and Laestadius (1992)).

particular firm could be the same as the source of the production, or it could lie between the source of production and the market where the finished goods were to be sold. Because production inputs, including labour and raw materials, were assumed to be available in abundance and ubiquitous, and the demand market was assumed to be geographically concentrated in fixed locations that are known to the particular firm, the single most important determinant of location was the minimisation of transportation costs.

Although providing an abstract framework on space, Weber's model was based on the conditions of a single plant choosing an optimum location for its operation. It did not provide the reasons for industrial agglomeration and the external linkages between the particular firm and actors that provided auxiliary resources (Walker 1989).

While acknowledging transportation and labour costs as important mechanisms that fuelled the location of economic activities and thus influenced the evolution of the periphery/core in terms of economic development, Pérroux (1950) criticised the prevailing consensus at the time among economists for downplaying the role of geographic space in explaining the linkages between economic actors and the development of a particular sector of the economy. Lasuén (1969) argues that previous economists who had analysed the location of economic activities treated geographic space as "a passive rigid container that conditions the dynamic evolution of economic forces " (Lasuén 1969,p. 21).

According to Pérroux (1950), the geographic space from which an industry operates consists of a set of dynamic socio-economic relationships that evolve and bind economic actors. These have pull and push effects that determine the competitiveness of an area. Therefore, the ability of space to provide resources is an important factor that could contribute to understanding the differences and similarities between nations/regions. In the geographic space, there is both a human as well as an economic aspect consisting of single and complex mechanisms that often interplay through relationships which according to Meardon (2001), was discarded by traditional economists who analysed economic development.

2.1.2 Territory as a mechanism of development

As indicated earlier, Pérroux's conceptualisation of space and subsequent introduction of growth poles theory attempted to answer the questions of: What factors play a role in the economic development of a region; what are the features of successful industries; what mechanisms contribute to the evolution of peripheral regions? And how do clusters of innovative firms emerge? Pérroux asserted that territory had the ability to become a stimulus for the general economic condition of a region or a nation by inducing propulsive industries[14] (Lever 1980, Tomas 1969, Lasuén 1969).

Pérroux argued that economic development at the national and regional level as well as the evolution of peripheral and core regions are about industrial dynamics, i.e. the birth and death of industries at a particular place. Old industries die because product and process innovations make previous products redundant and open up new areas of production. Unarguably, Pérroux's ideas were related to the creative destruction approach adopted by Schumpeter (1943), who contended that economic development is affected by factors such as technology and the diffusion of technology by a task performer "an entrepreneur" who innovates a set of endogenous combinations such as the introduction of new products that the consumer has not tried before or a qualitative extension of an available product, the introduction of new methods of production or marketing method, the exploitation of new markets and the organisation of a new industry. However, Schumpeter did not have a geographical dimension to his theory. Even though Pérroux did not depart from the entrepreneurial aspect, his growth poles theory recognizes the ability of technology to shape territorial dynamics and become a driver of economic development and thus an important factor that is exogenous to the traditional comparative-based advantages of land, labour and capital as the basic prerequisites to growth.

Lasuén (1969) suggests that growth poles theory relates to Schumpeter's theory of innovation in that it departs from new process and new products that affect the structure

[14] Lever (1980) defines propulsive industry as firms which are "significantly linked by flows of goods with a large number of other industries and which are therefore likely to transmit growth more widely" Lever (1980, p.501)

and composition of industries in a given location. The geographic location that housed old industries become peripheral while the location of new industries become core regions and start to develop. In other words, innovations contribute to the territory undergoing the same kind of dynamics as that of the individual firm. To argue the similarity of product and geographic space in economic development, Pérroux (1950), who obviously was influenced by the Schumpeterian approach, discusses the features of leading industry, industrial complexes, sectoral and spatial relationships between dominant industrial location and the industry, and the relationship between industrial clustering and the general development of the nation.

According to Pérroux, mainstream economists assumed the geographic territory to be homogenous and available to every actor. In doing so they failed to explain why different locations favoured the growth and development of a particular industry, while other areas were disfavoured. Pérroux means that the territory, rather than the operations of the firm, should be the point of reference to explore general economic development. The territory as a dynamic entity has the ability not only to influence the decline and growth of industry in another location, but it also affects different sectors of the economy (Walker 989). According to the growth pole theory, the presence of a lead industry in a region is likely to make the whole region prosper and develop since the successful industry depends on local inputs such as labour to increase production. Likewise, the same development elsewhere could indeed diminish production in another region (Pletsch 1982).

2.1.3 The industrial policy dimension of the growth poles

Following Pérroux's growth pole theory, several regional development economists have devised other concepts that depart from the socio-economic aspect of economic development and the forces that lead to regional disparities. In addition, they discuss the policy dimensions in regards to the evolution of growth poles. For example, Albert Hirschman (1958, 1967) in studies done in peripheral regions in the south of Europe and in South America, employs *polarisation* and *trickling down* to describe how growth in a region is affected by the evolution of new growth poles as a result of a dominant industry.

According to Hirschman (1967), the development of a propulsive industry induces a process of innovations, which positively affect the general progress of the region. The emergence of growth poles as a result of a propulsive industry could lead to the positive effects of polarisation, but it could also have a negative impact in terms of a trickling-down effect on other areas leading to uneven development as core areas attract manpower, capital and public infrastructure from surrounding areas while peripheral areas undergo a process of decay (Amos Jr 1988).

The growth poles as a strategy of regional development gained prominence in the 1960s and early 1970s as governments saw them as an opportunity to influence regional development in peripheral regions around the globe (Amos Jr. 1988, Polése 1999). These post-war decades were characterised by an economic reconstruction of industry and the subsequent boom of the economies of Europe and North America. In academia, factors such as the availability of statistics, a process of urbanisation/migration in some regions and differences in population distributions contributed to the development of new concepts such as "disparities" and " lagging". To reduce regional economic polarisations and to ensure the development of peripheral regions, many governments established departments with the task of pursuing and stimulating regional development policies that could contribute to even development. Through diverse forms of incentives, such as subsidies, investment in infrastructure as well as channelling public funds into lagging regions, governments hoped to encourage regional parities (Polése 1999).

In the Swedish context, this period was marked by an interventionist regional industrial policy. Sweden as a nation was spared from the wrath of the Second World War and its industry was intact and in the forefront to cater to growing international consumer demand. However, in the 1960s the country underwent an industrial restructuring that mainly affected the northern regions. The number of people working in the traditional sectors of the economy such as mining and forestry was significantly reduced as a consequence of technological changes that led to productivity increases. Less man-hours and more machine time resulted in unemployment and subsequently in an increase of migration from the northern part of the country to industrial cities in the south (Lindberg

2001).

During this period, Swedish regions witnessed an active uniform policy initiated by the government. Large manufacturing firms were given subsidies to move whole or parts of their operations to peripheral regions. Later on, this policy was complemented by locating government agencies to these regions to offset the gap created by the disappearance of jobs (SOU: 2000:87).

The objectives of this industrial and regional policy were twofold. First, to contribute to regional parity and offer employment opportunities to people in peripheral regions affected by firm closures as a result of the industrial transformation. Secondly, to keep wage increases and inflation levels low; the concentration of both people and industry in some parts of the country posed the threat of inflation and increases in wages that threatened the Swedish economy (Bergström 1999). By way of investments in infrastructure, transportation, direct subsidies in the form of lower employment costs and availability of funds, the government hoped that many firms would establish a presence in the lagging regions and more people would be deterred from immigrating to cities (Bergström 1999, Engstrand 2003).

Moreover, in the late 1960s and the 1970s Pérroux's growth poles dominated regional development policy in Canada, France, the USSR, Italy, Brazil and Sweden[15], as many governments embarked on a planned regional development policy (Polése 1999, Engstrand 2003). In a bid to stimulate economic development, large industries were enticed to relocate in lagging regions so that their presence could result in positive externalities of development and lead to job opportunities. Several of these rejuvenation schemes never materialised or did not lead to a rise in efficiency. In this regard, Hirschman (1967) introduces the concept of "*the hiding hand*". He asserts that the development of a growth pole in a region induces policy-run programmes that function as "servants" to enhance regional development. These undertakings often fail, not because of prospective obstacles, but because of overrating the innovative capabilities and problem-solving capacities of the growth pole. The hiding hand principle is stronger in

[15] Engstrand (2003) exemplifies this policy strategy by describing how the government relocated a refinery in the Fyrstad region in the west of Sweden.

development projects that have technical bearings as compared to, for instance, agricultural or educational projects. According to Hirschman (1967) policy makers are involved in a "pseudo-imitation technique because they pretend that a regional development project is nothing but a straightforward application of a well-known technique that has been used successfully elsewhere".

Hirschman (1967) argues that there is a lack of an adjustment process. Because the project is based on imitation, the actors always have an example of a successful project to refer to when talking about their benefits in ensuring regional development.

In " *Resurgence of regional economies, ten years later: the region as a nexus of untraded interdependencies*," Storper (1995) also departs from the perspective of Pérroux when he proposes the region as the single most important contributor of firm competitiveness. In his analysis, the territory that firms function from is not a static one that plays a secondary role in the general economic development of a region, but a dynamic one in which there are human interactions that interplay with factors of production and technological proliferation to enhance the competitiveness of the region. Storper's approach is an evolutionary one and departs from the concept of "path dependency" and the related one of "lock-in" which was introduced by Brian Arthur (1989). Arthur (1989) argued that history matters in understanding industrial dynamics and the development of an industry in a particular location.

From a local and regional development perspective, the path dependency and lock in approaches relates to the notion that regions and locations that have similar historical backgrounds would experience similar patterns of economic development in the future (Malmberg & Maskell 1997). Accordingly, a territory's ability to develop and compete with other territories is conditioned by history and comes as a consequence of cumulative decisions made by companies and policy makers. Storper (1997) proposes a trinity model to understand territorial development. It consists of internal capabilities of firms, exogenous forces of technology and territorial dynamics that are gained at a location. These mechanisms cannot be understood in isolation as they often interplay. For example, the existence of firms is the result of dynamic co-operating networks that form

parts of a production system and that are not free from the environment they function from. The second dimension is the territorial dynamics that emerge as a consequence of collaborating networks of organisations and include information flows that reduce the transaction costs for actors. The third element of Storper (1997) is technological progress, which is not placeless but occurs in clumps and is often preceded by reciprocal relationship building between economic actors that are in geographical proximity to one another.

2.1.4 Myrdal´s heinous and panaceas forces

In understanding regional disparities and the question of the evolution of core-periphery regions, the elements of Pérroux's concept of growth poles were a central theme also pursued by Gunnar Myrdal in *Economic theory and underdeveloped regions (1957).* Myrdal (1957) criticized traditional equilibrium-based trade theories that asserted that differences between nations were a result of uneven immobile factor distribution. In rebuffing the basic assumptions of these theories, Myrdal contended that there are distinct external forces that explain regional disparities across nations, which were, according to him, discarded by trade theorists.

According to Myrdal (1957), nations and regions go through a process that is marked by spatial concentration of economic activities brought about by technological innovations and knowledge spillovers. Accordingly, the development of a core or a periphery region is the result of a chain of events that are proximately caused but have cumulative causations. These contribute to the development and growth of some regions and could also cause others to lag behind (Meardon 2001). The cumulative causations lead to regional disparities that arise as a result of the two interplaying forces, *backlash* and *spread*, which could have both positive and negative effects on regions.

Backlash forces are the repercussions on regions where an innovation in products is made and where knowledge spillovers are achieved, and the heinous impact on inferior regions such as underdevelopment, unemployment and lack of industrial dynamics. According to Myrdal (1957), when a technological stride or an innovation is made by an industry, it contributes to the prosperity of the region because of the knowledge spillovers

to the region, which leads to the concentration of human beings and firms. The capacity and propensity to innovate increases and most importantly it induces the movement of brains from inferior regions thus causing dispersion (Meardon 2001). In its turn, the number of job opportunities increases and there is a rise in the income and purchasing power of households, leading to an improvement in the general welfare of the people. In adjacent regions, however, backlash forces can have negative impacts as they can contribute to migration, particularly of young people to more innovative regions (Meardon 2001).

In the absence of employment and the subsequent deterioration of the general standard of living, people tend to move to the superior region in search of work. The spread impacts are the positive reactions to backlash forces on adjacent regions (Meardon 2001). According to Myrdal (1957), capital and human accumulation in superior regions increase the number of people living in those superior regions and subsequently lead to an imbalance in demand and supply. The high standard of living induces new preferences and needs, thus costs of production rise. At the same time, some inferior regions imitate the innovations that contributed to their hardships and offer the inhabitants of the superior regions the same kind of products at a cheaper price. The magnitude of the spread and backlash effects on the economy of peripheral regions depends on the development of human resource infrastructure and state intervention to stimulate the economy during cyclical periods (cf. Arthur 1989).

2.2 Location as the matrix of development and competition

Pérroux's conceptualisation of space and the subsequent introduction of the growth poles framework, and the discussion on centrifugal and centripetal forces that attract or disperse location of economic activities and Myrdal's forces of development were inspired by the works of Alfred Marshall. Nearly half a century earlier, the political economist Marshall had pioneered the study of cluster dynamics and revealed geographic location as the matrix of competition. In addition to describing the propulsive ability of the territory

from which Pérroux and Myrdal drew inspiration, Marshall (1920) laid the foundation for the reasons as to why we have industrial agglomeration and the economies of cluster dynamics.

In the chapter *Industrial organization – the concentration of specialized industries in particular localities* in "The principles of economics", Marshall discusses the advantages that geography could offer to economic actors following empirical observations made on the districts surrounding Lancashire and Sheffield (Laestadius 1999).

Marshall (1920) argued that concentration of economic activities resulted from historical circumstances, including factor endowments, local demand and the geographic conditions of the area. But perhaps his chief contribution was in revealing the relationship between the internal capabilities of individual firms and external mechanisms that proximity facilitated. According to Marshall, firms develop internal economies, which allow them to either cut production costs or increase sales. To a certain degree, accessing and sharing resources with other economic players in the same geographic proximity is the result of what takes place outside the firms' borders. In this respect, Marshall played a central role in the theory of economic organisation (Laestadius 1992).

2.2.1 Agglomeration economies

Marshall described economies of location and in so doing laid the foundation for studies on the geography of production and later, cluster dynamics as mechanisms of development. Referred to as agglomeration economies, these are externalities which depart not only from internal mechanisms that minimise the production costs of companies, but also from external dynamic mechanisms including knowledge spillovers to society. For the sake of simplicity, economic geographers group agglomeration economies into two economies: *urbanisation economies* and *localisation economies*. Urbanisation economies emerge when people and economic activities locate near to each other in order to benefit from proximity. These are often external to the area, but internal to the firms in the area as they gain economies of scale in production (Malmberg 1998). On the other hand, localisation economies are firm specific and emerge because of geographic proximity,

which allows the firms to have collective benefits that are unavailable to firms in other areas.

According to Malmberg (1998), both urbanisation and location economies are to a great extent influenced by the same set of mechanisms and develop from shared infrastructure. Physical proximity allows the companies to produce at a lower cost as transportation, thus transaction costs are reduced, and they can benefit from cheaper provisions that arise from shared accessibility to harbours, roads, etc. Furthermore, it facilitates the flow of information and allows the companies to share technical, education and labour market infrastructure.

It is worth noting that in addition to the studies on the relationship between territory and competition, Marshall also discussed various aspects of economic development, including the role of politics and the division of labour (Laestadius 1992). As regards location, Marshall (1920) offered three major advantages that geographic proximity provides to people and firms: *creation of a labour market, external economies of scale, and learning opportunities.*

First, geographic proximity facilitates the creation of a specialised labour market as it attracts both employees and employers. On the one hand, a person seeking employment is inclined to move to a place where he can get a job and, on the other hand, employers are inclined to settle anywhere where it is easy to select and recruit personnel. This approach is often referred to as localisation economies (Malmberg 1998) and in Marshall's own words:

> "Employers are apt to resort to any place where they are likely to find a good choice of workers with the special skill which they require; while men seeking employment naturally go to places where there are many employers who need such skill as theirs and where therefore it is likely to find a good market." (Marshall 1920, p.271)

The second important advantage of geographic proximity is the ability to offer external economies of scale. Concentration of business activities creates external economies through vertical relationships, such as sub-contracting agreements between firms in the

value chain, and vertical co-operation for the firms that produce the same kind of goods (Marshall 1920). At the same time, it gives the concentrated firms advantages in terms of lower costs over firms in other territories, as Marshall noted:

> "The economic use of expensive machinery can sometimes be attained in a very high degree in a district in which there is a large aggregate production of same kind, even though no individual capital employed in the trade be very large. For subsidiary industry, devoting themselves each to one small branch of the process of production, and working it for a great many of their neighbours, are able to keep in constant use of machinery of the highly specialized character." (Marshall 1920, p.271)

According to Marshall, the third major advantage of geographic proximity is the ability of geography to enhance face-to-face interactions between economic actors: Asheim (2000) suggests Marshall's main contribution to social science is in revealing proximity as a factor that enhances the creation of learning opportunities. Through relationship ties and the facilitations of information exchanges between different actors, geographic proximity fosters learning and innovation that provide the necessary resources for competitiveness (Malmberg *et al*, 1996).

Malmberg *et al* (1996), argue that geographic proximity allows for tacit knowledge exchange because this kind of knowledge "does not reside in blue prints and formulae, but is based on personal skills and operational procedures which do not lend themselves to be presented and defined in either language or writing" (Malmberg *et al* 1996, p.90). This aspect of learning activities of not only developing the competitive strengths of the existing firms, but also of enhancing the growth of new firms was a key aspect of location that Marshall emphasized when he wrote:

> "Good work is rightly appreciated, inventions and improvements in machinery, processes and the general organisation of the business have their merits promptly discussed: If one man starts a new idea, it is taken up by others and combined with suggestions of their own; and thus it becomes the source of further new ideas." (Marshall 1920,p.271)

2. 2.2 Dynamic industrial districts

Marshallian dynamics of location, especially with respect to relationship and knowledge spillovers as an important dimension in understanding spatial competition and factors that influenced the periphery-core development of regions, were confined to bookshelves until Piore and Sabel entered the scene in the mid- 1980s. In their much-acclaimed book "*The industrial divide"* (1984), they discuss the emergence of two major paradigms supposed to have shaped economic development in post-war Europe and the United States. First, they describe how mass production technology at the turn of the twentieth century ended the era of handicraft production and gave rise to the Fordist era in the USA and parts of Western Europe. Secondly, they describe the stagnation of the world economy in the 1970s and the arrival of new flexible production methods, in which manufacturers shifted one product or process to another depending on the market needs.

Amin and Thrift (1995) have described this period as the post-Fordist or post-industrial era, which is characterised by among other things, the diffusion of technology, volatile markets, and the growth of a large number of small- and medium-sized firms in parts of Europe. As the volatile market conditions curtailed returns on investments, e.g. machines often became redundant before the investment costs were recovered; many firms experimented with flexible working conditions and production methods. The resulting high level of efficiency, which previously had been reserved for multinational large corporations that thrived on mass production, as well as active support from institutions, enhanced the growth of small- and medium-sized firms.

Following on this, "Marshallian districts" became the metaphor and point of departure for understanding and analysing the dynamics of the "third Italy[16] (Cossention 1996, Brusco 1986, Becattini 1995, Baker 1995, Brusco 1995, Dei Ottati 1994). This name is used to differentiate industrial districts in the south of Italy and the triangle of Genoa, Turin and Milan in the northeast and northwest of Italy from the rest of the country. These studies revealed the presence of many industrial districts that were home to small- and medium-sized firms with flexible production methods. The firms were found, for

[16] The Marshallian district concept has also been used to analyse dynamics regions in many European, Asian as well as North America.

example, in the knitted goods industry in Capri, the ceramic tiles industry in Sassuolo, and the textile industry in Prato. Taken altogether, these districts numbered around 29 (Cossention 1996).

In accordance with Marshallian dynamics, the Italian case studies showed that the industrial districts had the capacity to attract skilled workers, which was one of the major advantages that Marshall (1920) had written about. According to the studies of the Italian districts the availability of jobs for people who want to take them and the level of entrepreneurship indicated that the districts were growth areas (see, for instance, Cossention 1996, Brusco 1986, Becattini 1995, Baker 1995, Brusco 1995, Dei Ottati 1994). The division of labour between the Italian industrial districts allowed each district to have a unique form of specialisation. Workers and technicians move between the different firms, for example between suppliers and buyers, but they tend to stay within the district. In this way, tacit knowledge among the workers could be accumulated (Berggren *et al,* 1996, Becattini 1995, Brusco 1995).

In Sweden, the Gnosjö region located in the province of Småland in southeast Sweden showed the same pattern in terms of generating small enterprises. The small companies in this region were shown to combine competition and collaboration. Just like the Third Italy, the presence of socio-economic networks that created a breading ground for entrepreneurship was observed (Wigren 2003, Brulin 2000, Johanisson 1984).

The ability of Gnosjö region to foster entrepreneurial activities and nurture a climate of trust between the economic actors through embedded relations that span through the community is referred to as "*the Gnosjö spirit*"[17]. According to Gummesson (1997), the foundations of this spirit started in the sixteenth century when a weapon factory was established in the scarcely populated, small-farming area. The iron industry and trade rose during the sixteenth and seventeenth centuries when foreign smiths taught new methods. After the death of the Swedish warrior king Charles XII and Sweden's defeat in the Great Northern War, local blacksmiths witnessed a sharp fall in the demand for their metal products. Following the decrease in demand, many of the now self-employed blacksmiths

17 In Swedish "Gnosjöandan".

started to expand their production lines. However, from the mid-nineteenth century, the wood industry and glassworks took the place of the iron industry.

Characteristics of the industrial districts of the Third Italy and the Gnosjö region[18] can be summarised as follows (Baker 1995, Becattini 1995, Brusco 1995, Asheim 2000):

i. Geographic concentrations of many small- and medium-sized firms.
ii. Dense socio-economic networks that encourage inter-firm relationships and enhance competitiveness.
iii. Institutional arrangements that facilitate the flow of ideas, which enhances development of production methods and market innovations.
iv. Willingness to adapt to new circumstances and flexible production systems.
v. Division of labour between the districts allowing for high levels of competence and accumulation of tacit knowledge.

2.2.3 Places that "stick"

Meanwhile across the Atlantic, the behavioural perspective on territorial competitiveness and the centrality of the region as an important unit of development gained further importance when Anna Lee Saxenian published "*Regional Advantage: Culture and Competition in Silicon Valley and Route 128*" (1994). In a study of the two areas of route 128 in Massachusetts and Silicon Valley in California she concluded that the success of the latter depended on the dynamic horizontal networks of managers, companies and supporting public institutions. In contrast to the static vertical integration of inter-firm relationships in Route 128, she found that the dynamic networks that existed in Silicon Valley provided a receptive atmosphere, which encouraged co-operation while still maintaining a degree of competition.

At the same time, several social scientists (For instance, Staber 1998, Markusen 1996, Mascanzone *et al* 2000, Baker 2000) began to develop concepts that departed from

18 It is worth noting that although the Third Italy and the Gnosjö region are similar in the spirit of encouraging entrepreneurship and the many informal networks, there are also differences between the regions. For example, in the Gnosjö region, the industrial specialisation is horizontal, while in the Third Italy it is vertical.

Marshall to explain spatial competition. They examined key features of special areas in terms of economic development and began to categorise the different kinds of industrial districts.

Staber (1998) argues that there are two distinct kinds of industrial districts. First, there are the "Marshallian" type industrial districts with competitive inter-firm relationships. These districts have, of course, firms that come and go because of forces of competition. New firms are born out of older firms, new entrants emerge as a result of needs within the districts, and firms are closed as a result of increased costs, lack of customers, etc. Secondly, there are industrial districts, mostly like the ones in the Third Italy, which have inter-firm relationships and are socially integrated. The dynamics arise as a result of institutional arrangements for collective learning and social relationships. Staber asserts that the backbone of industrial districts is the institutional setting with common, but varying, mechanisms of integration based on kinship, religion, and relationships. Actors are involved in dense social networks that facilitate not only competition due to peer pressure, but also co-operation through drawing on network resources.

In the USA, Markusen (1996) found the presence of industrial districts that were quite different in characteristics from those in Europe. In *Sticky Places in Slippery Space: A Typology of Industrial Districts*, she gives an in-depth analysis of neo-Marshallian industrial districts. Markusen contends that the research findings from studies of the Italian districts, which are based on the socio-economic networks of small- and medium-sized enterprises, are far from representative for other industrial districts throughout the globe. To capture differences in terms of networking, regional development and institutional context, she proposes two alternative models of industrial districts.

The first kind of industrial district is similar to Pérroux's growth poles where a dominant firm pushes the region forward, which is an important element in growth pole theory. Markusen (1996) calls it the hub-and-spoke. These kind of industrial districts consist of one or several major employers with supplier networks and service providers. These are often industrial areas that house single enterprises like the Boeing complex in

Seattle, or larger areas that house firms in the same industry like the motor industry in Detroit.

The dynamics of hub-and-spoke industrial districts are the ability of small- and medium-sized firms (SMEs) to interact in networks, and the capacity of a large firm (an engine enterprise) to accommodate the smaller firms. The SMEs are linked through transactional relationships to the engine enterprise, to which they sell to or learn from (Barkley 2001). The co-operation and competition between the SMEs are usually dictated by the engine enterprise. The SMEs in the hub-and-spoke gain external economies from each other by virtue of their number. For example, at the Boeing complex in Seattle, several SMEs supply Boeing with various inputs (Dunning 2000, Markusen 1996). Mascanzoni *et al,* (2000) report the presence of sixty hub-and-spoke districts in the Third Italy. These are characterized by vertical and horizontal networking between the firms, which are mainly small suppliers and an engine enterprise. Small local networks of firms import, store and distribute raw materials necessary for the engine enterprise to produce finished goods. These drive the pace of product innovations in the district. These locomotive companies in the Italian sense are global players with international reputations and they are characterised by their excellent professional knowledge of craftsmanship, technical and social know-how, and innovation ability. Their success is a result of technological, organizational and marketing abilities that have been accumulated during many years of conducting business activities in the districts. Close proximity between the engine enterprise and their suppliers and customers facilitates the transfer of strategic information, which small- and medium-sized suppliers are dependent upon.

There is a two-way linkage of relationship between the firms in a hub-and-spoke district. First, there is a vertical relationship between the engine enterprise and the SMEs that are clustered, and, secondly, a horizontal relationship between the SMEs. Competition is limited because most of the SMEs supply different services or products, or they are all involved in the value chain of the engine enterprise (Barkley 2001).

The second category according to Markusen (1996) is the satellite platform and state anchored industrial districts, which often are induced by policy measures to enhance

regional development. Defence installations, universities and concentrations of government agencies belong to this category. Policy measures play a vital role not only in their evolution, but also in their successful development. In these kind of industrial districts, there is no collaboration between the companies as each and every one of the tenants is engaged in different kinds of activities. Most of them are large players that determine the pace of development.

2.3 Towards the" new"

Although Marshall (1920) discussed the knowledge aspect of economic concentration, most of the studies on "Marshallian districts" from the eighties onward have departed from the institutional setting with a focus on cluster dynamics in explaining their evolution and functioning. The case studies of the Italian districts and other areas around the globe described the relationship dynamics, including the collaborative arrangements between economic actors and public bodies in achieving development. This aspect of cluster based relationships as a facilitator of regional development was to a certain extent discarded by mainstream economists.

In the early1990s, spatial competition models including Marshall's were aligned with new growth theories[19], mainly due to the importance of knowledge as a factor of competition. These theories hold that steady economic growth in a nation or a region depends on technological progress and knowledge utilisation (Glaeser 2000, Ekstedt 2001). Accordingly, the development of new technologies and their diffusion by way of knowledge accumulation are critical components in a company's productivity. Much of the literature builds on the works of Romer (1990), in which he models the micro-economic environment from a knowledge accumulation perspective. The underlying theme of Romer's approach was that the development of the individual firm depends on knowledge accumulation and, consequently, its productivity and innovative capabilities depend on the extent of knowledge spillovers from human capital proliferation.

[19] This is sometimes dubbed as endogenous growth models.

At the same time, the new growth theories revealed the importance of cluster dynamics and the effects associated with research, development, and the spin-off effects of knowledge-based firms, and hitherto captured the importance of location. Accordingly, knowledge accumulation is often the result of education, experience and training that is contextually generated and diffused. Therefore, much of the recent research attempts to explore the geographic dimension of economic development by looking at mechanisms that lie outside the borders of the particular firm, including the extent of knowledge spillovers between actors. These are mainly the mechanisms that were earlier discussed by Marshall (Laestadius 1999).

2.3.1 Political and economic changes

The knowledge accumulation perspective as an important mechanism to achieve micro-economic competition and territorial development coincided with a period that was marked by political and economic changes. The collapse of the Berlin wall and the subsequent opening up of new markets in Eastern Europe and the expansion of the European community (later on, the European Union) are just a few examples of the political developments. On the economic front, improvements in transportation and information flows mainly in the telecommunications industry and the disintegration of the larger manufacturing industry in the developed world (Castells 1999) led some scholars to predict the "death of distance" (see Cairncross 1997). While others, e.g. Amin and Thrift (1995, p.2), argued that globalisation "does not represent the end of territorial distinctions and distinctiveness, but an added set of influences on local economic identities and development capabilities".

The developments mentioned above gave an added significance to knowledge as a catalyst of economic development and heralded the evolution of new concepts such as "the knowledge economy" (Castells 1999), "the learning economy" (Lundvall 1992) to capture the knowledge and relationship dimension of development. The spatial dimensions of these changes were captured by the advent of the concept of "new

economic geography".

In the early 1990s, Paul Krugman for instance developed his trade theory of "the new economic geography", in which he constructed an equilibrium-based model of trade to explain the concentration of business activities in a given place. His model of interplaying factors contained: increased returns to scale, transport costs and factor mobility. According to this model, increased return to scale motivates producers to limit production costs, transport costs are reduced because of the geographic proximity, and factor mobility is achieved because of the expansion of the labour market (Krugman 1996).

Other scholars departed from the mechanisms that influence the evolution of competitive nations and regions. Tson Söderström, *et al*, (2001), for example employ the metaphors of "forces of concentration and forces of dispersion" to describe the features of the new economic geography. On the one hand, the new economic geography is manifested in the replacement of traditional factors such as economies of scale by relationship-based factors (forces of concentrations). On the other hand, according to Söderström *et al*, (2001) the new economic geography is characterised by the forces of dispersion. These include the presence of infrastructure, which attracts skilled labour, research and development, customers and suppliers.

2.3.2 The industrial Policy dimension of the "new"

The political as well as the economic changes had implications on not only the mechanisms that influenced regional and national development but also on industrial policy. A common theme pursued by scholars and later on embraced by governments was that national and regional differences depended on the extent of knowledge utilisation. In addition, since the "new" concepts reveal a positive relationship between innovation, knowledge and economic development (Lundvall 2001, Archiburgi et al 2001, Storper 2000a, Audretsch 2000a), they had an influence on industrial policy. On this front, the developments mentioned above contributed to a rethinking of regional and national development strategies, especially at a time when previous policy measures appeared to be

unsustainable. The relative successes of industrial districts and the digital boom orchestrated by the advent of the Internet have also certainly enhanced the development of new frameworks of competition; a paradigm that departs from conceptual-based development (Raines 2001). In the period leading up to the new millennium, there was a widespread debate on the "knowledge economy" as a mechanism that would contribute to regional and national development. In the report *A New Economy?* (2000), the OECD described knowledge creation as the ultimate panacea to overcome the challenges of the global economy. In terms of regional development, the debate stressed the importance of codified forms of knowledge that could be accessed and generated through institutions of higher education.

In the Swedish context, there was a shift towards a new regional development strategy in which partnerships and innovations became the key words. The government mandated regions to stipulate "Regional Growth Agreements" (RGA) in 1998 to stimulate the involvement of local/regional actors in the promotion of business development (Hård 2003). Previous policy measures including inducement schemes to encourage the location of industry in lagging regions were replaced with the promotion of locally-based developmental programmes that aimed at promoting the growth of small and medium-sized firms (SMEs)[20] which became an integral part of the debate on regional development. Encouraged by the debate on the "new" economy and ICT, municipalities in peripheral regions in Sweden were supposed to promote measures to induce relationship and knowledge-building mechanisms in the hope of regenerating their local economies.

Accessing knowledge that is gained by higher education and benchmarking successful concepts of industrial dynamics became a key feature of regional development. In peripheral regions, the underlying objective of such a policy move was to overcome

[20] It is not always easy to define what a small- and medium-sized enterprise is. In particular, the concept of smallness varies, as the degree of smallness varies from sector to sector. When distinguishing between small- and medium-sized enterprises, the EU defines a small enterprise as an enterprise that has between 10-50 employees. Very small enterprises, which sometimes are referred to as micro enterprises, have no more than 9 employees.

potential disadvantages of firms in terms of size and location by facilitating learning, innovation and knowledge exchange with a view towards creating territory-specific types of knowledge that are crucial to competitiveness (SOU 2000:36).

Embodied in the new regional development policy is an emphasis on a systems-based strategy to enhance competitiveness. By adopting a regional / national innovation systems' approach the government hoped Swedish industry would become internationally competitive. The theoretical undercurrents of the concept of, "*National Innovation Systems" (NIS)* were provided by Christopher Freeman (1988) in order to describe the success of Japan. Freeman (1988) discusses how industry and public policy interplayed to contribute to innovative methods, process and products. The NIS concept has been developed by, among others, the economist Bengt Åke Lundvall. Central to the notion of NIS is the idea that differences between nations in terms of economic development depend on a myriad of factors including the degree of knowledge utilisation, institutions and infrastructure rather than on basic factor endowment:

> "National innovation systems are, by definition, localized and immobile, and thus able to provide firms with valuable capabilities and framework conditions not available to competitors located abroad, even under the most open market conditions imaginable." (Lundvall 2000, p.364).

The relative success of Silicon Valley and Route 128 in Massachusetts in fostering entrepreneurship and knowledge-based dynamics (Saxenian 1994) and the political as well as economic changes mentioned earlier increased the importance of innovation systems as a developmental tool. In Sweden, the central government has with the establishment of Vinnova (the Swedish Agency for innovation systems) embraced an industrial policy with the goal of enhancing the competitiveness of Sweden as a nation by promoting the innovative capabilities of industry. In recent years, the parameters of the national innovations systems approach have been expanded to include actors at the regional level with the advent of regional innovation systems (RIS) (Bager-Sjögren & Rosenberg 2004).

The seeds of the regional innovation systems approach were sown in the 1970's when higher education was decentralised (Andersson *et al*, 2004). The establishment of

universities and university colleges in almost every political province (*län*) and the development of science and technology parks is a testimony of this approach. The underlying implication of this policy approach is a belief that knowledge spillovers between geographically proximate actors or functionally interacting actors would have a positive effect on regional development and contribute to the emergence of knowledge-based firms that would replace the decline of traditional sectors.

2.4 Clusters

If the national and regional innovation systems approach is one that answers the "hows" of knowledge generation, one concept that departs from the "wheres" of development is "Clusters". In the last two decades, this concept has become part and parcel of the regional and national economic development debate (see, for example, Stymme 2004). In the economic, geographic and business literature, the phenomenon of cluster is used interchangeably with industrial districts and science and technology parks. In the past, scholars have used the perspective of geographic agglomeration, which Marshall pioneered to describe clustering of economic activities. This description denotes the tendency of firms in the same field to locate in the same geographical area. In most circumstances, however, the physical location of firm agglomeration is based on factor endowment and does not necessarily mean the presence of interdependencies (Malmberg 1998).

2.4.1 Interconnections and interdependencies

As indicated in section (2.2), clustering of economic activities is not a new phenomenon, but has rather occurred for centuries.[21] In Marshallian dynamics as well as in Pérroux's growth poles and in Myrdal's forces it was the key aspect. However, it gained potency in 1990 when Michael E. Porter, Professor of Business at Harvard University, authored a book entitled "*The Competitive Advantages of Nations"*. The findings in this book are based on research carried out in several European countries, including Sweden. The Swedish

[21] See for example the discussion earlier on Pérroux's growth poles.

analysis is contained in a book entitled "*Advantage Sweden*", which was co-authored by Örjan Sölvell and Ivo Zander at the Stockholm School of Economics. For the purpose of this study, I intend to embrace Porter's (1990) definition of a cluster, which is:

> "Geographically proximate groups of interconnected companies and associated institutions in a particular field, linked by commonalities and complementarities. The geographic scope of a cluster can range from a single city or state or a country or even a group of neighbouring countries." (Porter 1990, p.254)

The origins of clusters are the same as those of agglomerations and include historical circumstances, proximity to sources of endowment, local demand conditions and random elements (Porter 1990). These factors are said to be the main reasons why firms tend to concentrate in a certain area and why a geographic territory gains the competitive edge. However, not many of these factors act independently, but rather there are several factors that interact with one another. Technology is one such factor. Krugman (1996) argues that technology is a vital factor that induces clustering, but not the main one. Instead, technology helps the pace of the cluster development, as it takes some time to discover and diffuse it. Technology has been cited as one of the factors that contributed to the growth of the well-known cluster of Silicon Valley. The discovery and subsequent diffusion of the semiconductor and the computer processor certainly played a leading role in the development of Silicon Valley (Saxenian 1994).

Tson Söderström *et al* (2001) assert that clusters go through various stages that range from "the heroic" to the "renaissance" phase. The heroic phase is the initial period of clustering and is characterised by the presence of a few actors, mainly entrepreneurs or a flagship enterprise. During this phase, there is almost no vertical relationship between the actors. The second phase of clustering is marked by the presence of dense networks of relationships that are vertically integrated and a critical mass of firms that are concentrated in the same area. The final phase is characterised by "diversity" and specialisation, with many sub-clusters and firms that are vertically integrated.

Rosenfeld (1997) also argues that economic clusters have a life cycle that is marked by embryonic, growth, maturity and decay stages. According to him, the embryonic stage of a cluster is the result of technological innovations and/or inventions and internal direct

investments made either by an individual or a firm. The growth stage is marked by the developments of markets, the spin-offs of firms, the attraction of imitators that develop unique products, competition that allows for benchmarking and the facilities to attract entrepreneurship. The mature stage is marked by new entrants, including service providers, shared infrastructure that leads to cost efficiency for the companies and the ability to combine competition and cooperation. The decay stage takes place when the products that the cluster produced are replaced by cheaper production elsewhere or substituted for as a result of new innovations.

When introduced in the early 1990's by Porter, the cluster approach defied traditional models of the location of economic activities, which were mainly based on comparative advantage, and were static in their nature (Malmberg *et al* 1996). In contrast to agglomeration theories, Porter (1990) took a business science perspective and contended that it is the interplay between geography, institutional linkages and inputs from formal and informal organisations that forms the basis for competitive advantage of nations. In addition, Porter (1990) recognised the importance of interdependencies between firms in terms of relationships and knowledge building in developing production competencies (Cooke 2002). Porter never described how large a geographical area ought to be, or how many firms ought to be concentrated in one specific area to be called a cluster (Berggren & Laestadius 2003). However, one vital element of his thesis was that firms do not live in isolation, but rather depend on other firms and organisations for various kinds of resources that enhance productivity, innovation and new business formations.

2.4.2 The diamond model[22]

Having previously written about firm-based competitive strategies, including value-chain management and firm-level competitive strategy through cost reductions, Porter (1990) developed a diamond-shaped model to describe the main elements that contribute to the competitiveness of nations. The model consists of four major interplaying factors that

[22] For an in-depth analysis of this model on Swedish industrial dynamics, see *Advantage Sweden* (Sölvell et al, p. 24)

determine territorial competition: demand conditions, factor conditions, firm strategy, and related and supporting industries. It also included two exogenous variables that could be accessed by any nation or region: chance and government policy. Two of the components of the model, demand and factor conditions, are external mechanisms. These lie outside the borders of the firm and relate to the availability of a demand market and the production factors necessary to meet the demand. According to this thesis, the basis for competitive strength of a nation is the presence of factor conditions, such as provision of upgradeable natural resources, capital and labour, combined with market demand conditions, such as local and national demands.

Porter (1990) relates the demand and factor conditions of nations to two micro-economic-based elements: individual firm strategies and the presence of related, and supporting industries. These two elements are firm- and branch-specific factors, which in Porter's view form the basis of the *cluster* concept. The idea behind this is simple; Rival firms and other firms in the same field tend to appear in a cluster where they have access to common services which reduces transactions costs and allow for the provision of human resources. The presence of related and supporting industries facilitates a process of innovation and value-creating mechanisms, without the individual firm needing to make all the investments on its own. The interdependencies that arise in terms of inputs, such as training and specialised labour, are managed collectively. In this way, the firms can significantly reduce their production costs as compared to rivals that are located in different places.

2.4.3 An analytical instrument and a policy tool

The concept of cluster gives an analytical opportunity to scholars, as well as to policy makers, to capture the mechanisms that lead to industrial development in a nation or a region (Malmberg 2002; Brown 2000). Through the dynamic linkages of relationships and transactional activities, the cluster concept helps to identify competitive sectors of the economy (Malmberg 2002). In addition, this approach provides scholars with instruments to study how firms perform in an institutionalised system rather than seeing the firms as static units usually described by statistic variables of size, number of employees, etc.

According to Malmberg (2002), using the cluster approach provides insights into functional linkages such as:

i. Vertical transactional links, i.e., exchange of goods, know-how, etc. between firms, customers and suppliers.
ii. Horizontal competitive links, i.e., competition between firms in acquiring factors of production such as labour.
iii. Knowledge spillovers through interaction between actors.
iv. Horizontal co-operation through formal and informal contacts such as strategic alliances, networking, etc.
v. Commonalities such as technologies, complementary activities, infrastructure and labour pools.

