Literature review with a focus on the impact of information technology and the experience of Nordic countries

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Study submitted to
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INSTITUT CANADIEN DE RECHERCHE SUR LE DÉVELOPPEMENT RÉGIONAL
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THE ECONOMIC FUTURE OF PERIPHERAL REGIONS

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INTRODUCTION

In November 2000, Economic Development Canada gave the INRS a mandate to conduct a Comparative Overview and Monitoring Programme on peripheral economies. The program is structured around three axes. The first is comprised of a detailed statistical analysis in order to understand the spatial dynamic of the Canadian economy, with special attention given to the peripheral regions of Quebec and Atlantic Canada. The second focus is to examine specific peripheral regions of Quebec and Atlantic Canada with the goal of having a detailed understanding of the situation in these regions as well as needs, interventions and emerging practices related to economic development.

The third axis is structured around an international comparative analysis. It is composed of two parts: 1) a workshop to take place in October 2001 attended by specialists of Scottish, Norwegian, Swedish and Finnish origin; 2) a preliminary review of the literature regarding economic development in the peripheral regions of these countries. The goal is to prepare a statistical portrait of these regions as well as to review the politicies that could influence regional development (INRS, 2000). This review will also serve as a preparatory document for the workshop. This document was prepared with these three axes in mind.

STRUCTURE OF THE DOCUMENT

In the following paragraphs, we describe the literature that has been consulted in order to set the limits of our research. Such limits are needed since choices need to be made between, on the one hand, a complete synthesis of the literature, which would lead to a very detailed document, or, on the other hand, an overview of the literature which risks being too general. The first part of this report will examine the scientific literature regarding regional economic processes. In this section, we introduce certain important concepts in regional analysis, all of which are based on the new global context within which peripheral regions are evolving. Specific attention is placed on what is known as the information economy.

The second part of the document is comprised of a statistical portrait of the peripheral regions of northern Europe. This summary presents original compilations of published data. The statistical information on these regions is not original, however, there has been little comparative analysis of the regions of the four countries in this study (Copus et al 2000, p. 37). Some special compilations, geographic and sectoral re-classification and other changes were needed in order to obtain comparable data. The data describe changes in demographics, economic structure, and the socio-economics of peripheral regions in the four countries studied.

The third part examines regional development policies in the northern peripheral regions of Europe. We have attempted to focus on a general description as opposed to specific policies in large part because

local interventions are increasingly defined by local needs and issues. In other words, while financing and certain basic economic issues are determined by central institutions (European Union, the State etc.), it is increasingly acknowledged that each region is unique, and that local actors are the most effective in developing regionally appropriate policy (Ray 2000, Saracenno 1999). It is difficult to synthesize a series of descriptive case studies of unique regions since - by definition - each of these regions is unique.

DOCUMENTED SOURCES

There are many sources of information available concerning the politicies and evolution of regional development in Europe. These can be classified in three ways: scientific articles (see for example, Masden and Bristow 2000; Taylor and Wren 1997; Lowe and Ward 1998); reports from specialised research groups (such as NORDREGIO – a northern research group developed by the Nordic Council of Ministers, and the Arkleton Centre – the centre for research on northern rural regions at the University of Aberdeen); and, finally, the reports, papers and other documents from organizations directly implicated in the development of policy (European Union, OECD, various ministries). A fourth source, containing some sources that have already been referred to, is made up of research and reports submitted to governments or European institutions by certain specialists.

The synthesis of such a vast and varied literature is problematic for several reasons. First of all, publications that are strictly scientific (anonymously reviewed) are often very specialized and focused on very specific subjects. For example, certain authors (Marsden and Bristow 2000) rely on precise methodologies to evaluate a multitude of overlapping programs. Others, such as Martin and Tyler (2000), are interested in aspects of a question from a regional perspective. Still more, such as Taylor and Wren (1997), will look at regional questions from a national policy perspective, while others concentrate on specific issues of rural poverty.

Another common type of article is that which describes a specific intervention – a case study. Their value, while perhaps limited in the context of a literature review, is that they examine a specific aspect of a defined regional problem without presenting generalizations. However, case studies often take for granted an understanding of the overall context, and this understanding is precisely what this report is trying to deliver.

The richest literature on the northern peripheral regions is that which has come from specialized research centres. Here we find the most detailed studies (for example Copus et al 2000, Isaksen and Asheim 1997; Persson 2000; NCM 1997, etc.) that also strive for a larger view of the European context. One difficulty encountered is that these contributions have not been indexed: in other words, whatever is not available on their web sites is not readily available to the researcher. Consequently, it is difficult to make a

complete review of these works. However, these sources have greatly contributed to our overall understanding of peripheral regions of northern Europe.

A third source cited below is literature that originates from organizations such as the European Union and the OECD. These are organizations that are charged with policy implementation as well as providing advice to governments. This literature poses two problems: first, as with the literature coming from research organizations, a complete review of every report, pamphlet, evaluation etc. is impossible considering that some are published, some are of limited circulation and still more are confidential. The second problem, particularly for literature evaluating certain programs, comes from the political orientation of these groups. In the absence of external evaluations, and considering the close relationship between program administrators, national governments and the sources of information (statistical sources, program beneficiaries, development stakeholders), it is difficult to ensure objectivity. Thus, while still useful, these sources are not always the best from a scientific perspective.