As illustrated by Malmberg (2002) above, using the cluster approach to analyse regional or national development poses measurement challenges since functional linkages are subjective and difficult to quantify. According to Berggren and Laestadius (2003), the adoption of a quantitative cluster approach to study industrial development is a complex one, since the extent of relationship connections between proximate economic actors is hardly accessible in industrial statistics. Instead, they propose a qualitative evaluation, which considers horizontal and backward linkages in the form of "development pairs". They exemplify this with the Finnish-Swedish cluster of the telecom companies Nokia and Ericsson, which they argue developed parallel with a distinctive feature of competitive rivalry.

In addition to being an academic analytical instrument to understand spatial competition, the cluster concept has also become a popular tool among policy makers to enhance regional and national development (Sadler 2004;Gordon &McCann 2000, Raines 2001, Stymme 2004). From a policy perspective, an important factor of the concept is the degree of co-operation that is needed to manage interdependencies between public institutions and organisations and more importantly policy measures to provide auxiliary

inputs to companies to raise their competitiveness. As Waits (2000) contends, adopting a cluster-based approach allows policy makers to have insights into the factors that drive the economies of particular regions and the challenges that face them.

O'Mally and Van Egeraat (2000) examined how a cluster-based approach helps us understand regional and industrial development in Ireland. Despite an active policy strategy to induce and promote the growth of new industry using a cluster-based approach, they found that the performance of Irish traditional firms (Food processing, manufacturing, service etc) was not weaker than the performance of the designed clusters àla Porter.

Raines (2000) puts forward insights into how the cluster concept is embraced as a developmental approach in seven regions across the European Union (Art Vally in France, East Sweden[23], Limburg in the Netherlands, North Rhine Westphalia in Germany, Pais Vasco in Spain, Scotland and Tampere in Finland). In general, he found that a cluster-based approach is influencing regional and national development policy either by complementing existing development policies or through using it as a new framework to achieve competitiveness.

Brown (2000) examined the literature on clusters and cluster policy and argues that there is a lack of coherency in both how the concept is defined scholarly and how policy makers apply it in practice. While some European countries such as the Netherlands have adopted a "top-down" approach to implementing clusters, other countries including Scandinavia have opted to have a bottom up strategy where cluster development is a local/regional issue.

Brandt (2001) has also studied cluster-based approaches in Sweden and the other Scandinavian countries[24] and he contends that Porter's cluster approach is shaping industrial dynamics in Sweden. He identified two basic measures to develop cluster dynamics: top-down and bottom-up approaches. These two approaches are based on providing direct and indirect support to devising cluster-based strategies. The direct approach is marked by a strategy of "picking winners" and "implicitly" targeting available

[23] In Swedish: Östergötland.

[24] Isaksen (1997) identified 143 clusters in Norway and Nielsen (2001) identified 149 clusters in Denmark.

competitive sectors. The indirect approach strategy involves devising programmes, such as "partnership" programmes, and endogenous development initiatives to induce cluster dynamics.

At the University of Uppsala in Sweden, researchers in economic geography have initiated a programme entitled *Centre for research on innovation and industrial dynamics* (CIND) with the aim of analysing spatial competitiveness. This centre has among others mapped competitive clusters in Sweden from an economic geography perspective. According to Lundequist *et al* (2002), Sweden is home to 38 clusters representing different economic sectors of the economy. They provide 1.4 million jobs and constitute 37 per cent of the labour force. In addition, there are nearly 100 local industry centres with the potential to grow into competitive clusters. The geographical distribution of the industry clusters reveals a concentration in the relatively urbanised areas of Sweden. Stockholm accounts for nearly a quarter with its 14 clusters, Gothenburg 7 and Malmö 2. Out of the nine industry clusters identified in the northern part of Sweden, two clusters - one in the forestry sector and one in the manufacturing sector - were in the Söderhamn region, the area of focus of this dissertation.

In the paper *Putting Porter into practice? Practices of regional cluster building: Evidence from Sweden*, Per Lundequist and Dominic Power (2002) discuss how the concept of clusters is shaping approaches to regional development. They have identified the following four spheres, in which the cluster approach is put into practice across Sweden.

The first category identified is an approach in which industry decides the pace of the cluster development that aims at strengthening the competitiveness of existing firms. Four such clusters were found in the areas of liquid crystal display production, the polymer and plastic industry, the aluminium industry, and the wood cutting industry.

The second category identified is cluster development mechanisms put in place through policy measures. These clusters were found in the areas of TIME (Telecom, IT, Media and Entertainment), medicine, design and biotechnology.

The third category identified is futuristic projects, wishful thinking clusters that are induced through policy measures. These are mainly "from nothing to something" clusters

and include the telecom and rock music industries.

The fourth category identified is "part-time clusters". These include a cluster of automobile testing facilities in the arctic part of Sweden and a motion picture cluster in western Sweden.

Despite the popularity the cluster concept has gained in both policy and academic circles, it is laden with ambiguities in terms of scope, contents and definitions (Malmberg 2002). For instance, in an article entitled "*Deconstructing Clusters: Chaotic Concept or Policy Panacea?*" Martin and Sunley (2003) discuss how "Porterian" clusters are shaping economic development policies. The authors assert that the concept is "vague" as to both definition and scope and that it contributes to "conceptual and empirical confusion" (2003, p.10). According to Martin *et al* (2003), much of the cluster debate centres on policy discourse to find "fit" strategies to enhance development and that from a scholarly perspective it does not inject new blood into location as a matrix of competition. Their critique is based on how the concept is defined (they cite 10 different definitions) and that the political discourse surrounding it, as a tool to encourage innovation, clouds the scholarly value and the lack/difficulty of empirical foundations (Sadler 2004). In respect to the policy dimension, Martin *et al* (2003) suggest the role of policy should be to encourage productivity in all firms and caution against a policy that is committed to a "mind-set" of creating clusters.

Also, Feser (1998) points to the inconsistency of cluster definitions and the lack of clarity in understanding the dynamics that lead to the development of clusters. He argues that this results in an inconsistency in policy measures on cluster developmental approaches.

In a study commissioned by ITPS, the Swedish Institute for Growth Policy Studies, Malmberg (2002) follows this path of criticism to a certain extent. He asserts that it is unclear whether the term denotes the functional dynamics of geographically proximate organisations or the geographical scope. He argues that the ambiguity of the concept is strengthened by the policy discourse designed to enhance regional development. In policy terms, a cluster is "formed when an actor (often with a base in a public organisation, or

private supporting institution) identifies a cluster, existing or potential, gives it a name (often with the suffix of "valley") and starts to act to strengthen, develop and market it" (Malmberg 2002, p.16).

Apart from the companies, a cluster also encompasses public or non-governmental organisations that provide inputs such as competence development, education facilities, research and development, marketing and other business development mechanisms that make the cluster competitive (Porter 1998, 2000). However, although public policy towards encouraging cluster development is vital, according to Enright (2000) the role of policy is limited to improving rather than initiating and implementing. Apart from providing public goods and competence generation mechanisms, active policy participation aimed at "creating" a cluster could impede cluster development, as noted by Enright and Ffwocs-Williams (2000, p.4):

> "Guidelines on policy towards clusters must be premised on a view of government as supporting existing and emerging clusters rather than trying to create them from scratch. A policy aimed at developing entirely new groups of firms in selected sectors can entail high costs, high risks, serve as a screen for outmoded forms of industrial targeting."

McDonald & Vertova (2001) also maintain that policy arrangements are beneficial in identifying potential clusters, to facilitate co-operation and competition, provide linkages between firms and support institutions as well as develop infrastructure. However, active policy participation in creating clusters from scratch and imitations could restrain their development and lead to lock-in effects.

In Sweden, in a much-publicised report entitled "*kluster.se*", Tson Söderström *et al* (2000) caution against the proliferation of strategies that aim at creating clusters in all regions of Sweden. While the authors maintain that Sweden has the capability to generate dynamic clusters outside the Greater Stockholm area", they caution against "spreading resources too thinly over Sweden" *(*2000, p.23).

On the other hand, Rosenfeld (1995) takes a policy perspective on the development of clusters and contends that there is a need for active policy intervention to promote

cluster-based strategies to achieve economic development. He argues that public policy should not only focus on building the necessary infrastructure, but also on "building" competitiveness and innovation by, for example, investing in social capital and learning. Furthermore, he asserts that cluster definitions have been complicated by the political discourse about networking and other inter-firm dynamics.

2.4.4 Some classifications of clusters[25]

As indicated earlier in this section, Porter (1990) did not explicitly discuss the geographical scope of a cluster. This creates a size problem, especially since the concept has become embedded in the industrial development debate. The business economist Michael Enright (1996), however, is one of several researchers who have tried to describe the geographical dimension of clusters. He has suggested the following four varieties based on the works of Porter (1990):

Industrial clusters. In this case he uses Porter's definition of a concentration of companies in the same field and proximate institutions. This implies that basically the geographical scope of this cluster could be more or less anything. The reason why Enright uses the word "industrial" in this respect can be understood given that Porter's studies are based on nations rather than regions or small geographical areas.

Regional clusters. Concentration of firms in the same or related branch and regionally based proximate institutions. Paradoxically, regional clusters allow firms to have a measure of both co-operation and competition, as they are outward-oriented, such as the firms in the Gnosjö region. Isaksen (2001, p 104) argues that the term "regional clusters" encompasses a broad description of "industrial districts, innovative milieus, local industrial complexes and new industrial spaces"

Industrial districts. Firms that are geographically bound and engaged in complementary and common production processes, such as the firms in the Third Italy.

---

[25] There are several ways to classify clusters. Different researchers have provided different typologies of clusters and my ambition with this study is not to give a thorough typology. Instead this classification merely attempts to shed some light on the topic and is not meant to offer a solid typology.

Business networks. Firms that are not necessarily located in the same vicinity, but that have continuous communication and interaction with one another. Although the actors have relational bonds and conduct transactions with one another, this kind of cluster is functional rather than geographical, and it does not necessarily mean that they are in the same or related branch.

Park (2000) identified six kinds of clusters based on scope, technology and division of labour. These are "three basic types of Marshallian districts, hub-and-spoke, mature satellite, and pioneering high-tech industrial districts" (Park 2000:329). Dunning (2000) uses a classification also with six varieties, similar to that of Park:

One category is the hub-and-spoke cluster, which is induced by the presence of an engine enterprise. The dynamics of this cluster evolve around gaining external economies through supplier and customer networks.

Another category is industrial districts, such as the districts of the Third Italy. This cluster is characterised by factors of production, such as access to labour and natural resources. The dynamics of the industrial districts are achieved through external economies in terms of reduction of transportation, transaction and labour costs. Three of the categories are clusters induced by policy measures to create learning and innovation opportunities. These are:

i. Institutional clusters that are formed as a result of their proximity to institutions of higher education and evolve around universities.
ii. Public bodies that provide public infrastructure. Examples are Farnborough and Aldershot in the United Kingdom, which are centres for aerospace and atmospheric research.
iii. Generic clusters that mostly are started as a science or technology park. Their success depends on sophistication, upgrading of infrastructure and an innovative milieu that encourages growth through knowledge fluidity and learning externalities.
iv. The last category is export zones, which developing countries have established in a bid to improve competitive strengths and to obtain foreign currency.

Multinational companies are invited to make a presence in these clusters.

Rosenfeld (1997) has taken a relationship perspective and identified three kinds of clusters based on relationship densities.

Working clusters. This is a mature agglomeration of firms that recognise their interdependencies. The firms and the supporting institutions of the cluster are involved in interactive processes of learning and innovation. The social structure allows for exchange of information and ideas, business start-ups and networking, and it seeks to strengthen the systematic and economic value and image of the home region. This type of cluster, which is sometimes called "overachieving" clusters, is found in the Silicon Valley, the ceramic tiles industry in Italy, and the horticulture industry in Holland.

Latent clusters. This kind of cluster is referred to as "underachieving" clusters. These clusters have the potential to develop and become a working cluster, but so far there is no social structure that allows for a free flow of information. Despite the presence of firms and supporting institutions, interaction between actors is weak. Although the actors in the clusters are sharing much, they are not aware of the interdependencies that exist between them. They also lack supporting organisations that actively seek to create an arena for networking and interaction. One such cluster is the biotech cluster in the research triangle in North Carolina.

Potential clusters. This kind of cluster is also known as "wannabees". They have many characteristics of a cluster, but lack competitive advantages. These clusters are often found in the technology sector and they are often initiated, designed and selected by policy makers. Another type of potential cluster is an agglomeration of a group of firms in the same or related industry that lack political power, skilled workers or exposure. Examples of such clusters are the rural cluster of wood products in eastern Oklahoma and microbreweries in Oregon.

2.4.5 A dominant concept

Undoubtedly, the cluster concept has become the dominant concept to understand industrial dynamics and regional industrial policy. However, together with the previously

discussed concepts of Growth poles (Pérroux 1950) and industrial districts (Marshall 1920), it shares family resemblances and constitute variations on the same theme as some other concepts (e.g. the Development Bloc[26]; Competence Bloc (Eliasson 1996); Technological system (Carlsson 1997) that have been developed by Scandinavian researchers[27] in business economics and economics to explain and understand industrial development. Although these concepts do not have territorial dimension, most of the literature of Scandinavian scholars is based on the importance of relationships and knowledge that is exchanged between companies, research and developmental units and the public sector to enhance development.

The cluster concept is related a geographic concentration of interrelated firms and the dynamics are the interdependencies that arise between the firms and their immediate environment and the benefits that could collectively be drawn to enhance competitiveness. Using William Connolly's phrase, although the concept of cluster might be an "essentially contested" as to how the cluster and its geographical scope are defined and classified, a nuclear aspect of a cluster is the relational dynamics that geographic proximity facilitates. As both Pérroux and Marshall have previously captured them, these dynamics are not new but they stress the importance of knowledge in a world of increased globalisation. Cluster dynamics depend on the ability of the actors to manage interdependencies, to exchange and build knowledge that enhances the competitiveness of existing firms, and to provide the right kind of atmosphere for the creation of new firms (Porter 1998).

Although it was Porter (1990) who devised the term cluster to describe a geographic concentration of interrelated firms, cluster dynamics, including learning, knowledge spillovers and the ability of concentrated firms to provide external economies, depart from the works of Marshall (1920). In addition, Myrdal (1957) and Pérroux (1950)

---

[26] The DB introduced by Dahmén implies a departure from market mechanisms and micro economic links that push economic development forward resulting in the creation of new firms, new commodities and new production methods. To a great extent, the foundation of this concept is very similar to that of the cluster concept (Laestadius 2005)

[27] In addition, these concepts are closely linked to innovation system (Lundvall 2000), which I have previously discussed, and the Network approach (Håkansson 1987) to be discussed in this section.

provided the theoretical underpinnings. Indeed, Porter (2002) confirms Marshall's contribution:

> "Clusters have long been part of the economic landscape, with geographic concentrations of trades and companies in particular industries dating back for centuries. The intellectual antecedents of clusters date back at least to Marshall (1920/1920), who included a fascinating chapter on the externalities of specialized industrial locations in his Principles of Economics." (Porter 2002, p.4)

Marshall's influence is quite visible when Porter (1990, 1998, 2000) describes the advantages of clusters in terms of enhancing entrepreneurship and contributing to productivity and innovation gains. Accordingly, as compared to firms scattered in different places, clustered firms have a relatively higher productivity rate because they have easier access to labour and lower production costs. Innovation gains are achieved through interaction between geographically proximate actors, which also contributes to new business formations because of the needs perceived in the cluster as stated by Porter (2000).

> "Locating within a cluster can provide companies with superior or lower cost access to specialized inputs such as components, machinery, business services, and personnel, as compared to other alternatives – vertical integration, formal alliances without side entities, or "importing" inputs from a distant location." (Porter 2000, p.259).

As suggested earlier in this chapter, the development of competitive hot spots driven by knowledge and relationships in many places around the globe has given an added significance to the importance of the local environment as a nexus for development. It is in this context that the "cluster" approach is embraced by policy. The emergence of local systems in a global economy reinforced the vitality of location- hitherto countering a common fear of a diminishing role for the local environment, which according to Porter (1998) poses a paradox in the sense that their emergence reflects the vitality of the local milieu as a unit of competition. In this context, location is an important determinant of competition because much of the competences and inputs that firms need remains a local phenomenon. As Audretsch (2000b) asserts, the operations of globally competitive firms

do not take place in isolation, but often involve a process of co-operation between different players that function from a certain location. Innovation is a locally induced process that is the outcome of locally formed, transmitted and accessed knowledge as argued by Maskell *et al* (1999).

Business relationships

From a business economics perspective, the extent of relationship linkages is also an important dimension in understanding industrial dynamics. An analytical framework to understand relationships presented by scholars of business and economics at the University of Uppsala in Sweden acknowledges the absence of an ideal world, in which information is readily available to each actor (cf., Håkansson and Snehota 1989). According to this approach[28], which was developed in the 1960's, the immediate environment of the individual firm reveals vast formal and informal networks of relationships that interact and provide ancillary inputs, including resources that are needed by the individual firm to carry out its activities. Although this approach does not focus on the importance of location, it departs from the importance of relationships that are co-ordinated and thus a process in which values, including knowledge, experience and skills, are created and exchanged.

In a study on interdependency between firms and the importance of location using this "network" approach, Markgren (2000) asserts that geographic proximity plays a secondary role in terms of relationships between buyers and sellers. He found that the majority of the manufacturing firms studied had their focal relationships in other locations than that of their own locale. Although the main motive for locating a firm in a particular area was that the owner of the firm was a resident of or domiciled in the area, the study suggests that relationships rather than geography played a paramount role for the activities of the firm.

Although relationships are a natural part of doing business and do not necessarily have a geographical dimension, cluster-based relationships are geographical. From a local

[28] The Uppsala network approach was developed to study industrial marketing and is based on the trinity of actors, activities and resources.

development perspective, the benefits actors can draw from them are based on the ability of the local environment to promote business development in general and entrepreneurship in particular. In a specific territory, relational exchanges are accumulated over time and actors are able to engage in horizontal and vertical networking that is built on trust and co-operation. This does not only allow for developing existing businesses, but also for developing new business formations (Storper 1995, 1997, Maskell *et al,* 1998, Porter 1990).

Storper (1997) suggests that business relationships between individuals are both contextual and functional, and that they are construed and constrained by, for example, the business life cycle, tasks and the context of the network, and the institutions as well as the culture in the area. He asserts that the territory is the nexus of "untraded" interdependencies that potentially have a favourable impact on the capacity to innovate in clusters. According to Asheim (2003, p113), these are "a structured set of technological externalities, which can be a collective asset of firms/industries within countries/regions and which taken together can represent important country- or regional-specific 'context conditions'".

Social relationships

An important element of cluster dynamics is the relational exchanges between various actors that promote the creation of knowledge and facilitate its spillover to the other actors in order for innovations to take place. These are often institutionalised and enrich the territory with new firms, new production and process methods (Cooke 2002). Although formal interactions are vital in accessing knowledge, social relations play a paramount role in the sense that they facilitate the exchange of knowledge that is necessary for the development of firms (Maskell *et al,* 1999). The knowledge creation aspect of clustering was also an important dimension in the works of Alfred Marshall as illustrated by the following passage:

> "(...) If one man starts a new idea, it is taken up by others and combined with suggestions of their own; and thus it becomes the source of further new ideas." (Marshall 1920, p.271)

However, the formation of knowledge does not occur on its own, but is achieved through embedded social relationships that promote ties between economic actors. These can be strong or weak ties as stipulated by Mark Granovetter (1985). Cluster-based relationships are mainly embedded in a community that has geographical proximity, which creates a climate of trust, manifests itself in socio-economic networks between different actors, and encourages entrepreneurial activities. The relational exchanges between different actors have social, business and collegial dimensions that facilitate knowledge exchanges that are unique for the area (Johanisson 2002). Embedded relationships that have been accumulated for a long time facilitate the creation of dynamic learning, a fact that has contributed to the competitiveness of the Italian industrial districts (Asheim 1996).

According to Cooke (2002), proponents of the cluster concept do not consider the importance of social relationships that primarily underlie the formation of knowledge. Most of the scholars refer to spillover and contextual knowledge without taking into consideration interactive relationship building that precedes knowledge formation.

In this connection, we can note an emerging literature in recent years that proceeds from the concept of "social capital" as the vital mechanism of local development processes (Putman 1993, Brulin 2002, Johanisson 2000). Although the role of social relationships that are specific to a territory in extending inputs to firms to become competitive is nothing new (cf., Granovetter 1985), it was Putman (1993) who introduced the concept in describing why some regions in Italy succeeded in combining co-operation and competition. He argues that the success of the Italian industrial districts depends on a territorially unique social cohesion based on non-economic factors. One of these factors is the extent of social capital, which he defines as "features of social organization, such as networks, norms, and trust that facilitate coordination and cooperation for mutual benefit" (Putman 1993, p.35). The underlying theme of this literature is the notion that the presence of a social cohesion in a location fosters the creation of relationships that extend across the border of the firm and nurtures a climate of trust, which enhances territorial development. Social capital manifests itself in the presence of socio-economic networks of individuals, supporting governmental and non-governmental organisations

whose contributions and participation ensure enterprise development.

These dynamics have been achieved in many cases in the industrial districts of the Third Italy. In defining these clusters, several researchers have focussed on relationship dynamics. Although the geographical concentration of firms is an important element of the dynamics, they see the relationships as the catalyst in the clusters, as they are contextually gained and bind the actors. Having studied many of the Italian districts, the economist Becattini (1992) defines the industrial districts from the dynamics based on relationships and social cohesion:

> "Socio-territorial entity is characterised by the active presence of both a community of people and a population of firms in one naturally and historically bounded area. In the districts, unlike in other environments, such as manufacturing towns, community and firm tend to merge." (Becattini 1992, p.39)

In most cases, organic, embedded relationships that are unique to a territory form the foundations of cluster dynamics. In order to describe the factor that made the Italian districts so famous, Mascanzoni (2002) for instance introduces the concept of "genius loci". This phenomenon could be translated as "the spirit of place". This expression was used by the Romans to describe the forces that protected the inhabitants of small villages from external threats. He asserts that all the successful clusters in Italy are permeated by the presence of this spirit. In most cases, genius loci has been embedded in the hearts of society over several centuries. The importance of this spirit is used as a marketing tool in Italy and it manifests itself in some of the names of well-known Italian produce, such as the Parma cheese. Furthermore, the expression is used in describing the ability of actors in a local setting to focus their trade on niche production.

Researchers in Sweden use the term "the Gnosjö spirit" in describing the success of an industrial district in the southeast of Sweden. This spirit could be summed up as the presence of embedded relationships that stretch to all walks of society, including personal networks that span beyond the borders of firms (Wigren 2003, Brulin 2000, Johanisson 2002).

Amin *et al* (1995) use the term "institutional thickness" to describe an institutional setting that promotes development of relational assets. The term includes the ability of

local firms, organisations and community to develop mechanisms that are necessary for firms to grow. Institutional thickness is the extent of territorially embedded social and cultural factors that:

> "(…) live at the heart of economic success (…) Institutional thickness depends on the high level of interactions among institutions in a local area, which in turn leads to development. It is simultaneous collectivization and corporatisation of economic life, fostered and facilitated by particular institutional and cultural traditions which appear to have been central to the generation of success with "neo-Marshallian nodes in global networks" Amin and Thrift (1995, p.14).

Dei Ottati (1994) also departs from the institutional setting and their importance in acquiring resources such as labour that are vital for the firm to develop. Innovation and competitiveness is a "collective process" and becomes a natural element in industrial districts. The local territory reveals actors that are engaged in collaborative arrangements so as to enhance spatial development. These are often involved in formal or informal networks aimed at innovating products or methods. Accordingly, in industrial districts these collaborative arrangements spill over to the geographically bound society (Asheim 2000).

Porter (1998) adopts the metaphor of "social glue" to describe the importance of social relations in fostering important linkages that create competitive knowledge.

> *" (…)* the proximity of companies and institutions in one location – and the repeated exchanges among them – fosters better coordination and trust. Thus clusters mitigate the problems inherent in arm's-length relationships without imposing the inflexibilities of vertical integration or the management challenges of creating and maintaining formal linkages such as networks, alliances, and partnerships (Porter 1998, p. 80).

2.5 Summary and concluding remarks

The aim of this chapter was to capture and discuss the mechanisms that influence location of economic activities and industrial policy. I began by discussing theories

relating to the development of core as well as peripheral regions since the contextual setting of this study is the peripheral region of Hälsingland. The issue of periphery/core polarisation of economic development and the mechanisms that contribute to their evolution is one of dynamics. In the past century, several scholars have devised concepts to explain the development of core/periphery and the relationship between the territories that firms perform from and the competitive strengths of the firms. However, much of the earlier literature on economic development treated the territory as a sterile unit that is exogenous to the activities of the firms. It was Pérroux (1950) who abstractly conceptualised space and devised the concept of the growth pole. In doing so, Pérroux gave the reasons why the place could act as a centripetal force that pulls economic activity together. Pérroux pioneered the field of regional development. The growth poles approach was one of the earliest strategies adopted by government to reduce regional disparities. The ideas expressed in the growth poles including external forces that shape industrial dynamics were even discussed by Gunnar Myrdal, the Swedish Nobel laureate, in describing the mechanisms that relate the evolution of inferior regions.

In the second part, I discussed the literature that relates to location as the nexus of development and the evolution of dynamic regions including Italian industrial districts. Already at the beginning of the last century, theories on location of economic activities were presented by Alfred Marshall. In his works, he emphasized the importance of geographic proximity between firms as it created advantages in terms of formation of a specialised labour market, external economies of scale and learning opportunities. In the 1980's, the dynamics of Marshallian type districts became the metaphor to describe the north of Italy and elsewhere around the globe. The scholarly descriptions of these districts focused on the behaviour of actors, including the institutional settings. There have been some typologies of industrial districts, see, for example, Markusen (1996).

The third section of this chapter discussed a shift in the mechanisms that influence regional development policy and the conditions of location of economic activities. Since the amalgamation of traditional theories of location and new growth theory, there is agreement that regional economic development is no longer exclusively decided by the availability of land, labour and capital. Knowledge generating and relationship building

mechanisms that are locally gained play a paramount role in contributing to the competitiveness of nations and regions. From a peripheral region's dimension, this means a shift of focus from traditional employers as a source of employment to creating the right kind of mechanisms to promote knowledge creation and the development of skills, to generate competences and create the right kind of environment that could nurture relationship building. The new regional development approach focuses on the notion that regional competitiveness is enhanced by an innovation-based systems approach. This approach to regional development in Sweden appears to be based on an assumption that economic development is best achieved by accessing knowledge. This manifests itself in the belief that the development of new technologies and their diffusion across firms are assumed to be critical components of a region's developmental process. However, these are often embedded in institutional factors and are integrated and co-ordinated with industrial policy by way of creating and or improving the educational infrastructure (Lundvall 1999; Porter 2000; Audretsch 1998).

The third section of this chapter also discussed the concept of clusters which has become an important development concept, albeit discursively. It was devised by Porter (1990), but is based on Marshall's theories. Porter never discussed the geographical scope of clusters and this clearly has created a size problem. However, several other researchers have provided definitions. These can range from Marshallian industrial districts whose geographical scope can be more or less anything to business networks, where the firms conducting transactions with one another do not necessarily have to be located in the same vicinity. Dunning (2000) has defined clusters based on type, features and dynamics, such as the hub-and-spoke cluster that is induced by the presence of an engine enterprise, industrial districts that are characterised by factors of production, and clusters induced by policy measures, such as institutional clusters.

What kind of conclusions can be drawn from this literature review? First, given increased globalisation, the development of *cluster dynamics* is a key factor for the location of economic activities and for the shaping of industrial policy. This is not to say that it is a new thing. However, the latest development on the world economic scene has given new

relevance cluster dynamics as a vital aspect of development. In a world economy that is interconnected and that has seen political harmonisation (e.g. the EU) and the opening of cheaper production sites for manufacturing companies in the hitherto industrially less developed world (e.g. China), what takes place in the local environment is becoming a key factor of development. This is cluster dynamics. From the perspective of peripheral regions, relationship building at the local level to face the challenges of increased globalisation is a mechanism that promotes the location of economic activities and contributes to industrial dynamics. Cluster dynamics in peripheral regions concerns the issues of putting into place mechanisms that promote horizontal and vertical relationships and encompass an array of business and public actors. In the literature, the extent of cluster dynamics depend on the ability of the actors involved to manage interdependencies, to exchange and build knowledge that enhances the competitiveness of existing firms, and to provide the right kind of atmosphere for the creation of new firms.

We can thus conclude that there are generally speaking two ways of gaining such cluster dynamics. First and foremost, a situation that evolves organically in which industry sets the pace of the development of cluster dynamics. This is the situation in the Italian industrial districts – and to an even greater extent in the Gnosjö region of Sweden and in a way could be sourced to the presence of institutional factors that are specific to the region. Secondly, there is the issue of policy leading the way. In this case, the dynamics are mainly centred on the proliferation of knowledge. The underlying theme of this approach is that regional economic development is enhanced by the promotion of knowledge that is achieved in a system. In this case, human capital formation is facilitated by the promotion of research and development mechanisms. This policy aspect has been enhanced by the development of Silicon Valley- and the subsequent onset of ICT proliferation.

Against this background, can the necessary development of cluster dynamics in peripheral regions be achieved? Can cluster dynamics be induced by policy measures? Can peripheral regions create the necessary infrastructure to accommodate new conditions of development? How are peripheral regions coping with the global pressures? What kind of

local responses are put in place to overcome the perils of being in the periphery? How does the development of cluster dynamics in the periphery present itself? In this study, these questions are explored through three case studies of cluster development processes in two peripheral municipalities in Sweden. Thus the remainder of the dissertation provides empirical insights into strategies for promoting clusters. As indicated earlier, the case studies are named the business case, the policy and hybrid cases, respectively.

To do research on cluster dynamics and industrial policy in peripheral municipalities presents both challenges and opportunities. In the next chapter, I will describe the methods used in this study and discuss the research approach of the study.

> "One thing a philosopher may do, and one of those that may rank among his highest achievements, is to see a *riddle, a problem,* or a *paradox,* not previously seen by anyone else. This is an even greater achievement than resolving the riddle. The philosopher who first sees and understands a new problem disturbs our laziness and complacency." (Popper 1963, p.184).

3. BACKGROUND AND RESEARCH APPROACH

What are the mechanisms that contributed to writing this dissertation? What kind of research approach should I embrace to understand the developmental processes in the periphery? In this chapter, I will describe the methodological approach of the study. The approach used cannot be described without discussing the background of the project. Therefore I begin with a background description of the project. This is followed by a discussion on the methodological choices I have made and a description of how I gathered the information to write this dissertation.

3.1 The project's background

Research is a process that involves decisions on what subject to write about, how to gather the desired material and how to interpret and convey its findings. My journey to write this dissertation commenced in the autumn of 2000, when I and seven other post graduate students with diverse academic backgrounds in the social sciences made Söderhamn into our home. We were part of the program *Research on development processes* (the FOUP[29] program) at the National Institute for Working Life. Our research station in

[29] Forskning om utvecklingsprocesser

Söderhamn, the FoU[30]-centrum, was co-financed by local actors including the municipality.

A factor that induced our presence and the subsequent evolution of our research station was the closure of the air force base, F15 in Söderhamn. As is to be discussed in Chapter 6, Söderhamn has in the last few decades been confronted with the closure of companies in the manufacturing sector, which had provided stable jobs for decades. In the mid-1990s, the F15, a major public employer in the municipality, was also closed as part of a defence strategy review. In the wake of the closures, the local authorities decided to look forward to the next millennium with a focus on creating the right kind of environment to promote the emergence of new enterprises.

The closure of the air force base and the establishment of our research station coincided with a major change in Swedish regional development policy. From having pursued a policy of encouraging the establishment of large manufacturing companies in peripheral regions, it now turned to concentrating on the development of knowledge production. Söderhamn was among small Swedish cities/towns/municipalities to pursue this path to meet the challenges of the global economy.

In Chapter 6, where the contextual setting and background to the policy and hybrid cases are presented, I discuss how the municipal leaders of Söderhamn embarked on a process to change the economic landscape of the municipality. According to Vision 2005[31], in the future Söderhamn would focus on creating learning mechanisms to enhance the development of knowledge-based business activities. Söderhamn did not have the tradition of physically harbouring institutions of research and development. So for the first time in its history, this peripheral municipality was to break with the past and invest in mechanisms that promote the development of new industry and promote the proliferation of higher education to revitalise its economy. In this connection, several regional as well as national bodies were contacted to provide the right kind of framework to realise these goals.

[30] Forskning och utvecklingscentrum (English: Research and Development Centre)

[31] For the contents, see Chapter 6.

3.1.1 A developmental engine

Our research station was one of the development programmes[32] initiated in Söderhamn as part of a "package" of policy measures to revitalise the local economy. In the past, this municipality has relied on large employers in the forestry sector, and more recently on various government initiatives to offset the effects of various industrial transformations. Our research station was now earmarked to become an engine in the new dynamism. Our role was one of understanding and participating in the development processes that were being launched and contributing to knowledge building. Thus, in the autumn of 2000, our research station was inaugurated.

Our presence in Söderhamn, i.e., the National Institute of Working Life and the Council for Working Life, was in line with the Triple Helix concept that departs from the notion that joint production of knowledge between actors is a factor of development. In its formal form, this concept incorporates generation, creation and utilisation of knowledge and involves participation of public/private organisations, Academia and society in general. In Sweden, much of the contents of the Triple Helix concept are stipulated in a bill (1996/95:5) passed in 1997. Previously, the primary goal of universities and colleges had been to educate and conduct research. This bill added a third task, i.e., to co-operate with the immediate environment and contribute to the local, regional and national development processes (Brulin 1998, Svensson 2002).

3.2 Methodological choices

There is agreement that the aim of the social sciences is to study complex social and economic phenomena/situations with the aim of increasing our understanding and improving our scientific knowledge (Toulmin 1972, Alvesson & Skölberg 1996). In doing this, students of the social sciences are exposed to the various methodological choices that exist to achieve the goal. Academic research in general and in the social sciences in

[32] Besides the National Institute of Working Life, the Council of Working Life (which has since left Söderhamn), several other government agencies established a presence in Söderhamn. For example, the Swedish Office of Patent and Registration (Swedish; Patent och registreringsverket (PRV) relocated some of its operations from Stockholm to Söderhamn.

particular is both a process of seeking knowledge about phenomena and a process of reporting its findings. The research approach embraced is often determined by the nature of the phenomenon under study and the availability of data about the phenomenon. So how did I collect and interpret the data on the mechanisms that influence the location of economic activities and industrial policy in this peripheral region? In this section (3.2), I am going to focus on the methodological approach used in the dissertation.

3.2.2 Case studies

The empirical part of this dissertation consists of three case studies on local developmental processes in the two municipalities of Söderhamn and Ljusdal. These are the *business case*, which describes and analyses the development of the call centre cluster of Ljusdal; the *policy case*, regards giving insights into the cluster formation process of the Soft centre in Söderhamn and the *hybrid case* describes the cluster formation process of Flygstaden (former F15 base) in Söderhamn. Yin (1993) defines a case study approach as an empirical instrument, which explores a contemporary phenomenon within the context of a real-life situation when the boundaries between the phenomenon under study and the context are not clearly defined, and in which multiple sources of data are applied.

However, what constitutes a case study is subject to discussion. In parts the reason for this is that, the term "case study" method is frequently used synonymously with fieldwork and other kinds of data gathering methods. Hammersley and Gomm (2000) argue that all kinds of research may be labelled case studies because there are always units, person(s), a company or a phenomenon under investigation. However, the case study method as a tool of investigation contrasts the survey and experimental approaches (Yin 1994, Hammersley *et al* 2000). According to Merriam (1988), the choice of case study as a strategy becomes inevitable if the research aims to deeply understand, describe a specific notion, event, person, subject, institutions or social groups. Yin (1993) notes that a case study method becomes the ideal approach to embrace when there is a need to get a holistic picture of a phenomenon and when there is a lack of previous research.

> "Case studies are the preferred strategy when "how" and "why" questions are being posed, when the research has little control over events and when the focus is on a contemporary phenomenon within some real-life context*" (*Yin 1993 p, 13)

3.2.3 Case studies and knowledge progression

Can case-study findings be generalised? The issues of generalisation of research findings in a case study approach or other kinds of data generation methods is a philosophical one and one that is related to the question of how we generate and interpret knowledge and how one views the progression of scientific knowledge. As scientists or non-scientists human beings are driven by a thirst for discovering and understanding the unknown and improving their knowledge (Toulmin 1972). My belief is that research undertakings irrespective of methodology often involve quenching a desire to detect, discover and generate knowledge on how complex mechanisms work, co-exist and co-function. Since the days of the Greek civilization this desire has captivated the minds of scientists. However, the method of generation and interpretation has been marked by differences and controversy, which dates back to the Greeks (see for example Toulmin 1972 & 1996, Wartofsky 1968).

Historically, the primary goal of scientific research has been to seek ways of contributing to the human desire of finding "universal" truths and generating uniform theoretical statements that are independent of context, place and time (Wartofsky 1968, Toulmin 1996). In a bid to master the complex world and hence progress scientific knowledge the motto was the more evidence produced about human behaviour the better. Embodied in this was a vision of conquering the complex world through an amalgamation of method uniformities and the generation of theoretical statements that could be generalised (Wartofsky 1968; Popper 1963). Toulmin (1996) calls this mission to conquer complexity, "high" science[33] and gives five major pillars that it rests on:

---

[33] The notion of "high science" which is sometimes dubbed as "positivism" could be sourced to great thinkers of the 16th, 17th and 18th century Europe including Descartes (1596-1650) and Auguste Comte (1797-1857). In contrast to the then prevailing view of knowledge which incorporated religious beliefs, these philosophers departed from science as being precise, applicable and encouraged by among

i. The objective of scientific research is to enhance theoretical knowledge of society, human mind and physical nature.
ii. Scientific inquiry results in universal statements of theory that purport to devise abstract concepts that are generally embedded in axiomatic systems.
iii. Empirical observations are the result of carefully designed experiments, unanalysed and detached experiences of the observers own intervention.
iv. Universal principles of theories are a temporal while observed phenomena could be stated in historical terms.
v. Theoretical knowledge deduced could be practically applied to several disciplines.

These goals of "high science" remain an ideal rather than easily accomplishable because of the complex nature of the world where various factors interplay, co-function and co-exist. In this dissertation, I depart from understanding and explaining rather than conquering, which according to Toulmin (1972) is the goal of the social sciences. However, whether one opts to understand or to "conquer" an important dimension of scientific knowledge building is its ability to progress and it is in this respect that the use of case study as an approach plays a pivotal role. The stimulus for the case study research approach is often curiosity and the objectives of its research findings are to offer understanding and give insights into how things work in reality (Yin 1993, Stake 2000). To this end, the case study research plays an important role in ensuring the progression of scientific knowledge by its ability to provide empirical insights in regards to unexplored, neglected or overlooked peripheries of research. Furthermore, the case study approach can be used to challenge the conventional wisdom governing a process, a theoretical statement or a widely held view and as such enriches scientific knowledge progression by discovering their limitations (Donmoyer 2000, Stake 2000, Flyvberg 2004).

---

others Galileo's axiom, they believed human actions could be illustrated by using mathematically based formulae.

A twentieth century scientist who has contributed a lot to our understanding of the progression of scientific knowledge and whose line of reasoning could be applied when discussing the strengths of case studies is Karl Popper. Popper was an evolutionary scientist who rejected the notion of scientific knowledge being a static phenomenon and argued that it is a progressive process.

As an empirical scientist Popper (1963) questioned and criticized the prevailing God's eye view of scientific knowledge generation. He asserted that scientific knowledge is not a rigid issue but a dynamic process that is subject to change and conditioned, and constrained by factors such as the context and time. Accordingly, our view of the world is too often shaped and governed by bold theoretical statements, conjectures, which then become accepted conventional wisdoms that govern how we view the world. Accordingly, scientific theories are based on hypotheses or statements that are difficult to verify but easier to falsify. He asserted that theoretical statements are often ridden with "truth" fallibility and are error prone. Consequently, to progress, scientific knowledge needs to pass the litmus test of refutability and testability. In devising these criteria for the progression of knowledge, Popper was critical of a scientific idealism that encompassed methodological monism, with the task of confirming and producing repetitive theoretical statements that could not be empirically put to the test. According to Popper, scientific knowledge building is instead enriched by research that questions the solidity of previous research and one that brings forth paradoxes through applications. In the Popperian spirit, the primary objective of scientific research is to uncover the limitations of what is taken for granted. Central to this is the notion that scientific knowledge is best generated and understood in its context and it is in this respect that the case study approach becomes the ideal one to embrace as it has the strength of providing unique empirical insights and offer particularised knowledge, which challenges conventional wisdoms and stimulates further research (Flyvberg 2004, Stake 2000, Lincoln & Guba 2000, Schofield 2000).

In contrast to the generalisations issue, proponents of the case study therefore argue that its strength lies in its unique ability to develop "concrete" and "practical" context dependent knowledge that has been empirically collected (Stake 2000, Flyvberg 2004,

Lincoln et al 2000). In this respect, the adoption of a case study fulfils an important function of detecting the fallacies of generalised theoretical statements or accepted wisdom because of the empirical richness it poses. As a methodological approach, case studies allow the researcher to disclose empirically facts that contradict conventional wisdoms and as such have the power to improve scientific knowledge. Flyvberg (2004), suggests case studies have the ability to provide empirical "real life situations" and provide "multiple wealth of details" and in so doing fulfils the broader aim of scientific knowledge progression in the social sciences which is to devise illustrative context-limited knowledge. Flyvberg (2004) claims that since human beings, actors etc. perform in a social world that is often complex and the social science as a field "has not succeeded in producing general, context-independent theory and has thus in the final instance nothing else to offer than concrete, context-dependent knowledge" Flyvberg (2000, p.422).

Yvonna *et al* (2000) argue that to generalise a research finding we have to depart from a deterministic point of view and end up in the formulation of absolute "truths" that are free from context and time. In others words, generalisations are built upon seeking valid general laws, i.e., nomotic. Stake (2000) also asserts that case study researcher's primary goal is not to generalize the findings but rather to particularize them and hence provide explanatory laws. Lincoln *et al* (2000) assert that the issue of generalisations of case study findings is contextual since they aim at giving proper weights to issues that affect one segment of a larger and complex world that has unique characteristics. Case studies have an empirical point of departure and as such offer an explanatory framework that can help us to understand and challenge conventional wisdom about how we perceive knowledge progression. Since statements of theories remain valid until they are refuted, the case study is the ideal approach to use if we want to find the "black" swan. Flyvberg (2004) suggests that case studies not only helps us to find the black swan, but too often also reveals that "what appears to be "white" often turns out on closer examination to be "black"" Flyvberg (2004, p 424)

Flyvberg (2004) presents an empirical illustration of how he found a "black" swan when he did research on urban regeneration in the Danish city of Aalborg to investigate

how economic and political models were put into practice. While the textbooks in the academic world painted a picture of the presence of free markets and power division mechanisms in a democratic and capitalist country such as Denmark, he found that political leaders in the city were engaged in "blocking competition and the free market and creating special privileges".

Based on the discussion above on generalisations vis-à-vis particularisation of research findings when using a case study, it is safe to say that case studies provide generalisations of relevance and transferability to other events, phenomena, issues etc. that have the same contextual dimension (Stake 2000). When it comes to challenging conventional wisdom governing the progression of scientific knowledge, the case study as an approach has the strength of revealing the shortcomings of theories, widely held notions and accepted norms. This has been addressed by Popper (1963) who stressed that scientists construct theories- conjectures- that aim at finding the truth but in this pursuit could also make errors or overlook some important aspects.

The specific context in this dissertation is identifying and giving insights into the mechanisms that influence location of economic activities and industrial policy in peripheral regions. The primary objective of this dissertation was not to gather data that potentially could provide generalised truth, but rather to offer a contemporary understanding on what is happening in terms of economic development and industrial dynamics in peripheral Sweden. Any deductions made from or theoretical inductions made on the three cases that constitute the empirical foundation of this study can be applicable to other areas with similar problems, but not necessarily to what is happening throughout Sweden.

3.2.4 Contents and structure of case studies

The structure and contents of a case study can be illustrative or explanatory. The former regards describing and highlighting a process or an event, while the latter, also referred to as "pilot" study, precedes a comprehensive study. An illustrative case could have both a deductive or inductive objective and is used to shed light, and to give insights into how relationships manifest themselves in a local context. The explanatory case study, however,

is frequently based on theoretical deductions (Merriam 1988, Yin, 1993). The number of case studies selected by the researcher is determined by the purpose of the inquiry (Stake 1995). By using three case studies to shed light on contemporary processes of cluster formation in the periphery, it made it possible for me to see local developmental process from different perspectives.

From my perspective the use of a case study approach enabled me to understand and discuss a process from a wider perspective because of the combination of different data gathering instruments. In this context, at the practical level and in terms of empirical instruments of data generation in case studies, a practical distinction is made between qualitative and quantitative methods. A qualitative case study research approach is appropriate when a researcher wants to gain a deeper understanding of a contemporary phenomenon or describe a process. It aims at answering questions such as "how" a phenomenon evolves and "how" social relationships manifest themselves (Hammersley 1999, Labuschagne 2003). On the other hand, a quantitative case study research method is used to study a natural phenomenon to provide causal relationships and answer questions such as "how many".

An important advantage of using a case study research approach is the leverage it provides the researcher with when using both quantitative and qualitative data collection methods or combining the two since the objective is one of understanding (Yin 1994, Guba et al 2000).

Merriam (1988) offers five special features of qualitative case studies. First, a qualitative case study is characterised by the description of a process, including the consideration of underlying mechanisms from a historical perspective. Secondly, a qualitative case study research is aimed at understanding the contents of a phenomenon, including how people perceive social reality based on experience. Thirdly, case studies involve interactions with actors and thus the researcher's role is embedded in the research process. Fourthly, case studies involve conducting fieldwork, in which the researcher, through search and discovery, inquires about human beings, situations, places and institutions that make up the research sphere.

In general, qualitative case study research has the objective of exploring, understanding and gaining a deeper view of a process rather than quantifying and devising causal relationships. Unlike quantitative research, qualitative research starts out from the notion that the world we live in is complex and cannot be objectified. It is aimed at understanding subjective social aspects, including human relationships and interaction, and tries to capture a process rather than quantifiable variables such as results or products (Labuschagne 2003).

From my perspective, the choice of qualitatively generated data as the primary source was motivated by the interrelated questions of: How could I understand an ongoing process (the policy and hybrid cases)? And how do I understand a process that spans over nearly three decades (the business case). Regional development processes include aspects of geography as well as business and social relationships and are obviously multifaceted. The qualitative case study method became the appropriate and obvious primary choice because of the nature of the study. In the business case, it was a matter of giving a historical explanation of the events that led to the cluster of call centre firms, and in the policy and hybrid cases it was a matter of studying new development processes in a municipality. However, I have also used some quantitative data, mainly from Statistics Sweden, to gain a holistic and contextual portrayal of the region and municipalities under study.

The choice of a qualitative approach involved doing some fieldwork to get an in-depth view of the processes so as to understand how they were generated and the mechanisms that interplayed with one another. I wanted to learn how business and public actors perceive their social reality based on experience and goals and report the findings. The qualitative method responds to the needs of observing, interpreting and analysing contemporary social phenomena. In the interviews and through participation in meetings, I gathered information on my research sphere of industrial policy and cluster formation processes. Furthermore, I used secondary data considering historical as well as contemporary events, which I interpreted and put into context.

3.3 Accessibility

As indicated in the previous pages, the methodological approaches at hand for a researcher when seeking knowledge are, in normal circumstances, dictated by the objectives of the research and the availability of previous research in the field (see for example Alvesson *et al*, 1994). For my part, the question of understanding local development processes and achieving insights into the mechanisms shaping them was born during the first six months of my stay in Söderhamn. This period was also marked by opportunities to get into contact with the actors in the region but also to become aware of the dilemmas of my position. In this section, I will discuss how I gathered the research data.

Even though the development processes initiated in the municipality might have been new, Söderhamn and the region of Hälsingland were not new to me. Six months prior to the establishment of a research and development station in Söderhamn, I had as a postgraduate student at the university college of Gävle about 80 kilometres south of Söderhamn, participated in a project called "The digital stride"[34]. This project focused on devising a methodology for how small and medium-sized businesses in the administrative province of Gävleborg could benefit from the onset of the digital technology. Together with my colleagues at the university college of Gävle, we visited several small-and medium sized companies in the area in order to investigate their readiness for the arrival of information technology. As a framework in this project, we used the so-called MIO[35] model.

Six months later, I was again in Söderhamn as a Ph.D. student, supposed to contribute to the development of industrial dynamics of the region. Armed with a masters degree and a fair command of the Swedish language, which has become my working language since my arrival as a refugee a decade earlier, I found myself, together with my seven colleagues, standing on the steps of the building that was to become our office. A few months earlier, when the announcement of the closure was made, local politicians

[34] In swedish: Det digitala klivet.

[35] MIO (Market–Interaction–Organisation). For further discussion on the components of the MIO model, see "Det Digitala Klivet" Arnemark et al, (2000).

and newspaper editorials were filled with statements on the "death of an epoch" and a profound pessimism as to the possibilities of revitalising the local economy.

However, with the promise of a new package to create jobs, our arrival coincided with a period of optimism. By now, Flygstaden[36] (see the hybrid case) was being developed; several government agencies such as the PRV had relocated to Söderhamn and the Soft Centre (the policy case) as a science park was in its infancy. Our research station was in the same geographic vicinity as the Soft centre (the policy case to be described in chapter 7) and since the development project going on in the Soft centre was to promote research and development, the inauguration of our research station attracted the attention of the two dailies; *Hälsingekuriren* and *Ljusnan*. On a mild and sunny day in September 2000, we were standing on the steps of our research station and expected to contribute to the new dynamism of the municipality. Being the odd one out in terms of gender and colour, I was immediately interviewed by the reporters. What is your background? How would you contribute to the development of Söderhamn? At this moment of time, the questions were many, but the answers I could give were few.

However, this encounter and the exposure later on by the local newspapers and the general air of optimism gave me opportunities in terms of accessibility in my research, which is the focus of this section.

Being part of- and at the same time studying- a new development process at close range and having the expectation of contributing to regional development, presented both challenges and opportunities. In a way, the term "peripheral" would be true for me and the other doctoral students that I have shared the last five years with. We had the liability of conducting our research from the periphery. We did not have the geographic proximity to a university. From this context, the first few days of my research involved asking myself: How would I be able to conduct research far away from the corridors of academia? How would I gather the data, while at the same time being part of the process and keeping a distance from the actors who I would meet and interview? How would I be able to contribute to the development process?

[36] The former F15 base.

An important learning aspect for our research station was the presence of other doctoral students in the social and behavioural sciences. We had the opportunity to jointly meet with various actors in the region and to hold and participate in seminars on the issue of our roles and how best we could describe/analyse the development programmes that were taking place in the region. There was a general agreement that our presence in the municipality of Söderhamn was not only to contribute to the development dynamics in the municipality, but also to gather the data that would enhance scientific knowledge building. At the same time, we had, to a certain extent, the multiple roles of satisfying both the expectation of a municipality that was going through a new process, and the scientific community in terms of knowledge production (Hammer *et al* 2001). Unarguably, this was a challenging task. However, to be at the centre stage of events provided me with an invaluable opportunity to access knowledge about contemporary development and to access the actors to interview them. Apart from being a member of a multidisciplinary team of doctoral students, we had opportunities to meet local actors (politicians and business leaders), participate in seminars that aimed at reviving the local economy and exchange views on research approaches.

3.3.1 Opportunities and dilemmas

Not far from our forces in Söderhamn, the embryo of what the authorities hoped would be a science park was being shaped in the municipality. The soft centre development process to be described in the policy case was in its infancy. Various mechanisms to develop the competitiveness of the area were being put in place. Networking meetings between the companies in ICT were organised and, as indicated earlier, our own presence in the municipality was established to support the local development process.

The idea of inquiring into and writing a case study on cluster dynamics and industrial policy in regards to the Soft centre dawned on me during the networking meetings to which I was invited a week after the establishment of our research station. As suggested, during the first six months of our tenure, we got the opportunity to acquaint ourselves

with companies, supporting institutions and political authorities. I met with several municipal and trade leaders to orient myself with the ongoing development processes and I was given access to the networking of firms and organisations in participating in their meetings that were held once every month at the Soft Centre.

I had the opportunity not only to observe the network, but also to do in-depth interviews and chat with many representatives of the companies and organisations. My motives for being a participant in the network meetings were to get a holistic view of the motives, organisation and performance of the network. From the beginning, I decided that the data would be collected through close interplay with the firms and organisations for further interpretations and analyses. But soon I was faced with the question of whether I as a researcher could remain distanced from the problem under study. Whether or not it is possible to remain independent from the phenomenon one studies depends on the methodological choice at hand. Traditionally, it has been assumed that the researcher must maintain a complete independence from the studied object (Stake 2000, Hammersley 1999, Labuschagne 2003). I was aware that maintaining independence in my kind of situation was hard to achieve because of the expectations placed on my shoulders.

From the outset, I decided to work closely with the members of the network, adopting a collaborative stance (Hammersley 1999, Labuschagne 2003). At the first meeting, I observed[37] directly the activities of the network. My hope was that I would be able to generate a question or an idea through collaboration with the firms and organisations. I introduced myself as a Ph.D. student who was there to obtain knowledge. Furthermore, I told them that my relationship with them was built on interactivity; however, my role was to study the process. I knew that my role would need a clearer definition and a greater consciousness on my part.

During one of the meetings, this issue became urgent. Almost all the network members represented small firms in their infancy, and, at this meeting, they discussed the problems facing them. In particular, many raised the problem they had in creating a

[37] Direct observation is different from participant observation in the sense that a direct observer does not participate and takes a detached perspective i.e., instead of taking part, he/she watches. Both of these approaches are used by students of ethnography, a research method used previously by anthropologists to study cultures at close distance (Hammersley 1999, Labuschagne 2003)

business plan and bookkeeping. Because of my background in business administration and economics, several of the members eyed the side of the table where I was sitting. My lack of response prompted one of the representatives from the Soft centre to propose that I should help them in formulating a business plan and give a lesson on basic bookkeeping for the participants. Since I was there in my capacity as a researcher and among the participants were small business consultants whose business ideas were based on devising business plans and providing accounting help, this presented me with a dilemma. I immediately announced that I was not able to do that because I was there solely as an observer, and that I did not want to act as a party. Although some eyebrows were raised, it appeared as if the message got through.

All in all, I participated in the network meetings on eight occasions. There are obviously some advantages of being near the object of study at hand. My presence in the area opened a myriad of opportunities, including the ability to be kept informed of the development in the region through reading the local dailies or to meet representatives of business developmental agencies at the network meetings. Because the research station was in its infancy and unique to the area, we received actors from various municipalities in the region who were curious and, at times, envious of the development processes initiated in Söderhamn (Nuur 2001).

3.3.2Establishing contacts

At the same time as the soft centre project was being implemented, a parallel development process was taking place at the Business centre of Flygstaden, the former air force base F15. Unlike the soft centre project, Flygstaden had very few formal mechanisms to encourage collaborations. There were no official network meetings, nor were the project leaders actively involved in the business dynamics of the firms and organisations at Flygstaden.

My first contacts with Flygstaden were made in 2001. I contacted the general manager of PEAB, the private company that owned the area. I interviewed him about the

situation and how this company had become the owner of the park. In regards to the historical dimension of the development process and how Flygstaden was established, the manager provided me with the names and telephone numbers of the former air force chief and the chief of staff who were still involved in various projects. I obtained a directory of the companies and public bodies that were located there. In total, I interviewed nine people for this case, i.e., the hybrid case. Three of them were members of the project "Flygstaden". These were the former air force commander, his chief of staff, and the project leader for FCIP[38]. I also interviewed the former and current managers of Flygstaden, the private real estate company. The interviews with the above actors were aimed at gaining a historical perspective on the development of the park.

As mentioned earlier, participating in the networking meetings at the Soft centre had given me the opportunity to meet with other players in the region. During this period, many actors in the neighbouring municipalities viewed the development processes that were taking place in Söderhamn as one they could learn from. At the network meetings, representatives of various municipal development agencies came to observe and expressed their intentions of learning from Söderhamn. During the third network meeting, I got the opportunity to meet the business development director of NärLjus, a joint public-private organisation whose task was to promote business development in the municipality of Ljusdal. I had a chat with him on the economic structure of the companies in Ljusdal. He informed me of the presence of call centres. I asked to interview him or someone in his office.

A week later, I was in Ljusdal at Närljus to be informed about the companies. I was offered a list that contained addresses and names of companies and who to contact. Thus, the business case was born. In total, I made eleven trips to Ljusdal and interviewed managers and representatives of supporting institutions, i.e., Närljus, the employment service office and the local educational centre. On four occasions, I was accompanied by one of my supervisors. The manager of Byggfakta was interviewed on three occasions. This was because many of the other managers mentioned that their firms were direct

[38] First Class Industrial Park, an EU-financed collaborative project between several European towns where military air bases have been closed down.

spin-offs from Byggfakta, or that they themselves had worked at Byggfakta before starting their own companies or becoming managers. To get a historical dimension to the establishment of Byggfakta, I interviewed one of the middle managers of Byggfakta who had moved with the firm from Stockholm in 1971. Seven companies allowed me to observe what the employees did and exchange a few words with them as to the tasks they performed, their working environment and education level.

The data sources

Yin (1993) and Merriam (1988) propose two main data sources, which I have also used in this dissertation. These are primary sources, such as interviews and observations, and secondary sources, such as documentation. On their own, these data sources have weaknesses as well as strengths. For instance, the advantages of using primary data sources are, among others, to gain insights into a contemporary process, to get a deeper contextual understanding of a phenomenon, and to get involved in a process. The weaknesses with primary data sources are that they are time consuming, the reflexivity that is caused by the researcher's presence, and the risk of bias due to the actions taken by the researcher (Yin 1994). The strengths of secondary sources are that by using multiple sources, they provide leverage in reviewing the validity of the collected data, while the weaknesses include "biased selectivity" of the secondary data. In this dissertation, primary sources involved physical interaction between me (the researcher) and the respondents. It consisted of conducting interviews, using observations to collect data. Secondary sources consisted of documentation, such as archival records and press cuttings.

In sum, the data collection included conducting 70 interviews with 52 actors in Ljusdal and Söderhamn (table 3.1). These are representatives of firms, civil servants and political leaders. In addition, some of the interviewed managers and business owners expressed a wish for anonymity, which of course was granted. Furthermore, I have used written records, such as documentation (memoranda), archival materials and stored press cuttings, which I was given access to.

Table 3.1 Data sources of this study

Case	Primary data sources	Number of interviews/ observations	Number of people interviewed	Secondary data sources
The business case	Interviews Direct observation	32 7	27	Press cuttings
The policy case	Interviews Direct observation	24 8	16	Documentation/press cutting (archival records)
The hybrid case	Interviews	14	9	

Lasting for 1-2 hours, the interviews were unstructured and were preceded by an informal chat. The unstructured interview form gave me freedom to talk about what was of central significance to the interviewee, rather than what I thought was important. The interview often started with an introduction of the activities of the firm or organisation, how long they had been doing business, their business ideas, ownership and customers in the case of the firms. This was followed by my questions on the subject matter. During the interviews, I took notes and they were also taped if the interviewee agreed to this.

Of course, in any kind of interviewing, there is a possibility that there is a discrepancy between what people say and what they actually mean (Stake 1995, Merriam 1988). There is also a possibility that the interviewer unconsciously directs the respondent according to his/her own liking (Yin 1994, Stake 2000). I tried to avoid such problems by making the interview more of a discussion than asking questions. I was aware that my Swedish proficiency could be a salient handicap. In order to minimise this problem, I pointed this out to the respondents and asked for clarifications of what I felt was unclear. Likewise, the respondents were requested not to hesitate to ask me to clarify what I was saying. In the business and hybrid cases, when the interviews were done, I wrote out the transcripts and mailed them to the respondents to see if I had captured their answers. In the case of Ljusdal, I held a workshop attended by most of the managers and members of the supporting institutions who I had interviewed. The aim of this was to make sure that I had captured the general picture.

3.4 Summary and concluding remarks

This dissertation is developmentally-oriented and was born out of my own engagement in the development processes initiated after the closure of the air force base in Söderhamn, when I was part of the Government's programme to revitalise the economy of the municipality of Söderhamn. Because of this, I was presented with both challenges and opportunities when writing it. The challenges emanated from the fact that I was part of the process and would I thus be able to research and detach myself from the phenomenon I was studying? The opportunities included being in geographic proximity with the actors and with the phenomenon under study, which enabled me to read and hear about the problems and opportunities of Söderhamn.

I have used a case study approach to understand and gain insights into the mechanisms influencing local development processes in peripheral regions. The choice of the case study approach was also based on the nature of the studied phenomenon. As my own presence was embedded in the research process from the beginning, I wanted to be sensitive towards the contextual aspect and present a holistic picture. To identify the mechanisms that influence development processes in peripheral regions, I needed a methodological tool to use and inquire about human beings, social groups, situations, places as well as institutions. In adopting the case study approach, it gave me the opportunity to get very close to the business and public actors involved, which enabled me to achieve a broad scope and perspective on these mechanisms. The use of the case study approach also gave me the opportunity to combine various data sources including participation, interviews and archive materials, which I have described in the third section of this chapter.

In the beginning, I had the opportunity to observe the deliberations of the networking meetings in the autumn of 2000. Through these meetings, I had the opportunity to get in touch with other actors in the region, including representatives of business development agencies of Ljusdal where the business case is located. Although I visited Ljusdal, interviewing and observing the activities of the call centres, the interaction

was not as deep as the one at the Soft Centre. Nevertheless, because of the historical aspect of the case, I interviewed more people to illustrate a process that had been going on for nearly 30 years. When it came to the hybrid case, I did not have the same kind of opportunities as I had had at the Soft Centre. As mentioned above, at Flygstaden there was no networking, nor were the local newspapers writing about what was happening there as they did about the Soft Centre. Thus, my interaction with these actors was limited.

In this chapter, I have presented the circumstances that led to the evolution of the research question, which could not be isolated from my own presence in the region. The developmentally oriented nature of the interactions posed some challenges in terms of not deviating from the goal of the research. In most circumstances, academic research is about balancing and reflecting the issues under study. In this way, I have tried to increase the reliability of the research by adopting multiple forms of data collection, including interviews, observations and secondary data. I have also written down the interviews and sent them back to the respondents before analysing them.

So far about theory and methodology. The next chapter is the first of five empirical chapters.

4. CONTEXTUAL SETTING AND BACKGROUND OF THE BUSINESS CASE

In chapter two I discussed the literature on the mechanisms that influence location of economic activities and industrial policy. Based on the concepts of growth poles (Pérroux, 1955), industrial districts (Marshall 1920) and clusters (Porter 1990), cluster dynamics as important mechanisms that influence territorial development has been discussed. In the last few decades, the concept of clusters has come to symbolise industrial/regional policy because of the vitality of knowledge as an element of competition. Knowledge is, however, created and transmitted through relationship-based assets and therefore comes through interactions between proximate economic and public actors. This is the central theme of Marshall's theory of industrial districts, which much of the literature on location and industrial policy builds on. As also discussed in the preceding chapter, the concept of clusters (Porter 1990) departs to a greater extent from the theories and concepts developed by Pérroux and Marshall as regards the vitality of relationships that lead to the development of a territory. In conclusion, a common theme of the concepts that have been developed in this regard concern the territory as being a stimulus of development by way of facilitating for instance specialised human resources and thus attracting the location of industry.

One major component of the advantages of geographic proximity is the creation of a specialised labour market (Marshall 1920) and the facilitation of knowledge spillovers. These aspects of cluster dynamics are explored in this chapter and the following one. In them, I describe how Ljusdal, a peripheral municipality has succeeded in the creation of a pool of workers in the call centre sector and how cluster dynamics have been achieved. One increasingly common feature in the nature of global activities is outsourcing. Although outsourcing of production units has been occurring for decades, outsourcing of customer service units is a relatively new phenomenon, whose evolution has been strengthened by ICT. The location of call centres has become an important development tool in less privileged regions. From a regional development perspective, call centres are

an important kind of organisation on the job market (Richardson et al 2001, Fernie *et al*, 1998, Taylor et al, 1999). As suggested in chapters one and two, the Swedish Government's policy on regional business development has in the past been focused on encouraging large firms in the manufacturing sector to establish in peripheral areas. Coming into the new millennium, this policy appears to be replaced by strategies to encourage the emergence, development and growth of small- and medium-sized firms in the service sector in these areas. In a hearing on regional development in 1999, the question about what role call centres could play was discussed (SOU 1999:138).

In 1999, the Swedish Government appointed an IT commission to investigate the extent of the utilisation of digital technology. Among those invited was a representative of Svenska Etablerings AB, a national agency with the task of encouraging firms to establish a presence in peripheral regions. He asserted that his agency through state subsidies had succeeded in encouraging several firms to establish themselves in the Swedish "support area"[39]. Of these new establishments, 80 per cent were in the call centre field and they employed in total 5 000 people (SOU 1999:138).

The aim of this particular chapter is to give the contextual setting and provide a background picture to the business case that follows in Chapter 5 and to give a typology of the call centre firms in Ljusdal. First, there is a presentation of the municipality of Ljusdal, where the cluster of call centres studied is situated. Secondly, I will attempt to shed some light on the characteristics of call centres, which are a relatively new phenomenon in the Swedish landscape. Thirdly, I will describe the variety of call centre firms in Ljusdal, as well as their key supporting institutions. The chapter is concluded by a summary.

The empirical material of this chapter and the following chapter is based on 32 interviews with 27 managers and representatives of supporting public institutions, and I have also observed the activities of seven firms. The interviews were carried out in the period between May 2001 and April 2002.

---

[39] Another term that is used for peripheral regions that are in need of support for development. In Swedish "Stödområde

4.1 Ljusdal

The municipality of Ljusdal belongs to the administrative province of Gävleborg and is situated approximately 300 kilometres north of Stockholm in the geographical region of Hälsingland. The name Ljusdal refers both to the main town in the area, which is the seat of the local council, and to the municipality as a whole, which includes several surrounding villages. The main town of Ljusdal is situated on the banks of the Ljusnan River, which runs through most of the municipalities in Hälsingland.

4.1.1 Population and educational developments

Historically, Ljusdal has relied on forestry as its main source of living. The modern economic history of Ljusdal, however, is traced back to the later part of the nineteenth century. Following the building of the railway in the area, Ljusdal became an important junction for transportation of forestry products. Even though Ljusdal has enjoyed a prosperous period in the past as a result of its geographical position, current statistics presents us with a discouraging picture. For the last four decades, the number of people domiciled in the municipality has decreased by 12 per cent (Table 4.1). Unemployment figures are high, nearly 10 per cent in 2002 according to labour office statistics. The number of people with a higher education is below the national average (Figure 4.1).

Table 4.1 The population development, Ljusdal, Gävleborg and nationally 1970-2003
Index 1970=100

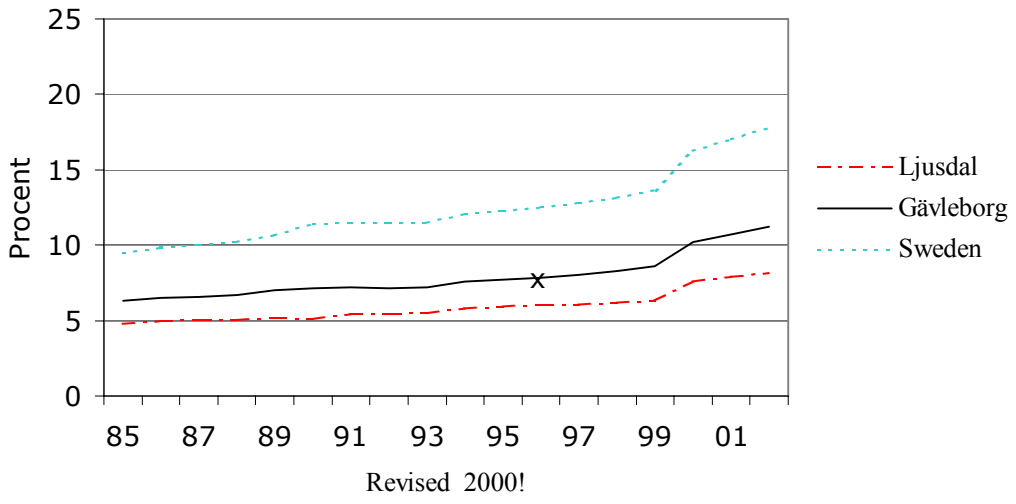
REGION/YEAR	1970	1975	1979	1983	1987	1991	1995	1999	2003
Ljusdal	100	97	96	95	93	94	93	90	88
Gävleborg	100	100	100	99	98	99	98	96	94
Sweden	100	102	103	103	104	107	109	110	111

Source: Statistics Sweden - census 1970-2003

The educational statistics reveal that Ljusdal has a lower share of people with higher education as compared to the nation and the administrative province as a whole. In 1985, 4.8 per cent of the people between the ages of 25-64 in the municipality had at least an upper secondary education as compared to 6.3 per cent and 9.5 per cent for the

administrative province and nation, respectively. Between the years 1985 and 2002, Ljusdal witnessed an increase of nearly 3.3 percentage units of inhabitants with at least upper secondary education as compared to an increase of 4.9 percentage units for the administrative province and 8.3 percent units nationally. Figure 4.1 shows educational statistics for Ljusdal as compared to the administrative province and nation during the period 1985-2002.

Figure 4.1 Share of population in the age group 25-64 with at least 3 years of upper secondary education 1985-2001.



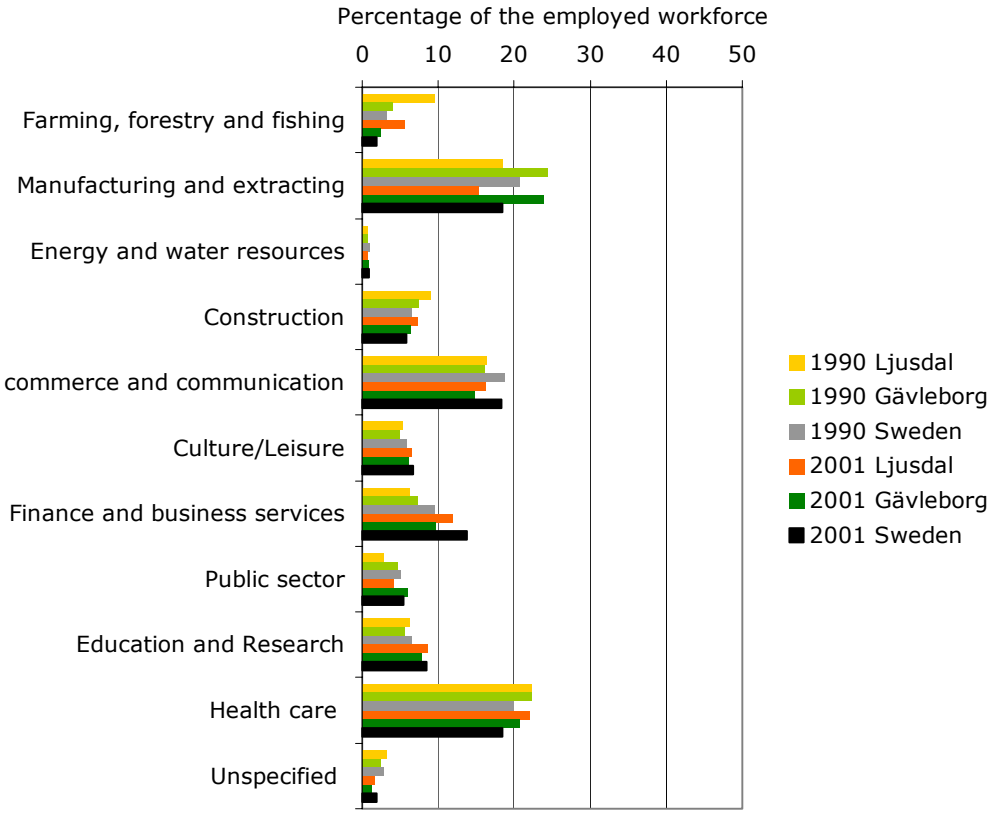
Source: Statistics Sweden - census 1985-2001

4.1.2 The business structure

During the last few decades, considerable changes have taken place in the economic life of Ljusdal. In 1970, small-scale firms in forestry production dominated business activities. Of a total workforce of 7 300 people, 1 770 were employed in this sector. In the following years, technological improvements have significantly reduced the number of people working in this field. Three decades later, the forestry sector employed 500 people out of a total workforce of nearly 10 000 people (Norberg 1999). In the neighbouring municipalities of Hudiksvall and Bollnäs, the same development has been observed.

However, Ljusdal is different when it comes to numbers of employers. Unlike Hudiksvall, for instance, which has been home to large employers in the manufacturing/forestry sectors, such as Iggesund and Ericsson, no single large company has dominated Ljusdal's economic activities. Instead, its forestry and manufacturing firms were mainly small in size.

Figure 4.2 Share of people working in the different sectors of the local economy in Ljusdal, Gävleborg and Nation during the period of 1990 and 2001.



Source: Statistics Sweden (RAM)

Prior to 1990, the dominating sectors in Ljusdal were commerce, transportation, farming/forestry and manufacturing. However, employment rates have shown a declining trend in these sectors. From 1990 to 1999, the number of people employed in farming and forestry, for example, decreased from 870 to 452 persons. The manufacturing sector employed nearly three times the number of people employed in culture and leisure services. By the late 1990s, fewer people were employed in the manufacturing industry

than in the mostly public sectors of healthcare and culture. There can be several reasons behind these decreases, e.g. efficiencies in industry, firm closures and migration to other municipalities.

Table 4.2 shows the top ten employers in Ljusdal in 2002. The top employers are found in the public sector including the municipal and county councils and service firms.

Table 4.2 the largest employers in Ljusdal

Name of employer	Number of people employed
Municipality	1 879
County Council	300
Byggfakta AB	190
DHL	170
Twenty4help	130
Peges	125
Mekanotjänst	117
Kährs Trävaru AB	95
Mellanskog AB	88
Delins Matbutiker	75
Samhall Dala	73
Solvus Support AB	70

Source: www.ljusdal.se (April, the 3rd 2002)

4.2 Characteristics of call centres

One interesting observation from table (4.2) is the presence of firms such as Byggfakta, Solvus Support, DHL and Twenty4help as four of the top ten employers. These are service firms, commonly known as call centres, which have become dominant employers in this municipality. What exactly is a call centre?

According to the Swedish IT Commission's report "*From call centre to contact centre*", a call centre is a broad term that includes reservations centres, help desks, information lines or customer service centres – regardless of how they are organised or what types of

transactions they handle. Some other terms used synonymously with the term call centre are: customer care centre, cost centre, relationship centre, distance support, help desk, customer relationship centre, contact centre or telemarketing (SOU: 1999:138).

4.2.1 "Satanic mills" or service providers?

As could be seen from the Commission's description, there is no clear definition as to what constitutes a call centre firm. We are also witnessing how many organisations are trying to use a different name to describe their activities, due to the negative portrayal of call centres in the Swedish mass media. In particular, the working environment at "call centres" has attracted the attention of the Swedish mass media.

For example, on the 21st and 23rd of January 2002, the largest evening newspaper in Sweden, *Aftonbladet*, ran two stories about working conditions at call centres. In the first article, with the headline *Toilet visits - wage cuts*, the paper described working conditions at a call centre reminding us of George Orwell's book *1984*. In the second article, the paper interviews a mother of four who was fired without notice for questioning the management's attitude towards the employees. This move, the newspaper saw as being reminiscent of the old days when workers were "enslaved".

Not only the mass media is concerned with the working conditions of call centre companies. Also researchers in behavioural sciences assert that the physical conveyor belt of traditional industry is manifested in a mental conveyor belt in call centres. While the traditional conveyor of autonomous teams has replaced belts and other forms of organisational innovations, we are witnessing a mental order facilitated by information and communications technology (ICT) (Melin 2003).

The definition of what constitutes a call centre is not universal and has been hampered perhaps by these criticisms. Internationally, Taylor *et al* (1999) suggest that several firms that could be classified as call centres have differentiated their operations by adopting other titles such as "customer service sector" and "customer satisfaction". This is a result of criticism in the mass media, in which the activities of call centres were portrayed as, for example, "dark satanic mills". Taylor et al (1999) give the following definition of call centres, which I intend to adopt:

> "A dedicated operation in which computer-utilising employees receive inbound – or make outbound – telephone calls, with those calls processed and controlled either by an Automatic Call Distribution (ACD) or predictive dialling system." (Taylor *et al,* 1999,p.102)

Despite the definitional problems, it is clear that the terms used to describe this kind of operation associate with a geographic location, a point where information is received, transformed or sent. In the past, this information, vital to the recruitment of a customer or maintaining a business, was exchanged using letters, faxes and telex. Nowadays, as a result of the diffusion of information and telecommunications technology (ICT), many call centres offer web-based solutions and integrated voice recognition technology.

The activities of a typical call centre involve handling a high volume of calls and e-mails for the purpose of sales, customer services or provision of technical support to firms. In recent times, call centres have been characterised by the type of calls that come in to, or leave, the centre. These activities are called inbound and outbound activities. Inbound call centres cater to calls coming in from customers, most often, but not always, from toll-free numbers. Outbound call centres mainly handle outgoing calls to customers and include activities such as telemarketing, market surveys and sales leads (SOU 1999:138, NUTEK R 2000:10).

4.2.2 A growing sector

The phenomenon of call centres arrived in Europe and Sweden in the 1990s. The term used then was in-house/out-house customer service centres. It is a challenging task to precisely state how large the "call centre" market is. According to the NUTEK report above, call centres in the USA are reported to be the largest growth sector of the economy and it has grown to around five million employees in three years. The same report claims that around one and half million people are employed in this sector in Europe (SOU 1999:138, NUTEK R 2000:10).

Breathnac (2000) reports call centres as a vital emerging sector in Ireland. A well-

developed ICT and education infrastructure and relatively lower entry barriers has attracted ICT giants like IBM, Dell and Compaq to establish in-house call centres or enlist the services of outsourced outlets. US-based firms account for 80% of call centre employment. 90 % of the call centres in Ireland are clustered in the Dublin area and in the study, the language skills of employees was given as the main motive for location. However, the study also found that 55% of call centre employees in Ireland use a foreign language and that 43% of them were citizens of other nations. Irish citizens who work at call centres often catered to English speaking countries and continental customers (France, Germany, Spain, Italian) while foreign nationals worked in call centres that targeted Scandinavian countries, Holland, Portugal and South Asia.

Fernie *et al* (1998) argue that in the United Kingdom there are 7 000 call centres that employ 200 000 agents[40], representing over one per cent of the total work force in the country. This figure was predicted to rise to nearly two per cent of the work force in 2001.

Richardson *et al* (2001) discuss the role of call centres as important employers in lagging regions in the United Kingdom. Drawing on two case studies in the North East of England and the Highland and Islands of Scotland, which are peripheral regions when compared to the rest of the United Kingdom, they found that call centres have significantly contributed to creating job opportunities. A number of factors, including the liberalisation of the telecommunications industry, the availability of a cheap labour pool, training infrastructure financed by public funds and subsidized property have combined to employ nearly 13 500 people in 1999 in the north east and 4000 in the Highlands and Islands.

In their extensive study of the development of industrial relations, Taylor *et al* (1998) report that geographically, call centre firms are clustered around the cities of Glasgow, Leeds and Newcastle/Sunderland. In Scotland there are 119 call centres and the sector employs 16 000 people. Out of the 119 call centres in Scotland, it was found that 36.9 per cent served businesses in the financial sector. Only four per cent of the firms were

[40] The term agent is used to describe an employee of a call centre.

operating in the telemarketing industry, where outbound calls are made. 69 per cent of those who worked at call centres in Scotland were below the age of 35, and women workers were the most predominant (67 per cent).

In Australia, Barrett (2001) reports that call centres are the fastest growing sector of the Australian economy. At the end of 2000, 4 000 Australian outsourced call centres serving 1 500 companies employed nearly 225 000 people. In contrast to the UK call centres, which tend to be located in lagging regions, the Australian ones were mainly clustered in the major cities of Melbourne and Sydney.

Available statistics in Sweden are based on a broader definition of what a call centre is. Any statistics about this phenomenon should perhaps be subject to scrutiny, which however is beyond the scope of my dissertation. In Sweden, two agencies have commissioned studies to identify the number of call centres in Sweden: NUTEK, whose task it is to promote development of firms, and Invest in Sweden, a semiautonomous official agency that sponsors foreign investments in Sweden. NUTEK identified 538 call centres, where 10 094 employees worked full time. The Invest in Sweden study focused on outsourced customer service outlets with the aim of finding the number of seats or number of people employed. This study identified 110 outsourced outlets that employed 7 051 people (SOU 1999:138, NUTEK R 2000:10).

In 2004, Charlotte Stoltz presented her licentiate dissertation entitled "*Calling for call centres – a study of call centre locations in a Swedish rural region*." She identified key factors that interplayed in the localisation of call centres: the business environment, information and communications technology, the market, entrepreneurship, and the availability of resources. Furthermore, she identified the presence of 40 call centres in the municipality of Ljusdal, which together employ 10.3 per cent of the total labour force in Ljusdal. These figures are based on interviews with the business development agency in the municipality and are thus not statistically produced. She asserts that the onset of information and communications technology has enabled places like Ljusdal to become home to clusters of companies in this field. This study proceeds further and discusses the mechanisms that induced the cluster and the elements that played a vital role in the evolution.

Furthermore, I argue that many of the firms in Ljusdal were not located as part of a policy move, but rather developed organically and have hitherto benefited from global outsourcing of services and competence embedded in the activities of the companies.

4.3 The call centre cluster in Ljusdal

As indicated earlier in this chapter, the establishment of call centres in peripheral regions is, among Swedish policy makers, viewed as a regional development tool to replace lost jobs in traditional industries (SOU: 1999:138). This is, however, not the case in Ljusdal. The majority of the firms clustered in Ljusdal have been established by people who are domiciled in the municipality. I will return to this issue later on in chapter 5. In the national newspaper *Svenska Dagbladet*, there was an article on the 16th December 1999 about call centres becoming the new regional political development tool. It claimed that call centres were attracted to peripheral regions because of their ability to offer employment conditions that are unacceptable in other parts of the country. It could be true that many municipalities are laying the red carpet for call centres to establish in peripheral regions. However, the municipality of Ljusdal has slowly, through an endogenous approach, built itself a reputation as the Mecca for firms in the call centre industry. What kinds of firms are located there? What are their activities?