It should be noted that in 1999, the new Scottish parliament created a rural development committee whose objective is to “consider and report on all matters that fall within the responsibility of the Minister for Rural Development" (http://www.scottish.parliament.uk/official_reportt/cttee/rural.htm). In January and March of 2001, a series of four reports were completed (RDC 2001a, 2001b, 2001c, 2001d) that provide a detailed description of rural Scotland. The complete reports and all of the issues that they take into account are available on the web site. This source of information is particularly rich, but the profusion of detail tends to obfuscate the wider context.

The large diversity of sources and the specific nature of some documents has meant that a great deal of summarization and synthesis has been necessary in order to paint a picture which would be coherent to non-Europeans. For example we were not able to find a document that presented in an overview of the economic situation in the peripheral regions of northern Europe. The studies of Copus et al (2000) and of the NCM (1997) provide very detailed information, while the European Union report (EU, 2000) covers all of Europe without distinguishing northern regions. However, the level of detail in these reports is such that we needed to synthesize the analysis, and rework the statistical tables that frequently cover different regions, periods and countries from report to report (Norway is not part of the EU, while Scotland is not part of NORDREGIO, only Copus et al (2000) examines the four countries). In terms of development policy and interventions, a similar effort has been made. It would have been possible to describe in detail each relevant program of the EU, or each specific intervention in a particular country, but our main goal was to approach the topic from a global perspective. These choices have dictated the form and content of the following.

PART 1 – RECENT WRITINGS CONCERNING REGIONAL DEVELOPMENT

In the following review, we report only the major conclusions of the consulted literature while integrating, from time to time, our own interpretation and ideas. We have chosen to emphasize changes the links between regional development and the knowledge based economy. Because the regional development literature is frequently general (especially the more theoretical writings), the writings we reference often do not have a specifically northern Europe focus.

It would be difficult to pretend that recent writings mark a radical departure in thinking on regional economic development. A slow evolution of thought over the past decades has taken place from models that privilege "hard" factors (especially physical capital) towards models that accentuate "soft" factors, such as human and social capital (Fukayama 1995). This evolution of thought is not limited to the area of regional economic development. It is also found in the general economics literature (Landes 1988; Olson 2000) and in the literature from international development agencies (World Bank 2000 2001; IDB 2000). In addition to classic economic factors, questions of culture, values and of local political institutions are also being considered.

The differences (or factors) of development within nation-states (provinces, departments, localities etc.) are the principal focus of the regional development literature. First, we find studies that focus upon agents of regional development (or of under-development). In these works, which often deal with a specific region, the local (or endogenous) development model is at the centre of debate (we shall come back to this). We also find studies which take a more macro-economic (or macro-spatial) approach to the trends affecting the geography of national economies. Which regions are favoured or neglected? Are regional disparities growing or shrinking? In these writings, the debate frequently centres upon the neo-classical regional convergence model.

1.1 NEO-CLASSICAL MODEL OF REGIONAL CONVERGENCE

The neo-classical model of regional convergence (whose roots are found in general equilibrium models of the economy) predicts the long term convergence of regional economies in a country – especially in terms of salaries, rewards from capital investment and productivity – as obstacles to the free movement of factors of production are removed. If the mobility of labour and capital is assured, poor regions will catch up with richer ones and socio-economic disparities between regions will disappear over the long term. From this perspective, lower costs in transportation and communication, such as the introduction of new information and communication technologies (NICT), should favor the convergence of regional economies and reduce socio-economic differences.

Interest in regional convergence has existed since the 60's but in recent years, it has seen a resurgence, particularly in the work of Barro and Sala-i-Martin (1991, 1995). Several recent studies look at economic convergence between countries as well as within them. Most examine convergence (or divergence) trends of per capita income and production. Most research (including that dealing with Canada: Coulombe 2000) has confirmed the trend towards convergence of per capita income and productivity between regional economies in industrialized countries. This result is not surprising in that economic integration will - nearly as a matter of course - lead to a reduction in socio-economic disparities in a country: this is, in effect, one of the principles which underpins the foundation of the European Union and other free trade groups. But does this mean that general trends (market trends), of which population movement is one, will alleviate development problems experienced in peripheral areas?

Despite the logical coherence of the neo-classical model and the amount of empirical study that exists, it is of limited use when examining the problems of development in peripheral regions as we have defined them. Analysis that emphasizes productivity can mask changes in employment (Cuadrado-Roura et al. 2000; Martin and Tyler 2000). For example, a region that increases its productivity at the expense of employment will be seen as converging with wealthier regions even while the level of employment (and population) could be declining. Moreover, a rise in productivity and salaries – especially if they occur in the dominant economic sector – can have the effect of harming other sectors of the economy unable to offer competitive salaries. Due to the fact that the economies of peripheral regions are, as a general rule, specialized in certain dominant activities (i.e. natural resources), this is a real risk (Larsson, 2000; Persson, 2000).