As discussed above, in the public eye the features of call centre firms are not that flattering. However, despite the use of computers and telephones, the firms that I have studied in Ljusdal are not the typical call centres that most people would probably associate with odd-hour callers that persuade a customer to buy a product or a service. Most of the managers interviewed for this case expressed both a "love and hate" attitude towards being called "a call centre" firm. While some of them said that they preferred the term IK[41]-företag, "Information and Knowledge Company", most of those interviewed said that there is a marketing value in using the term call centre to describe the activities

[41] In Swedish "Information och kunskapsföretag"

of their firms. The following is a quote from a manager who first worked as a call centre employee before establishing his own firm:

> "If we use the IK name, which is used virtually by every firm in Sweden, who would differentiate us from the masses? The name call centre is a brand name here in Ljusdal and many of my employees proudly and loudly call themselves call centre employees."

While it is true that some of the studied firms are housed in large rooms with workstations, which include a computer, a telephone set, and headsets that are hooked to a large switchboard, the resemblances for most of them end there. This study has identified the presence in Ljusdal of the following four groups of firms[42]:

i. In-house call centres
ii. Outsourced outlets
iii. Information brokers
iv. Telemarketers

Altogether they employ approximately 900[43] people out of a labour force of 8 500 people (Statistics Sweden) on a full-time basis. It is worth noting here that my classification is not based on the organisational structure of the firms, but on the operations they conduct.

4.3.1 In-house call centres

The first category of the firms in Ljusdal is what is referred to as cost centres, reservation centres or customer desks (SOU 1999:138, NUTEK R 2000:10). It is worth mentioning here that there are only three in-house call centres in Ljusdal. These are

---

[42] Apart from the above four groups of firms, there are companies which provide auxiliary inputs to the call centre cluster in Ljusdal. These include, a locally produced monthly magazine "CallCentreTidning" which provides to the employers and companies information relating to the industry. In addition, there are many smaller businesses that are not directly part of the cluster, but which provide services to the employees. An example of this is a small firm that was established by a former employee of a call centre when she discovered the need for a recreation facility.

[43] This figure is based on the interviews with the job centre and the firms. It is in the same range as Stoltz (2004) who suggests that call centres in Ljusdal employ about 10,3 percent of the workforce in Ljusdal.

units/departments, which are functionally part of a larger organisation. In most of the firms that I visited, the name cost centre is used internally to differentiate them from revenue centres.

Although in-house call centres are functionally part of the organisation, their geographic location can vary (SOU 1999:138, NUTEK R 2000:10). Most of the employees do not need to physically interact with customers, and hence can be located outside the headquarters of the organisation. The employees in the in-house call centres have the same career opportunities as those who work in the other departments of the mother organisation. An example of an in-house call centre in Ljusdal is the freight company DHL. Unlike other call centres (see below), this is a customer centre to which DHL's customers call for reservations, pricing and tracing.

The three in-house call centres, I visited have a fast tracking terminal, an internal unit that helps managers to get information about customers. This is a sort of Management Information System, providing the managers with information about how many calls were made, who called, who attended to the caller, etc. The in-house call centres merge computing and telecommunications technology, allowing customers to communicate with employees who have instant access to information on product specifications, cost and payment instructions. These companies use facilities such as the Internet and relevant software and a telephone with a headset. DHL also uses a fast tracking system, which allows the staff and managers to have access to the relevant customer data and call logs from earlier customers.

4.3.2 Outsourced outlets

The second category, which I will label outsourced outlets, is the second largest group of call centre firms in Ljusdal. Outsourced outlets are functionally the opposite of the in-house call centres described above. The main differences are the ownership structure and the issue of control. Instead of being part of an organisation, outsourced outlets are independent firms that perform operations on behalf of other firms that relinquish control. By way of outsourcing agreements, organisations entrust call centres to perform customer relationship activities, such as measuring the performance of a marketing

campaign, maintaining and developing customer relationships, participating in the feedback from customers, identifying customer expectations and providing technical support (SOU 1999:138, NUTEK R 2000:10).

An example of an outsourced outlet in Ljusdal is the German-owned firm Twenty4help, which has Sweden's largest telephone operator Telia AB as its main customer. Through an outsourcing agreement, it has acquired a contract to provide Telia's customers with product information and technical support, as well as to answer queries from customers.

The majority of the outsourced outlets in Ljusdal handle both outbound and inbound calls and they are housed in large buildings. Although maintaining their identity, they have to contend with the fact that other firms have transferred control to them. In contrast to other inter-firm relationships, such as licensing, strategic alliance and acquisitions and mergers, outsourcing involves a lesser degree of freedom for the outsourced outlet. For example, an outlet cannot expand its customer base in case it jeopardises the outsourcer's strategic goals. The benefit to the outsourcer is that it can focus on its core business activities, while at the same time using another firm to perform part of its task. On the other hand, the disadvantages could include letting another organisation take care of customers. The outsourced outlets in Ljusdal provide the following customer based services:

First, they provide services to consumers of other firms that entrust them with maintaining customer relationships. These help desks are usually telephone based and offer integrated support to the firms before and after sales activities, as well as handling the entire administration process of their business-to-customer relationship.

Secondly, they provide interactive Internet-based services that offer firms solutions to queries and provide customer interface. Most often the services include answering technical questions and solving problems in handling digital systems. These live Internet services supplement the services they offer via the traditional channels of communication.

Most of the employees of this group in Ljusdal are employed on time-limited and often short-term contracts. According to the managers interviewed, the employees are

expected to be flexible in terms of adapting to the business strategies of potential customers (business) and to be able to respond to the needs of the customers (consumers). In four of the companies I visited in Ljusdal, the managers distribute calls to available workers by using an Automatic Call Distribution (ACD). In two of the companies, the managers also have an electronic surveillance monitor and an Action Request System (RARS), which allows them to discharge all support activities (telephone calls, faxes and e-mails) via a common system to provide optimum processing for each support case. The surveillance monitor records among other things the length of calls[44] and gives the managers control in determining efficiency.

4.3.3 Information brokers

The third category consists of firms that deal with gathering, storing, processing, and selling information. This category differs a lot from the two categories above as regards specialisation. I am going to refer to them as information brokers. This is the single largest group of firms in Ljusdal in terms of the number of people they employ.

One major difference between the information brokers and the other groups of firms in Ljusdal is the level of employee interaction with the customer. Information brokers provide differentiated services and the relationship is built on integration over the years. In general, the employee at one of these firms works at a fixed project to be finished within a certain period and for a specific budget. Some of the employees are employed on a continuing basis. Customers pay a subscription fee to gain access to the database with information. Based on the needs of the customer, most firms have a project team that searches a variety of print and/or electronic sources for very specific information. Depending on the agreement between the customer and the firm, they take the raw data and present only that which is pertinent to the client.

In Ljusdal, nearly all the information brokers cater to the needs of business actors. These business customers are located all over the country. Also, public organisations are

[44] The optimum length of a call varies. At one company, the manager stated that the ideal call should last between 3-8 minutes.

customers to these firms. Byggfakta, the leading call centre firm in Ljusdal may illustrate the role of the information brokers. Its business idea is to sell data about the construction industry. The statistical material is brokered between buyers and sellers of products and services in the Swedish construction market. In 2001, Byggfakta had a turnover of SEK 77 million. It is a subsidiary of the American company CMDG[45], which has an annual turnover of SEK 1.3 billion and employs 1 300 people worldwide.[46]

The largest service domain at Byggfakta is marketing research, which employs 30 people who have daily personal contacts via the telephone with 400 construction firms. Over the years, the firm has also established a unique network with Sweden's 289 municipalities. Its marketing "researchers" have access to the firm's database with over 175 000 construction projects, 150 000 companies and 180 000 contacts. The company is involved with every stage of the construction life cycle from initial idea, planning, construction and finish to maintenance and repair. The researchers read about 80 newspapers, call the municipalities (they offer permission for construction sites) and create a database with current information.

4.3.4 Telemarketers

In addition to the three categories above, there are also other firms that conduct call centre-related business in Ljusdal. These range from firms that have a flexible service domain, such as providing telemarketing services, to firms that perform outsourced operations or provide services catering to specific needs, such as health clubs and educational centres. One such firm in Ljusdal is MediaNet. It was started in 1996 with the business idea of managing customer relationships on behalf of other firms through outsourcing contracts. At the time of visiting (2002), MediaNet employed 30 people and had an annual turnover of SEK 14 million.

The activities of MediaNet differ depending on whether the customer (business) wants to increase his customer base, promote and test new products, or take care of

[45] This is the firm that Wigart licensed the concept to in the mid- 1980s and has since acquired many call centre firms in northern Europe.

[46] Since my last visit in 2003, Byggfakta has acquired a new ownership. Reed Business Information Scandinavia with subsidiaries in Finland, Sweden, Norway and Denmark has bought it.

existing customers. When I visited this firm at the end of 2002, the firm's dominating service domain was performing sales activities using the telephone, but it also offered firms in the Internet business production of websites, banners and advertising sites. It has a sales force of 30 people who make outbound calls from the firm's offices in Ljusdal and Bollnäs. In association with the local subsidiary of MIROI, a training firm, MediaNet also runs training programmes to unemployed workers in Ljusdal and the neighbouring municipalities. According to the manager of MediaNet, the firm's operations are flexible and designed to meet customer needs, and so are its employees. In the past, the firm has performed outgoing calls to consumers, such as when the bank Nordea ran a campaign for its Internet-based service "Solo". It has also had outsourcing agreements with public organisations such as the train operation company SJ, to which they provided schedules, pricing, etc.

4.3.5 Local supporting organizations[47]

A cluster does not only consist of firms that are in the same field and others that provide auxiliary inputs, but also public organisations that provide them with resources (Porter 1990). The issue of interdependencies and the contributions of organisations are what make a cluster different from mere agglomerations. In this connection, the Ljusdal call centre cluster is supported by a number of key public bodies that provide the companies with inputs. A number of supporting institutions that contribute to the development of the cluster could be identified. These formal organisations came into the picture in the early 1990s, when they discovered the potential for the development of the cluster of call centres. The key supporting institutions are Närljus, the business development office in the municipality, the labour office and public schools[48].

[47] Apart from these supporting institutions in the municipality, various national and regional public bodies support the companies in Ljusdal.

[48] The term school includes upper secondary school, adult education and the other sources of learning, such as the local educational centre "Utvecklingscentralen".

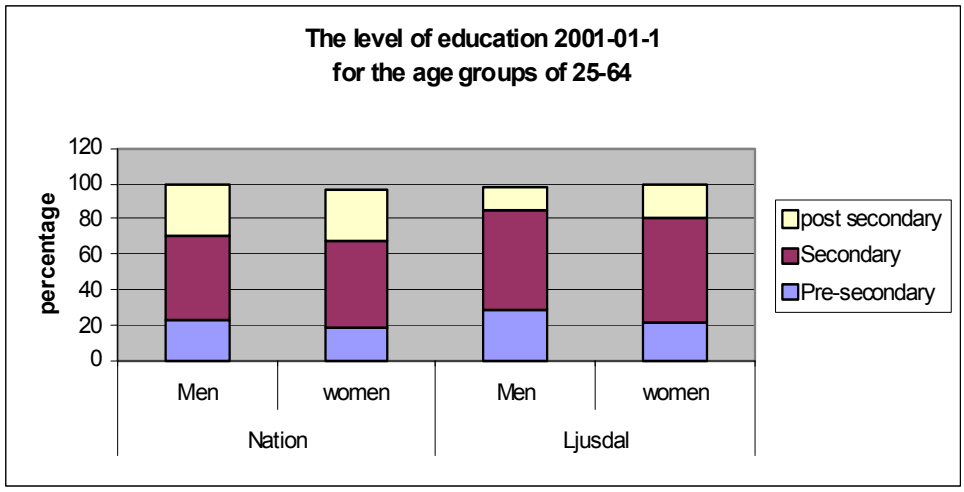
Närljus, the business development office in the municipality, is active in promoting business co-operation and the establishment of new firms in the area. It is a foundation, jointly run by the firms in Ljusdal and the local council (Norberg 1999). Its goals are to:

- Develop and improve the competitive strengths of firms by assisting firms in analysing their situation and defining their needs in relation to competencies needed.
- Create the necessary infrastructure to attract new firms to the municipality.
- Provide necessary educational infrastructure that compensates the firms for the lack of a university.
- Co-ordinate business activities and create links between the firms and external actors and other institutions that offer some kind of competencies needed internally, but are available externally.

As it provides the firms with trained workers, the perhaps single most important supporting institution of the cluster is the local employment service office. In total, in April 2003, there were 22 labour office employees who co-ordinate and match labour supply and demand in the municipality. Five of these are directly connected to the call centre services (the term public officials prefer to use is Information and Knowledge firms). The job centre had a labour pool of 1 050 unemployed workers (April 2002), which represented nearly 10 per cent of the labour force in Ljusdal. According to the manager of the labour office, about 90 per cent of its budget went to providing and generating competencies for the call centre firms.

A third important supporting institution is the adult educational centre and the upper secondary school. Ljusdal has a low percentage of people who have post-upper secondary education as compared to the national average. Figure 4.3 illustrates the percentage of people in Ljusdal who have upper secondary, pre-upper secondary and post-upper secondary school education at the time of my visits.

Figure 4.3 the level of education in Ljusdal



Source: Statistics Sweden.

Few of the firms interviewed for the purpose of this study had university graduates among their employees. For example, out of Byggfakta's 90 employees, only three had post-upper secondary education. However, the authorities are aware that higher education is essential to sustaining the competence base. In this regard, an important actor in the field of education is the local educational centre, "*Utbildningscentrum*". It was established in 1996 with the aim of facilitating recruitment of personnel with a higher education for the firms in Ljusdal.

From the start, it has in collaboration with the Technical University of Blekinge in southern Sweden offered courses to the residents of Ljusdal. According to the director of *Utbildingscentrum*, the aim was to make Ljusdal attractive for firms to recruit competent personnel. In the autumn of 2000, *Utbildningscentrum* succeeded in persuading the nearest university, the University college of Gävle, to provide an 80-credit point distance study course in computer applications. During the past two years, the regional University of Gävle has been actively involved in the development of the cluster. It has, for instance, given courses in project management for the firms.

4.3.6 The customers

According to a study done by OVUM research (SOU: 1999:138), the following branches were found to have outsourced outlets or in-house call centres in Sweden. The report also predicts the growth of the sector.

Table 4.3 Customers to call centres in Sweden per branch

Branch/year	1999	2000	2001	2002
Financial services	29%	29%	28%	28%
Commerce	20%	19%	18%	16%
Health/public services2	23%	25%	27%	30%
Construction	10%	10%	10%	10%
Telecom	5%	15%	14%	14%
Utilities[49]	2%	2%	2%	2%

Source: A market study of call centres in Sweden in autumn 1999 (SOU: 1999:138).

As regards the firms in Ljusdal, the majority of the outsourced outlets cater to the needs of end-users of telecommunication companies. Some of the customers of the outsourced outlets include public organisations, such as the PPM (*Premiepensionsmyndigheten*), the authority responsible for placing public pension funds[50]. Another one is the government-run organisation *Alfa-kassan* that caters for unemployed people.

The following table shows the largest employers of the call centre cluster in Ljusdal based on type of firms, number of people employed in each firm, and the firm's core business domain.

[49] Water and electricity

[50] Since I visited PPM, it has outsourced its activities in Ljusdal to Manpower.

Table 4.4 A selection of the "call centre" firms in Ljusdal

Name of firm	Type of firm	Number of employees	Core business domain
DHL	In-house	150	Freight
Twenty4help	Outsourced outlet	140	Telecommunications
Byggfakta AB	Information broker	95	Construction
Solvus Support AB	Outsourced outlet	75	Telecommunications
CityMark AB	Information broker	35	Real estate
MarknadsData AB	Information broker	30	Public health
MediaNet AB	Telemarketer	30	Media
Alfa-kassan	In-house	25	Public services
FirstIndex	Information broker	22	Manufacturing
Programgruppen AB	Information broker	19	Business/Taxation
Manpower AB	Others	15	Diverse
ByggIndex	Information broker	14	Construction
CallCentreTidning	Others	10	Media

The private sector is represented by large corporations, such as the telephone operator Telia AB. Telia has outsourced its Internet and telephony customer services to the firm Twenty4help. In order to cater to the customers of Telia, Twenty4help has created four divisions that each run independently. BAS employs 45 people and caters to Telia's private customers who subscribe to Telia's phone service. TIP (Telia Internet Partner) provides corporate support to Telia's business customers and employs 45 people. Also Comhem, a subsidiary of Telia in the television industry, has outsourced its customer support to Twenty4help. Hewlett Packard is also a customer to Twenty4help. The HP division has eight people who are directly involved with that project.

4.4 Summary and concluding remarks

The aim of this chapter was to capture the contextual setting of the business case and to describe the activities of the firms and their customers. In setting the scene, I have, apart from the firms, described three local key supporting institutions that assist the firms with various kinds of services. In this chapter, I have also discussed the lack of coherence as to what constitutes a call centre company. Furthermore, media and scholarly criticisms of the working conditions in call centre firms have been discussed. In several countries in the industrialised world, call centre activities are a relatively new phenomenon on the

business landscape. However, based on their operations, they do play a paramount role in the value chain of companies. Why should other firms entrust companies such as call centres to manage their customers?

Several decades ago, Ronald Coase (1937) laid the foundation for understanding interdependencies between organisations in gaining resources outside the individual firm's border and in balancing internal and outsourced activities. The outsourced outlets in Ljusdal provide auxiliary inputs and perform operations on behalf of other firms. In particular, these kinds of call centres are involved in making business actors not located in Ljusdal competitive. By way of outsourcing agreements, organisations entrust this kind of call centre to measure the performance of a marketing campaigns, to maintain and develop customer relationships, to participate in feedback from customers, to identify customer expectations and provide technical support. For the particular company that entrusts call centres in Ljusdal with maintaining customer relationships, it follows rational decisions made to buy part of the service through outsourcing agreements. In a competitive world, firms make decisions to buy services and products from other firms that can produce at lower price. As human and physical resources are scarce and are available outside the particular firm's border, firms incur transaction costs.

The Ljusdal cluster consists of a group of firms that are generally known as call centres. In Ljusdal, four groups of call centre firms can be identified: in-house call centres, outsourced outlets, information brokers and telemarketing firms. I have also attempted to illustrate the presence of supporting institutions and auxiliary input providers. Both in-house call centres and outsourced outlets cater to the needs of end-users, while information brokers cater to the needs of business actors. The service domains provided by these firms differ as well. Personnel at in-house call centres and outsourced outlets perform standard services that are either driven by a contract, such as outsourcing agreements, or involve managing customer relationships through tracing, while information brokers work on projects.

The information brokers are the largest and they broker information between various actors. The vast quantity of information available today has played a large role in the

emergence of these firms, as many organisations are finding that they do not possess the time, or lack the expertise, to find the information they need to operate in the market.

So what were the mechanisms that influenced the development of a cluster in the peripheral municipality of Ljusdal? In the next chapter, I will take an in-depth look at the cluster formation process.

> "When an industry has thus chosen a locality for itself it is likely to stay there long: so great are the advantages which people following the same skilled trade get from near neighbourhood to one another. The mysteries of the trade become no mysteries: but are as it were in the air, and children learn many of them unconsciously. […] If one man starts a new idea, it is taken up by others and combined with suggestions of their own; and thus it becomes the source of further new ideas." (Marshall 1920, p.271)

5. THE BUSINESS CASE FROM A CLUSTER DEVELOPMENT PERSPECTIVE

In the previous chapter, I described the contextual setting of the business case and presented a background picture. Among others, the call centre firms operating in the municipality of Ljusdal were described. Some of the firms are involved in managing customer relationships through outsourcing agreements, while others broker information between firms. In addition, Ljusdal is also home to firms that are generally referred to as telemarketers and in-house call centres. Although managing customer relationships have been a part of the organisational strategy, and thus is not new, the rapid development of information and communication technology (ICT) has improved the situation for this kind of services.

ICT applications make it possible to locate call centres in remote areas. A widely held view is that the absence of alternative jobs in these areas would keep the employee turnover low. The labour force is also assumed to be faithful to the employer in the absence of other employers. In the public eye, the activities of call centre firms are considered to consist of routine tasks, which demand limited formal education on the part of those who man these centres. Therefore, it seems like a paradox that call centre firms appear in clusters, a phenomenon driven by knowledge formation.

The aim of this chapter is to understand the mechanisms that influenced the growth of the cluster. How has this cluster developed? How has industrial policy responded to the development of this cluster? I will illustrate the development of cluster dynamics in terms of relationship building and knowledge creation and provide insights into the organic nature of a cluster formation process in this peripheral municipality. In the first section, the mechanism that induced the cluster formation process is described. In the second section, I discuss the role of technology for the growth of the cluster of call centre firms in Ljusdal. The third section shows how the company that induced the cluster played the role of an engine enterprise and contributed to knowledge spillovers to the other firms. In the fourth section, I take on a knowledge formation perspective, including human resource aspects, on the development of the cluster. In the fifth section, I attempt to capture the horizontal dynamics that exist between the companies and their supporting institutions. The chapter is concluded with a summary and concluding remarks.

5.1 The birth of the cluster

The call centre cluster in Ljusdal is the brainchild of a man named Bengt Wigart. In 1936, he established a company in Stockholm called Stockholms Inkassobyrå. The business concept was to sell information about the credit worthiness of companies to business customers mainly in the construction industry. He and his employees, who numbered less than a dozen, would gather information on profit and loss accounts and on demand provide statistics and account statements to potential contractors, sub-constructors and public agencies.

In the late 1960s, Wigart expanded his business operations to include conducting limited market research in the field of construction. This included calling contractors and local government authorities, asking them for potential plans for constructions, and then selling the information to potential contractors. As a result of the boom in the construction industry in the 1960s and 1970s, many firms emerged to give credit evaluation information. At the same time, Wigart realised that the demand for his

marketing research services was on the increase and therefore he sold the department of credit information to an American firm in Stockholm.

Thus, Wigart kept the department of marketing research. He appointed one of his two sons who worked in the company as the new general manager of the firm. Although the firm already had established a reputation in the construction sector throughout the country, Wigart Jr. identified two potential problems. First, the high turnover rate among staff members, recruitment, and, more importantly, maintaining staff that was willing to work at his firm, were becoming difficult. Secondly, he identified high labour as well as overhead costs in the Stockholm area.

5.1.1 Decision to move

In the mid-1960s, the Wigart family spent their winter holidays in a small village called Järvsjö, a few kilometres south of Ljusdal. Bengt Wigart had bought a cottage near the leisure centre, where municipal as well as business leaders met. Among the many businessmen and local political leaders that he met there were the local municipal councillor and the chairman of the chamber of commerce.

Although not a permanent resident of Ljusdal, Wigart gathered information such as the general business climate of the municipality, labour costs as well as rents. He shared his concerns about Stockholm being an expensive city and the relative high employee turnovers with the chairman of the local chamber of commerce and the leader of the council. They assured him that in Ljusdal he would be able to recruit staff that were willing to take on any kind of job and that the rent was cheaper than in Stockholm. On returning to the capital, he made a decision to move the operations of his firm to Ljusdal.

In the spring of 1971, Wigart made a trip to Ljusdal where he met with the local chamber of commerce who helped him to find a rental space near the train station. He went to Stockholm and broke the news about the planned move to Ljusdal for his employees. Five of his eighteen employees decided against moving to Ljusdal, while the

other thirteen, who were with the firm for an average time of 3 years, decided to move to Ljusdal[51].

The next challenge for Wigart was finding the necessary funds to cover transportation and overall costs of establishing a business in a new location. Sweden was actively promoting the localisation of firms to rural areas such as Ljusdal. By providing different subsidies, such as investment and establishment subsidies, large firms were encouraged to localise in rural areas. Wigart applied for SEK 15 000 to be able to move the operations of his firm to Ljusdal. According to some of his friends who were interviewed for this case, he was disappointed to learn that these subsidies were only available to large and medium-sized firms in the manufacturing sector.

5.1.2 Local mobilisation

After exhausting all possibilities of finding the funds, the local chamber of commerce in Ljusdal, whose members Wigart had met during his winter holidays and shared his plans with, mobilised its members to help Wigart. A convoy of twenty cars, with nearly 40 men and women from Ljusdal, took care of the transportation of the company from Stockholm to Ljusdal.

Two days later, in the beginning of May 1971, Wigart's company was established in Ljusdal. It employed 18 people working mainly with market research. Its main business idea was still conducting market research for firms in the construction industry. However, in Ljusdal the manager decided to offer his customers a "complete package", which included statistical materials about the construction industry. For this purpose, the firm started to publish a monthly statistical magazine that was distributed to firms and individuals as well as to municipal and regional authorities.

[51] Three of these were still working at Byggfakta in Ljusdal when the interviews for this case were conducted in the spring of 2002.

5.2 The "stickiness" of Ljusdal

Even though Byggfakta was established in Ljusdal in the early 1970s, it took nearly two decades before the cluster begun to see daylight in this peripheral municipality. According to modern location theory, knowledge formation that is facilitated by geographical proximity is important when understanding the location of economic activities. Innovations often take place through interaction between different actors in systems like clusters, innovation systems, knowledge blocks, etc. Through linkages facilitated by proximity, the diffusion and transfer of contextual knowledge between entities in the system are strengthened. This spillover of knowledge between different actors results in new products/services and the improvement of the existing ones (Audretsch 2000b, Maskell et al, 1998, Porter 1990). Alfred Marshall had earlier (1916) expressed similar ideas on knowledge exchange that comes through proximity. Talking about the advantage of industrial districts, he coined the famous phrase: "Knowledge is in the air".

What are the factors that contributed to the growth of this cluster? In this section, I will attempt to capture the relevant factors.

An exogenous factor that enhanced the growth of the cluster was the advent of information and telecommunication technology (ICT). In particular, the arrival of the Internet provided the firms in Ljusdal with a plethora of opportunities, including customer relationship management and database modules. To business customers of firms such as Byggfakta, it offered the opportunity to access information online by paying subscriptions (Ekstedt and Nuur 2004).

Up until the late 1980s, Byggfakta was the only firm that conducted "call centre" activity in Ljusdal. However, as a result of the development of ICT applications, several call centre firms were started in the municipality. ICT has certainly contributed to improved production and process methods. At the same time, it has become a competitive tool, as it enables firms to redesign their business activities, including how organisations are structured. Byggfakta bought its first computer in 1974 for the purpose of storing and processing statistics. However, most of the employees still use the telephone and write letters when dealing with customers.

5.2.1 The locomotive enterprise

The onset of ICT has indeed brought with it opportunities and enhanced the pace of development for firms throughout Sweden and is thus not a unique feature of the firms in Ljusdal. The role Byggfakta played, as an engine enterprise, thereby enhancing the development, can hardly be over-estimated in the cluster formation process that the call centres went through. Byggfakta was the direct role model for many of the companies that were established in the first phase of the expansion of the Ljusdal cluster.

The expression "locomotive company" is often used to describe a propulsive firm in the industrial districts of Italy (Macanzoni 2000). In this case, however, it is somewhat too strong, as there are very few commercial relations between the other companies and Byggfakta. These companies simply imitated the business idea of Byggfakta, and applied it in different segments of the economy.

5.2.2 Knowledge spillovers in the form of business ideas

Knowledge spillovers between proximate actors are as discussed in section 5.2 , a key feature of cluster dynamics. The business idea of Byggfakta was to buy and sell market information between actors in the construction sector of the economy. However, it was not until 20 years after the establishment of Byggfakta that some of the employees discovered a need for brokering information in other fields of the economy (Ekstedt *el al.* 2004).

The start-up of the first call centre firm after Byggfakta in the neighbourhood took place in 1988. Two former employees of Byggfakta, which then employed 230 people, established the company Informationsgruppen in the neighbouring municipality of Hudiksvall. This firm is today the prime competitor of Byggfakta. Since its establishment, it has been acquired by Bonnier, one of Sweden's major media companies. It maintains a database that contains 5 000 names, addresses, and telephone numbers for information and contacts for potential construction plans.

Following the birth of Informationsgruppen in Hudiksvall, the mental barriers for

other people in the vicinity to become entrepreneurs were lowered. If a colleague or a neighbour were able to start his/her own business, other people thought that they also had the chance to make it on their own.

The second direct spin-off from Byggfakta was the establishment of CityMark, which was started by another former employee in 1991. The firm's business idea is to act as information intermediary between buyers and sellers in the real estate business. CityMark's customers are real estate owners and buyers. A third spin-off is KompetensFakta that was started in 1991 and provides information about competence needs between providers and buyers. The firm has a database with information about competence and education needs of firms and organisations throughout Sweden, as well as names of persons to contact, planned periods for competence development and budgets. The business customer is given access to the database through an annual subscription.

Table 5.1 selected firms that spinned off from Byggfakta

Name of firm	Number of employees in 2001	Focal customers
Svenska Media AB	22	Media (press)
MediaNet AB	25	Internet-based media
CityMark AB	30	Real estate
Informationsgruppen AB	50	Construction, media
KompetensFakta AB	20	Education
MarknadsData AB	15	Health care
ByggIT	10	Accessories
Annonskraft	4	Advertising
Call centre tidning	10	Newspaper
ByggIndex	10	Manufacturing

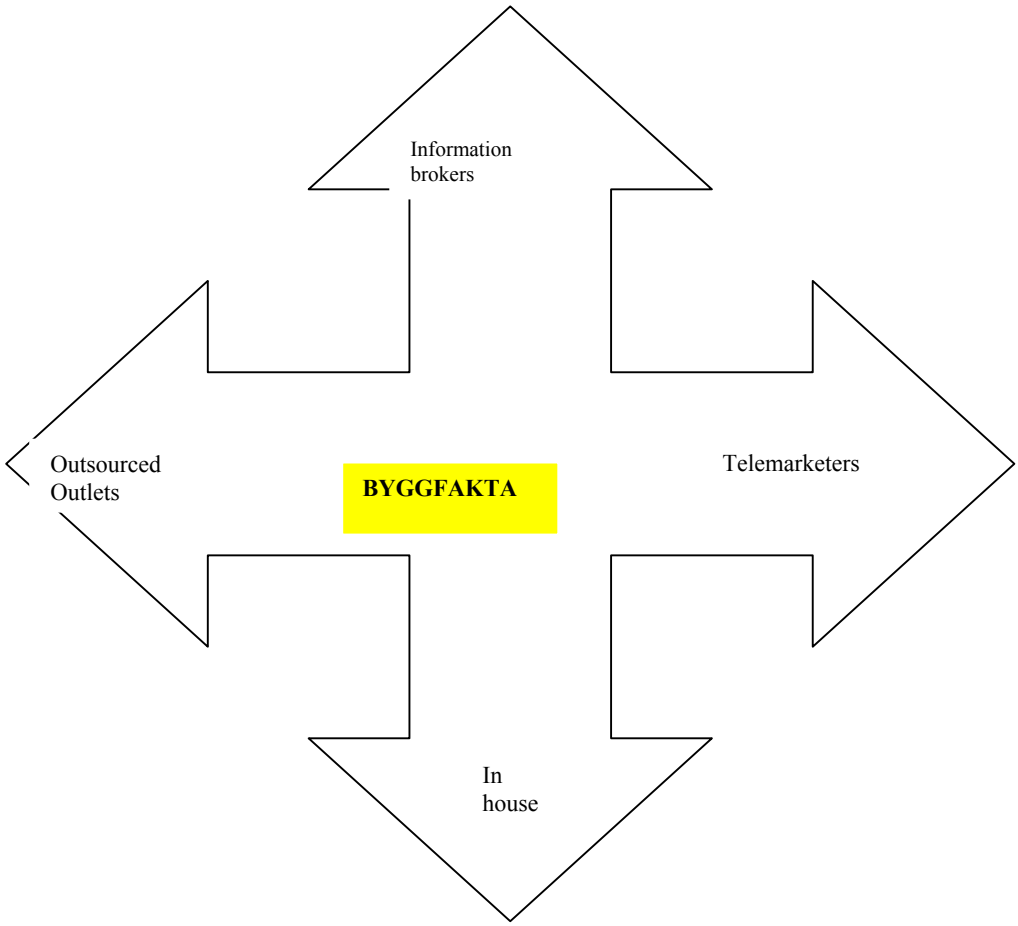
In the early1990s, several other employees from Byggfakta embarked on starting their own businesses in different areas of the economy, such as education, real estate, media, manufacturing, etc. All these companies buy and sell information within specialised fields. The Ljusdal call centre cluster also consists of companies other than direct spin-offs from Byggfakta. In many ways, Byggfakta became an educational organisation: a school serving the other companies. That is where the entrepreneurs and some of the personnel of the

new-founded companies got their first experience of how to do business and how to use the technology in the field of information brokering.

5.2.3 Managerial mobility and internationalisation of ownership

Apart from the direct spin-offs from Byggfakta, the cluster is marked by an inter-firm managerial flow. This flow appears to be larger among the information brokers than in the other three groups of firms. It happens either as a result of an entrepreneur leaving his employer and starting a new business venture or from the recruitment of managerial personnel from other firms. Here again, Byggfakta plays a vital role as the main source of managerial recruitment.

Figure 5.1 Managerial mobility



Nearly all the firms have a manager, an owner or a department manager who has worked at Byggfakta. For example, having seen an opportunity in the field of selling information about office accessories to firms, the current general manager of Byggfakta established a firm called FirstIndex. Later on Byggfakta acquired his firm. In 2002, FirstIndex became a subsidiary of Byggfakta with an annual sales turnover of SEK 10 million and it employed 22 people. After the acquisition, the business idea remained the same: to provide the customer, mainly business-to-business customers, with enough information about prices, availability and delivery times. The customers subscribe to the service of the firm.

Another factor that has played a role in the growth and marketing of the cluster is the issue of internationalisation (Ekstedt et al, 2004). This has contributed to investment flows and made it possible for new business formation. The internationalisation processes in the cluster started in 1982, when the general manager of Byggfakta was invited to the USA to discuss the possibility of licensing its business concept and to explore licensing agreements. After a few months of discussions, Byggfakta licensed the concept to a small Atlanta firm that at that time employed 10 people. The irony was that ten years later, this small firm would grow into an international firm and acquire Byggfakta.

The early internationalisation of Byggfakta contributed to the marketing of Ljusdal as a place where it is favourable to place call centre activities. In the mid-1990s, several international companies were attracted to Ljusdal. The quality of the labour force was well regarded so they saw a potential for development. Today, foreign companies own seven of the largest firms in Ljusdal including three of the largest firms: Byggfakta, Twenty4help and DHL. But even if some of the ownerships have an international flavour, the dominant part of the economic activities in the cluster is directed to the Swedish market.

5.2.4 The marketing role of Byggfakta

In addition to the direct spin-offs, there are firms such as Manpower, Twenty4help and Alfa-kassan that could not have had their base in Ljusdal without the presence of Byggfakta. Another example is DHL, which was established in the USA in 1969. In 1992, DHL decided to establish its customer service department in Ljusdal. According to the area manager in Ljusdal, there were two important reasons that contributed to this choice:

lower employee turnover rate than in Stockholm and other cities, and the presence of Byggfakta[52]:

> "We knew from the beginning that we could not use the argument of proximity to universities, airports or cities – Ljusdal is about 400 km[53] to the north of Stockholm. But at the same time we had the Byggfakta card to play. We told them [DHL] that we had a call centre firm with over 150 employees in Ljusdal – and the many other firms that were started here. We told them that people in Ljusdal are proud to work at call centres and that we were willing to provide them with training. We even asked the management of Byggfakta to contact DHL!"

5.3 Understanding the paradox

The evolution of this call centre cluster shows a paradox: although call centres at least in the academic debate, are often characterised by standardised activity with low knowledge content, they appear in clusters, a phenomenon driven by knowledge formation. In this section, I will attempt to explain the paradox of why call centre companies cluster in Ljusdal. What kind of knowledge formation encouraged the cluster of call centres in Ljusdal to develop and expand in the first place? Is it a myth that call centre activity has low knowledge content? In other words: What was the role of knowledge for the formation of the cluster in Ljusdal?

As described in the previous chapter, there is a great variation in the kind of activities performed by the different call centre companies. To understand this, we have to look at the variations of the activities of the companies in regards to main customers, the services they provide, the task of the employees and the turnover. There is a set of position strategies that has developed within the cluster. The following table summarises the differences and similarities between the activities of the firms, including what kind of customers they serve, the service domain they provide, the turnover rate among the

---

Competition is limited between the small firms, as most of them supply different services or products, or they are all involved in the value chain

[53] The actual distance between Ljusdal and Stockholm is 350 kilometres.

employees and the tasks performed by the individual employee. In the following section, I will discuss the variations.

Table 5.2 Differences and similarities between the four categories of call centre firms in Ljusdal

	Information brokers	Outsourced outlets	Telemarketers	In-house call centres
Main customers	Business	Consumers	Consumers	Consumers
Service domain	Differentiated	Standard	Standard	Standard
Employee turnover	Low	High	High	Low
Employee tasks	Varies	Routine	Routine	Routine

5.3.1 Differentiation of the business idea

The knowledge content of the cluster is actually embedded in the business idea of the companies, and not in the economic sector or branch of the cluster. There is specialisation in regards to the kind of customers the firms cater to. As described earlier, most of the information brokers cater to business-to-business customers, such as Byggfakta, while the in-house call centres, the telemarketing firms and the outsourced outlets serve business-to-consumer markets.

The information brokers are the largest group and they provide differentiated services. These are adapted to the needs of their business customers who may represent whole and diversified branches. For example, Byggfakta provides information to all actors in the construction industry. In a time when so much information is available, these categories of call centres in Ljusdal have found their own niche of gathering, processing, storing and selling information.

The development of the activities of the information brokers is the result of the sheer amount of available information on the market. This has created a demand for information professionals who are adept at finding the correct data, and presenting it in the format the client desires. The demand for information in marketing, credit, and legal affairs continues to rise, as does the need for general business information.

The other major group of companies are outsourced outlets. These are independent companies that perform customer relationship activities on behalf of other corporations. Most of their customers are located nationally. These are mainly large corporations, such as Telia, the largest telephone provider in Sweden. When it comes to the business idea of this group, a factor that plays a vital role is the ownership structure and the issue of control in regards to what they sell. By agreements, these kinds of call centres are entrusted with the handling of, for example, a marketing campaign, the maintenance of customer relationships, the identification of customer expectations and the provision of technical support.

The outsourced outlets handle both outbound and inbound calls. Typical outsourced outlets like Twenty4help have different teams of people supervised by a person directing the calls. The employees have quick access to current information about different issues (products, services, accounts and other information) via specialised databases. In some cases, the switchboards are linked through to corporate data networks, including mainframes or local area networks or computer-telephone integration. These networks belong to their business customer but employees at the outsourced outlet may be given access to them.

The third major group are firms that are generally referred to as telemarketing firms. These firms often have flexible business concepts that are decided by their clients. If, for instance, a company in Stockholm or any other part of the country wants to increase its customer base, or promote and test new products, telemarketing firms enter into some kind of outsourcing agreement. Sale campaigns using the telephone still dominate, but the firms also offer Internet production of web sites, banners and other advertising sites. A large share of the work in the telemarketing companies is rather repetitive, but one can also find variation in the tasks in the form of some kind of problem solving. But on the whole, the knowledge content, in terms of the business concept of these companies, is much lower than in, for example, information brokers.

The fourth group consists of the in-house firms. As mentioned earlier, these are units of an existing organisation. The Ljusdal in-house call centres cater to the needs of

consumers and the employees perform routine tasks. The employee turnover is low. This could be attributed to the fact that they are employed on a permanent basis and that they could advance their career within the organisation.

5.4 The human resource dimension of the cluster

Labour specialisation is often cited as the single most important aspect of agglomeration economics. The creation of a pool of labour was one of the key aspects in Marshallian dynamics over a century ago when he argued that proximity facilitates the formation of specialised markets for labour (Marshall 1920). Even Porter (1990, 1998, 2000) discusses the generation of competences within a cluster. In the business case, this issue is a driving force that enhanced the pace of development of the cluster. The business concept of gathering, processing and selling information (the activities of the information brokers), the outsourced outlets catering to the needs of customers and, to an even larger extent, the activities of the telemarketers is embedded in the ability of the workforce to deal with customers. In one sense, the understanding of how the cluster has developed is to view it through the human resource interdependency that exists between the firms in the cluster. The strength of the firms in Ljusdal depends on human resources. Many of the firms I visited were aware that the single most important competitive factor was the recruitment and retaining of personnel, as put by one of the interviewees:

> "Had it not been for the presence of our skilled workers, who are willing to work here, we wouldn't have existed. Had my firm been located in Stockholm, the only recruits that I would have been able to employ would have been students who want to make a few extra bucks. There wouldn't have been any continuity and learning."

5.4.1 Age and gender distribution

In 2002 when I interviewed the actors, most of the people employed in the Ljusdal cluster of call centres were domiciled in the municipality. However, there were also some employees that commute from the nearby municipalities of Bollnäs and Hudiksvall. But what kind of people work at these firms? The national trade union that represents the call

centre workers in Sweden is the Salaried Employees Union, HTF. In a report released in December 2000, it asserted that the employees of Swedish call centres are mainly women (80 per cent) and that 45 per cent of them are under 25 years of age.