Much depends upon which variables researchers choose to analyse, and how one defines "development". Neo-classical rationale argues that migration and population decline will eventually solve any development problem facing peripheral regions. However, the model only addresses one aspect of reality (the easiest to model, Krugman, 1985); it leaves to one side the dynamic feedback relationships (more difficult to model) between productivity and geographic concentration of population and of economic activity. To the extent that the relationship is productivity and concentration is positive (Ciccone and Hall 1996; Glaeser 1998; Rauch 1993; Quigley 1998), it is conceivable that population movements from less dense (periphery) to more dense (core) areas would also increase differences in productivity. In the future, the relationship between density and productivity could strengthen as a result of the sensitivity of knowledge-based activities to externalities (see below). It is difficult to predict the outcome of these two opposite effects (the positive effect of emigration on salaries and its negative effect on productivity): it is a complex debate and one which goes beyond the mandate of this literature review. Nevertheless, it is reasonable to assume that below certain density (or market size) thresholds, the negative effects of population loss will prevail over any positive ones.

The impact of territorial subdivisions and of the scale of analysis

When examining peripheral regions, the main limitation in the literature reviewed arises from the geographical and spatial division of regions. Geographic divisions of national territory are most of the time products of administrative and political needs. Rarely are they developed with concern for an analysis based on demographic categories or geographic locations. More often than not, the “regions” that are analyzed (Canadian provinces, American states, French regions, German *länder* etc.) refer to relatively large (and populous) territories, each with its metropolitan centre, large or small. None of the studies referred to use a geographic division of territory that would allow for the isolation of peripheral regions. However, Kangasharju (1998) and Kangasharju and Pekkala (2000) are somewhat of an exception; we will return to these studies later.

In his study of Canada, Coulombe (2000) indicates that regional differences in levels of urbanisation are a key factor in explaining socio-economic differences as well as in explaining the convergence trends identified (this has also been confirmed when different countries are compared: Jones and Koné 1996; Ingram 1998). In other words, it is not surprising to observe tendencies towards regional harmonisation – in the neo-classical sense – between regions that possess the geographic and demographic characteristics (sufficient size, density, urban hierarchy) to benefit from the positive effects of national economic growth: these characteristics permit the 'capture' of growth. However, since the focus of our analysis is on territories that are more distant from the core and less dense, results can sometimes be different. As Barro (1991) notes, the tendency for regional economies to converge is far less clear as soon as heterogeneous regions are compared.

There is no contradiction between convergence, observed *between* large regions and persistent disparities *within* these same regions (in particular between metropolitan areas and distant zones). For example, economic harmonistaion between Quebec and Ontario in terms of per capita income is not incompatible with the continued concentration of Quebec’s economic growth in Montreal and the continuing socio-economic disparity between the city and peripheral areas of the province. Intra-regional geographic concentration and regional convergence can go hand in hand. Thus, the geographic subdivision and the size of regions used can have a major effect on observed results. Convergence may be occurring at one scale but not at another. Consequently, in the absence of more detailed data, one must be wary of extrapolating the conclusions of one analysis to another.

A reversal (or slowing down) of the general tendency to converge?

Recent empirical studies, of which some deal with Nordic countries, seem to indicate a break in the trend and a resurgence of regional disparities. In conformity with the neo-classical model, Kangasharju (1998) observes a clear trend towards convergence of per capita income between Finnish regions over the

period 1934 to 1993. The geographic divisions employed in the study are detailed: 88 regions with an average population of 57,000 people, comparable to Canada's census divisions. However, Kangasharju and Pekkala (2000) observe an increase in regional disparities between 1988 to 1997, based on data for per capita GDP. The regions that diverged the most from Helsinki had also seen a relative decline in productivity per worker and overall employment. However, one should be careful about drawing premature conclusions since the studies used different data (per capita income vs. GDP per capita) and also because it is possible that the recent results are due to cyclical factors. As the authors point out, divergence is most noticeable during periods of recession; Finland entered a recession at the beginning of the 1990's. Nevertheless, the regions hardest hit by this recession were in Northern Finland: these are peripheral regions according to our definition.

The possibility of a break in the trend to convergence is also evoked in other studies (Lopez-Bazo et. al. 1999; Martin and Sunley, 1998): these authors have noted that over the past 10 to 20 years there has been a slow-down in its pace, and sometimes an increase in disparity between regions. Armstrong (1995) observes, for Europe and the United States, a polarization of the rates of income growth: regions with strong growth levels are generally located close to one another while the same is true for regions with weak levels of growth. In other words, the positive side-effects of growth are sensitive to distance and do not exceed certain geographic limits. In analyzing the evolution of productivity, Cuadrado-Roura et al. (2000) point out the heterogeneity of European regions. However, regions where the rise in productivity was higher than average were characterised by economic diversity or by the presence of a major financial or industrial city. These results do not necessarily point to a simple "core-periphery" dichotomy because there are many old industrial regions in the heart of Europe (Wallonia, Lorraine etc.) that continue to have economic problems. Thus, whilst general trends can indeed be identified it is impossible to abstract from regional particularities.

In sum, the studies on regional convergence (or divergence) invite a prudent interpretation. These works highlight the impact that scale and the choice of variable can have on results. They also suggest the importance of distinguishing short-term cyclical movements from longer term structural changes. However, there are still many unanswered questions: are the recently observed increases in regional disparity of cyclical (short-term) or structural (long-term) nature? It is too early to draw firm conclusions on this matter. However, on the basis of the reviewed studies, it would be difficult to claim that we are on the cusp of a sudden redeployment of economic activities towards peripheral regions. The opposite seems more likely. The trend towards geographic concentration of economic activities and population, which began with the industrial revolution, seems to be continuing and even strengthening.

Why is this occurring? We now turn to this question, with a special reference to the impact of IT, and the 'knowledge economy'.

1.2 THE KNOWLEDGE ECONOMY AND FACTORS IN REGIONAL ECONOMIC DEVELOPMENT

In most literature on this subject, “knowledge” is identified as a source of productivity and economic development (e.g. OCDE 1996; Castells 1996). As such, this recent work continues and elaborates the tradition of noted economists such as Lewis 1955, Denison 1962 and Kuznets (1965, 1966). As with these previous works, the difficulty for current researchers lies not in affirming the importance of knowledge (difficult to refute), but rather in its rigorous definition and measurement. Basically, knowledge is considered, on a conceptual level, as a distinct factor of production distinct, just like capital and labour; but this distinction does not solve the measurement problem. In general, it is data on workforce education levels or R&D investment which have been used to evaluate the "knowledge" content of economic activity. As such, in Quebec it is estimated that high-knowledge activities (those intensive in R&D and in human capital[1]) were responsible for 46% of new employment created between 1984 and 1999 (MIC 2001).

Our objective is not to enter into a debate over the definition of the knowledge economy. It is sufficient to say that knowledge (information, technological progress...) is an essential factor of production and is therefore closely related to increases in productivity. This factor can be embodied in capital, in words (both on paper and in virtual space), but most of all in human beings by way of accumulated knowledge, experience, know-how and intuitions. The more recent concept of “social capital” has augmented these individual characteristics with wider ones such as values, informal relations and institutions that can also contribute to increases in productivity and to the creation of a prosperous society. A vast literature is evolving on this topic - and on its links with economic growth - (Aheim and Cooke 1999; Brown and Duguid 2000a; Edquist & Johnson 1997; Fukayama 1995) without yet arriving at rigorous or exact definitions or prescriptions (Hudson 1999; Markussen 2000; Staber and Morrison 2000). Indeed, the concept of social capital – something that develops from the interactions and operations of an entire society -- and the lack of precision which such a vast concept engenders makes any prescription hazardous: for the time being one can at most contend that social capital is a form of knowledge (or of know-how) embodied in people, groups of people, in their collective memory and in their institutions.

All of these concepts and ideas bring us back to a general statement which summarises the state of our knowledge (or ignorance): economic development, and in particular regional economic development, is a complex affair where geographic, social, cultural and political factors mingle and interact. If the explanation was clear and the solutions obvious, there would be no poor regions (or countries). The advent of an information economy only adds to this complexity. It is precisely because knowledge is an intangible factor, not palpable, inscribed in people's heads and in the collective memory, that it lends itself

with great difficulty to exercises of mathematical modelisation. What economists call “externalities” and “overflow effects” play an important role in the creation and transformation of knowledge. In this context it is probable that the importance of externalities associated with large cities will be even more apparent in the future (Knight 1995); hence the drift towards “softer” models and concepts.

HUMAN CAPITAL, ECONOMIC AGGLOMERATION AND CUMULATIVE EFFECTS

If we accept the positive relationship between human capital and local economic performance (again, difficult to refute, Shearmur 1998), the emigration of skilled and educated workers from less dense and less rich areas to more prosperous areas accentuates regional disparity (in terms of development potential). This process promises to be more influential in the future as human capital increases in importance as a key factor of regional comparative advantage. Canadian researchers, like their Nordic counterparts, show that emigration of young (and more educated) people from peripheral regions to central ones continues.

The cumulative effect of the geographic concentration of talent is the basis of work by several authors (Florida, 1995; Hall 1999; Knight 1995; Porter, 1990). They often emphasise the influence of positive externalities associated with the accumulation of knowledge, which in turn often rests upon knowledge networks in specific industries (Asheim and Cooke 1999; Cox 1995; Brown and Duguid 2000b). The accumulation over several decades of talents and businesses gives rise to regional comparative advantages which other regions find difficult to imitate: thus an initial advantage will bring about further investment. The overall result depends on the cumulative strength of the process. Feldman (1994) emphasises the relationship between innovation and space; innovative "places" stimulate - in his view - the establishment of creative enterprises. For Krugman (1991), the concentration of one industry in a specific place is often a historical accident, but once the process begins, the initial advantage becomes “fixed” and a series of cumulative effects follow.