Most of the people that I interviewed for this case were managers. My main motive was to investigate how the cluster development process was initiated, the dynamics and the relationship between the actors. Therefore, it is beyond the scope of this study to analyse the wage levels or the gender distribution of the firms. Based on the interviews, however, the call centres employed an equal number of women and men. But there could be female under-representation in managerial positions, since almost all the managers who were interviewed for the purpose of this study were men. In many of the information brokers, most of the employees were men between the ages of 30-60. Outsourced outlets, in-house call centres and telemarketing firms employed both men and women who were younger than thirty years old.

5.4.2 Employee tasks vs. business idea of the firms

The importance of formal education as a prerequisite to work in the call centre firms in Ljusdal is often emphasized. However, very few of the employees in the call centre cluster in Ljusdal have graduate degrees. But there is reason to suspect that there is a high concentration of tacit knowledge among the workers in many of the companies in the cluster. In particular, the information brokers have people who throughout the years have accumulated advanced knowledge.

Most of those who work in the outsourced outlets are upper secondary school leavers who have been given vocational training before they joined the firms. In addition, this group of employees have been given some training after being hired. The employees of in-house call centres are also mainly upper secondary school leavers. However, they differ from the group above in the sense that they are given permanent employment, which enables them to pursue a career in the firm.

The type of work that the individual employee is expected to carry out is reflected by

the kind of call centre he/she works in. The following diagram illustrates this.

Table 5:3, tasks performed by the employee in relation to the business concept of the employer

Task/business concept	Standard	Differentiated
None routine	Outsourced outlets (a)	Information brokers
Routine	Telemarketers	Inhouse

The employees of information brokers have varied tasks and are expected to solve problems in different projects. The customer often asks the firm to gather and deliver tailor-made information. In this regard, there is a knowledge formation aspect that could be sourced to the skills/competences of the employees. For example, MarknadsData AB, an information broker that provides services to buyers and sellers in the care industry employs 15 former enrolled nurses who have gained experiences in the field of health care, former correctional officers, former geriatric care employees and civil servants that had prior work experience to provide services. It has established a database that is constantly updated to keep track of the names, addresses, telephone numbers, availability, and provide online forms for clients to fill. MarknadsData AB customers include organisations that are involved in providing rehabilitation services to individuals (e.g. public/voluntary/private organisations that are engaged in the treatment and care of substance abusers, mental institutions and the prison services). In addition to this, MarknadsData AB also provides information to adoption/foster care agencies and elderly homes as regards availability, price and location.

In the other three groups, standardised tasks dominate, like answering the phone and giving the details of, for example, products to customers. The answers to the customers are generally easily found in a manual. There are, however, exceptions. Some of the outsourced outlets (a) have special departments that appear to manage rather sophisticated customer relationships, like computer support, while others (b) have

standard routines that are similar to the telemarketers where the employee performs the routine task of answering the telephone.

In the cluster, the forms and periods of employment differ. Depending on the nature of the outsourcing agreement, employees at outsourced outlets are mainly offered short-term contracts that run parallel with the outsourcing agreement. On the other hand, the information brokers provide the "until further notice" employment form.

For the employees of these two groups, career prospects differ. Because of the time-limited nature of outsourced agreements, there appears to be no career development plan for the employees of this group. The employees at information brokers have a career path, however. Not surprisingly, they have employees who have worked at the same desk for several years. The employees of telemarketing firms are mainly young and they are provided a basic salary and a bonus depending on the number of sales. In most cases, they are students working part-time.

The information brokers and in-house call centres provide their own on-the-job training to their employees. According to the managers and the employment service officers, the employees of the outsourced outlets in Ljusdal are required to complete a vocational training course in basic computing and they are provided with customer service management training. However, according to one of the managers interviewed for this case, "an essential aspect is an interest in information and telecommunications processes". No doubt this is because they cater to customers in the telecommunications industry. Once employed, the employee is provided with numerous intensive in-house courses, consisting of knowledge about operating systems, software usage and the operation of the hardware. Many of the managers said that knowledge of the English, Finnish, Norwegian and Danish languages is essential together with clear and correct Swedish. This can be attributed to the fact that most of the outsourced outlets in Ljusdal cater to customers in the neighbouring Nordic countries.

Apart from courses in basic computing, employees of outsourced outlets and telemarketing firms are offered courses that include customer relationship management. The local labour office finances almost all these courses and in most cases entrusts a call

centre firm to provide them. Due to the fact that outsourcing agreements are time-limited and subject to review, and the presence of relatively many outsourced outlets that compete for projects, a rotation of labour is created. It is common that when one outsourced outlet receives an offer but does not have the capacity to fulfil it, they entrust it to another outsourced outlet or "borrow" personnel.

5.4. 3 Employee turnover

As mentioned in section 5.1, one of the reasons why Wigart moved his firm from Stockholm to Ljusdal was to reduce the employee turnover rate. However, the employee turnover rates at the call centre firms appear to be related to the kind of firm and to the type of work that the employee is expected to carry out.

In general, the managers of the outsourced outlets interviewed for this case report a higher turnover rate than information brokers. The reason could perhaps be that employees at outsourced outlets have low task variability with routine services often dictated by an outsourcing partner. These partners insert control mechanisms that may hamper the ability of the employee to try out his/her skills. In the case of the information brokers, however, it is the sales ability, and especially the relationship with the customer, that is the primary task. The employee has to understand their customers and solve their problems. At the telemarketing firms, and the majority of the outsourced outlets, employees are mainly provided with manuals, are monitored and work under "real time" with perhaps a few minutes to rest. The information brokers, on the other hand, provide a white-collar environment with workers provided with computers and telephones. Most of the work is delegated and there is no monitoring equipment. The following figure describes the variation in turnover rates and the business idea of the companies.

Table 5:4: The tasks performed in relation to the turnover rate

Tasks/Turnover	Low	High
Routine	Inhouse	Outsourced outlets
Non-routine	Information brokers	Telemarketers

5.5 Horizontal development dynamics

In the previous sections of this chapter, cluster formation has been described from a business knowledge perspective. Although the growth of the cluster has been enhanced by the business concept of the companies and the presence of a labour pool, an important factor that influenced it is the horizontal dynamics between the actors in Ljusdal.

Most of the horizontal dynamics are informal by nature and due to the outcome of social relationships that lie outside the borders of the firms. Several of the managers of the studied call centres, as well as representatives of supporting institutions, described an air of co-operation that exists between them. The benefits of having been schoolmates, being supporters of the same local bandy team and, especially, being work colleagues, have contributed much to the dynamics within the cluster.

Närljus, the local business development authority, has established a formal development network known as IK (Information and Knowledge, which is the term used by the authorities to describe these firms). The aim of this network is to act as an arena to exchange business leads and to encourage the firms to jointly market the municipality. Since its establishment, it has encouraged firms to participate in breakfast meetings to exchange ideas on business development. Although many managers of the studied firms have attended these"network" meetings, they insist that it is the informal networks that have facilitated the interaction between them.

In his licentiate dissertation, Johan Norberg (1999) has studied the extent of

networking between firms in the forestry field in the two municipalities of Ånge and Ljusdal in the region of Hälsingland. By using quantitative analysis, he discovered that networking was limited between the managers of the forestry companies in Ljusdal.

While the majority of the managers interviewed for this case are positive to the development network, many of them mention the importance of the informal networks that exist between them as a success factor. Since Ljusdal is sparsely populated, it is easier for the managers to meet informally to exchange views about business development and learn from one another. The size of the municipality has also played a role, as two of the managers stated:

> "Ljusdal is small in size, everyone knows one another. We eat lunch at the same restaurants, we have been former colleagues, some of us have gone to the same school and as such we have still maintained our friendship over the years."

> "We have lived and worked at the same place over years, our children attend the same school or participate in the same sports event, so we know each other very well."

The extent of informal relationships is not only confined to the firms. There appears to be embedded relationships, including supporting institutions that encompass all the actors. One manager at a supporting institution describes how he made a decision to improve the capability of the firms by meeting the manager of a call centre firm at the nursery that his children attended:

> "I had seen the manager at the nursery on several occasions, but we had never discussed anything relating to business development. However, on this particularly cold day, we exchanged a few words on the business activities of his firm. He told me that he had just sold his old company and was in the process of establishing a new one in the field of managing web-based relationships. His problem was to find trained computer technicians to recruit. The next day, I arranged a meeting with some of the supporting institutions and decided to enlist the services of the local University college of Gävle to conduct a five-credit course!"

Sports activities in Ljusdal have been an arena to meet and to exchange, develop and explore ideas. Just like other municipalities in the region, Ljusdal has a bandy team. Bandy

is a winter sport played on an ice rink the size of a soccer field and the ball is hit with a stick. Most of the managers of the studied firms have mentioned that they were either members of the Ljusdal Bandy Club in their youth, or their children are members today.

Some of the managers sit on the board of directors of other firms in the same market. This interaction facilitates not only the flow of information, but it also strengthens the friendship between them. These informal networks of former colleagues have, for example, played a vital role in the establishment of firms such as Twenty4help. This firm was born out of the closure of a firm called DataSvar in Järvsö, a village south of Ljusdal. DataSvar employed 50 people primarily to answer phone calls from customers. In 1997, an American company called Sykes bought DataSvar and its affiliate in the administrative province of Härjedalen.

The management of the new firm was promised state subsidies if they moved their operations to Härjedalen, which is a support area. This resulted in job losses for 50 employees. The local manager in Ljusdal was offered a job at the new location in the town of Sveg, which he declined. Through the years with DataSvar, he had made contacts with representatives of Telia, the Swedish telephone operator, and saw a business opportunity to start his own business. Therefore, he resigned and immediately explored ways of starting his new firm, WestCall.

Although start-up costs for call centre firms are not as huge as establishing a firm in the manufacturing sector, it was hard finding the personnel needed to run the company and the facility to operate from. The manager contacted a hotel owner who provided a hotel room and allowed him to run a call centre business. With regards to finding personnel to run the operations, he contacted laid-off workers from DataSvar. WestCall was run from a hotel room for nearly a week. Three years later, Twenty4help, a German firm that employs over 1 200 employees worldwide, bought WestCall.

Based on the interviews, inter-firm dynamics such as takeovers are common in Ljusdal. The aim of these acquisitions appears to be to exploit the core competence in the new business domain.

Another example of a business takeover is Svenska Media AB, whose business idea is

to publish monthly and weekly journals that target house owners and management in the construction industry. The owner of Svenska Media worked at Byggfakta as a department manager when he saw an opportunity to start his own firm. After several years, the management at Byggfakta bought his firm and kept him as the manager of the new subsidiary. According to the general manager of Byggfakta, the aim of these acquisitions is to manage its competitive environment because it allows it to strengthen and expand the service domains it provides.

5.6 The supportive role of the public sector

The formation of the Ljusdal call centre cluster is undoubtedly an organic one. In the later phase of the formation of the Ljusdal cluster, there has, however, been some direct support from the public sector. The school system has adopted some courses for the kind of work one expects to meet in the call centre sector. The public labour office is now taking an active part in helping persons and companies of the sector to find each other.

For example, Närljus, the municipal business development unit, has today four business areas to focus on: manufacturing, forestry, tourism and firms in the "knowledge and information" sector, which includes the studied firms. The manager of Närljus says that its major task is to market the municipality as "a call centre Eldorado" to customers in Stockholm, especially since many municipalities in other peripheral areas have benchmarked the firms in Ljusdal. There is some pride in the way the representative of this organisation talks about the call centre cluster:

> "A few years ago, we could travel to Stockholm and present Ljusdal to potential customers as a call centre paradise. Nowadays, however, we have many other municipalities that also claim they have a competent work force; who are experienced in the call centre field. I remember being at a conference on regional development and there were many leaders from municipalities in the north who would like to attract firms. Therefore I think that our strategy ought to be to show customers that we have a call centre cluster. In Ljusdal, we have people who are not ashamed of saying they work at call centres."

5.6.1 Strategies to manage labour

As indicated earlier, labour rotation exists within the cluster, which is far greater in the outsourced outlets and telemarketing firms than in the other groups of call centre companies. Possibly this depends on the nature of the agreements with business partners. According to the managers interviewed, the rotation is necessary. Due to the dynamic nature of the outsourcing contracts, it makes the most of the employees' duration of seasonal employment, depending on the level of business relations with, for example, the outsourcing partner.

A second vital supporting institution that has discovered the growth potential of the cluster is the local labour office, which has adopted a "fit policy". The aim of this fit policy is to attract the unemployed to the call centres (see Table 5.3). According to the labour office manager, job seekers go through "a process" at the job centre. It often begins with a thorough interview with the job seekers, which results in a job plan. The job seekers are asked about their education, work experience and interests. If they say that they want to work at a call centre, they are offered an introductory course in basic computing.

Table 5:5 Course curriculum for potential call centre workers

Course	Duration
Datortek	12 weeks
European Computing Driving Licence	1 to 7 weeks
"Maybe a call centre"	4 weeks
Introduction to programming	2 weeks
Basic programming	9 weeks
Database (Access and SQL)	5 weeks
Basic networking	5 weeks

The job seekers begin their training by attending a basic computing course called "*Datortek*", which runs for 12 weeks depending on the knowledge of the participant. This course is followed by ECDL courses aimed at increasing basic computing skills. ECDL is

a pan-European qualification demonstrating competence in essential computer skills and knowledge. If the job seekers wish to work in the call centre industry, they are offered a course called "Maybe a call centre", which is an orientation course that highlights the pros and cons of call centres. If the job seekers wish to continue, they are invited to attend courses in database, basic networking and office application.

In addition to the above-mentioned courses, the local labour office assists job seekers to attend other "vocational courses" in computing. These courses are advanced in nature and run in parallel. They include Internet courses, sales, virtual basic and Java programming. These courses are bought from firms in the call centre branch.

5.7 Summary and concluding remarks

The aim of this chapter was to illustrate the development of cluster dynamics in terms of relationship building and knowledge creation and provide insights into the organic nature of a cluster formation process in a peripheral municipality. I have, for instance, described the mechanism that induced the formation of the cluster in Ljusdal, and I have identified the factors that contributed to its growth. Moreover, the horizontal dynamics that exist in the municipality, including the role played by the supporting organisations in the development of the cluster have been discussed. Today, the call centre cluster in Ljusdal is composed of the companies and the supporting institutions that complement the activities of the firms in the cluster. The following figure shows a map of the cluster.

In agreement with the findings of Porter (1998), I found that it is the companies that decide the pace of the development of the cluster. But the supporting organisations, such as Närljus, the labour office and the schools, have also played an important role in the development of the cluster.

The information brokers are the largest group and they provide differentiated services adapted to the needs of the customers, which are mainly business customers. Their business operations include gathering, processing, storing and selling information in a time when so much information is available. The sheer amount of available information creates a demand for information professionals who are adept at finding the correct data,

and presenting it in the format the client desires. There is a continuing rise in the demand for information in marketing, credit, and legal issues, so is the need for general business information.

Most of the information brokers in Ljusdal resemble one another and they have adopted the general business idea of Byggfakta but in a different branch. The reason for this is perhaps that it is former employees of Byggfakta who have started most of the other firms, or that their managers have been recruited from Byggfakta. The other major group of companies are outsourced outlets. These are independent companies that provide customer relationship activities on behalf of other corporations. By agreements, these kinds of call centres are entrusted the handling of, for example, a marketing campaign, the maintenance of customer relationships, the identification of customer expectations and the provision of technical support.

With regards to human resources, there is a difference between the firms that make up the cluster in Ljusdal. For example, outsourced outlets have a higher employee turnover rate than information brokers. The reason for this is probably that employees at outsourced outlets perform routine tasks that are often dictated by an outsourcing partner. Despite giving up control, outsourcing partners still exert control mechanisms that may hamper the ability of the employee to try his/her skills. At the information brokers, it is the sales ability and relationship with the customer that is the primary task of the employee. Also, the length of the employment contract contributes to the lower employee turnover rate in these companies.

In this chapter, I have also discussed the role of knowledge in the cluster formation process in Ljusdal. The evolution of call centre clusters shows a paradox: although call centres often are characterised by standardised activity with low knowledge content, they appear in clusters, a phenomenon driven by knowledge formation. What kind of knowledge formation has contributed to the development and expansion of the cluster in Ljusdal?

In conclusion, two interrelated factors have contributed to the knowledge formation of this cluster. The first one relates to skills development. In the regional development

debate in Sweden, there is certainly a profound belief that knowledge gained through higher education is a prerequisite for development and for achieving territorial competitiveness. As discussed in this chapter and the preceding one, however, the knowledge formation of the call centre cluster in Ljusdal is based on among others on the skills and competences of the employees.

Secondly, finding the window of opportunity: In Ljusdal, the first establishment of call centre activity took place more or less by chance. A company happened to be placed there. The business idea of that company got a new potential strength with the introduction and application of the modern information and communication technology two decades later. Some people saw that the idea was applicable to other economic sectors than the original one and a cluster was about to be born. The founders of the new companies imitated the pioneering company and many of them actually got their basic training there.

The Ljusdal case shows that there are great variations of activities in the call centre cluster. Routine activities are mixed with advanced ones. But note that the information brokers, performing varied tasks and expecting the employees to solve problems in different projects, are the predominant kind of companies in this cluster. The other call centre companies perform more standardised tasks, like answering the phone and giving the details of, for example, products from a manual.

Approximately a hundred kilometres southeast of Ljusdal the municipality of Söderhamn is located. Although located in the same political (Gävleborgs län) and geographical region (Hälsingland), there ends the similarity. In the last few decades, while the municipality of Ljusdal has made a name for itself as a call centre Mecca, Söderhamn's economic landscape has been dominated by employers in the manufacturing sector and public bodies that have been induced through policy measures. Prior to that, Söderhamn was a place that had witnessed variously virtuous and vicious forces. Could the municipality of Söderhamn gain cluster dynamics?

In the next three chapters, I look at industrial policy and cluster dynamics in the municipality of Söderhamn. What happens when a municipality that has become path dependent in a particular industry is confronted with new economic realities? Could

policy arrangements induce cluster dynamics? In the next chapter, I will describe the contextual setting of the policy and hybrid cases.

> " A district which is dependent chiefly on one industry is liable to extreme depression, in case of a falling-off in the demand of its produce, or a failure in the supply of raw material which it uses. This evil gain is in a great measure avoided by those large towns or large industrial districts in which several distinct industries are developed. If one of them fails for a time, the others are likely to support it indirectly" Marshall (1920, p 227)

6. THE CONTEXTUAL SETTING OF THE POLICY AND HYBRID CASES

The aim of this chapter is to capture the contextual setting of two empirical cases – the policy and hybrid cases. The contextual setting of the policy and hybrid cases is a municipality that has undergone both virtuous and vicious forces of economic development that had been propelled by technology and market forces. In the first section, I will give some background information on the municipality of Söderhamn where the two case studies were carried out and I will describe the structural changes and crises that have confronted this peripheral municipality. In the second section, I will present the current situation of Söderhamn in terms of growth, education, employment and economic structure.

6.1 The growth poles of the nineteenth century

As mentioned earlier, the municipality of Söderhamn, as well as the municipality of Ljusdal, belongs to the administrative province of Gävleborg. Söderhamn is situated approximately 250 kilometres to the north of Stockholm in the geographical region of Hälsingland. Following the municipal reforms of the 1970s, two neighbouring

municipalities[54] merged with the municipality of Söderhamn. In this study, the name Söderhamn refers to the new municipalities including these two villages.

Söderhamn is unarguably a place that has witnessed Pérroux's "growth poles" and Myrdal's heinous and virtuous forces of economic development. This municipality is one of the places that saw the dawn of Swedish industrialisation during the latter part of the nineteenth century. According to Lindberg (2003), it was probably here that modern Sweden was born. Although having considerably contributed to the building of the Swedish welfare state, Söderhamn has since become a victim of the industrial restructuring caused by technological innovations that changed the division of labour.

Just as in the case of Ljusdal and several other municipalities in today's peripheral regions, the business landscape of Söderhamn was, in the pre-industrial period, mainly dominated by small-scale farming. However, in the mid-eighteenth century many manufacturing companies were started or began arriving as a result of the abundant natural resources of forestry. These were mainly sawmills in the hinterland of Hälsingland as well as small-scale companies in the coastal areas. The natural resources and the accessibility of deep-water harbours for transportation contributed to it becoming an important core area in the nineteenth century. However, as the pace of industrialisation was strengthened, Söderhamn was slowly becoming peripheral.

The Economic Historian Henrik Lindberg (2002) has described the effects that the changes of the industrial structure have had on the municipalities of Söderhamn and Hudiksvall in the region of Hälsingland. In his licentiate and doctoral dissertation, from which I have drawn valuable information, he compares the economic development in these two municipalities from 1850 to 1995. He, among other things, describes the glorious period of the forestry cluster in the area, as well as the challenges it has been faced with to survive. Furthermore, he describes the measures political leaders in the municipality of Söderhamn have taken to solve various crises between 1975 and 1985.

[54] Norrala and Söderala

6.1.1 Forestry clusters

In the region of Hälsingland, forestry clusters had already begun to develop in the nineteenth century. Because of the availability of forest in the region, the first wave of companies that were established in Söderhamn consisted of sawmills that mainly catered to local and regional needs. With the advance of industrialisation and improved transportation, Söderhamn witnessed the arrival of a new wave of firms, mainly in the manufacturing sector, which catered to the needs of the firms that were involved directly or indirectly with the forestry cluster. The arrival of these manufacturers was not unique to the region but was also in force throughout Sweden. Unlike their predecessors, the sawmills in the case of Söderhamn and the mining regions in the north and central part of Sweden (Bergslagen) these new firms processed the raw materials into goods that could be shipped southwards and to international markets. Another difference was that these firms did not depend to the same extent on geographic proximity to sources of raw materials. Instead, what was important to them was proximity to labour markets, customer bases and strong infrastructure, such as harbours to facilitate the transportation of their goods (Nilsson 1998, Lindberg 1999).

In the case of Söderhamn, a boom in the forestry sector took place in the mid-nineteenth century, when the company Söderhamn Eriksson (later on taken over by e.g. Kockums and Procordia) was pioneering in manufacturing steam-driven saw mills. It sold its products to firms in the region, where woodcutting and processing of wood prior to this had been done by hand (Lindberg 1999, Mårtensgård 2000).

The forestry cluster consisted of core companies, whose business activities centred on forestry production. These were mainly in the pulp industries that were set up in the mid-nineteenth century and in the sawmills that were being modernised. Surrounding the core companies were firms that supplied the machines and provided transport so that the goods could be shipped. The following figure shows how the forestry cluster was formed in Söderhamn.

Table 6.1 The forestry cluster of Söderhamn

Core industry	Supporting industry
Wood and pulp producers	Logistic firms, machine manufacturers, Consulting firms, service providers and suppliers

Source: Adopted from Lindberg (1999:24): The forestry cluster in Söderhamn.

6.2 The vicious forces of the twentieth century

Industrialisation enhanced the pace of development for the companies and contributed to increased opportunities for the people. In 1920, for instance, the sawmills in Söderhamn employed nearly 3 000 people, i.e., one fifth of the total labour force of the administrative province of Gävleborg (Lindberg 1999).

The sawmills continued to be the main source of employment in Söderhamn until the beginning of the twentieth century when the arrival of the cellulose industry changed the economic structure in the region. Innovations in production processes and the development of new or improved products led to higher productivity and enhanced competitiveness. At the same time, it also contributed to a reduction of the number of people employed in the forestry sector.

In the period leading up to the Second World War, a new wave of firms emerged that processed forestry products into goods mostly for export. The onset of power stations increased the ability of companies to produce cheaper. Furthermore, technological improvements in production and investments in new machinery increased the efficiency and productivity in the production process of the companies, resulting in lay offs and redundancies. At the same time, new products and new designs were introduced. One example of these companies is Ala Sågverk, which was established in 1854. After having exclusively been operating in sawmill production, this company was a pioneer in the

artificial drying of wood in 1946. Less than a decade later, it managed to increase its output by introducing the first barking machine in the world. Today, Ala Sågverk is the last remaining sawmill in the region (Lindberg 1999, Mårtensgård 2000).

Along with increased competition, a new ownership structure was created. For instance, the company Sulfit AB Ljusnan is the result of a fusion between three pulp mills in 1908. This company focused on producing sulphite until it switched to sulphate in the 1970s. Today, this company produces different kinds of paper products of which 90 per cent is exported (Lindberg 1999, 2003, Mårtensgård 2000).

6.2.1 Backlash effects

Söderhamn's path to becoming a periphery commenced in the early twentieth century. The arrival of companies in the cellulose industry had a dramatic effect on the number of people employed in the sawmills. During the period of 1920 -1940, the number of workers in the sawmills was reduced by two thirds. From employing 2 200 people in 1920, the sawmills employed no more than 700 people in 1940. During the same period, the total number of people employed in the cellulose industry rose from 650 to 1 200 people. In addition, several sawmills were closed down (Lindberg 1999).

Improvements in technology also resulted in companies investing more money in machinery that could perform tasks previously performed by humans. Thereby, more machine-hours than man-hours significantly reduced the labour force, while at the same increasing the productivity of the firms (Nilsson 1998, Lindberg 1999).

While technological improvements in production and marketing have contributed to industrial restructuring, they have also become associated with the word "crises". Söderhamn epitomises the economic transformation that municipalities dominated by traditional industries have gone through in terms of working life and industrial transformation (Lindberg 1999).

6.2.2 Spread measures

At the same time as Söderhamn and other peripheral municipalities became the victims of industrial restructuring; we can observe an active industrial policy. In the early 1940s, a committee was assigned by the Government to find a suitable home for the first air force base in the northern part of the country. Representatives of Söderhamn went to Stockholm to convince the committee to place the air force base in their municipality. Following the closures of the sawmills a decade earlier, the representatives used the labour market situation in the municipality as an argument. In spite of hard competition from other municipalities, it was finally decided to place the air force base in Söderhamn (Lindberg 2003, Mårtensgård 2000).

Three years after the establishment of the air force base F15 in Söderhamn, the municipality faced a new crisis. Unlike the previous crises, this one was not caused by the closure of sawmills, but by the world war. Not only was there a general decline in the nation's economy – most of the companies in the municipality were export-oriented and their ability to export their products was curtailed by the war. However, at the end of the world war, Söderhamn saw a boom when the markets were reopened.

The crises, however, did not end there. Twenty years later in 1970, the Government again came to the rescue. Through subsidies the Government convinced the telephone company LM Ericsson to move parts of its operations to Söderhamn. The factory was to produce components to the automatic telephone systems pioneered by LM Ericsson. The establishment of the factory had a profound effect on working life. Out of the 400 workers, 250 were women. In the past, most of the companies in the municipality, including the sawmills and the manufacturers had employed men, while the women were employed within the service industry and public agencies (Mårtensgård 2000, Lindberg 2003).

Due to the oil crises of the 1970s and the subsequent structural changes that followed, Söderhamn experienced a rise in unemployment because most of the firms in

the municipality operated in the export sector (Lindberg 2003). In December 1975, for instance, 150 of the 470 employees at LM Ericsson lost their jobs as a result of the repercussions of the oil crises. In the following years, production capacity was reduced in several other companies in the municipality, which resulted in job cuts (Lindberg 2003).

6.3 From traditional sources of employment to "IT[55]"

In the period leading up to the new millennium, Söderhamn witnessed yet another crisis. In the mid-1990s, as part of the restructuring of the armed forces, the municipality lost an important employer. The air force base F 15 was closed down, depriving nearly 500 people of work (Mårtensgård 2000).

When the decision to close F15 was finally made, the municipality of Söderhamn faced the loss of 250 military jobs as well as 250 civilian jobs that catered for the training of 300 to 400 conscripts per year. In addition, many small firms in the region that provided different kinds of services to F15 lost their sources of revenue. The closure brought about uncertainty on the job front, as expressed by the former commander of the air force base:

> " F15 played a vital role not only in the defence of the nation, but also on the job front. In recent years, it became the backbone of the Söderhamn economy. Many families depend on it as a source of employment. It was not unusual to find both spouses, and in some cases a whole family, who made their living working at the F15."

6.3.1 The vision of a changed business structure

After having worked closely together to try to save the air force base, including lobbying through the capital of Stockholm, political leaders from all parties on the political scene in Söderhamn took a decision that aimed at revitalising the local economy. In a unanimous decision in December 1997, the local council adopted a document entitled *Vision 2005*. This document was the result of a local mobilisation campaign to engage the inhabitants in an attempt to improve the business climate of the municipality. Based on proposals

[55] Information technology

made by the inhabitants, it contained the following five points to enhance the development of Söderhamn:

- The first vision was to maintain the existing co-operative atmosphere. Following the announcement of the closure, there was a strong willingness to work together in finding common solutions to reviving the local economy.
- The second vision was to develop a sustainable environment based on the frameworks of Agenda 21.
- The third vision was to facilitate and encourage investments from the private sector and to create an atmosphere that would encourage people to settle down in the municipality. For its realisation, the authorities embarked on a national and regional marketing campaign to encourage tourism and to "put Söderhamn on the map".
- The fourth vision was to foster collaboration between the public and private sectors. This included establishing a business developmental unit, *Söderhamns näringsliv*. The board of this organisation consisted of elected political representatives and civil servants. Its objectives were among others to encourage the establishment of new companies and to facilitate business start-ups. In addition, this organisation would promote the establishment of two distinct areas: a soft centre and a logistic centre.
- The fifth vision was the project "Learning Söderhamn". With the arrival of the digital economy, the leaders identified the benefits of digital technology in terms of improving educational levels and the furthering of competence. With digital artefacts, such as the Internet, obstacles would be removed, such as the limited labour market size in the region and incentives for firms to localise in the region. As location mattered less, it was assumed that the companies in Söderhamn could compete on the same terms as those in Stockholm. In addition, the IT revolution was predicted to give Söderhamn equal opportunities to access knowledge. Human-based resources, such as

> competences and skills, would be easier to acquire. With the necessary infrastructure and the right local milieu, weaknesses could be turned into strengths. In particular, the Internet was hailed as a vital instrument to enhance the growth of small companies.

In this dissertation, I am concerned with the last two goals stipulated above. To realise the goals of *Vision 2005*, two development processes were initiated: the establishment of Soft Centre Söderhamn (the policy case) and Flygstaden "the Air City" (the hybrid case). The first development process was based on capitalising on the benefits of the Internet and involved the establishment of a science park that would facilitate the growth of small- and medium-sized firms in the information and technology sector. The second development process was to revitalise the old air force base F15 into a modern hub for a cluster of logistics firms.

6.4 Population, education and business structure

In the following section, I will present the current situation of Söderhamn in terms of population growth, education, employment and business structure. The primary data are from Statistics Sweden. The main aim of this section is to show the development of Söderhamn as compared to the nation and the administrative province of Gävleborg.

6.4.1 Population trends

Although Söderhamn might have been a centre that attracted workers from the surrounding communities in the period following the Second World War as a consequence of economic growth, it has, since the 1970s, experienced declining population rates. While the Swedish population rose by 11.1 percentage points during the period of 1970 -2003, the population of Söderhamn decreased by 15.4 percentage points. This decrease is even faster than for the administrative province of Gävleborg as a whole, the population of which decreased by 5.7 percentage points during the same period. From

being the home to 31 900 people in 1970, the population of Söderhamn in December 2003 is 27 000. Table 6.1 shows the population changes in Söderhamn as compared to the administrative province of Gävleborg and the nation as a whole.

Table 6.1 Population changes 1970-2003 in Söderhamn, Gävleborg and Sweden.

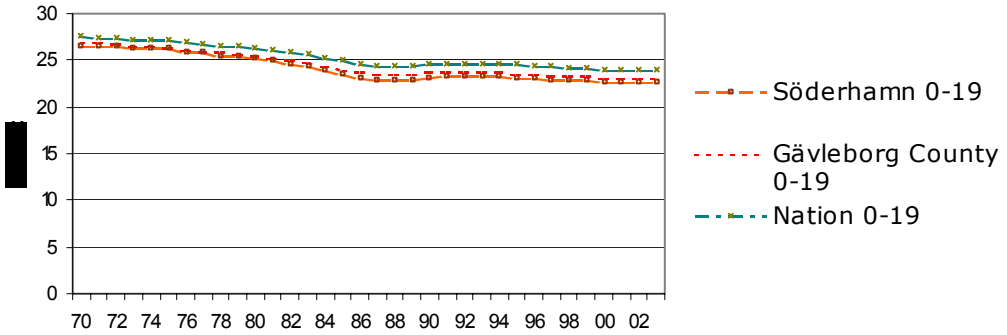
Population Index 1970=100									
Region/year	1970	1975	1979	1983	1987	1991	1995	1999	2003
Söderhamn	100	101	98	96	93	93	92	87	85
Gävleborg	100	100	100	99	98	97	98	96	94
Sweden	100	102	103	103	104	107	109	110	111

Source: Statistics Sweden, census 1970-2003

For Söderhamn, the negative demographic trend began in 1973 and continued into the new millennium. In the first two years of the 1970s, the population of the administrative province of Gävleborg decreased by 1.8 per cent, while Söderhamn was one of the few municipalities in the province whose population slightly increased. The positive population development took a slight dive in 1973, while in the following year Söderhamn succeeded in turning the previous year's decrease into an increase of nearly 2 percentage points.In 1976, following the downturn in the Swedish economy due to the oil crises, Söderhamn experienced a decrease in the number of inhabitants. Reduced forestry-related production resulted in 600 jobs losses. Since that period, population figures have shown a continuing downward trend.

The census statistics also reveal a declining number of young people in the municipality. In 2003, the share of people between the ages of 0-19 in Söderhamn was 22.6 per cent as compared to 24 per cent for the nation and 23.1 per cent for the administrative province (Figure 6.2).

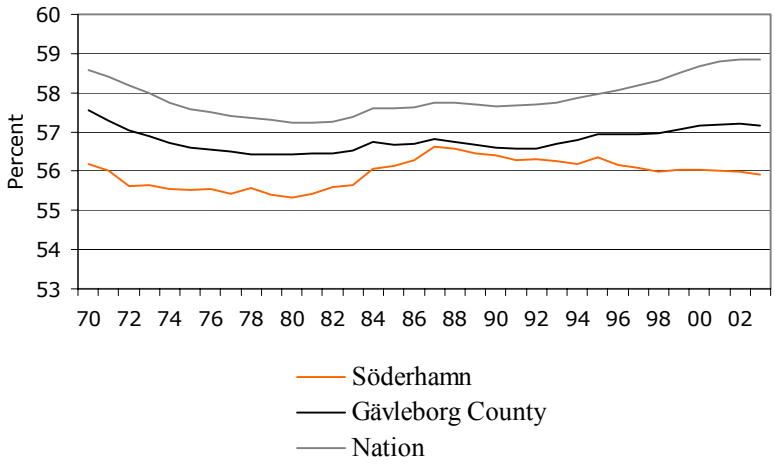
Figure 6.2 Share of population in the age group of 0-19 years.



Source: Statistics Sweden, Census 1985-2001

The opposite is true when it comes to the share of people over 65 years old, which has increased from 17.2 per cent in 1970 to 21.5 per cent in 2003. Consequently, the municipality of Söderhamn has a lower number for the working population in the age group of 20-64 years as compared to the nation and the administrative province (figure 6.3).

Figure 6. 3 Share of the working population 20-64 years



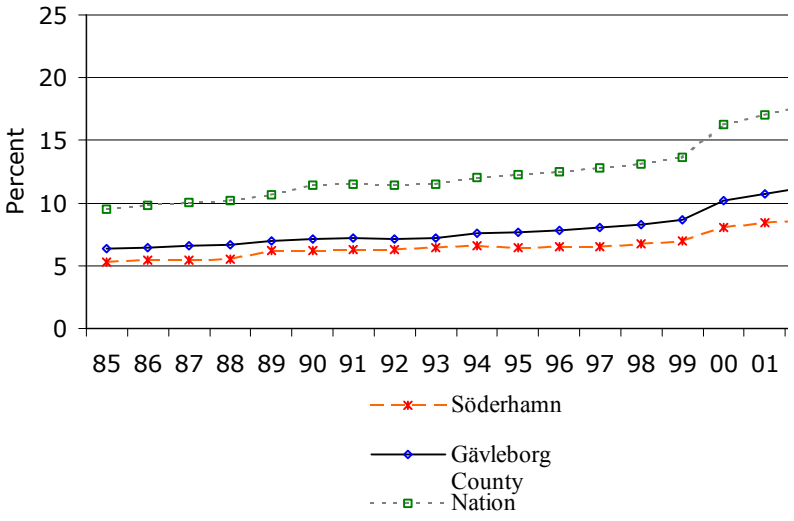
Source: Statistics Sweden

6.4.2 Educational levels

Educational statistics reveal that Söderhamn has a lower share of people with higher education as compared to the nation and the administrative province. In 1985, 5.3 per

cent of people between the ages of 25-64 in the municipality had at least an upper secondary education as compared to 6.3 per cent and 9.5 per cent for the province and nation, respectively. While a positive development was recorded for the whole nation with regards to the levels of education among the population, the percentage change was lower in Söderhamn than for the nation and province. During the period of 1985 - 2002, Söderhamn witnessed an increase of nearly 3.4 percentage units as compared to an increase of 4.9 percentage units for the province and 8.3 percentage units at the national level. Figure 6.3 shows educational statistics for Söderhamn as compared to the administrative province and nation during the period of 1985-2002.

Figure 6.4 Share of population in the age group 25-64 with at least 3 years of upper secondary education 1985-2002.



Source: Statistics Sweden, Census 1985-2001

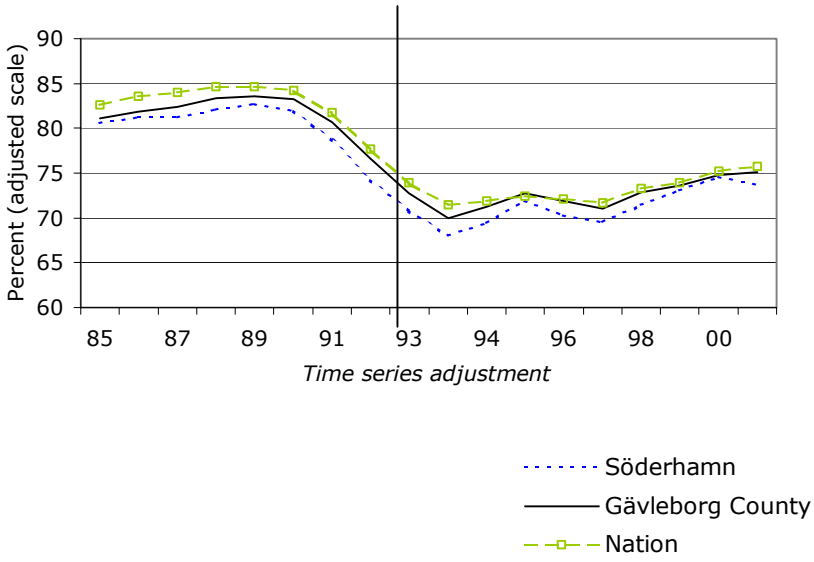
6.4.3 Employment statistics

In Söderhamn, the share of people employed in relation to the available workforce has decreased by 6.1 percent during the period of 1985 - 2001. In 1985, 80.5 per cent of the

population between the ages of 19-64 were employed in Söderhamn´s compared to 81.1 per cent and 82.7 per cent for the administrative province and nation, respectively.

In the early 1990s, the nation as a whole experienced a drop in employment rates. Nearly 600 000 jobs were lost due to the financial crises of the late 1980s. The share of employment dropped by 11 percentage units between 1990 and 1993 in both Söderhamn and the nation as a whole. Since then the figures have improved for the nation, and in 2001 it is 75.8 per cent. The municipality of Söderhamn has historically had a lower employment rate as compared to the nation and the administrative province. In 2001, the employment rate in the municipality was 73.7 per cent as compared to 75.1 per cent in the province. Figure 6.4 shows the share of population employed between 1985 and 2001 in Söderhamn, the administrative province and the nation.

Figure 6.5 Share of population employed 1985-2001.



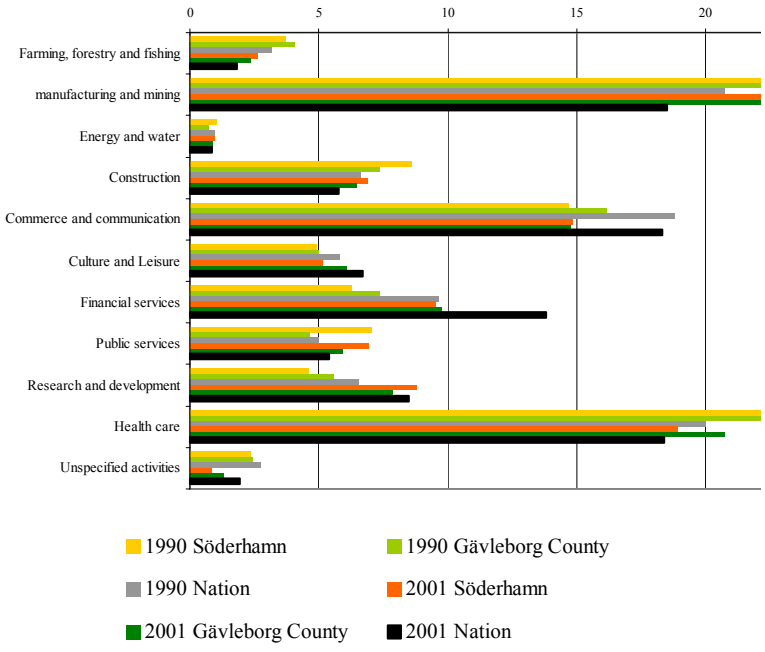
Source: Statistics Sweden (RAMS)[56]

[56] Register-based labour market statistics.