Activities associated with the knowledge economy (intensive in R&D and human capital) are thus expected to be more sensitive to agglomeration economies than more traditional activities (Storper 1992; Markusen 1996). Numerous authors have noted that knowledge-based activities are spatially concentrated (Audretsch and Feldman 1996; Coffey and Shearmur 1998; Delaplace 1993; Shearmur 1997). Amongst the reasons put forward to explain this are the concentration of a diversity of knowledge providers; the presence of a pool of specialized and educated labour; the proximity of research centres and universities as well as the existence of business and industrial associations (Breschi 2000; Lung et al 1999). It is not necessary to evoke the cases of Silicon Valley or of route 128 (outside of Boston) to highlight the importance of agglomeration economies for key sectors of the knowledge economy.

[1] human capital poses analogous measurement problems.

The new vigor of agglomerative forces is especially evident in sectors with high artistic or technological content, sometimes grouped together under the terms “entertainment industry”, or multimedia. The need for a great diversity of talent to be close at hand explains, in large part, the importance of agglomeration in these sectors. For example, the creation of a film, television program, music video or even a publicity campaign requires a disparate collection of specialists such as singer-songwriters, editors, camera technicians, engineers, marketing specialists, actors, musicians, computer programmers and animators: the combination depends upon the product. In these circumstances, is it surprising that these industries are concentrated in some of the major cities of North America such as Los Angeles, New York, Toronto and Montreal?

The concept of agglomeration economies is not a new one. A century ago, Alfred Marshall spoke of the advantages of having a specialized pool of labour and of the creative dynamics engendered by the geographic concentration of skills and businesses (Jourdenais and Desrochers 1998; Brown and Duguid 2000b). Economists and management gurus are in the process of rediscovering the importance of agglomeration economies (Krugman 1991; Porter 1990, 1996; Quigley 1998): this is perhaps the best indicator of their strategic role in the knowledge economy. The vocabulary may have changed: today one speaks of “clusters”, or in French, “grappes”, yet the idea remains very similar. At its most basic it consists of understanding and qualifying the advantages of geographic concentration for certain sectors of the economy. The literature from Nordic countries is no exception: in a study of 300 foreign-owned subsidiaries in Sweden, Ivarsson (1999) found that more than half were located in clusters.

Other terms recur in the literature on this topic, and these differ according to the ideological bent or disciplinary affiliation of the author: “the new international division of labour”, “flexible production”, “post-Fordism”, “global cities”, “the network society”’ etc. (Castells 1996; Esser and Hirsch 19899; Hall 1999; Sassen 1991; Storper and Scott 1992). Whatever the vocabulary used and the analytical approach (Marxist, neo-classic etc.), all agree on a basic fact: the evolution of modern economies will favor some regions over others. All speak, with different discourses, of the importance of networks, of synergy, of places of creativity and diversity, and of the concentration of talents and minds. How will peripheral regions, those regions without high population density and important economic centres, evolve in the the knowledge economy? Initial indications are not very positive. Even the new international division of labour (with the locational flexibility it gives multinationals), which could possibly benefit low-salary regions, does not seem likely to help peripheral regions a great deal. Indeed, salaries in these regions are often relatively high because of the capital intensity of activities based on the extraction and transformation of natural resources.

It should be noted, however, that geographic concentration does not occur uniformly in *all* sectors and for *all* regions. The enthusiasm which has developed around notions such as “clusters” can hide other, more traditional, considerations. Malmberg et al (2000), in their detailed empirical study of Swedish exporters, emphasise the importance of internal economies of scale (at the plant and company level). Transportation costs, which, in the context of a non-material economy can indeed lead to spatial concentration (Krugman, 1995), are a factor of dispersion for sectors dependent on the exploitation of natural resources that are difficult to transport (Dicken and Lloyd, 1990). Despite recent trends, and despite the sometimes uncritical enthusiasm surrounding the discourse on innovation, networks and proximity, there are actually few empirical studies (Malmberg et al 2000; Staber and Morrison 2000) that enable one to evaluate these ideas, to understand their impact on different sectors and on different economic activities, and, above all, to evaluate them relative to other factors of location and growth which continue to operate.

THE IMPACT OF NEW INFORMATION AND COMMUNICATION TECHNOLOGIES (IT)

What can be said of the probable impact of IT? In reducing communication costs, can information technology successfully reduce the friction of distance? One could thus hope that the advent of IT (e-mail, internet etc.) would favor distant regions. All businesses, whether in large cities or in the periphery, should end up enjoying identical access to information, the only requirement being a personal computer and a connection to a server. Studies on this question are still rudimentary, but conclusions found so far indicate that reality contradicts these hopes; it seems that IT will accelerate the forces of centralisation and geographic concentration (Castells 1996; Glaeser 1998; Gasper and Glaeser 1998; Jourdenais and Durocher 1998). How can this conclusion be explained?