6.4.4 The economic structure

Until the early 1970s, manufacturing was the backbone of the local economy in Söderhamn. In 1970, the forestry cluster and manufacturing firms such as Ericsson employed 46.8 per cent of the labour force in Söderhamn (Lindberg 2003). By 1990, this figure had dropped to 30 per cent. On the other hand, in the 1970s the number of people employed by the service sector rose dramatically. The increase from 42 per cent in 1970 to 60.3 per cent in 1979 was due to investments made in education and health care and the eventual restructuring of industry. In terms of the sector that employed the highest percentage of people, manufacturing remained the dominating sector in 2001. This sector employed 24.6 per cent of the total workforce. This is higher than the national and administrative province averages, which were 18.5 and 23.9 per cent in 2001, respectively.

Figure 6.6 Employment in different sectors of the local economy 1991-2001.



Source: Statistics Sweden

In this regard, Söderhamn appears to show the same pattern of employment as in the administrative province and nation. Manufacturing and health care services are the major employers. In 1990, 46.8 per cent of the working population were employed in the health care and manufacturing sectors. Ten years later, the number of people employed in the manufacturing sector had risen by 1 percentage unit, while the number of employees working in the health care services had dropped by 4 percentage units. Figure 6.5 shows the economic structure in the municipality, the administrative province and the nation during the period of 1991 - 2001.

6.5 Summary and concluding remarks

The aim of this chapter was to give the contextual setting of the policy and hybrid cases, which comprise the municipality of Söderhamn. It is located in the same geographical province of Hälsingland and the administrative province of Gävleborg as Ljusdal previously discussed.

Unlike Ljusdal, where there were small companies in the forestry industry that made the municipality their home following the establishment of the railway station, the municipality of Söderhamn's economic history is different. It is a municipality that was home to firms in different sectors of the economy including the forestry cluster that developed. This cluster consisted of core firms that included wood and pulp companies, whose activities were complemented by transportation firms, machine manufacturers and service providers and consulting firms.

Different innovations and technology were important mechanisms that brought with them both virtuous and vicious forces to Söderhamn. It had witnessed the development of propulsive industry that attracted investment, workers and companies that functioned in the forestry cluster that developed and flourished in the early days of industrialisation. Since the 1970s, however, Söderhamn has become a municipality that is peripheral in terms of economic development. Many of the companies that were attracted to

Söderhamn because of the resources were closed down due to technology induced industrial transformation.

Unlike Ljusdal, Söderhamn has benefited from different kinds of regional development strategies meant to offset the backlash effects of industrial restructuring. In the mid-1940s, following the closure of several sawmills, the government decided to locate an air force base, the F15 to compensate for the subsequent job losses. In the same decade, LM Ericsson was established in Söderhamn to provide employment following the industrial crises.

These two developments were to pave the way for an active government policy to come to the rescue of Söderhamn in times of future crises. However, as Lindberg (1999) suggests, this was a period when LM Ericsson and other industries in the manufacturing sector experienced an expansion of their markets. This was the period when Swedish industry was competitive and Swedish products were in high demand. The decision by LM Ericsson to move its operations to Söderhamn and then to the neighbouring municipality of Hudiksvall meant that the number of women employed increased.

Since the seventies, the picture of Söderhamn as a place of prosperity has changed. Today, it is one that is characterised by a declining population, a larger chare of aging population and lower education compared to the nation and the country. In the mid-1990s, following budgetary measures and a rethinking of defence policies in Sweden, an announcement was made to close down the air force base - the F15 - which apart from providing employment opportunities had a symbolic value in the municipality. Apart from the psychological blow, the closure resulted in direct job losses as well as indirect ones as many suppliers were affected.

When the closure was announced, the leaders of Söderhamn embarked on a path dependency strategy of exploring ways to revitalise the local economy of the municipality. In the next two chapters, I will provide insights into how these development projects that were aimed at achieving cluster dynamics were initiated and carried out.

> The increased importance of innovative regional clusters as an engine of economic growth has led policy makers to abandon the policy cry frequently heard two decades ago, […] to ”How can we grow the next Silicon Valley?” (Audretsch 2000 (b), p. 344)

7. THE CLUSTER FORMATION PROCESS OF THE POLICY CASE

In chapters 4 and 5, I described the cluster development process of the business case in the municipality of Ljusdal. A series of events that contributed to the evolution of the call centre cluster were identified, such as the availability of labour and the benchmarking of the business concept of ByggFakta of gathering, processing and brokering information. In addition, I described how the onset of digital technology enhanced the growth of the cluster and how the supporting institutions embarked on different strategies of making the cluster competitive. Another factor that played a vital role in the evolution of the cluster was the degree of social relationships that lay outside the borders of individual firms.

In contrast to the organic nature of the development of the cluster in Ljusdal, which was based on exploiting the business concept of brokering information, the creation of the Soft centre in Söderhamn was a political move to regenerate the economy following the closure of the air force base. How did the cluster formation through policy measures manifest itself? Could policies induce cluster dynamics and could it be done as was intended in Söderhamn?

The contextual setting of the business case is the municipality of Söderhamn, which has undergone industrial restructuring and has experienced a path dependent policy. As described in Chapter 2, the concept of clusters has become an enticing development tool that could contribute to relationship building and knowledge creation. This case illustrates a policy move to achieve cluster dynamics. In a way it also reflects how the innovation system through policy is used in practice.

The aim of this chapter is to provide insights into a cluster formation process initiated by policy makers. In the first section, I will discuss the mechanisms that induced the cluster. In the second section, I will describe the knowledge formation process of the potential cluster. The third section contains a description of the political leaders' attempts to develop relationships between the companies. The chapter is concluded by a summary and concluding remarks.

The empirical material of this case is based on 24 interviews undertaken with 16 owners of small enterprises and representatives of business development agencies. In addition, this case is also the result of my own participation in the project to enhance business development in the municipality. As discussed in Chapter 3, being at the centre of events also provides opportunities to know what is happening in the area, for example by listening to the local radio station and reading local newspapers.

7.1 A time of opportunism

I have opted to call this case "a policy case" because of the nature of the cluster formation process and the active role of policy in attempting to induce a dynamic process in Söderhamn. In a way, this policy project is also a case of opportunism or "new economy hubris" – to benefit from the advantages of the "new economy" and to create a futuristic science park in a municipality that lacked the prerequisites of higher education by drawing mainly on the benefits of the Internet. The policy case was born in the nineties. This was a period that saw the emergence of new business formations that defied traditional structures in terms of the products and services being sold. The arrival of the Internet in the 1990s brought with it a period in which there was a digital boom. For example, Sölvell *et al* (2000) report how relatively unknown new business formations following this digital boom in Sweden were valued higher than traditional firms at the Stockholm stock exchange. Netcom Systems, a firm that was started in 1997 and operated in the telecommunications sector, was valued more by the stock market than Telia, the then state-owned firm. In that decade, several new firms, such as Framtidsfabriken,

Readsoft and Intentia, entered the business environment and were hailed as being successful.

No doubt this digital boom stimulated regions throughout Sweden to jump onto the success train. To the authorities in Söderhamn, the closure of the air force base came at a good time. This was the 1990s, when the business development debate focused on the benefits of digital technology to enhance regional development. It was time for the municipality to accept that the presence of traditional industry would no longer lead to sustainable development. Instead, the diffusion of digital technology could mark a new era. The idea of information technology (IT) as a future strategic tool to overcome the problems of lying in the periphery, and as a catalyst for creating jobs, was expressed by the local politician Stig Wigren:

> "There is an awareness today that old jobs will not return and that there is a need for new competencies in Söderhamn. If (we) succeed in creating attractive modern jobs, good educational opportunities (…) in five years, we hope to create five hundred IT jobs at the Soft centre".[57]

The ability of the Internet to transform the industrial dynamics was not only confined to discussions in Söderhamn. The notion that the information technology sector would grow, interbreed and dominate other economic activities was also expressed in the Government Bill 1999/2000:86. This bill stated the overall policy objective of Sweden becoming the first country to create "an information society" for all its citizens.

At national, regional and local levels there was an atmosphere of optimism as to the many benefits that could be derived from the onset of the digital technology. The Internet was viewed as a tool that would facilitate knowledge building and enhance skill levels of the citizens. In addition, digital technology was expected to contribute to the emergence of a new set of companies in the service sector, i.e., in banking, insurance, finance, travel, advertising, etc. In an attempt to capitalize on the opportunities offered by the Internet, the municipal leaders in Söderhamn decided to induce cluster dynamics by establishing what in the local press and policy discourse was termed as a "science park".

---

[57] Wigren cited in the book *Greppet* (The Grasp) 40:1998. My translation.

7.1.1 A science park-based concept

In a way, this policy case also illustrates how mechanisms to induce knowledge building have become integral parts in policies for regional development strategies. In Sweden and elsewhere, the development of science parks is seen as a future growth engine that would lead to territorial development. Political leaders have great expectations in the ability of science parks to contribute to national and regional development. According to Ferguson (1995), the reason for this is the relative success of Stanford Science Park in the USA in contributing to the industrial dynamics of this region and the subsequent growth of ICT industry.

Nationally, political leaders view Science parks and their development as a salvation for Sweden's future in becoming a nation driven by knowledge-intensive industry. Gaining in importance following the development of ICT, the first science park in Sweden was established in 1983 in Lund. In 2000, there were 32 science parks located in close proximity to universities and university colleges. There was a boom in science parks during the period of 1994-2000 when their numbers doubled (Erfors 2004). As to be discussed later, Söderhamn did not have a physical proximity to a university.

What is a science park? A science park is a broad term that encompasses technology parks, innovation centres, research centres and research parks (Ferguson 1995). It could be defined as a geographic location that has an operational and/or formal association to higher education institutions such as universities and research institutions. According to Ferguson (1995) the concept of science parks is simple; Geographic proximity to institutions of higher education encourages interactions between companies and the university. Since institutions of higher education are sources of knowledge, the presence of science parks is expected to contribute to turning codified knowledge into business ideas. The science parks become an arena for academics to test a business concept that could be turned into a product or a service (cf., Ferguson 1995, Erfors 2004). Despite the ambitions of regional and national leaders to create an environment of development and growth, several studies have revealed the limitations of science parks in generating the

dynamics of proximity (cf., Sörlin and Törnqvist 2000).

The most important actors in a science park are the institutions of higher education, the tenants and the park owners. The university or research institutions are expected to become a source of knowledge and intellectual platform and provide business support in terms of initiating technology transfer, encouraging and supporting business start-ups and providing various incubation schemes to help small firms grow. The science park itself is expected to provide an environment in which entrepreneurs can develop close interactions with other centres of technology as well as the necessary infrastructure, such as administration, counselling, joint marketing and financial advice (Cox 1985, Ferguson 1995).

For the municipality of Söderhamn the creation of "soft Centre" was indeed a new dawn. All of a sudden the discourse on the Internet presented the municipality with new opportunities. Having since long relied on a few employers in the manufacturing sector, the "new economy"[58] would allow Söderhamn to regenerate its economic base. It would give them access to new sources of knowledge and enable them to focus on the growth of small firms. How should Söderhamn benefit from the "new economy"?

7.2 The Söderhamn committee

Following the closure of the air force base, the government appointed a committee to explore ways to compensate Söderhamn for the loss of jobs caused by the closure. This committee, later known as the Söderhamn committee, was headed by the trouble-shooter Lars Jeding[59], who was assigned the task of helping Söderhamn to revitalise its economy. At the beginning, the committee considered various proposals that aimed at creating jobs. Among the many proposals that were discussed, two primary strategies were put on the table: First, to consider ways in which the government could relocate some state-run agencies, or how large firms could be encouraged to move their operations to Söderhamn.

[58] The term "new economy" was used in the debate on knowledge economy.

[59] Jeding has since then also been appointed to head various committees to explore ways of helping communities that suffered job losses due to firm closures in other parts of the country.

Secondly, to explore ways to encourage locally based development initiatives to foster the emergence of new firms in the service sector.

While discussing the above two proposals to rejuvenate the area, the committee got their first break in terms of carrying the first proposal into effect. Caterpillar, an American firm that specialises in forest equipment, announced that it would establish its presence in Söderhamn. A few weeks previously, it had acquired a local company that manufactured forestry equipment and wanted to expand its operation. Caterpillar obtained SEK 20 million in the form of regional development incentive from the National Board for Industrial and Technical Development, NUTEK (Press release from NUTEK 4 February 1999). The investment contribution was earmarked to create 50 new job opportunities[60].

Although the authorities in Söderhamn and the members of the committee welcomed this measure as a step forward in job compensation, it was still considered insufficient given the 500 jobs that had been lost due to the closure of the air force base. According to the first proposal, several government agencies were to be relocated in Söderhamn, including the Department of Agriculture, the Patent and Registration Office, the National Social Insurance Board and the Government Employee Pensions Board.

7.3 The "panaceas" package

On the front page of the local newspapers in December 1997, the inhabitants of Söderhamn could see the picture of the chairman of the Söderhamn committee holding a large parcel. The Söderhamn committee was delivering a "package" solution that would compensate Söderhamn for the job losses and create new jobs. The chairman, Lars Jeding, was quoted as saying that the closure of the F15 base was the best thing that had ever happened to Söderhamn. The symbolic package included both endogenous approaches to create new jobs and measures to relocate state-run agencies.

However, the underlying theme of the package was an emphasis on the importance of knowledge as a strategy to achieve sustainable development. Knowledge formation was central to offset future crises in Söderhamn. Therefore, it was necessary to allow the

[60] In the beginning of 2003, Caterpillar announced job cuts due to a fall in demand.

inhabitants and firms access to higher education, which by now was viewed as a liability in Söderhamn. The idea of establishing an institution of higher education was discussed, preferably a university college in Söderhamn. This proposal was however abandoned considering the presence of the University college of Gävle in the region. The University college of Gävle was contacted to explore ways of establishing a mini campus in Söderhamn, but this too failed.

Because the authorities had identified higher education as a tool for future business development, the committee explored the possibility of having a virtual infrastructure that would allow them access to higher education. With the arrival of information and communications technology (ICT), geographical distances were no longer supposed to be a problem. As an alternative to a university, a science park would foster entrepreneurial growth and the establishment of government agencies would enhance research and development. Moreover, in co-operation with different universities throughout the world, the centre was predicted to provide the firms and their employees in Söderhamn the necessary knowledge in information technology (Greppet 1998). Thus, the committee had laid the foundation for starting a science park and for how it would function.

7.3.1 The design of a soft centre

To realise this goal, eight different projects based on the proliferation of information technology were started. These projects were financed through the administrative province authorities, the local council, the European Union and the state. The projects included the development of an IT platform and the virtual education centre, the implementation of IT 2000 technology and the establishment of government-financed research organisations, such as the Council for Working Life Research and the National Institute for Working Life.

Together with the other projects, the Council for Working Life Research and the National Institute for Working Life were expected to contribute to knowledge formation. In particular, through research and other inputs the researchers were expected to help companies, which were envisaged to cluster at the Soft centre, to develop their business ideas. To this end, in September 2000, the National Institute for Working Life established

a "research" station in Söderhamn. This station has seven doctoral students (including the author of this dissertation), mainly in the fields of behavioural and social sciences. The fields of their studies include research on various development processes taking place in Sweden. The following table shows the envisaged actors of the science park and their respective roles.

Table 7.1 The envisaged actors and their roles

Actor	Role
The Soft centre	Provide necessary infrastructure such as administration and a common server Provide an arena for networking Hold seminars Market the companies
The National Institute for Working Life	Provide research and development support
The Council for Working Life	Provide research and development support
The virtual education centre	Broker competencies
Small established firms	Provide IT-related competence to the municipality
Incubator services	Identify and provide assistance to potential firms

Other important actors in the stipulated framework were the potential customers, e.g. larger established firms such as Emerson and Caterpillar that could become customers to the firms based at the science park.

7.3.2 A licensed concept

The name Soft Centre was not an original idea of the policy-makers in Söderhamn. The name, as well as the concept, was franchised from Soft Centre International at an annual fee of SEK 200 000. The first soft centre in Sweden was established in the municipality of Ronneby in the administrative province of Blekinge in the south of the country. This municipality shared many features with Söderhamn. The economic activities of the region had been dominated by ship building, farming and fishing, and after the Second World War some manufacturing industry.

Following industrial restructuring in the twenty first century, the municipality displayed the hallmarks of a municipality in crisis: low levels of education, high unemployment rate and descending population growth. In 1970, for instance, manufacturing industry employed 31 per cent of the labour force in the municipality (for an in-depth discussion of the development of Karlskrona, see Engstrand 2003). During the period of 1990 - 1997, Ronneby, together with the nearby municipality of Karlskrona, saw employment in the information and communication sector rise by four times the national average. While the national average for people employed in this sector was 5.1 per cent, in Karlskrona/Ronneby it was 11 per cent (Alsén et al, 1999).

Soft Centre Ronneby was established in April 1987. Its aim was, as in the case of Söderhamn, to create a platform for business development and growth. The business idea was based on three interrelated concepts of establishing a critical mass of companies, providing education and training, and facilitating research and development. Under its umbrella, there were hopes of creating new development and business opportunities for companies within the information and communication technology market and close co-operation with universities and society as a whole (Alsén 1999).

However, one major difference between Soft Centre Ronneby and the envisaged soft centre in Söderhamn was that the former was a result of joint industry-education co-operation. Tarkett, a leading manufacturer of floors, was involved in the initial discussions to establish a science park in Ronneby. This firm was the first tenant in the park and it moved its marketing, research and development departments to the centre. Televerket, the national telephone operator, was also involved in the earlier discussions.

When it came to research and development in Ronneby, two universities in southern Sweden, the universities of Lund and Växjö, were involved in the earlier stages. Alsén et al (1999) noted "In terms of R&D, the activities were concentrated on trying to establish a couple of initial projects. Two such projects were initiated during the first year together with Televerket (ex Telia) and Lund University" (Alsén 1999, p.5).

In the autumn of 1987, a few months after the park had been established in Ronneby, the University of Lund in co-operation with Telia started a research centre in the region. Later that year, the University College of Växjö in co-operation with the

University of Lund started basic computing courses in automatic data processing and subsequently a university college in the administrative province of Blekinge was established. Symbolically, the new university got the name the University College of Karlskrona/Ronneby, which later became the Blekinge Institute of Technology. The courses offered in Ronneby reflected the prevailing optimism about information technology. In 1996, 780 students were, for example, attending courses at the campus in Ronneby, which is located near the park.

Since the establishment of Soft Centre Ronneby, the idea has been expanded and marketed as a concept. Since its launch, it has lent its name to Kalmar, which is situated on the southeast coast of Sweden, and Duluth in the USA. Soft Centre Kalmar was established in 1999 and has focused on TIME (Telecom, Information, Media and Entertainment). It is closely connected to the University of Kalmar and is said to employ 350 people working in 20 firms (Nilsson 2000).

In the agreement between the licensee, Soft Centre International, and Soft Centre Söderhamn, the licensee demanded that the business ideas of the firms at Soft Centre Söderhamn only have one focus area. Therefore, the area of focus was set to be electronic document management. In essence, this meant that Soft Centre Söderhamn was prevented from expanding its focus area to include, for example, hardware production. The following table shows the proximity to higher education institutions and areas of focus of the soft centres.

Table 7.2 Proximity to higher education institutions and area of focus of the soft centres.

Location	Proximity to higher education institutions	Area of focus
Ronneby	Blekinge Institute of Technology	Diverse
Kalmar	University College of Kalmar	TIME
Duluth	Six colleges and universities	Diverse
Söderhamn	None	Electronic document management

As can be seen from the table above, Soft Centre Söderhamn differed from the other soft centres in both focus and direct proximity to institutions of higher education. The absence of close relationships with a nearby university, coupled with the single focus of

electronic document management, did not speak in Söderhamn's favour. However, it is worth mentioning here that after negotiations, the field of focus was expanded to include three other areas: electronic commerce, electronic logistics, and electronic learning.

Active political engagement in ensuring the success of the science park continued even after the creation of the Soft centre. Representatives of the municipality discussed what kind of organisation Soft Centre Söderhamn would be at the early stages. Soft Centre Ronneby, which the authorities in Söderhamn benchmarked, was started as a non-profit foundation. In the beginning, Soft Centre Söderhamn was also run as a non-profit organisation. However, in January 1999, a decision was taken to change the organisation form to a public liability company owned by the municipality. The chairman of both the non-profit organisation and the public liability company was Lars Jeding, previously appointed by the central government to lead a committee to find ways of reviving the local economy.

7.4 The implementation

7.4.1 Starting with the house

In June 1999, renovation work was started on the old railway station that was supposed to house the new futuristic science park in Söderhamn. Symbolically, the railway station was built a hundred years earlier. Political leaders from all the parties passed a motion to turn the building and its surrounding area into a modern science park. In the local press several enthusiastic articles were written. The only dissenting voice regarded the preservation of the windows of the building, which many saw as a cultural monument. For example, the governor of the administrative province declined to inaugurate the building unless its cultural value was maintained. One of the local newspapers captured the symbolic value of the location of the science park:

> "Nearly a century ago this was a hypermodern centre for communications. In the coming autumn, this old railway station will be re-inaugurated to become the next century's communications centre. At the end of the month, work will commence to rebuild the railway station into a soft centre. The entire station will be renovated… The

> structure of the waiting room will be restored into a conference room… At the lower floor, a library, a cafeteria and the administrative office of the Soft centre will be built."[61] (*Hälsingekuriren*, 14 July 1999)

7.4.2 Finding the tenants

Now that the science park was designed at least on paper and the old railway station was renovated to meet the demands of the future companies, the next step was to find the tenants. Various recruitment drives and seminars were held to recruit firms to the park. To market the concept the authorities participated in several trade fairs. These included several visits to the University college of Gävle that arranged "special days" for every town in the administrative province. Soft Centre Söderhamn was able to show their idea on three such occasions. In particular, they targeted students who were doing their final year in the computer engineering and science departments. On another occasion, the owners of the park participated in a fair arranged at Arlanda, the airport outside Stockholm, where they had a monitor to show the park and what potential tenants could expect. Moreover, they produced information pamphlets and advertised in the local as well as the national press.

In June 1999, the manager of Soft Centre Söderhamn presented the first potential tenant, a firm called Eductia. The event made headline news in the two local dailies and there were pictures of the manager flanked by the smiling director of the Soft centre. Eductia was started in 1993 and operated in education, systems development and computer support. It had offices in a neighbouring municipality and in Söderhamn. The manager told the gathering press that the company would employ six people that would be housed at the Soft centre (Hälsingekuriren 22 June 1999, Ljusnan 22 June 1999). When asked why his firm had chosen Soft Centre Söderhamn he replied:

> "We wanted to be located in the best environment. From an infrastructure perspective, Söderhamn is the municipality that has the best location in Hälsingland and is already a meeting place. The Soft centre has also a clearly defined goal; to become the best in electronic document processing." [62]

---

[61] My translation

Nearly four weeks later, it was time to present the next tenant, Martisson Information Systems with offices in 16 municipalities. The manager announced that they would establish a customer support centre at the Soft centre. Furthermore, he informed the press that the firm had recruited 11 people in Söderhamn, and that by the end of the year the firm would employ 30 people at the Soft centre. Despite this promise, the firm never moved into the Soft centre.

In August 1999, Soft Centre Söderhamn became a member of Swede park, an umbrella organisation for 32 science parks scattered around universities in Sweden. The chairman of the Söderhamn committee, Lars Jeding, highlighted the importance of Soft Centre Söderhamn becoming a member of this organisation – despite the lack of proximity to a university college. He remarked: "With this membership, we have achieved a strong marketing argument in attracting potential tenants to Söderhamn"[63] (*Ljusnan*, 17 August 1999, p. 4).

On a snowy Thursday morning eight months later, the Soft centre building was officially inaugurated. The press was presented with four firms and the promise that more would follow suit. The firms were Ericsson, Eductia, Your Voice and Proffice. The most important tenant was Emersson, which at the time was called Ericsson. After a lot of persuasion, it had decided to move some of its information systems departments to the Soft centre.

One of the new firms at the Soft centre, a start-up firm called EuroDocs, was developing Internet-based services, including specialisations in electronic document management. According to its owners, its plan was to become a leading company in the field of simplifying and automatising the procedures of retrieving and filling online forms. They hoped that their business would develop by creating application software, outsourcing different services, providing document management on the Internet, consulting and offering a variety of services such as homepage construction.

---

[62] Cited in *Hälsingekuriren* in June 1999 page 6. My translation.

[63] My translation.

In Table 7.3 on the next page follows a list of the companies that moved into the Soft centre (as January 2001), their activities and number of employees.

Table 7.3 Tenants at the Soft centre, their activities and number of employees.

Name	Activities	Number of employees
Emerson	Information development systems	3
Educatia	IT education and support	2
CM AB	Education, consulting	1
Plenia	Recruitment	Unknown
Ejcom	Management	3
NIS AB	Education, recruitment, marketing	1
Beek	Consulting and recruiting	1
Nomedia	Electronic learning	1
EuroDocs	Electronic document management	2
Your Voice	Electronic document management	7
Proffice	Recruitment	3

7.5 Business development scheme

Most of the tenants were small firms in a relatively new economic activity. As such they faced the challenges of developing and becoming resource efficient and competitive, as well as technically advanced. The owners of the park outlined a framework to support development and business opportunities for these firms, as well as for all the companies within the information and communication technology market in the area. One task that the authorities viewed as very important was to support the tenants in finding venture capital. Research and business development support would be provided by organisations such as the National Institute for Working Life. Through the virtual educational centre the authorities hoped to secure the provision of skilled personnel for the firms.

7.5.1 Inducing relationships

Now that the necessary infrastructure was in place, including supporting institutions, a building to house the companies and the political backing based on *Vision 2005* (the document adopted by the local council after the closure of the air force base), the next

task was to stipulate the necessary elements to ensure cluster-based relationships.

One of the goals of Soft Centre Söderhamn was to become an arena for networking and it was the owners' role to encourage the formation of a network and to provide necessary incentives for networking. The aim of this network, which became known as the IT Network, was to create strong business and education links between companies, education institutions as well as society as a whole.

Because of the importance attached to information technology, a project was initiated to gather data about IT companies in the region. After an initiative from Soft Centre Söderhamn, 18 small, autonomous and mainly knowledge-based firms were invited to a meeting in October 2000 to form a strategic business network. At the meeting, it was decided that the members of the network should meet once every month to exchange views on and ideas about business development.

Also, officials of public business development bodies attended these network meetings, such as the local labour office, the Business Development Unit of Söderhamn, as well as Soft Centre Söderhamn. At these meetings, their role was to find ways to help the members with competence generation.

The following table shows the composition of the IT Network (December 2000) in terms of business area, number of participants from different areas, main area of location, number of years in business, number of employees and type of customers.

Table 7.4 The composition of the IT Network

Main area of business	Number of participants	Main area of location	Years in business	Number of employees	Customers
Computer consultants	6	Söderhamn	2-5	3-10	Business
Web-based firms	7	Söderhamn Hudiksvall	< 1	3-5	Consumers
Incubator firms	3	Soft centre	<1	3-5	Public bodies
Solo	7	Soft centre	1	N/A	Business

One member of the network was MGON that operates in the computer and video games market. This firm was started in 1998 and offers entertainment channels on the Internet to computer consultants as well as to small one-man firms. MGON focuses on games

that are played online and its mission is to offer its global audience a common meeting place for their favourite games.

The members of the IT Network also included some already established IT consultants. These included firms that sold computer-related software and hardware, and those that provided consultancy services to firms in the region. Seven of the members of the network had been established as a result of the dot com boom. These were mainly small firms that employed between 3 to 5 people and their customers were mainly consumers.

Three of the members of the network were incubator firms, which had developed a business idea aimed at serving public organisations. One of these was EuroDocs that was started in 2000 by two persons. Their business idea was to offer Internet-based solutions to public services in terms of providing electronic-based documents that could be filled by citizens and thus reducing bureaucracy. Another such firm was Your Voice that at the time employed 5 people. It was started in 1995, developed, and offered system integrated programmes, such as E-democracy, to small firms. After its move to the Soft centre, it has mainly focused on providing public and municipal organisations with two programmes, Open24 and Diarpo.

i. At one of the first network meetings, the following goals were laid down:
ii. Exchange qualified business leads between themselves.
iii. Provide top-quality service to customers by pooling resources.
iv. Obtain out-of-municipality customers.
v. Learn business development skills by exchanging ideas.
vi. Create potential to increase revenues by finding new customers and suppliers.
vii. Achieve growth by establishing long-term business relationships.

At the initial meetings of the network, 13 managers/owners of small firms in the IT industry and three members of the supporting institutions (labour office, virtual education centre, Soft Centre Söderhamn) were present. There was an atmosphere of enthusiasm at the creation of the Soft centre and the establishment of the formal network. The

emphasis was on the importance of establishing relationships with other companies in the region. There was awareness on their part that the key to success in this increasingly global environment was greater business collaboration. The following statement by the owner of one of the incubator firms describes the optimism at the meeting:

> "Let's face it! We live in a global village. The arrival of the Internet has made it possible for us to compete worldwide. We are today competitors in Hälsingland [the geographical region], but soon we shall be competing with firms in the USA. Together we can forge an alliance of firms that can compete with firms as large as IBM."

Another point that was discussed was how to foster collaborative relationships. Most of the participants had not met the others before the meetings. One of the pioneers of the network said:

> "We have not come that far yet, we are not even on talking terms with one another. We see ourselves as competitors, although some of us sit and do business at the Soft centre."

Business collaboration in marketing was another important issue discussed. Particularly owners of small newly established firms experienced lack of marketing capabilities, as one of the members put it:

> "I have a good business idea but I have not studied business administration so I have problems writing down a business plan, book keeping and marketing."

Some of the meetings centred on the various disadvantages of being located in Söderhamn. At one of the meetings, the members divided themselves into small subgroups to do a SWOT (Strengths, Weaknesses, Opportunities and Threats) analysis of being located in Söderhamn. As a result of this analysis, two disadvantages were identified: the size of the companies and the location. These two factors were believed to have significant impact on their ability to recruit and retain staff as well as to enhance growth for the region in general. For larger companies it was in general easier to recruit and retain competent personnel as they could offer extensive benefits packages, better

salaries and more development opportunities. As regards the location, a mix of positives and negatives was presented.

The members hoped that their strategic network would help them into seeing themselves as partners rather than competitors, as stated by the owner of a small company that develops a product in the field of electronic document application:

> "When I want to respond to a tender from a big company or an organisation, and I write that my firm employs 3 people, how will the decision-maker react? Will he choose us or a company with 500 employees?" He goes on: " If, however, I write in my application that we are a company situated at a soft centre with 50 employees, with the capacity to come up with an end-to-end solution, I'm sure we can land the contract."

Nearly all the participants shared this optimism until the beginning of 2001. Then the attendance to the network meetings suddenly dropped from 18 people at the January meeting to only 6 people at the February meeting. At the February meeting, it was recognised that the network meetings could no more be held in the Soft centre building and it was decided that their next meeting in March would be held at a local pub. At this pub meeting only three people arrived and they decided that future network meetings would be held in an informal manner.

Why did not the network function as envisaged? Since the end of the last network meeting, I have been in touch with the members and asked them why the network failed. There are some differing opinions as to the reasons why things did not work out all that well. Due to obvious reasons, I will not state the names of those I spoke to or when I talked to them.

One of the reasons given was the issue of trust. It takes time to build trust and it is easily lost. Two participants who questioned the motives of establishing the strategic network echoed this concern:

> "There were some people who were dominating the network meetings. I thought that we were there as equals, wanting to achieve a common goal but unfortunately some of the members had a different agenda… They wanted access to the names of my

> customers… I have found out since then that the same people who were assuring us that we were not there to snatch customers from each other have taken some of my customers."
>
> "I came to realise after the last network meeting that some of the participants who I thought were my equals had fat contracts with the municipality... I keep wondering whether the whole thing was some members' ploy to enlarge their own business portfolios with the help of the municipality."

A common reason given by most of the members was the downturn in the information technology sector, as noted by one of the pioneers of the network:

> "I think the network did not work as intended because of the events in the IT sector. We were so very optimistic at the outset, hoping that there would be enough market for all of us but soon we realised that the pie was not as large as we thought … and what happens when there is not enough food to eat? Yes, fear descends… I was so afraid to lose my customers to the members of the network that I decided not to attend again."

The organisers of the network were also seen as culprits in the failure. The soft centre representatives and the members of some of the supporting institutions, including the labour and business development offices, were very active in the initial stages of the network. They participated in the meetings as observers but took a leading role in issues of competence generation and financing. In particular, the representatives from the Soft centre acted as moderators in the discussions and they opened the meetings and informed the participants on business developmental issues. Later on, however, they did not participate in the meetings.

> "I believe that the network failed because the municipality was not involved as they had promised. At the beginning of our meetings, they [officials from the municipality] promised to act as independent moderators. But as time went by, there was no one from the Soft Centre at the meetings."

7.6 The death of a "concept "

On the 23rd of February 2002, the abandonment of the Soft centre concept was officially announced in one of the local newspapers. In its place, a new organisation, Teknikparken ("the Technological Park"), was formed. This is a municipally run company whose domain includes managing municipal property such as housing and office buildings. Out of the virtual educational centre a new organisation was born, the Centre for Flexible Learning. This centre organises seminars, offers adult education courses and helps firms in the area with competence generation.

Usually news about the Soft centre made headline news. This time, one of the local newspapers had an article on page five entitled *Raising the flag of change*. The article began with an account of the events that had led to the creation of the Soft centre, the flagship strategy to revitalise the business climate of Söderhamn and the subsequent bust of the IT bubble.

Furthermore, in the article, the manager of the new organisation announced that the agreement with Soft Centre International had been cancelled. He made it clear that the main reason for cancelling the agreement was because the municipality was not allowed to expand the four focus areas stipulated in the agreement, i.e., E-learning, E-commerce, E-logistics and electronic document management. On the question of whether he expected to have new tenants, he answered: "Let's face the truth, there are no firms queuing to come here, it will surely take at least a year before things will take off."

At the end of December 2003, only EuroDocs, Your Voice and one employee of Proffice are still housed in the old soft centre building. It is worth mentioning here that the geographical scope of Soft Centre Söderhamn was expanded to include the area around the old harbour. Two of the firms that were located there, Ejcom and Plenia, were declared bankrupt. Plenia, which had been given SEK 65 million by NUTEK, was asked to repay SEK 6.5 million after liquidation (*Hälsingekuriren*, 8 September 2001).

7.7 Summary and concluding remarks

This policy case illustrates how the concept of science parks has been integrated into policies for regional development strategies. Furthermore, it is both a case of attempting to achieve cluster dynamics through formalisation and a case inducing cluster dynamics in action. The arrival of the Internet and the discourse on "the new economy" certainly played a leading role in the establishment of Soft Centre Söderhamn. This was in the second half of the 1990s, when the business development debate in Sweden on the whole focused on digital technology as a way of transforming local economies. For the municipality of Söderhamn, it was time to accept that the presence of traditional industry would no longer lead to sustainable development. Instead, the diffusion of digital technology was supposed to mark a new era and the problems of lying in the periphery would be overcome.

In an attempt to capitalise on the "knowledge economy", the municipal leaders in Söderhamn decided to induce cluster dynamics and wished to harvest the fruits of the new economy by establishing a science park. However, it appears that the seeds were never sown. Söderhamn lacked a tradition of a science base and any close geographic proximity to a university college. The University college of Gävle is about 80 kilometres away. To overcome this shortcoming a virtual educational centre was established, including supporting government-run organisations, and the old railway station was rebuilt to house the potential tenants.

The aim of the Soft centre was to create development and business opportunities for companies within the information and communication technology market. Moreover, the Soft centre should become an arena for networking to create strong business and educational links between companies, educational institutions as well as society as a whole. The reasons that were given as to why the networking did not work out well were the lack of trust between the firms, the lack of interest on behalf of the organisers, as well as the general downturn in the IT sector.

The authorities in Söderhamn benchmarked Soft Centre Ronneby and licensed the concept from Soft Centre International. However, Soft Centre Söderhamn differed from

its role model in both focus and direct proximity to institutions of higher education. The absence of close relationships with a nearby university, coupled with the initial single focus of electronic document management, certainly contributed to the downfall of the Soft centre. A question that arises is why a municipality with low education level among its inhabitants and which historically had a traditional industry structure embarked on such a process.

The aim of this policy case was not only to identify how active policy measure is used in developing cluster infrastructure, but also to illustrate how active policy measure attempted to create cluster dynamics. These measures included facilitating networking between firms, supporting institutions and society as a whole, as well as looking forward by using interventions. An artefact of cluster dynamics is the ability of actors to combine a degree of outward competition with inward collaboration. With this case, I have shown that it is difficult to induce cluster-based relations through policy.

Obviously, the policy case was a failure in which external and internal factors interplayed. The "new" economy discourse in the late 1990s and the Internet bubble have certainly played a role in the creation of the Soft Centre and the subsequent abandoning of the concept. There was also an element of micro-economic failure in the policy case as well. When it comes to the micro-economic environment and failures, the institutional arrangements at hand could also impede or lead to failure (McGrath 1999). The behaviours of actors who are involved in an undertaking, rules, norms and regulations affect the outcome of a process/project. Important to this notion is trust and the breadth/depth of the social relationships.

Given the history of Söderhamn as a location that lacked institutions of "science", the creation of Soft centre was a bold move meant to break with the past and initiate a process of creating the necessary infrastructure to accommodate the evolution of new companies in the "knowledge" economy- in away this was a learning process and whether this project would lead to such expectation in the long run is certainly a question of time. However, the creation of Soft Centre has no support in the theories of cluster dynamics (cf., Marshall 1920, Porter 1990, Saxenian (1994).

From a regional development perspective, Hirshman (1967), who devised the concept of the "hiding hand", argues that it manifests itself in the copying of successful projects with a technical bearing. Indeed, during the creation of the Soft centre, the Internet was hailed as a factor that would enhance regional development and it would declare geographical distance irrelevant and transform business-to-business and business-to-customer interfaces.

The creation of the Soft centre followed a time when the debate on the "new economy" was at its zenith. With digital technology previous obstacles in peripheral regions could be overcome, such as competence generation, business formations and other kinds of liabilities including size and location. In addition, in good Schumpeterian spirit, the applications of digital technology were supposed to create combined resources and knowledge utilisation that would lead to the emergence of new business formations. In this respect, the authorities in Söderhamn were probably not alone in taking this action. Their motives were to create the right kind of environment that would enable the firms to capitalise on the opportunities of the digital economy.

> "Thursday the 13th of December 1996 was the day when the Parliament decided to close the F15. The local battle to save the *Hälsinge*[64] wing of the Swedish Air Force had come to an end. Nearly 500 job opportunities disappeared in an already severely affected municipality in Norrland[65]. In the corridors of the Parliament sporadic applause could be heard, while in Söderhamn, despite the promise of government aid, people are talking about the death of a local community."[66]

8. THE CLUSTER FORMATION PROCESS OF THE HYBRID CASE

The aim of this chapter is to provide insights into a cluster formation process that was initiated by policy-makers and run by two individuals in co-operation with business actors in the private sector. In the first section, I will discuss the mechanisms that induced the cluster. In the second section, I will describe the cluster formation process. In the third section, the development of a cluster of logistics firms is discussed. The chapter is concluded by a summary and concluding remarks.

The empirical part of this chapter is based on 14 interviews with 9 individuals. These are the owners of Flygstaden, the project managers, the former air force commander and his chief of staff and business owners.

8.1 Traditional

I have opted to call this case "a hybrid case". The main reason why this name has been chosen is the manner in which the cluster was formed with regard to the actors involved, i.e., policy-makers, two individuals and one private firm.

In a way, the creation of Flygstaden follows the traditional regional development policy path that was initiated in the 1970s. As mentioned in the introductory chapter, in order to reduce regional disparities, the Swedish Government has initiated various

64 This is an adjective that refers to the region of Hälsingland in which Söderhamn is situated.

65 Refers to the northern part of Sweden.

66 Abstract from the book "*Greppet*", *To turn the development of a region*, SOU: 1998:89, Report from the Söderhamn committee, page 13. My translation.

incentive programmes over the years so as to promote the location of large manufacturing firms, and more recently also service firms, in peripheral areas. In terms of compensating municipalities that have suffered job losses due to closures, the government seeks to locate government-run agencies in these areas. As mentioned in chapter 6, Söderhamn is a good example of Swedish regional development policy in practice. Several manufacturing firms have been established in Söderhamn as a result of various subsidies. Although the establishment of a new air force base in 1945 was motivated by military reasons, its location to Söderhamn was based on industrial restructuring and the subsequent job losses in the region at that time.

In 1996, the epoch of the F15 came to an end following a defence bill to restructure and reduce the armed forces. Several government agencies were asked to look into different ways of locating parts of their activities in Söderhamn so as to compensate the municipality for its loss of 500 jobs.

However, to regenerate the economy of Söderhamn, mere compensation for lost jobs was not sufficient. The municipality had to look for other solutions to solve the economic crisis. Inspired by the debate on the new borderless economy, the municipality of Söderhamn decided to initiate two parallel development processes: the establishment of Soft Centre Söderhamn and Flygstaden ("the Air City").

As described in the previous chapter, the first development process was based on capitalising on the benefits of the Internet and involved the establishment of a science park that would facilitate the growth of small- and medium-sized firms in the information and technology sectors. The second development process was based on using the existing infrastructure to revitalise the old air force base F15 into a modern hub for a cluster of logistics firms. How would the municipality turn a military airbase into civil use?

8.2 The cluster formation process

Although the creation of Soft Centre Söderhamn was perceived as a welcome move to

revitalise the region's economy, at the same time it threatened the future of the air force base. Basically it meant that the development of the base, which is situated 5 kilometres south of the town of Söderhamn, would have to compete with the Soft centre in the town centre in finding tenants, as noted by one of the interviewees in this case:

> "Although we had the basic infrastructure that any tenant would need, we knew that the F15 would not be as suitable as the soft centre area because it was situated in the city centre with restaurants, banks and other facilities. We asked ourselves whether we could offer all the benefits that came with being in the city."

Following the announcement of the closure of the air force base, the authorities appointed a local development committee with the task of finding ways to revive the area. The former commander of the air force base and his chief of staff were appointed to lead the committee. In particular, they were entrusted to explore the possibilities of turning the base into a business centre that would be attractive to potential tenants.

The first proposal presented by the committee was to purchase the base, which was unanimously agreed by the local council in a session. There were several reasons for buying the area. Among others, the group noted that it had the potential of becoming a self-generating cluster in transportation, and the presence of infrastructure was predicted to give the municipality an opportunity for development.

In May 1998, the local authority bought the air force base from the National Fortifications Administration for SEK 7.6 million. The initial price was set at SEK 35 million, but the municipal representatives argued that the area had no longer the same value, that the cost of running the base without tenants was SEK 10 million per year for heating and indirect costs, and that the restructuring of the air force base into a civil area would demand a high level of investment. For the municipality, the purchase brought with it both challenges and opportunities, as noted by one of the interviewees.

> "Here we had an air force base with no military men in uniform and no fighters, but at the same time we were aware that we had the resources and infrastructure, such as buildings, runways and computer networks. The challenge was finding tenants that were willing to rent them."

Immediately after the purchase, a development project entitled "Developing the F15" was initiated. The actors involved in this project were, for example, the European Structural Fund, the Municipal Council and the County Council. The former air force commander and his chief of staff were asked to lead the project. Their primary tasks were to run a public relations exercise to change the negative connotations associated with the former air force base so as to be able to attract potential customers to the area, as well as to find a new landlord.

8.2.1 Public relations exercise

During the period leading up to the announcement of the impending closure, the newspaper reports were filled with an air of despair over the eventual loss of a historical landmark. In the hearts and minds of the inhabitants, the air force base had become part of their local identity and the pride of the town. Thus, a primary strategy for the project leaders was to wipe out all negative connotations associated with the closure of the base and to establish a brand name and a slogan for the new area. To accomplish this it was decided to avoid using words such as "the old F15" and "the closed down air force base" in the discussions, as described by one of the project leaders:

> "An adjective such as "old" and a verb such as "close down" would certainly have contributed to associating the area with a redundant area, which the F15 was not. Our goals during the first few months were confined to getting rid of these adjectives. We knew that the F15 was synonymous with Söderhamn and if we used them it would certainly contribute to negative emotions among the inhabitants of Söderhamn. "

In order to overcome emotional as well as negative associations the project leaders adopted a slogan that was in part similar to the words expressed by Lars Jeding, the chairman of the Söderhamn committee, when he presented the Söderhamn package to heal the wounds caused by the closure[67]. The new slogan read: "This is the best thing that has happened to the municipality of Söderhamn for the past 20 years". The purpose of adopting this phrase was partly to make the inhabitants of Söderhamn look forward to

[67] See previous chapter

a new post-F15 era marked by new business formations, and partly to turn something negative into something positive for the future.

The project leaders mobilised various local and regional actors in their efforts to embark on a public relations exercise. They held liaison meetings with most of the larger firms in Söderhamn, the government agencies and the regional institutions, such as the University of Gävle. The local press was also invited to attend these meetings and report on the new era. To make the inhabitants feel that they were part and parcel of the new era of revitalising the local economy, a competition was organised and advertised to find a "suitable" name to the envisaged business area. The project leaders received 853 name proposals. The name decided on was Flygstaden, "the Air City".

8.2.2 Finding a new landlord

Now that the former air force base F15 had acquired a new image and a new name- Flygstaden- the second task was finding a new landlord for the area. Although it was the local council that had bought the area from the National Fortifications Administration, the municipality had no plans to keep and run it. The two project leaders contacted various firms to find out if they were interested in becoming partners and finding ways to develop the area into a business centre that would attract other firms in the same field. In particular, their attention was turned to construction firms in the region.

The reason was that even though the area had fixed assets, including barracks, offices and runways, most of them were not meant for civilian use and investments would be required to transform them into a business centre. Another reason for turning to private firms was that the project leaders were aware that the municipality would not generate the necessary dynamics of running an area such as Flygstaden, as noted by one of the interviewees for this case:

> "From the very onset, we knew that the involvement of private firms would set in motion a process into which other firms would be attracted. It was easier for us to convince firms in the private sector to move to the area if another private firm ran it. We hoped that this would create a domino effect and facilitate the process of finding tenants."

After discussions with various construction firms that were interested in purchasing the centre, PEAB, one of the largest construction companies in Sweden, agreed to buy parts of the centre. In the initial phase, they bought 65 per cent ownership of the centre, while the municipality of Söderhamn retained 35 per cent. One year later, a new ownership structure was agreed upon between the parties, and in 2002 PEAB owned 95 per cent. The municipality, however, retained the forest area around the centre and airfield. The new firm, Flygstaden AB, became a subsidiary of PEAB AB. Since Flygstaden AB was established as a legal body, it has had to face the task of marketing the centre and it has invested SEK 80 million in the project. In a bid to attract tenants, Flygstaden AB asked the former air force base commander and his chief of staff to run the project.

The envisaged Flygstaden cluster was to comprise manufacturing firms, service firms to provide on-the-spot services to the tenants, education and training facilities, government agencies and the landlord. The initial task of the management of Flygstaden AB and the project leaders was to attract 10 firms with differentiated business operations. In particular, the hope had been that the combination of business centre and airport would give the area a competitive edge.

8.2.3 Finding the tenants

Having acquired the centre, PEAB, through its new subsidiary Flygstaden AB, initiated a process of finding potential tenants. The project leaders and the management of Flygstaden AB outlined some guidelines as to what kind of firms to target. To begin with, they discussed the worst-case scenario.

In Sweden, several funds are available to firms that want to establish their entire operation, or parts of their operations, in peripheral regions. However, these funds may also attract so-called fortune hunters, who promise much but deliver little. According to one of those interviewed for this case, there are fortune hunters who target municipalities that have become victims of industrial restructuring. Having them as tenants, the interviewee continued, "would harm the image of the area and despite getting several

thousands of crowns in revenue in the short term, in the long run it would damage the area's reputation".

The worst-case scenario also included a situation where the area would be divided up between several owners. The former F15-base was composed of runways and several buildings and to have many landlords would make negotiations difficult for potential tenants.

Thus, the first task of the project leaders and the manager of Flygstaden AB were to identify potential new tenants in the centre. By contrast with the policy case (previous chapter) when the mere promise by a company to locate its operation was hailed as a new development. They decided to focus on attracting:

- A potential engine enterprise that in its turn could attract suppliers.
- Manufacturing firms, preferably within the aero and electronic/IT sectors.
- Already established export-oriented firms in the region.
- Service firms to provide services to the tenants.
- Government agencies to perform research and provide services.

The first target was to convince one of the largest firms in the region to move to Flygstaden. As the aim of the whole project was to develop a cluster of logistics firms, the project team had hopes of this firm becoming an engine company and that suppliers would follow suit and locate in the centre.

The second target was to attract firms in the manufacturing sector that wanted to move their entire operation, or parts of their operations, to the centre and that had some of their customers outside the municipality. In particular, the owners had hopes of the tenants being firms within the aero and electronic/IT sectors.

The third target was the firms that were already established in the region, like Arizona Chemicals and Caterpillar. These firms are export-oriented and as such dependent on logistical tailor-made solutions.

The fourth target was to attract service firms that could complement the core firms. The municipality and the owners of the centre were aware of the need to recruit firms that provided services. A special group of firms that were needed were on-site service

providers, such as firms that provide accommodation, meals and training, as noted by the manager of Flygstaden:

> "Imagine having 400 people at Flygstaden and there are no service firms that provide training, snow clearance or meals? That would have been a bad strategy. Most of our targeted tenants would have opted to stay in the city centre where there are restaurants, banks, etc."

As regards the fifth target, the central government had promised to locate government agencies in Söderhamn in compensation for the loss of jobs due to the closure of the air force base. However, this created competition between the areas in the city centre and Flygstaden, as noted by one of the project leaders:

> "We knew we had the infrastructure, but let's not forget that a new area called the Soft Centre was being planned. We had to present the advantages of the new area to the government agencies that planned to move to Söderhamn."

Furthermore, the initial plan contained the decision to establish college/university level education and research facilities within the field of logistical operations in the area. According to one of the project leaders, the reason for this was:

> "To make sure that the airport facilities would be used by the firms, thereby creating a concept based on utilising the available facilities to its maximum – the airport, research facilities and the potentials of freight services."

8.3 The locomotive company

It was not an easy task to persuade firms, particularly large firms, in the region to move all or parts of their operations to a new area. Anyhow, the strategy was devised to convince one of the largest private employers in the municipality, Ericsson Radio Systems, to locate parts of their production to the centre. At the time, this firm employed 1 500 people in the municipality. The project leaders and the manager of Flygstaden had hopes of getting a tenant like Ericsson Radio Systems would mean that it would function as an engine

company and attract other firms to the centre, as noted by the manager of Flygstaden:

> "We knew that Ericsson Radio Systems in Söderhamn was the subsidiary of a large multinational firm with global operations. They imported and exported parts using road and rail to their worldwide customers, and we tried to convince them that at Flygstaden they could use the airfield for freight purposes. Once we had persuaded them, we were hopeful that many small firms that supplied them with parts would follow suit."

During the negotiations to convince Ericsson Radio Systems to move to the centre, Emerson Energy Systems bought the company. Like Ericsson Radio Systems, Emerson Energy Systems is also an established global supplier of telecom energy solutions. It offers its worldwide customers power supplies, standby power systems and energy management systems. There was a risk that they would bring a new management team from their headquarters in Stockholm, but fortunately, the new owners kept the same general manager who led the discussions with Flygstaden AB. After one year of discussions between the Flygstaden team and Emerson, they agreed to move parts of its operations to Flygstaden.

The other major employer that became a tenant at the centre was ElectroSystem AB. It moved some parts of its production and 37 employees of its in total 87 employees to Flygstaden. ElectroSystem provides reserve parts to the automotive and mechanical industry in Sweden and it has many customers scattered all over the country. No doubt, this firm could benefit from the concept. Apart from being a major supplier to the car industry, this firm manufactures electronic materials and power systems to many of the electronic firms in Sweden, such as Ericsson.

One of the first small firms to move to Flygstaden was AD-Contakt. It was started in the early 1980s with the business idea of providing firms in the automotive and electronic industries with competence development. Its services range from product development, test equipment, software and training to quality assurance. Among its customers are two of the largest firms at Flygstaden, Emerson and ElectroSystem, as well as Luxor, a major manufacturer of electronic goods, and Electrolux, a major manufacturer of appliances. Since the early 1990s, it has also supplied components to companies in the automotive industry.

Other tenants that moved to the centre were 13 small electronic firms that employ between 2-10 people. Their main customers are ElectroSystem and Emerson to whom they provide computer parts and systems. ElectroSystem is a supplier to Emerson, which in its turn supplies power systems to global firms. In addition, 23 other small firms that provide on-the-spot services and supplies to the other tenants moved into the centre. Among those were LC Lab, Slip & Montageteknik i Söderhamn AB, AD-Contakt, SNS Service & Stålhantering, and Swedish Mechanical AB.

Also, government agencies were located in Flygstaden. In fact, two of the major employers at Flygstaden are government agencies. One is them is the Premium Pension Authority. This national authority was established in 1997 to administer the new Swedish pension system, which allows the pension savers to personally decide how to invest parts of their pensions. The second major government employer is the State Pension Authority, which employs 50 people at its offices in Flygstaden. This authority administers the pension funds of public and municipal employees. In addition to these two major government authorities, Flygstaden came to house the Records Department of the National Labour Market Board and some municipal institutions, such as the technical programs of the local high school. By the end of December 2000, Flygstaden had attracted nearly 50 firms and government and municipal agencies that together employed 670 people. The following table shows a list of the tenants of Flygstaden in February 2001, as well as their business activities and number of employees.

Table 8.1 Tenants of Flygstaden in February 2001.

Name	Type of business activity or area	Number of people employed
Private firms		
Emerson Energy System	Telecom energy solutions	301
ElectroSystem	Mechanical and electrical systems	87
EuroTech	Mechanical	6
Priority Aero Maintenance	Aero maintenance	2
Swedish Mechanical	Engineering	11
WIMAB	Mechanical	3
Small "micro" firms[68]	Various activities	83
KPMG	Accounting/auditing	2
LRF Konsult	Local farming union	2
Manpower	Hiring/recruiting	2
PEAB	Construction/landlord	50
Securitas	Security	2
Telia	Telephone operator	7
Number of employees in the private sector		558
Government/municipal agencies		
Arbetsmarknadsstyrelsen	The National Labour Market Board	18
Statens pensionsverk	The National Pension Board	50
The local municipality	Municipal affairs	11
Premiepensionsmyndigheten	The Premium Pension Authority	69
Staffanskolan	Upper-secondary education	13
Number of employees in the public sector		161

In the spring of 2001, 301 employees of Emerson's total workforce of 1 200 employees in Söderhamn were located in the premises at Flygstaden. However, since the collection of data for this case, Emerson Energy System has given notice that it would cease its operations in Söderhamn and the number of employees at the centre has dwindled to 150 people. According to the manager, this is a result of the recession, which has forced the firm to decrease the number of people they employ in Söderhamn to less than 500 people.

In 2003, Emerson announced it would cease its operations in Söderhamn, thereby making nearly 600 employees redundant. The firm is reported to have moved its operations overseas to benefit from lower production costs. After the closure of the

[68] Firms that employ between 2-10 people.

airbase, the authorities in Söderhamn had hoped that Emerson would become the engine enterprise at the business centre Flygstaden.

8.4 The development of the cluster of logistics firms

The next step for Flygstaden AB and the project leaders was to initiate a project with the aim of developing a cluster of logistics firms. According to one of the project leaders, Flygstaden had "a good infrastructure, low rents and a landlord that was willing to invest". However, despite these advantages the area had some disadvantages, such as being far from the market. Many firms in Sweden use Arlanda Airport, the main national airport outside Stockholm, to transport their goods.

In the initial phase of the project, the project leaders made several study trips, among others to the USA, to find ways of developing a logistical centre. In particular, they studied the concept of First Class Industrial Parks- FCIP- that incorporates air, land and sea cargo transportation.

The FCIP concept is an EU-financed project with the overall objective to improve regional economic structures based on a network of First Class Industrial Parks in the European Union and its candidate countries. Within this project, efforts were made to establish contacts between municipalities in countries around the Baltic Sea, which have suffered job losses due to the closure of military airbases. The idea is to use the infrastructure of the airfields to create logistical centres based on airline transportation.

The first class industrial park concept is based on creating a critical mass of firms in the manufacturing sector, which are expected to provide the backbone of the park, service firms that provide on-site services to the manufacturing firms in the park and training and research firms. For Flygstaden AB, embracing this concept would mean that they could offer third party logistics firms, freight operators and other firms to pull resources and share the infrastructure and facilities to run transportation at Flygstaden, as illustrated by the following figure.

Flygstaden was predicted to provide an infrastructure base composed of runways, warehouses, office buildings and computer networks to attract third party logistics firms. The authorities hoped that Flygstaden would become a transportation alternative to the large firms, mainly in the logging and electronic sectors, in the neighbouring counties. Usually these firms depended on land transports to and from Arlanda Airport when buying raw material from abroad and delivering their products to the world market. By choosing Flygstaden as their logistics base, they would be able to reduce both transport times and costs.

However, instead of competing with large freight companies catering to the large firms, Flygstaden AB decided to focus on inbound and outbound services of the value chain of small and medium-sized manufacturing companies in the region. In this respect, a marketing campaign was launched to attract third party logistics firms that would provide the firms in the region with an alternative to the often expensive freight companies that catered to large firms, as noted by one of the interviewees:

> "We wanted to offer the small- and medium-sized firms in the region an alternative to the often expensive freight firms that provided logistical support to large firms such as Sandvik. These large firms often have overseas customers and their own logistical operations, or they entrust large American logistical operators. The third party logistics firms that would make Flygstaden their base would be able to create a niche for themselves by focusing on small- and medium-sized firms that so far have been negotiating with many firms [air, land and sea cargo] to transport their goods."

8.5 Summary and concluding remarks

While the central theme in the creation of Soft Centre Söderhamn was based on knowledge formation, the establishment of Flygstaden followed the path of traditional location patterns that have become a feature in peripheral regions in Sweden. Following the closure of the air force base, the authorities appointed a local development committee with the task of finding ways to revive the area. The former commander of the air force base and his chief of staff were appointed to lead the committee. The first proposal

presented by the committee was to purchase the base, which was unanimously agreed upon by the local council in a session.

Following the purchase, the former commander and his chief of staff were appointed to lead a project to explore the possibilities of developing a business centre at the base. One of their two primary tasks was to run a public relations exercise to change the negative attitudes towards the former air force base so as to be able to attract potential customers to the area. One outcome of this exercise was the new name of the area- Flygstaden. Their second task was to find a new landlord.

After negotiations with several interested companies, PEAB, a large construction company, bought most of the area and established a subsidiary- Flygstaden AB. The two project leaders were asked to stay and in co-operation with the management of Flygstaden AB they initiated a project aiming at creating a cluster of logistics firms. Their first goal was to attract tenants to the centre, in particular: A potential engine enterprise that in its turn would attract suppliers, manufacturing firms, preferably within the aero and electronic/IT sectors, already established export-oriented firms in the region, service firms to provide services to the tenants and public agencies to perform research and provide services.

Having obtained the tenants, the project leaders and the management of Flygstaden embarked on the next step of the process to develop a cluster of logistics firms. In particular, they studied the EU-financed project First Class Industrial Parks. Within this project, efforts are made to establish contacts between municipalities in countries around the Baltic Sea, which have suffered job losses due to the closure of military airbases. The idea is to use the infrastructure of the former airbases to create logistical centres based on airline transportation. According to the managers and officials interviewed for this case at Flygstaden, the FCIP concept would involve the possibility of offering a total package. If the plans go ahead, Flygstaden would offer third party logistical firms, freight operators and other firms that would share the infrastructure and facilities. Only time can tell whether this will become reality.

The dynamics of a hub cluster is the ability of the small and medium-sized firms to interact in networks and the capacity of the larger firms to accommodate their presence. In the case of Flygstaden, there were no attempts to create a formal networking structure, as was the case in the Soft centre. The small- and medium-sized firms that clustered at Flygstaden were theoretically to be linked to Emerson, the engine company, through transactional relationships, i.e., by selling to and learning from Emerson.

The relationship dynamics of a cluster induced by an engine enterprise is a two-way linkage. First, there is the vertical relationship between the engine company and the small firms that are clustered around it, and secondly, the horizontal relationships between the small firms. Competition is limited between the small firms, as most of them supply different services or products, or they are all involved in the value chain of the engine enterprise. In general, the co-operation between the small firms is defined by the terms of the engine enterprise (Barkley 2001).

The First Class Industrial Park project is a step in the direction of co-ordinating a pan-Baltic co-operation in the field of air logistics. This project is still in its embryonic stage.

> " Swedish regional policy has changed from including primarily prioritised areas to being a policy that in practice covers all parts of the country, although the main focus area will remain on prioritised areas. Policy instruments have expanded over the years and now also include measures within our policy areas of importance to the development of trade and industry" A policy for growth and viability throughout Sweden- summary of government bill 2001/02:4 p, 3.

9. SUMMARY AND CONCLUSIONS

The points of departure for this dissertation were local development processes to offset global pressure and to provide insights into how the rapid growth of the global economy has created a new economic reality in two municipalities in the geographical region of Hälsingland in Sweden. Although global diffusion of companies, new economic realities and internationalisation of business operations are not new phenomena, the latest development – globalisation - involves challenges as regards development of peripheral regions in the old industrialised countries. The empirical part of this dissertation concerned the peripheral region of Hälsingland, which is still home to firms in the forestry cluster that historically served an international market; technological strides have been shaping the division of labour and industrial dynamics. In this case, globalisation of economic activities is a continuation of a process that started a long time ago. However, it is the pace of the changes and factors of that determine the location of firms, which are having profound repercussions on the working life in peripheral regions.

The aim of this dissertation was to contribute to research aimed at enhancing regional economic development by providing insights into the mechanisms of importance for this process. In it, I explored two interrelated questions concerning 1) the general mechanisms that influence the location of economic activities and industrial policy in peripheral regions? 2) and to what extent these mechanisms manifest themselves in local

development processes in a peripheral region? In addition to the conceptual contribution that this study might provide in terms of the mechanisms influencing location and industrial policy, an underlying wish has been to provide insights into how the "new" economic geography and globalisation are shaping the economic landscape of two municipalities in a peripheral region in Sweden. In this chapter, I will summarise the findings and conclude the dissertation with a discussion on cluster dynamics and industrial policy in peripheral regions.

9.1 Cluster dynamics as the influencing mechanism

The first research question I explored in this dissertation concerned the general mechanisms that influences location of economic activities and industrial policy in peripheral region. By all accounts, a key element that promotes competition and territorial development is knowledge building (Storper 2000b, Audretsch 2000a, Lundvall et al 2000). Actors achieve this often through physical proximity because its creation and proliferation takes place in a geographically proximate setting. With this dissertation, I have outlined that a) the conditions for locations are changing and b) that local industrial policy is changing to meet the threats of increased globalisation.

In this context, the concept of clusters is shaping local development processes in peripheral regions. Although the theoretical undertones of cluster dynamics were provided decades ago by Marshall (1920), there is a profound interest in the importance of cluster dynamics as a source of innovation and knowledge creation. From a regional development perspective, particularly in peripheral regions cluster dynamics relates to providing the conditions for the emergence of new small-and medium-sized (SME) firms replacing traditional firms in the forestry and manufacturing sectors.

Undoubtedly, the latest developments on the global scene are posing challenges on the mechanisms that are put in place to enhance development. With this dissertation, I have discussed how the traditional Swedish approach to achieving regional development which, in the past had focused on a top-down strategy with the goal of promoting parity by providing subsidies and locating public agencies to compensate job loses is facing

challenges. The previous policy approach to promote parities was biased towards supporting large manufacturing companies, with its starting-point in the view that the bigger, the better. Regional as well as central authorities have used this path-dependent approach to pursue active management of industrial policy. Today, the indications are that previous approaches aimed at achieving regional parities are unsustainable. Firms that once were enticed to locate in peripheral regions are finding other sites (many of them outside Sweden!) for their production; the public sector is undergoing downsizing - especially the defence sector as a consequence of the decline of the "cold war".

The emergences of small- and medium-sized businesses that are different in form from previous ones are seen as important players in regional development. They are expected to employ the lion's share of the workforce and are potentially effective means to enhance development, especially when traditional employers are presented with opportunities elsewhere to benefit from cheaper modes of production. In spite of the globalisation debate, it is the small enterprises that provide inputs and contribute to the efficiency and competitiveness of the larger international companies (Porter 1998,2000; Audretsch 2000a, 2000b, Storper 2000a, 2000b).

9.1.1 Three case studies

The second research question I explored concerned the extent to which the general mechanisms manifest themselves in local development process. With this dissertation, I have described cluster dynamics as an influencing mechanism of local development process in a peripheral region. Although clustering of economic activities in the studied region is not a new phenomenon, embracing the cluster concept with emphasis on knowledge creation and relationship building is expected to pave the way for a new economic structure that is different from the one dominated by traditional firms. That is, one in which small service based firms play a paramount role as a source of employment. Achieving cluster dynamics from a peripheral perspective means a new dawn, a transformation process and a means to change ways of thinking. To illustrate, three case studies that were carried out in two municipalities in the region of Hälsingland in "northern" Sweden have been presented.

Summary of the three case studies:

The *business case* concerns the formation process of a cluster for call centres in the municipality of Ljusdal. The mechanisms that induced the process, the role of technology for the growth of the cluster, the spillovers from the engine company to the other firms, as well as the horizontal dynamics between the companies and the supporting institutions have been described.

The *policy case* concerns the formation process of what was intended to be a soft ware cluster - the Soft centre -, which was initiated by policy makers in the municipality of Söderhamn. The mechanisms that induced the cluster, the knowledge formation process of the cluster, how the soft centre concept was benchmarked, the efforts to create a sustainable environment for the potential firms of the cluster, as well as the political leaders' attempt to develop relationships between the companies have been described.

The *hybrid case* concerns the cluster formation process of a logistical centre that was initiated by policy-makers and run by two individuals in co-operation with business actors in the private sector. The mechanisms that induced the cluster, the cluster formation process and the initiatives that were taken to establish a business centre with a view to develop a cluster of logistics firms based on the existing infrastructure of a closed-down military airbase have been described.

9.2 The changing face of the "periphery"

A key word used in this dissertation is "periphery". Today, the indications are that local peripheries in the global level's centre compete with advanced peripheries in the global systems. Basically a region or areas that can be considered core in a country maybe a periphery in a global context. I will return to this perspective below.

Regional disparities in terms of income, employment and the general conditions of economic development have always been a common feature of nations and Sweden is not an exception. Naturally, the evolution of peripheral and core regions has been and is still dynamic. Several of the regions that once provided the backbone of the Swedish economy and significant parts of its industrial dynamics are today lagging as regards job

opportunities and are witnessing a decline in number of inhabitants. From the Swedish perspective, economic activities are today clearly being concentrated in urbanised regions (Stockholm, Gothenburg, Malmö) and in medium-sized regions that can provide firms with sources of innovation and knowledge (centres that house institutions of higher education). From the perspective of the individual firm, it seeks location not only to minimise production costs, but also to benefit from external advantages, including relation-based assets and sources of auxiliary inputs in order to develop internally as well as become competitive. Urbanised regions offer opportunities for the firms to increase productivity because of lower transaction costs and easier and quicker access to market information as well as recruitment of human capital that is increasingly being provided by institutions of higher education. Rather simplified, people tend to move to locations where they can find work or acquire skills and education. But not all people move to locations in search of work. Younger people might be inclined to move for lifestyle reasons. Older people could stay for the same reason. These are the theses of regional scholarship, which date back to more than a hundred years when Marshall (1920) revealed territory and geographic proximity as important mechanisms for the development of both people and firms. The theses were later developed by among others Pérroux (1945) and Myrdal (1957), who analysed the forces that contributed to the core-periphery aspect of economic development. Although accessing jobs is an important dimension, it could, however, be argued that job availability is not enough; a location has to provide "stickiness" in terms of providing better living conditions and attract both employees and employers.

Historically, as I have discussed in chapter five, many of today's peripheral regions in Sweden (for instance, Hälsingland) were one-time growth poles and home to competitive clusters that fuelled development in other regions. Today, however, many of these past core regions and municipalities that lie outside urban areas are witnessing, to use Gunnar Myrdal's phrase, the backlash effect of development in the sense of losing many jobs. Traditional employers that once were encouraged to make a presence in peripheral regions to provide employment opportunities have rationalised their production. And

competition from abroad is stiff; either from foreign firms or from Swedish firms which relocate production facilities to other countries.

In this study's introductory chapter, I adopted a working definition of "periphery" as regions and municipalities that lack the elements considered important in the localisation of economic activities, such as physical proximity to institutions of higher education, i.e., an infrastructure that promotes knowledge and relationship building. This simple definition appeared to be clear-cut when I embarked on this dissertation. However, the pace of globalisation has resulted in changing localisation dynamics and changes in the frontiers of periphery.

Historically, the evolution of core-periphery regions has been greatly influenced by various kinds of innovations that made it possible to cut production and transportation costs. Physical proximity to sources of production and improved transportation modes were major reasons why many firms in the forestry sector were established in the north of the country in the eighteenth and nineteenth centuries and thereby made Hälsingland into a core region.

Today, however, the frontiers of where economic activities can be located have shifted. New technologies have made it possible to outsource production units and manage customer relationships in remote areas as well as overseas (Castells 1999). For call centre locations, for instance, the cliché that geography is history could be true, especially with the ability of digital technology to provide organisations with the capacity to respond to customer needs regardless of location. In a way, this means that call centres situated in the peripheral municipality of Ljusdal in Sweden are competing with companies in, for example, India and South Africa or Ireland where Breathnac (2000) reports the presence of call centres that cater to Scandinavian customers using Swedish, Danish or Norwegian languages. Could the strongest threat possibly come from the Baltic countries of Estonia and Latvia given the historical bonds between Scandinavian countries and these newly emerging economies?

In a related development, Business Week has in its September 05, 5-12 issue, described the trend of outsourcing of service firms to southern Europe and North Africa. In an article entitled "*Cafes, beaches, and Call centers*" the magazine writes that the

combination of weather and the relative low wage costs in Barcelona and other cities in southern Europe (Naples, Palermo, Toulouse and Montpellier) and Tunisia are inducing employers (e.g. Citigroup, General Motors and Hewlett Packard) to establish call centres that are mannered by people attracted to sunshine. Could this development pose a threat to the call centres in Ljusdal?

9.3 Cluster dynamics at work

According to conventional wisdom regarding contemporary development, the degree of knowledge formation is a mechanism that plays a role in shaping the periphery-core aspect of economic development. While in the past proximity to factors of production and access to transportation infrastructure (Von Thünen, Marshall 1920) played a decisive role in determining location of economic activities, today there is scholarship that suggest that the presence of an infrastructure, which facilitates knowledge creation and proliferation, strongly contributes to a location becoming the core of economic development. In the same vein, the absence of this infrastructure is likely to be a contributing factor to becoming peripheral. In this sense, the location of Ljusdal is a peripheral one. Unemployment rates are high and the population is declining. There is no university in the area. Still, in this place a cluster of call centre firms evolved, but it did not happen overnight. The business case shows that cluster dynamics can be achieved in the periphery through local development processes. In recent years, call centres have however become part of a revival of the old top-down uniform strategy to promote regional development. In a hearing on regional development in 1999, it was alleged that four out of five companies receiving state or regional subsidies to establish a presence in remote areas were firms in the call centre industry (SOU 1999:138). Could this development be sustainable? By all means, ICT application has improved the conditions for competitiveness of firms and it has brought with it the emergence of new business formations, such as call centre firms. These firms arrived at a time when it was observed that more and more economic activities could be outsourced or carried out in temporary projects by other companies (Ekstedt *et al,* 1999). From a regional policy perspective, the

locations of call centres suggest the old enticements to be still potent. But in a new version, the business case shows that most of the firms were not located there through policy. In this study, I have identified a series of events that certainly contributed to the evolution of this cluster and the dynamics. This was a an organic process that took decades and are:

i. The efforts of an entrepreneur, who saw an opportunity, and the entrepreneurial spirit,
ii. The onset of information and communications technology,
iii. The presence of skilled employees,
iv. The presence of supporting institutions, and the social relationships between the actors.

9.3.1 Entrepreneurial opportunism

The business case illustrates the evolution of an organic cluster based on entrepreneurial development. While policy initiatives were an important contributing factor to improving the competitiveness of the firms described in the business case, the mechanisms that led to the evolution of the cluster were entrepreneurial. Wigart, an entrepreneur who decided to move the operations of his firm, initiated the process nearly three decades ago. His main motives were to find a cheaper place to rent and a more reliable labour force considering the high cost of renting a space in Stockholm and the high personnel turnover rate. Ironically, Wigart was denied the available funds to move his firm to Ljusdal because only manufacturing firms were to benefit from it.

This is a paradox today; many municipalities in peripheral Sweden are laying the red carpet for call centre firms to establish a presence, which is quite contrary to how firms of this kind earlier have been viewed by industrial policy. As mentioned in the chapter on the cluster formation of the business case, call centres are becoming important employers in peripheral regions. They are seen as saviours in terms of providing much needed jobs in the periphery. However, the Ljusdal cluster did not evolve because a call centre was established once as part of a policy decision of compensation, but rather because of

business idea-based dynamics in which technology, co-operation and public-sector support interplayed.

In the literature on location, it has often been recognised that an entrepreneur plays an important role in the development of agglomerations and clusters (Malmberg 1998; Porter 1990). The evolution of the Ljusdal cluster of call centres was no different. Bengt Wigart played such a role in the development of the cluster in Ljusdal. Although a comparison of Ljusdal and Silicon Valley could be fanciful, many argue that it was the efforts of one individual, Frederick Terman, a Professor in Electronics, who played a major role in the evolution of the technology industry of Silicon Valley. Professor Terman worked at the Massachusetts Institute of Technology in Boston when he decided to move to Stanford University taking with him two of his doctoral students, David Packard and William Hewlett (Saxenian 1994, Malmberg 1998). He encouraged and loaned money to Hewlett and Packard to work on his audio oscillator in a garage in Palo Alto. Are there any other Wigarts out there in the periphery? Is the window of opportunity over given "call centres" becoming part and parcel of the new regional development (SOU 1999:138)?

9.3.2 ICT applications

In the last few years, an important element in the contemporary regional development debate is how peripheral regions best can use information and communications technology (ICT) to offset the disadvantages of their peripheral location. Application of ICT provides and improves the productivity of firms and it creates opportunities for new business formations. In terms of regional development, ICT applications are expected to improve the abilities of peripheral regions to access education and enhance competence generation, which are viewed as important elements of growth and development (SOU 2000:36). ICT is however a generic technology that is available to every actor on the market. The important thing is thus not whether the actors in the periphery-like the call centres in Ljusdal-can benefit from this technology or not but whether they can enhance their competences relative to their competitors when introducing this technology which, in addition, seems to increase the global competition.

The development of call centres in Ljusdal did not occur in isolation, but was a process, which revealed a pattern of positive events coinciding. The diffusion of ICT and the arrival of the Internet have certainly played a major role in enhancing the positive development of the cluster in Ljusdal. Perhaps the introduction of new services, market expansion and the new economic activities that emerged would not have been feasible without the new technology. Although the Internet not always has been perceived as a revolution among the information brokers in Ljusdal (the use of the telephone is still an important tool for most of the firms in Ljusdal), many of them exchange information with their clients via the Internet by way of a user-name and a password. However, the arrival of the Internet facilitated the processes of the whole new concept of gathering and selling information through subscriptions to databases. Also, the entrepreneurial spin-offs from Byggfakta can certainly, to some extent, be attributed to the Internet. Most of the managers of these new firms had been employed at Byggfakta, where they had obtained the knowledge to develop the same business idea but entered into other lines of businesses.

9.3.3 Skills

A third mitigating mechanism that played a central role in the call centre is the development of tacit knowledge within the cluster. There was definitely no "knowledge in the air" designed for call centre activity when Byggfakta moved from Stockholm to Ljusdal. The necessary knowledge was brought from Stockholm, embodied in the personnel that wanted to settle in the area. One can say that one common feature of the firms in Ljusdal is the importance of personnel, because it is through the employees that the firms create value for the customer. Especially for the information brokers, the functional skills of their employees are the firms' single resource and they perform a great variety of tasks. During the interviews, the managers of these firms stressed that the breadth and depth of the skills of employees are a competitive weapon.

But as the years have passed, the air turned thicker. Although knowledge about how to broker and handle information between different entities is especially dense around

Byggfakta in the municipality's centre, this kind of air has also reached public organisations like the school and the labour office.

As described in the business case, Ljusdal has succeeded in creating a specialised labour market with managerial as well labour mobility between the firms. There is awareness on the part of the firms, and especially the supporting organisations, toward viewing the cluster of call centre firms in the municipality as a tool for development. Apart from the establishment of a specialised labour market, which was one of the key thesis of Marshall (1920) over a century ago, there are two other dimensions which cannot be overlooked in analysing the factor that led to the growth of this cluster; First, the under-utilised capacity/skills potential in the periphery; Although formally low education led to the evolution of this cluster and the subsequent availability of job creating opportunities for the inhabitants, a dynamic process like the emergence of the call centre cluster in Ljusdal can serve as a lever for competence enhancement - and call centre locations may serve as the high end of the local labour market as compared to what it can be in Stockholm. Secondly, the mirror image of this is that the advanced/high competence/human capital formation can occur throughout the world and thus also advanced software production - advanced design that could compete on a global scale - can be done in locations that can be described as peripheral.

9.3. 4 Horizontal development dynamics

Research on the Italian industrial districts has described the extent of horizontal development dynamics as a feature that has contributed to the competitiveness of the region (cf, Becattini 1990). Likewise, the development of the Gnosjö region is to a certain extent attributed to a collective development spirit that encompasses non-governmental organisations and the willingness of public institutions to provide inputs (cf., Brulin 2001).

Using Göran Brulin's phrase "Factor X", there is some kind of "Factor X" functioning in Ljusdal. The social relationships between the actors and the social cohesion in the municipality of Ljusdal have certainly contributed to the growth of the cluster and should not be underestimated. Although different kinds of technological applications are

beneficial to enhance a firm's development, they are redundant if there are no relational exchanges between the actors. It is often in the local setting that actors exchange ideas face-to-face (cf., Maskell *et al,* 1998). Although direct business exchanges, such as vertical integration, could not be identified due to the nature of the services the firms offer, there is a social dimension that cannot be understated. This includes the benefits of having worked at the same firm, the relatively low establishment barriers, and belonging to the same sporting organisations.

In summary, many of the features of the business case reflect how cluster dynamics can be achieved, i.e., the development of organic relationships, the knowledge building that resulted in the development of a business concept, and the learning and knowledge spillovers that contributed to the development of the cluster. The mental barriers to becoming an entrepreneur were lowered when it was possible to use a role model. The understanding of how the Ljusdal cluster is formed lies in the spread of the business idea and how this was adopted to new activities and markets. The rapid development can be explained by a demand gap when it comes to brokering different kinds of information. The new information technology was the facilitator, rather than the instigator, that made these kinds of services run smoothly. In the later phase of the cluster development process, it can be useful to talk about spillover and contextual knowledge effects as some of the researchers in the field do.

Although the spin-offs of the firms are independent of public inputs and often evolved through the development of organic relationships and business based knowledge acquired by work at (e.g. Byggfakta), the inputs of the public sector is one that cannot be discarded. For example, the job centre plays a leading role in providing personnel to the cluster and it conducts regular evaluations of the local labour market. Through personal contacts between the "call centre team" and the firms, the local labour office gets advance information on possible recruitment needs or pending lay-offs. This enables the office to prepare an action plan. In the case of pending redundancies, the office consults other firms and inquires about their personnel needs and if there are any plans to recruit new employees. In some cases, the firms contact the labour office when they are looking for people with special competencies. If people with such competencies cannot be found, the

labour office entrusts a firm or a public educational institution to provide courses in that specific area. So, today one can say that Marshall's suggestion that a cluster is promoted by some kind of collective knowledge also holds true for Ljusdal.

9.4 Industrial policy perspective

In terms of industrial policy in peripheral regions, creating the right kind of climate to foster the emergence of small enterprises requires an overhaul of business development strategies, which in the past have been dominated by strategies promoting large manufacturers. In this dissertation, I have described how industrial policy in peripheral regions has shifted from an exogenous approach to one that starts out from the promotion of an endogenous approach and involves the encouragement of locally based development schemes with the aim of promoting cluster dynamics.

As mentioned earlier in this chapter, the Swedish government's one-for-all approach to reduce regional disparities by locating economic activities in less privileged towns is being replaced by a policy strategy in which emphasis is given to knowledge creation and relationship building. Contemporary industrial policy is embracing a system approach in which cluster development is the main focus. This appears to be a panacea for development. But could such moves achieve the desired results? Could such a strategy help peripheral changes meet the challenges of increased globalisation and contribute to the development of a new industry structure? In contrast to the business case, where several factors (entrepreneurial opportunism based on business ideas, skills development and horizontal dynamics), the policy and hybrid cases to a greater extent describe how attempting to induce cluster dynamics through industrial policy works. Unlike the business case where we could observe the organic nature of the relationship in terms of knowledge formation and network development, and a business idea-based development, the hybrid and policy cases are built on imitation and reviving the local economy through policy measures. From the context of peripheral regions, policy moves of this kind may be looked upon as a learning process considering the lack of this tradition.

9.4.1 Imitation

The cluster concept is one of the latest concepts that have found its way in the business development discourse. In the empirical chapters (4-8), I have illustrated the cluster formation process in a peripheral region by providing three case studies. Although the theoretical undercurrents of the cluster concept could, as discussed in several parts of this thesis, be sourced to great social scientists like Pérroux (1950), Myrdal (1957) and Marshall (1920), it has become the dominant concept as far as regional and national competitiveness is concerned. I have also described measures to imitate successful concepts are becoming a trend in peripheral regions. With a view to induce cluster dynamics, a source of inspiration is the development of the three areas of Silicon Valley, the third Italy and, closer to home, the Gnosjö region. However, these three regions are not homogenous, but differ in both geographical scope and the characteristics of the companies. For example, Silicon Valley is a relatively large area geographically, the clusters of the Third Italy are spread over several districts, and the Gnosjö region consists of four municipalities. As regards population, Gnosjö has probably less than five percent of the population in Silicon Valley or the third Italy. Furthermore, Silicon Valley is reported to have all the characteristics of the "knowledge economy", including venture capitalists, professional networks and world-class institutions of higher education (Saxenian 1994) of a different magnitude than in the case of Swedish peripheral regions. The other two regions are characterised by the presence of small- and medium-sized companies and their ability to promote and generate entrepreneurial companies and to manage interdependencies through co-operation that involve both formal and informal organisations (Brusco 1986, Becattini 1990, Johanisson 2002).