The centralising effect of IT rests on two observations:

1) IT increases the possibility of centrally managing operations, especially for activities that involve economies of scale (Dicken, 1998).
2) IT is not a substitute for interpersonal communication, but is, rather, complementary and in fact increases the demand for face-to-face contact (Graham and Marvin 1996; Gillespie and Richardson 2000).

Let us examine these two explanations in turn.

It is true that IT reduces the costs of communication, and thus, in principal, the constraints associated with distance. However, they do so in both directions. Who really benefits from this: cities or peripheral regions? The net effect (in terms of transferring operations and employment) depends on the conditions of production of the activity in question. If the activity is decentralised due to the high costs associated with management and long distance marketing, the introduction of IT can provoke a centralisation of activities in larger cities (in the sense that larger cities are more amenable to efficient management and coordination). Two examples illustrate this. The introduction of IT into banking, in particular the

introduction of automatic bank machines, can have the effect of reducing employment in outlying regions (employment primarily involved in direct contact with clients) while concentrating management, data analysis and decision making in the city (O'Brien 1992). A similar rationale applies to distribution activities (such as wholesale) where the arrival of IT tends to emphasise inventory and operations to the detriment of local distribution activities. Still, everything is dependent on the type of activity in question. But we have discussed in previous sections how the evolution of modern economies have generally favoured activities that are sensitive to agglomeration economies. If this is indeed the case, the introduction of IT will accelerate the tendency towards geographic concentration.

Is it not reasonable to assume that IT will in the future reduce the need for interpersonal contact (one of the central functions of a city), and thus reduce the need for economic actors to travel ? If we use e-mail, there is no need to meet face to face. Following the same logic, there should be a reduced need for physical meeting places in the future. However, the opposite seems to be the case: IT, far from being a substitute for interpersonal contact, are actually creating new needs (Graham and Marvin 1996; Gillespie and Richardson 2000; Niles 1994). Here, an analogy to the introduction of the telephone is revealing. Its introduction did little to slow the pace of urbanization and geographic concentration. In fact, the opposite occurred. As was the case with the telephone not so long ago, communication using an electronic "voice" creates a new need to contact and meet. The increase in air travel and the proliferation of business conferences (conventions, fairs, congresses etc.) are the most obvious examples of this. The effect of centralization due to increasing travel demand (national and international) is accentuated by the weight of economies of scale associated with air transport, which favours the concentration of services in high density nodes or markets.

We should also note that the cost savings related to IT are limited to communication, that is to say, to the costs of transmitting information. Costs associated with the transportation of goods and people are hardly affected. In peripheral regions, commerce is largely linked to goods that are often heavy (minerals, metals, wood etc.) or perishable (fish and seafood, food). No change in technology is anticipated that will affect the transportation of people and goods. Distance continues to affect economic activities that are dependent on transportation. Moreover, as Glaeser (1998) suggests, the opportunity cost of time (the cost that we attribute to lost time) is increasing in industrialized societies then the opportunity cost of travel must be increasing as well. IT will not end what some call the "tyranny of distance".

The confusion that surrounds the probable impacts of IT is related, at least to some extent, to the scale of analysis and thus, once again, to how territory is divided. Authors who put forward the decentralizing powers of IT, thus the potential for "telecommuting", are implicitly situating themselves within a limited geographic area (Jourdenais and Durocher 1998). The ability to work at home in front of a PC, or the possibility for a business to be located outside a city, will not necessarily reduce the need for travel or

meetings. In light of the preceding paragraphs, it is more reasonable to assume that the need to be in contact with the city will remain important and the cost, monetary or otherwise, of travel will continue to act as an impediment. It is true that several researchers (notably Beyers 2000; Beyers and Lindhal 1996) have documented the presence of professional services in remoter rural areas. They noticed that the presence of such services was made possible by IT, but is also due to other important factors. Most service providers had developed their skills, expertise and networks in large urban centres before installing themselves in distant regions. Also, the proximity of a major airport "hub" (for example, Chicago, New York or Los Angeles) is important (Echeverri-Carroll and Brennan 1999) because face to face contact with clients and suppliers remains of paramount importance.

A recent study regarding the distant regions of the highlands in Scotland (Newland and Ward 1999) provides some empirical confirmation. The authors conclude, after a study of 167 businesses, that:

> *"the deployment of new information and telecommunication technologies has improved the efficiency of businesses located in the Highlands, but this is true everywhere, at both the national and international level. Nothing indicates that the rate of change in the Highlands is any higher than anywhere else. ... the endowment of a region with an advanced telecommunications infrastructure is not enough to guarantee the decentralisation of economic activities (Newman and Ward, p. 269)"*

In our opinion these lines summarise the dilemma of IT for distant regions. The potential for decentralisation exists, however, its possibilities remain limited, except in certain cases, to areas that are within one hour of travel (100-150 km) from a major city. The regions with which we are concerned are beyond this radius.

PRELIMINARY CONCLUSIONS

Our analysis, though still preliminary, does not incite us to optimism regarding the future of peripheral regions in the information economy. "New" factors of development continue to favour large cities. Growth activities associated with the knowledge economy are sensitive to agglomeration economies. IT, far from promoting the decentralisation of population and economic activity, risks accelerating the tendency towards geographic concentration in large cities and the regions near them. In an economy where value added is increasingly linked with knowledge, businesses will locate near regions where knowledge-based activities are located. For peripheral regions, the cumulative negative effects of the emigration of youth and the brain drain risks to be a dilemma in the future.

We shall now turn to the peripheral regions of northern Europe, and see how they have evolved in this new context. The specific focus will be on Finland, Sweden, Norway and Scotland.

PART 2 – EUROPE'S NORTHERN REGIONS

This part comprises two sections. The first is a literature review concerning the countries under study, and more particularly of the economies of their peripheral regions. The second part is a presentation of statistics pertaining to each country which enable rough comparisons in terms of population, economic structure and socio-economic factors.

2.1 COUNTRY PROFILES

Most of the information in this section has been acquired from the EU (LEADER: www.rural-europe.aeidl.be), the Nordic Council of Ministers (NCM 1997; 1999) as well as Russwurm (2000) for Norway. All other sources are mentioned directly in the text.

Finland

This country of 5.1 million inhabitants is the most northern country in Europe situated between 60° and 70° latitude. A quarter of the country is located above the Arctic Circle. The land is characterised by lakes that occupy 10% of the country's area and forests that cover 60% of total surface area.

Wood is at the centre of a series of related industries that make up the most important part of Finland's economy as well as its largest export sector. The wood industry is primarily centred around the production of sawn lumber, particle board, joinery, prefabricated homes, wood fibre panels as well as paper (second largest producer after Canada) and boxes. Other activities are important in the Finnish economy. Mineral industries and construction employ 35% of the industrial work force and occupy second place in export earnings.

The electronics and telecommunications sectors are another important economic pole, especially considering the global success of Nokia (mobile phones), the largest exporter in the country. Interestingly, Nokia maintains an important production plant in the small town of Oulu (100,000 people) located 600 km north of Helsinki which does not seem to suffer due to its distance. This Baltic port city, founded in 1531, provides access to the northern Finnish hinterland and provides a link from the Baltic towards the arctic regions Barents. However, beyond this "classic" role, the city has developed a node of high-tech enterprises around its university. This university, with 13,000 students and 3,000 employees is an important structural element in the city. In 1996, a year in which northern Finland had a net loss of 3 703 population, Oulu's population actually grew by 1,372 people (Ville d' Oulu, 1998). It is clear that Oulu is not only an important northern city, but also an important engine of economic growth. The city merits a more in-depth study.

Finland is one of the European countries most affected by the 1990's economic slowdown (Tervo 1998) and a number of regions have felt the negative impact of losing the Soviet market (Eskelinen et. al. 1997). Rural and peripheral zones were particularly affected by this. In these areas the unemployment rate surpassed the 1996 national average of 16%. In certain villages in Lappi the number of people without employment even reached 50% of the active population. Although there has been some recent improvement, in general, the northern peripheral regions of Finland continue to have an unemployment rate higher than the rest of the country.

Sweden

Sweden is the largest and most populated of the Scandinavian countries. It has a population of 8,816,381, unequally distributed between the north and the south. The southern half of the country has most of the population concentrated in the three large cities of Stockholm, Göteborg and Malmö as well as a number of smaller cities. This distribution can be explained by the strong forces of urbanisation that began in the 1950's. Rural areas witnessed a decline in population that continued until the early 1980's when there was a slight slowdown in the exodus. Those rural regions that did see their populations grow, were usually located in the peri-urban areas around cities. Remote regions are still recording a steady decrease in population (Persson, 2000).

The rural regions of Sweden can be divided into three industrial categories. The northernmost region has very low population densities but is well provided in terms of forest and mineral resources. Steel, smelting, paper and wood represent the principal export sectors of the Swedish economy. The south of the country, while also endowed with much forest, is primarily an agricultural region dominated by livestock farming. Finally, the "Swedish archipelago", the group of islands belonging to Sweden, is largely based around leisure activities.

Norway

Norway, which counts only 4,4 million people, is the only country studied that is not part of the European Union. Its two principal cities are Oslo with a population of 900,000 and Bergen, an important centre of petrol production with a population of 200,000. During the first half of the 1990's, the Oslo-Akershus region saw the largest growth of population in comparison to other regions. Nevertheless, the demographic decline in the north in favour of the south decreased considerably between the 1980's and 1990's. This is not necessarily a sign of more sustainable development in the north. Norway profited greatly from high oil prices which allowed it to maintain some growth throughout the period between 1990 and 1998. In addition, the dichotomy between the north and south is evident if employment figures are considered: unemployment levels in the north remain well above those in the south. Tromso (population

50,000), the largest northern city is almost entirely dependent on government services (regional and local governments, university…) to provide employment.

Almost one-third of Norway's exports are made up of natural gas and oil. This advantage also has allowed the country to develop some industries that are extremely energy intensive such as smelting (aluminum, ferro-silicium), base chemical products and wood transformation. Norway also possesses expertise in the construction of oil platforms and ships. Finally, fisheries and related products account for a fairly large amount of exports as well as providing employment in peripheral regions.