The matrix of these regions is not, however, the geographical size or the products that are produced, but the extent of social relations embedded in the community. Furthermore, the ability of the companies to engage in co-operation while still maintaining competition is crucial to overcoming potential disadvantages, to stay competitive and survive in the global economy. Supporting institutions and an environment that fosters learning, innovation and knowledge building are vital factors

that contribute to the dynamics of these regions. As illustrated in the business case, cluster dynamics and the knowledge formation related to it, take time to be achieved and encompass an array of factors which were quite visible in the business case, but which were absent in the policy and hybrid cases.

9.4.2 The role and timing of policy measures

In the three case studies, the policy hand was visible, though in different degrees and scope. Studying a local development process in peripheral regions without discussing industrial policy aspects that shapes it means that only a partial analysis is provided. I have shown how the authorities in the two municipalities tried to induce cluster dynamics through formal relationship building and knowledge creation mechanisms. In contrast to the evolution of organic development of relationships and business idea-based knowledge in the business case, the policy case was about formal relationship building between the small companies, many of them in their infancy and in need of external resources to succeed. The authorities in the business case have also attempted to entice formal relationship building by organising networks. However, based on the interviews with the companies, many of the actors have known each other through their workplace or have had interactive exchanges in the informal sense. In other words, it appears as if it is the informal interactions of people getting together and discovering a mutual need that led to the new business start-ups.

From a theoretical point of view, these dynamics are not new as they have been discussed earlier by Marshall (1920) and Pérroux (1950). From a policy perspective, cluster development has become an important tool to revitalise the economy in a region and to offset job losses by contributing to entrepreneurial growth and thus forming networks formally is no bad thing given the circumstances. Although the goals of the three approaches that I have described were similar in terms of what the authorities wanted, there were different driving mechanisms. But achieving cluster dynamics takes time and is often not planned. Furthermore, the life cycles of the development processes were different and, perhaps even more importantly, the role that the supporting institutions played.

Table 9.1. Influencing mechanisms, life cycle and the role of supporting institutions.

Case	Life cycle	Nature of the dynamics	Driver	The role of policy
Business	30 years	Informal and organic	The business concept	Supportive role
Policy	3	Formal and policy induced	IT-discourse /E-commerce	Active role
Hybrid	3	None could be identified	Regional location policy	Active role in the initial phase, but low profile in the implementation phase

The policy and hybrid cases describe how cluster dynamics were induced entirely through policy measures. The contextual setting of these cases is the municipality of Söderhamn, which has become path dependent on policy measures to offset the effects of crises. Söderhamn had undergone several crises because of technology, market forces and the latest closure of the air force base. This was a continuation of a process that begun in the twentieth century when the significance of sawmills as the number employers were reduced with the onset of the cellulose based industry. These became important employers and together with supporting industry of transportation and manufacturing formed the forestry cluster. In the 1970s due to market forces, several employers ceased with their operations. The closure of the air force base in the mid-1990s was followed by the same path dependent strategy of seeking solutions so as to solve the immediate problems (Lindberg 1999 and 2002).

Following the closure of the air force base, F15, the development processes initiated included the promising of 350 jobs in the public sector as compensation. In addition, the Söderhamn package, unveiled on a winter morning in the middle of that decade included the promotion of endogenous development initiatives to change the municipality's reliance on large employers. Measures to promote an industry that is based on the "knowledge" economy and to benefit from the digital boom witnessed in core regions were to be put in place. In a way, this was a local economy in transformation. Two separate development processes were initiated as part of the "package". Relationships and

knowledge building were identified as the way forward for this peripheral municipality. According to a document produced by the political leaders and circulated in public, Söderhamn was to become a place where learning was the main theme (Svensson 2004).

Through policy measures cluster dynamics were to be promoted so as to encourage the evolution of a new industry that would take the municipality into the new millennium. Theoretically, policy measures may induce cluster formations (cf. Dunning 2000). Many of the universities around the globe have been induced by policy measures and thus policy does indeed play a role. While it could fuel the pace and development of entrepreneur-based clusters, they could also provide the presence of public clusters by way of co-locating and creating a critical mass of publicly-sponsored government agencies. But Söderhamn lacked a tradition of higher education. The role of policy makers is to identify potential clusters and to facilitate the development of cluster dynamics. This could be done, for example, by providing linkage mechanisms, such as networking between the firms and the supporting institutions, and soft infrastructure, such as training and education, as well as hard infrastructure, such as public roads.

According to Scheele (2002), in order to strengthen the competitiveness of clusters in peripheral regions important contributions from policy makers are:

- Providing support through labour market measures in terms of training and competence generation.
- Providing knowledge-based infrastructure to accumulate tacit knowledge.
- Providing business developmental support during the cultural incubation period.

Although public policy measures are aimed at encouraging cluster development by improving the general business environment, cluster formation policy in terms of creating wished for clusters and providing infrastructure that formally aim at inducing cluster dynamics has been argued as not effective in cluster development (cf. Enright 2001).

Moreover, it is one thing to create some of the necessary mechanisms for developing cluster dynamics, but can policy measures "create" relationships? The point of departure of scholars who have studied industrial districts is the relationship aspect of clustering. It

has been argued that it is the organic growth of relationships through socio-economic links between firms and institutions that contribute to the dynamics of clusters. In the policy case described in this dissertation, the IT network that was established by the authorities shows that it is easier said than done when it comes to inducing the relationship aspect of clusters.

The establishment of the business centre Flygstaden was of a hybrid nature. Although policy played a role in the initial phase of the development of the cluster, it was two individuals, in co-operation with the new owner of the business centre, who carried out the implementation. In their studies on the Swedish region Gnosjö, Johannisson (1992) and Brulin (2000) claim that civic entrepreneurs play a role in influencing local development. These are individuals who help other actors to enhance development processes by:

- Promoting a climate that fosters local development.
- Encouraging individuals to engage in firm development.
- Facilitating trust-creating mechanisms between individuals.
- Facilitating construction of personal networks.

In the hybrid case, the civic entrepreneurs were the former air force base commander and his chief of staff. At the same time, although the operations of the park Flygstaden were run by a private company and thus differed from the Soft Centre, the hybrid case was one of relocation policy at work.

The knowledge aspect of development to offset global pressure and the new economy enthusiasm are factors that have contributed to the initiation of the Soft centre in Söderhamn. Indeed in the policy case, there was an element of the "valley" cloning (Rosenfeld 1997 and Malmberg 2002)). Science parks are a key feature of the Swedish landscape and aim at creating the right kind of milieu that promotes the growth and development of knowledge-based firms. The size, function and focus of a science park may vary. Still, the notion of comparing Silicon Valley with a science park, such as the Soft centre in Söderhamn, may appear ludicrous and ambiguous. However, in providing

support for a growth environment, the structure, advantages and the different roles of the actors remain the same. The size of a science park does not actually matter for the growth of the cluster, as long as the science park meets the criteria of being near an institution of higher education, especially as all science parks start as a small project or initiative that is expected to grow. The source of knowledge is either a university or an institution of research that provides the park with scientific knowledge. In the case of Söderhamn, however, one vital criterion is lacking, i.e., infrastructure that supports and facilitates interaction between tenants and higher education institutions.

But the establishment of the Soft centre in Söderhamn should be seen from a wider perspective. There was an optimism that was associated with the new economy. In the regional development debate, many saw the arrival of the Internet as an opportunity to offset the liabilities of regions in the periphery. The prediction was that the Internet would allow regions to access knowledge that was important to firm development. According to authorities in peripheral regions, the location of economic activities mattered less and the weakness of lying in the periphery could be turned into strength, if only the right milieu and the right kind of infrastructure were provided.

Many of the firms at the Soft centre in Söderhamn and other firms engaged in the networking were in their infancy and they were established with the idea that electronic commerce would continue to grow. During that period, we have witnessed how entrepreneurial firms such as Netcom, Framtidsfabriken, Readsoft, Intentia and others were valued higher than many of the established firms in Sweden. Their introduction on the stock market in Stockholm resulted in higher stock valuations (Sölvell et al 2000).

At the same time, the municipal authorities in Söderhamn were faced with the loss of many jobs due to the closure of the F15, and they focused on knowledge utilisation as a panacea to offset future crises. The goal of policy makers was to provide mechanisms that created the right kind of milieu for knowledge creation and innovative energy so as to promote small and medium-sized firms. The idea behind the creation of a soft centre was to make sure that it would attract companies that would supply employment to the inhabitants. In other words, with the help of the new technology, Söderhamn would create mechanisms that were conducive to the development of SMEs.

Both Söderhamn and Ljusdal are situated in a region that has not been known for high levels of education among its inhabitants. There are institutions like CF.L, the Centre for Flexible Learning in Söderhamn, and UC, the Centre for Development in Ljusdal, that act as a bridge between the people and universities. The latest technology, e.g. the Internet and other platforms including video transmission, is therefore seen as a vital instrument to provide access to knowledge that has been reserved for the corridors of universities.

Another important dimension of creating cluster dynamics is relationship building between small companies. Many of the peripheral regions in Sweden lack the tradition of reliance on small companies. Furthermore, there is a lack of a physical infrastructure and knowledge infrastructure, such as providing firms and their employees with meeting places, networks of innovation, virtual knowledge programs and libraries. In this case, the policy case constituted a positive development, which in the long run might provide a learning dimension. The creation of special areas, such as technology parks, to promote incubator-based schemes that would help entrepreneurs to develop products would demand:

i. An industry-led initiative with a focus on the business concept
ii. A public-private initiative to facilitate shared risk programs and access to venture capital so that successful incubators could blossom.
iii. Development programme initiatives between the private and public sectors to ensure cross-fertilization between institutions of higher education and innovative firms.

In the policy case, the cluster development approach encompassed firms in a new industry. These small companies lacked financial resources to develop their business ideas in contrast to the firms in core regions, which have the ability to access abundant financial resources that are needed to encourage entrepreneurial innovations and product development. Their counterparts in the periphery must rely on superior product and service innovations to attract investors. Therefore, it is vital for supporting institutions with the task of ensuring business development to be in the forefront in detecting market changes and information about products and services

Peripheral regions have limited resources to look beyond their geographical borders for ideas and information that are vital to business development and are thus open to lock-in attitudes. This coupled with lack of skills and renewal strategies, including the inability to identify business needs in advance, allows them to be susceptible to lame projects that do not contribute to the creation of jobs (Rosenfeld 1995, 1997).

9.5 Future research

In summary, clustering of economic activities is not a new phenomenon and many peripheral regions in Sweden have had working clusters for a long time, including Hälsingland. However, today the global economy has shifted the rules that induce clustering of economic activities. Knowledge creation is an important factor that contributes to attracting the location of firms. Peripheral regions, such as Hälsingland, lack the physical infrastructure that promotes knowledge creation, such as institutions of higher education. There is a need for an upgrading of the regional infrastructure in order to promote entrepreneurship and training programs. By establishing government-financed research and technology programs, the necessary knowledge could be created to compete competitively with well-off regions. But what kind of knowledge is needed for development is an area that needs further research.

An issue that begs for further research in respect to peripheral regions concerns what kind of competitive advantage they offer. Richard Florida (2005) in "CITIES AND THE CREATIVE CLASS" argues that regional development is enhanced by the existence of "creative capital" which according to him comprises of the three Ts (Talent, Technology and Tolerance). The presence of these in a given location promotes the competitive advantages of regions because it paves the way for urbanised Bohemian lifestyles, which is crucial in a knowledge intensive global world. Although urban centric in his approach (evident from the title), Florida's perspective on lifestyles rather than the cost of production as an element of gaining competitive advantage could uncover new insights into how the development of peripheral regions in Sweden could be enhanced. For instance, given today's mode of faster transportation combined with the advantages of

offered by ICT proliferation, could the competitive advantages of peripheral regions such as Hälsingland lie in providing people in core regions lifestyles that are scarce in core regions? Could the relatively affordable large and beautiful wooden houses[69] in Hälsingland appeal to the minds of professionals, businessmen and civil servants in Stockholm? Could the presence of hunting opportunities in places like Ljusdal attract people?

In the Swedish industrial development debate we are witnessing how the concept of "innovation" system is embraced with the hope that it would lead to development. In the business development debate in peripheral regions and maybe throughout the nation the impression is that an innovation system based on the proliferation of knowledge would be a panacea to development given increased globalisation. Embedded in this approach is the notion that the future lies in promoting hi-tech industry. A research that focuses on whether or not an innovation system based on low-tech industry would certainly bring forth insights that might help peripheral regions to become competitive.

In researching the business case, I interviewed managers of firms and supporting organisations. Research that looks into the employees' motives for working in the call centres would certainly present a good field for study. Such a research might uncover the reason why younger people decide to take "a call centre" job, which in the public eye is viewed with a negative connotation. Is it because of the absence of other alternatives or could there be other reasons?

Several actors, mainly in the business sector, have through the interviews expressed the lack of a long-term strategy from business development leaders who they say are lame and are blinded by a will to attract firms. In this process, certain "free riders" are attracted to several municipalities. I have not looked at the issue of the various subsidies that are provided to firms for establishing a presence in peripheral parts of Sweden. Any future research in that particular field is welcome and would certainly contribute to the understanding of whether or not these measures have created any new jobs.

---

[69] In Swedish: Hälsingegårdar

The role of non-governmental and non-business organisations, such as sports clubs, voluntary organisations, etc., should be studied deeply in any future research in the periphery. Likewise, the contributions of business development authorities and intermediaries of resource generation, such as educational centres, would present an interesting area of study.

I have used the term "periphery" on many occasions in this dissertation. The pace of the global economy is one that shifts the character of periphery. Research that looks into the shifting structure of such transformations would be welcome.

Finally, although my ambition with this study was not to falsify a theory in a Popperian vein, several questions relating to conventional wisdoms governing regional development have arisen: Is the conventional wisdom governing the forces of development including an infrastructure based on higher education the road forward for peripheral regions? What kind of knowledge plays a role in the development of peripheral regions? Is a policy practice based on theoretical concepts a panacea for peripheral regions? Was my own involvement in efforts to revive the local economy of Söderhamn a success, a failure or in between? I will leave these questions to the potential reader of this dissertation to make up his/her own mind on.

REFERENCES

Ádàm, G., [1975], "*Multinational Corporations and Worldwide Sourcing*", in International Firms and Modern Imperialism, Edited by Hugo Radice, Penguin books, Victoria, Australia.

Alsén, G., Eriksson P., Nilsson A., Nilsson J,A., [1999], "*The university- a regional booster?The case of Karlskrona-Rönneby*" Paper presented at the conference of "Högskolor och Samhälle" Falun, Sweden in March 1999.

Alvesson, M., & Sköldberg, K., [1994], "*Tolkning och reflektion- vetenskapsfilosofi och kvalitativ metod*", Studentlitteratur", Lund.

Amin, A., & Thrift, N.,[1995], "*Globalisation, Institutional "thickness" And Local Economy*". In Healey, P., Cameron, S., Davoudi, S., Graham, S. and Madani-pour A, [eds.] Managing cities, the new urban context, Chichester: John Wiley.

Amos Jr O,M., [1988], " *Unbalanced Regional Growth and Regional Income Inequality in the latter stages of Development*", Regional science and Urban Economics 18.

Andersson, Å,E., [1981], "*Structural Change and Technological Development*", Regional science and Urban economics, Vol 11, Issue 3.

Andersson, R., Quigley, JM., Wilhemson, M., [2004], "*University Decentralization as Regional Policy: The Swedish Experiment*", Journal of Economic Geography Vol.4, No.4.

Archiburgi, D., & Lundvall, B-Å.,[2001], "*The Globalizing Learning Economy*", Oxford University Press.

Arnemark, M., Brodin, S., Nuur, C., Swenson, J., Zettergren, T., & Eriksson, LT,.[2000], "*Det digitala klivet*" ,Sandlund and Company, Gävle, Sweden.

Arthur, B., [1989], "*Competing Technologies, Increasing returns, and Lock-in by historical small events*", Economic Journal 99.

Asheim, B., [1996], "*Industrial Districts as Learning Regions: a Condition for Prosperity"*; European Planning Studies, Vol. 4, No. 4.

Asheim, B., [2000], "*Industrial Districts: The Contributions of Marshall and Beyond*" (In Clark, Gordon L.; Feldmann, Maryann P.; Gertler, Meric S. (Ed.): (2000): Oxford Handbook of Economic Geography. Oxford University Press).

Asheim, B., [2002],"*Temporary Organisations and Spatial Embeddedness of Learning and Knowledge creation*". Geografiska Annaler, Vol. 84 B, No. 2.

Audretsch, D., [1993], "*Industrial policy and International Competition* " in Industrial policy in the European community" edited by Nikolaides, P.

Audretsch, D., [2000a], "*Corporate Form and Spatial Form*" in (Clark, Gordon L.; Feldmann, Maryann P.; Gertler, Meric S. (Ed.): (2000): Oxford Handbook of Economic Geography. Oxford University Press)

Audretsch, D., [2000b], "*Knowledge, Globalisation, and Regions: An Economist's Perspective*" In Regions, Globalization, and the Knowledge-based Economy, Edited by Dunning, H.J, Oxford University Press.

Bager-Sjögren, L., Rosenberg. M., [2004], "*Kartläggning av aktörer i det svenska innovationssystemet*" Institutet för tillväxtpolitiska studier.

Baker P., [1995], "Small Firms, Industrial Districts And Power Asymmetries", International Journal of entrepreneurial behaviour and research, MCB University.

Barret S., [2001], "Call Centres: Are they a sustainable source of employment growth?" Paper presented at the International Employment Relations Association in Singapore in July 2001.

Breathnach, P., [2000], "*Globalisation, information technology and the emergence of niche transnational cities: the growth of the call centre sector in Dublin.*", Geoforum 31.

Becattini, G., [1992], "*The Marshallian Industrial District As a socio-economic notion"*, in Pyke, F. / Becattini, G. / Sengenberger, W. (1990) (eds.), Industrial districts and inter-firm co-operation in Italy, International Institute for Labour Studies, Geneva.

Beckmann, M [1972], "*Von Thünen Revisited: A Neo-Classical Land Use Model,*" Swedish Journal of Economics.

Berggren, C., & Laestadius, S.,[2003], "Co-development And Composite Clusters-The Secular Strengths of Nordic Telecommunications", Industrial and Corporate Change, Vol. 12 No.1.

Berggren, C., Brulin, G., & Gustafsson, L., [1998], "*Från Italian to Gnosjö. Om det sociala kapitalets betydelse för livskraftig industriella regioner*"., Stockholm: the council for working life research.

Bergström, F., [1998], "*Regional Policy and Convergence of Real per capital income among Swedish regions*" SSE/EFI working paper series in Economics and finance no.8

Brant, M., [2001], "*Nordic Clusters and Cluster Policies", in Cluster Policies-Cluster Development?* Edited by Mariussen, Å- Nordregio R2001:2.

Brown, R., [2000], "*Cluster Dynamics in Theory and Practice with Application to Scotland*", Regional and Industrial Policy Research paper, Number 38: European Policies Research Centre, niversity of Strathclyde.

Brulin, G., [1998], "*Den tredje uppgiften, Högskolan och omgivning i samverkan*", SNS förlag and ALI.

Brulin, G., [2002], "*Faktor X, Arbete och Kapital i en lokal värld ", Stockholm, Atlas.*

Brusco, S., [1986], "*Small Firms and Industrial Districts; The experience of Italy"*, In New Firms and Regional Development in Europé; Edited by D.Keeble and E. Wever, London- Croom Helm´.

Cairncross, F., [1997], "*The Death of Distance: How The Communications Revolution will change our lives*". Boston, Massachusetts. Harvard Business School Press.

Carlsson, B., [1997], "*Technological Systems and Industrial Dynamics*", Kluver Academic Publishers, Boston , London.

Castell, M.,[1999], "*Informationsåldern: Ekonomi, samhälle och Kultur. Nätverkssamhällets framväxt*," Diadolos, Göteborg.

Coase, R.H., [1937], "*The Nature of the firm*"

Connolly, W.E., [1993], "*The Terms of Political Discourse*", Blackwell Publishers, Oxford, UK.

Cooke, P., [2002], "*Knowledge Economies: Clusters, Learning and Co-Operative Advantage"* Routledge.

Cossentino, F., Pyke, E., & Sengenberger, E., [1996], "*Local and Regional Response to Global pressures; The case of Italy and its Industrial districts*"- Research Series; International Institute of Labour studies-Geneve.

Cox, R., [1995], "*Lessons From 30 Years Of Science Parks in the USA*", In J. Gibb, [ed.] Science parks and innovation centers: Their economic and social impact, conference proceedings, Berlin, Feb. 13-15. Amsterdam: Elsevier.

Dei Ottati, G., [1994], " *Cooperation and Competition in the Industrial District as an Organisational model*" European Planning studies Vol2.

Donmoyer, R, [2000], "*Generalizability and the Single Case Study*" in Case Study Method, Eds: Gomm, R, Hammersley, M & Foster, P. Sage publications limited, London

Dunning, J.H., [2000], "*Regions, Globalization, and the Knowledge Economy: The issues Stated*"- Oxford University Press.

Ekstedt, E,& Lundin, R A, Söderholm A & Wirdenius H., [1999], "*Neo-industrial Organising, Renewal by action, and knowledge formation in a project-intensive economy."* Routledge, London and New York.

Ekstedt, E., & Nuur, C., [2004], "*Call Centre Clusters- A Knowledge Paradox*" Paper presented at the 15th RLDWL congress held in Durban, South Africa, 25th-29th February 2004.

Ekstedt, E., [2001], "*Kunskap och handling för företagande och regional utveckling*", Arbetslivsinstitutet, Stockholm.

Eliasson, G., [1999], "*Competence Blocs and Industrial Policy in the Knowledge-based Economy*", OECD Science and Technology and Industry Review 22.

Engstrand, Å-K.,[2003], "*The Road Once Taken-Transformation of labour markets, politics and place promotion in two Swedish cities, Karlskrona and Uddevala 1930-2000*" Working Life In Transition.

Enright, M., & Ffowcs-Williams, I.,[2000], "*Enhancing the competitiveness of SMEs in the Global Economy: Strategies and Policies*", Paper presented at the conference

of ministers responsible for SMEs and Industry ministers, Bologna, Italy 14-15 June 2000.

Enright, M.,[1996], "*Regional Clusters and Economic Development- A research Agenda*" in Business Networks: Prospects for Regional Development- Edited by Staber, U., Schaefer, N. and Sharma, B. de Gruyter, Berlin.

Epstein, G., [2003], "*The Role and Control of Multinational Corporations in the World Economy*", in: The handbook of Globalisation, Edited by J. Michie, Edward Edger publishing house, Cheltenham, UK.

Erfors, A., [2004], "*Det är dans I Parken ikväll- om samverkan mellan näringsliv och akademi med forskningsparken som mäklande miljö och aktör*", Dissertation at the University of Lund, Sweden.

Ferguson, R., [1995], "*Panacea or let-down? Science Parks in the Literature*", Stockholm: TeknikBrostifstelsen.

Fernie, S. ,& Metcalf, D., [1998], *"(Not) Hanging on the phone; Payment systems in the new sweatshops*," In D.Lewin and B.E Kaufman (eds., Advances in industrial and Labour relations) Vol.9.

Feser, E.J [1998], "*Old and New Theories of Industry Clusters*" In Clusters and Regional specilization; On Geography Technology Networks; London, Pion Limited.

Florida, R., [2005], CITIES AND THE CREATIVE CLASS", Routledge, London.

Fredriksson, P[., 1999], "*The Dynamics of Regional Labour Markets and Active Labour Policy: Swedish evidence*", Oxford Economic papers 5, Oxford University Press.

Freeman, C., [1988], "*Japan: A new National System of Innovation*?", in Technical and Economic Theory, edited by Dosa, G, Freeman, C, Nelson R, Silverberg & G, Soete L: UK printership.

Glaeser, E, L [2000], "*The new economic of urban and regional growth*" in (Clark, Gordon L.; Feldmann, Maryann P.; Gertler, Meric S. (Ed.): (2000): Oxford Handbook of Economic Geography. Oxford University Press)

Glasmeier, A,K., [2000] "*Economic geography in practice: local economic development policy"* in (Clark, Gordon L.; Feldmann, Maryann P.; Gertler, Meric S. (Ed.): (2000): Oxford Handbook of Economic Geography. Oxford University Press)

Granovetter, Mark (1985) "*Economic Action and Social Structure: The Problem of Embeddedness*", American Journal of Sociology. Vol. 91 No. 3.

Gratzer, K, & Box, M,. [2002], "Scandnavian Economic History Review, "volume L, no: 1 2002.

Gummesson, O., [1997], "*Därför lyckas Gnosjö: bygden som har blivit ett begrepp* ", Stockholm, Ekerlids.

Hammer, S., & Svensson, L.,[20001]," *Som en bro över mörka vatten. Reflektioner från en fältforskningsstation I uppbyggnadsfasen*". Forsknings samverkan and nya former av kunskapsbildning- sammanställning av bidrag till konferensen Högskolor och Samhälle I samverkan.

Hammersley, M [1999], "*Some reflections on the current state of qualitative research*", Research intelligence No. 70.

Hirschman, A, O., [1958], "*The Strategy of Economic Development*", New Haven, Yale University press.

Hirschman, A,O., [1967], "*Development projects observed*", The Brookling institutet Washington.

Håkansson, H.,& Snehota, I [1995], "*Developing relationships in Business Networks*" Routledge.

Håkansson, H., [1987], "*Industrial Technological Development- A Network Approach*" London, Croom Helm.

Hård, U., [2003], " *Where have all the women gone? Gender Perspective on the Regional Growth Agreements- A new Swedish Regional development Policy*" in: Local Responses to Global Changes- Economic and Social Development in Northern Europe's' countryside's" editors: Persson, L.A, Åhlander, A.S, and Wiklund, H- Arbetsliv I Omvandling.

Isaksen, A., [1997], "*Regional Clusters and Competitiveness : The Norwegian Case*"European Planning studies, Vol 5 Number 1.

Isaksen, A., [2001], " *Building Regional Innovations System: Is Endogenous Industrial Development possible in the Global Economy*?", Canadian Journal of Regional Science, XXIV:1.

Johanisson, B., [1984], "*A cultural perspective on small business-local business climate*" in the International small business journal, vol 2.

Johanisson, B., [2002] "*Regional Policies and Comparative Advantage*"", Cheltenham, Edward Elgar.

Kebble, D., [1997], "*Small firms, Innovation and Regional development in Britain in the 1990:s*", Regional studies.

Krugman, P., [1996], "*The self-organizing economy*"- Blackwell Publishers.

Krugman, P., [2000], "*Where in the world is New Economic Geography*?" (In Clark, Gordon L.; Feldmann, Maryann P.; Gertler, Meric S. (Eds) Oxford Handbook of Economic Geography, Oxford University Press)

Labuschagne, A., [2003] "*Qualitative research- Airy Fairy or Fundamental*?" The qualitative report, vol 8, number 1.

Laestadius, S., [1980], "*Produktion Utan Gränser* (Production without borders)",Sekretariet för framtidsstudier.

Laestadius, S., [1992], "*Arbetsdelningens dynamik*" , Arkiv, Lund.

Laestadius, S., [1999], "*Marshallian dynamics and new growth theory*," TRITA IEO-R 1999:1, KTH.

Laestadius, S.,[2005], "*Det Dahménska utvecklingsblocket – några reflektioner*" i Benner, Mats, ed., *Innovationer – omvandling och dynamik*, Studentlitteratur, under utg.

Lasuén J.R., [1969], "*On growth poles*" Urban studies, Vol 6, Number 2.

Lever, W.F., [1980], "*Manufacturing Linkages, Industrial Dynamics and The Transmission of Growth*", Regional science and Urban Economics.

Lincoln, Y., Guba, E,G., [2000], " *The only generalizations is : There Is No Generalization*" in Case Study Method, Eds: Gomm, R, Hammersley, M & Foster, P. Sage publications limited, London

Lindberg, H. [1999], "*Industriell Omvandling I Söderhamn och Hudiksvall under trävaruepoken 1850-1995*", Licentiattuppsats ekonomiska-historiska institution Uppsala Universitet , Uppsala.

Lindberg, H, [2002], "*Att Möta Krisen-Politikbyte på local nivå under Industrikrisen I Söderhamn 1975-1985*" ,dissertation in economic History at Uppsala.

Lundequist, P & Power, D. [2002] "*Putting Porter into Practice? Practices of Regional Cluster Building: Evidence from Sweden*". European Planning Studies, V. 10, nr. 6.

Lundvall, B-Å, [1992], "*National Systems of Innovations- Toward a theory of innovation and interactive learning"*, Printer Publishers, London.

Malmberg, A. [1998],"*Den gäckande agglomerationsfördelen: teoretiska principer och empiriska paradoxer*" Svensk Geografisk Årsbok, Årg. 74.

Malmberg, A., [2002], "*Klusterdynamik och regional näringslivsutveckling,- begrepp diskussioner och forskningsöversikt*" – a report for ITPS.

Malmberg, A., Solvell O., Zander, I[1996], " *Spatial clustering, Local Accumulation of Knowledge and Firm Competitiveness*", Geografiska Annaler. Series B, Human Geography, Vol 78.

Malmberg, A., & Maskell, P., [1997], "*Towards an explanation of regional specialisation and industry agglomeration"* in Regional Specialisation and Local environment: Learning and Competitiveness. NordREFO 3.

Markusen, A., [1996], "*Sticky Places in Slippery Space- A typology of Industrial districts*", Journal of Economic Geography, vol.72, No.3.

Marshall, A., (1890/1920/1916/ 1920,) "*Principles of Economics. An Introductory Volume.*"

Martin, R., & Sunley, B., [2003], "*Deconstructing Clusters: Chaotic Concept or Policy Panacea*?", Journal of Economic Geography 3:5.

Mascanzoni, D,.& Novotny, M.,[2000], "*Lokomotivföretaget I Italien-Motor för sysselsättning och regional utveckling* ", Stockholm.

Mascanzoni, D., [2003], "*Snabbväxande Kluster I Italien-från fattigdom till spridd välfärd*" - Institutet för Tillväxtpolitiska studier, Elanders Gotab, Stockholm.

Maskell, P., & Malmberg, A., [1999], "*Localized learning and industrial competitiveness*", Cambridge Journal of Economics, 23:

McCann, P., [2002], "*Classical and Neoclassical Location- Production Models*" in: Industrial Location Economics; McCann (editor), Edvard Edgar, Cheltenham, UK.

McDonald F., Vertova G.,[2001], "*Geographical concentration and competitivenessin the European Union*" European Business review, MCB University Press.

MCGrath, R, G., [1999], "*Falling forward: real options reasoning and entrepreneurial failures*, " Academy of Management Review, Vol 24 No.

Melin, B., [2003], "*Mentala Löpande Band" och Risken för kognitiv överbelastning*", in "Ute och inne i svenskt arbetsliv", edited by Casten Von Otter.

Merriam, S, B., [1988], "*Fallstudien som forskningsmetod*", Studentlitteratur, Lund.

Morgan D. Thomas., [1969] "*Growth pole theory: An examination of the some of its basic concepts*". In "Hansen; Growth centres in regional development.

Myrdal, G., (1957), "*Economic theory and the underdeveloped regions*", London: Ducksworth.

Mårtensgård, L., [2000], "*Från Sågverk till Soft Centre-Söderhamn under 1900-talet* " Ljusdals tryck, Ljusdal.

Norberg, J., [1999], "*Träindustrins nätverk I Ljusdal och Ånge- en jämförelse*"- a licentiat thesis, Royal Institute of Technology.

Nuur, C., [2001], "*Business Networking between Information Technology Companies in Söderhamn*" Forsknings samverkan and nya former av kunskapsbildning- sammanställning av bidrag till konferensen Högskolor och Samhälle I samverkan.

O`malley, E.,& Van Egeraat, C.,[2000], "*Industry Clusters and Irish Indigenous manufacturers: Limits of the Porter view*" , in the Economic and Social Review Vol 31, Number 1.

Park, S-O., [2000],"*Innovation Systems, Networks, and the Knowledge-Based Economy in Korea"* in Globalization, and the Knowledge-based Economy, Edited by Dunning, H.-Oxford University Press.

Parr, J.B., [2002], " *The Location of economic activity: Central Place Theory and the Wider Urbanisation*" in Industrial Location Economics; McCann (editor), Edvard Edgar, Cheltenham, UK.

Perraton, J,.[2003], "*The scope and Implications of globalisation*", in The handbook of Globalisation, Edited by J. Michie, Edward Edger publishing house, Cheltenham, UK.

Pérroux, F., [1950], "*Economic space; Theory and applications*;" Quarterly Journal of Economics, Vol. 46.

Piore, M. Sabel, C.,[1984], "*The second industrial divide*." New York

Polése, M.E. ,[1999], "*From Regional Development to Local Development: On the Life, Death and Rebirth(?) of Regional Science as a Policy Relevant Science*", Canadian Journal of Regional science XXII:3 (Autumn 1999).

Popper, K., [1963], "*Conjectures and Refutations: The Growth of Scientific Knowledge*", Routledge & Kegan London.

Porter, M., [1998], "*Clusters and the new economics of Competition*" Havard Business Review Nov-Dec.

Porter, M., [2000], "*Locations, Clusters and Company Strategy*", (In Clark, Gordon L.; Feldmann, Maryann P.; Gertler, Meric S. (Ed.): (2000): Oxford Handbook of Economic Geography. Oxford University Press)

Porter, M., [1990], "*The competitive advantages of Nations*" London and Basingstoke, MacMillan.

Putnam, R.D,.[1993], "*The prosperous community;: Social Capital and Public Life*" in the American Prospect, Vol 3 No.13.

Raines, P [2001], "*The cluster Approach and the Dynamics of regional policy making*", The European policy Research centre: Glasgow. Regional and Industrial policy research paper Number: 47

Richardson, R., & Belt, V., [2001], " *Saved by the Bell? Call Centres and Economic Development in Less Favoured Regions*", Economic and Industrial Democracy Vol. 22.

Romer, P.,[1990], "*Endogenous Technological Change*", Journal of political economy, Vol. 98.

Rosenfeld, S. [1995],"*Overachievers: Business Clusters that work, Prospects for regional development*", Chapell Hill NC.

Rosenfeld, S., [1997], "*Bringing Business Clusters Into the Mainstream of Economic Development"*, European Planning Studies, Volume 5, Number 1.

Sadler, D., [2004], "*Cluster Evolution, the Transformation of Old Industrial and the Steel Industrial Supply Chain in North East England*" Regional studies, Vol 38.1.

Saxenian, A.L. [1994] "*Regional Advantage: Culture and Competition in Silicon Valley and Route 128 Cambridge*", MA: Harvard University Press.

Scheel, C, [2002], "*Knowledge clusters of technological innovation systems*", Journal of Knowledge management," MCB UP limited.

Schofield, J,W.,[2000], "*Increasing the Generalizability of Qualitative Research*" , in Case Study Method, Eds: Gomm, R, Hammersley, M & Foster, P. Sage publications limited, London.

Schumpeter, J., [1934], "*The Theory of Economic Development*", Cambridge, Harvard University Press.

Scott, A J. [2000] " *Economic Geography: the great half century.*" (In Clark, Gordon L.; Feldmann, Maryann P.; Gertler, Meric S. (Ed.): (2000): Oxford Handbook of Economic Geography. Oxford University Press)

Söderström, H-T, Braunerhjelm, P, Friberg R, Norman, V, Sölvell [2001], "*Kluster.se-Sverige I den nya ekonomiska geografin*" SNS- Stockholm.

Sölvell, Ö, & Birkinshaw., J [2000], "*Multinational Enterprises and The Knowledge Economy: Leveraging Global Practices*," in Regions, Globalization, and the Knowledge-based Economy, Edited by Dunning, H.

Sölvell, Ö., Zander, I., and Porter, M., [1991], "*Advantage Sweden*," Stockholm: Norstedts.

Sörlin, S., & Törnqvist, G., [2000], "*Kunskap för välstånd: Universiteten och Omvandlingen av Sverige.*" Stockholm, SNS

Staber, U, [1998], "*Inter-firm cooperation and competition in industrial districts*" Organisation studies 19.

Stake, R, E. [2000], "*The Case Study Method in social Inquiry*" in Case Study Method, Eds: Gomm, R, Hammersley, M & Foster, P. Sage publications limited, London.

Stake, R. E., [1995], "*The art of case study research*" Thousand Oaks, CA: Sage Publications.

Stoltz, C., [2004], "*Calling for Calling centres- a study of call centre locations in a Swedish rural region*", Licentiate thesis N0.5, Linköping studies in science and Technology.

Storper, M., [1995], "*The resurgence of regional economies. Ten years later: the region as a nexus of untraded interdependencies*" European Urban and Regional Studies, 2.

Storper, M., [1997], "*The regional world: Territorial Development in a global economy*". N.Y London, Guilford.

Storper, M,. [2000a], "*Globalization, localization and trade*" In: Clark G.L., Feldman M.P., Gertler M.S., (eds.). The Oxford Handbook of Economic Geography. Oxford, Oxford University Press.

Storper, M., [2000b], "*Globalization and Knowledge Flows: An Industrial Geographer's Perspective*" In Globalization, and the Knowledge-based Economy, Edited by Dunning, H.J, Oxford University Press.

Stymme, J,.[2004], "*Staten kan inte lära sig konsten att skapa kluster*" Axess magazine, number 3.

Svensson, L., [2002], "*Interaktiv forskning- för utveckling av teori och praktik*", Eds; Svenson, L, Brulin, G., Ellström, P-E & Widegren, Ö, Work Life in Transition; Arbetslivsinstitutet.

Svensson, R., [2004], "*Utplåning eller pånyttfödelse? En analys av de små kommunernas framtid i Sverige*" TCO

Taylor, P., and Bain, P., [1999] "*An assembly-line in the head: work and employee relations in the call centre*", Industrial Relations Journal, 30, 2.

Toulmin, S., [1972], "*Human understanding: Volume 1: General introduction*" Clarendon Press-Oxford.

Toulmin, S., [1996], "*Concluding Methodological Reflections: Elitism and Democracy among the Sciences*" in " Beyond Theory: Changing organizations Through Participication" eds, B. Gustavsen and S. Toulmin. Amsterdam: John Benjamins Publishing Company.

Waits, M., [2000], "*The Added Value of the Industry Cluster Approach to Economic Analysis, Strategy Development, and Service Delivery*," Economic Development Quarterly, Vol. 14, No.1.

Walker, R., [1989], "*A Requiem for Corporate Geography: New Directions in Industrial Organization, the Production of Place and Uneven Development*", Georgrafiska Annaler. Series B, Human Geography Vol. 71. No.1.

Wartofsky, M,W [1968], "*Conceptual Foundations of Scientific Thought:, An introduction to the philosophy of science*", Macmillan, NY.

Weber, A., [1909],"*Theory of the location of industries"* Chicago: The University of Chicago Press.

Wigren, C., [2003], "*The spirit of Gnosjö- The Grand Narrative and beyond*," JIBS Dissertation Series No.017.

Yin, R. K., [1984], "*Case study research: Design and methods*," Beverly Hills, CA: Sage Publications.

Yin, R. K., [1993], "*Applications of case study research*", Newbury Park, CA: Sage Publications.

Public reports and newspapers

A policy for growth and viability throughout Sweden- summary of government bill 2001/02:4 .

Aftonbladet 21, 23 Jan 2002, a Swedish daily.

Business week, Sep 5-12 2005.

Greppet [1998], *att vända en regions utveckling, rapport från söderhamnskommittén* (Eng. To turn a region's development- a report from the söderhamn committee), SOU 1998:89.'

HälsingeKuriren (local newspaper) June 22, July 14 1999 and Feb 23rd 2003.

Ljusnan (local newspaper), June 22, August 17th and February 22nd 2003.

Regionernas Tillstånd 2003-en rapport om tillväxtens förutsättningar i Svenska regioner (Eng. The state of the regions 2003- a report on growth conditions in Swedish regions).

Changing times, Changing conditions, IT commission report 8/98, Swedish Government official Reports 1998:65. Ministry of Transportation and Communications.

SOU 2000:87. *Regionalpolitiska utredningens slutbetänkande*. Nordstedts tryckeri AB.

Stockholm.

NUTEK [2 000:10], *Nutek, en marknadstudie av call centre i Sverige, hösten* 1999. A market study of call centres in Sweden, fall of 1999

Oremark, K, [2001], Att starta en teknik- så började Soft Center I Söderhamn att byggas, Söderhamns kommun.

SOU 1999:138) *Från Callcenter till kontaktcenter, Trender, möjligheter and problem* (The swedish government reports on the use of Information technology).

Svenska Dagbladet 16 Dec 1999- a Swedish morning newspaper.

HTF[1999], "Den nya arbetsmarknaden" (Eng; The new job market) downloaded from www.htf.se/bransch /Callcenter.html on the 20/07/2001.

Interviews

Business case; 32 interviews with 27 (three interviews were done at Byggfakta) managers of call centres with the supporting public bodies. These interviews were carried out between March 2001-june 2002.
Policy case; 24 interviews with 16 small business owners and representatives of supporting bodies made between October 2000-March 2003.

Hybrid case: 14 interviews with managers and with project managers carried out at Flygstaden April 2001-March 2002.