The dependence of Norway on natural resources, particularly natural gas and oil, raises some concern for the future. Over the past few years, electronics industries have played a growing role in the Norwegian economy. They have, however, consistently lagged behind their neighbours Sweden and Finland. For example, it is estimated that Swedish industries are two times more innovative than Norwegian ones, while the amount of money spent on research and development in Finland is double that of Norway (Tron 2000). Another major concern is the steady decline of young people and women in the rural agricultural sector (RTN, 2000b).

Scotland

Unlike the other countries discussed, Scotland is not divided between north and south so much as between east and west. Scotland is divided into two parts, the Lowlands and the Highlands which include the islands in the north. The Highlands and Islands make up a large part of the west and north of the country (including approximately ninety inhabited islands). To the east of the Highlands lies the Grampian region, the region that profits from its proximity to North Sea oil. The rural population of Scotland is distributed amongst a number of small communities that are frequently isolated not only from the two large cities of Glasgow and Edinburgh, but also from the smaller towns on which they depend. The difficulties associated with transport and communication amplify this isolation and complicate the development of even the most basic of services.

These regions are dependent mostly on the primary sector, in particular, livestock farming and agriculture and also fishing, forestry and aquaculture. Most of these sectors have been unpredictable due to low prices as well as extraneous crises such as mad cow disease. Recently, there has been more emphasis placed on developing tourism by focusing on natural and cultural heritage.

In terms of demographics, there is evidence that a fair number of qualified and educated people have begun to move back to isolated areas, mostly out of the desire for a different way of life. Nevertheless, this phenomenon has not affected the most peripheral regions such as the Hebrides, Shetlands as well

as the Lochaber, Caithness, Sutherland and Galloway counties. These places continue to see an exodus of the young.

2.2 STATISTICAL ANALYSES FOR SCOTLAND, SWEDEN, NORWAY AND FINLAND

Despite the profusion of statistics, the obtention of comparable data and concerning European regions is somewhat problematic since Norway is not part of the European Union and Scotland is not part of the Nordic Council of Ministers (NCM). Due to the fact that a simple literature review cannot provide us with good comparable data, we have prepared tables of data that are similar to our existing data on peripheral regions in Quebec and Atlantic Canada. These data come from varied sources and have been compiled in order to create comparable statistics. A European Union publication regarding the socio-economic situation in the EU (EU 2000) served as a starting point while the profile of northern regions from the Nordic Council of Ministers (NCM 1997) and the study of Copus et al (2000) on the northern periphery were also used. Finally, several web sites such as the European Fund for Regional Development (FEDER, http://www.inforegio.cec.eu.int) were also useful.

The following regions were retained for analysis (see map 1 in the annex, to which numbers below refer):

Sweden: Övre Norland (4), Mellestra Norland (5) and Norra Mellansverige (6). It should be noted that the Norra region is located relatively close to Stockholm (the closest part being only 120 km from the capital). It is comprised of a coastal zone to the north of Stockholm as well as a large “back country” extending towards Norway. The first two (the northernmost ones) extend from the Baltic across to Norway.

Finland: Pohjois-Suomi (3), Itä-Suomi (2) and Vali-Suomi (1). Pohjois, the northernmost region, is on the Baltic coast and extends east towards Russia, north towards Norway and west towards the Swedish region of Övre-Norland. The region of Itä-Suomi is located in the border region alongside Russia while the Vali-Suomi region extends from the Baltic to Itä-Suomi.

Scotland: Highlands and Islands (10) and Grampian (11). The Highlands and Islands region is located in the northwest of Scotland and is made up of the highlands and northern and wetsren islands. The Grampian region lies to the east, includes Aberdeen, and is adjacent to the oil regions of the North Sea.

Norway: Trondelag (9), Nordland (8) and Troms (7). These regions constitute the entire coastline to the north that surrounds Sweden with the sole exception of the northernmost region, Finnmark.

STATISTICAL SURVEY

In order to situate these European peripheral regions in a wider context we provide a brief statistical portrait of Scotland, Norway, Sweden and Finland.

Table 1 – GDP per capita (Europe = 100, based on purchasing power PPP)

	Scotland	**Sweden**	**Finland**	**Norway**
1986	92.4	111.5	99.7	-
1996	98.3	101.2	96.9	123*
increase	+6.4%	-9.3%	-2.8%	+ 10%*

* The numbers for GDP/capita for Norway are from 1994. The Norwegian growth is for the period 1991 to 1994.

Source : EU, 2000; calculated from the *Nordic Council of Ministers,* 1997.

There exist important differences in the GDP per capita between the four countries studied as well as sizeable fluctuations when compared to the averages of all 15 EU countries. During this period these countries experienced structural changes, especially Sweden and Finland. Sweden removed restraints and controls on the flow of capital that resulted in capital flight in the late 1980's. At the same time, economic liberalisation contributed to a profound restructuring of the Swedish social system that was – and to a large degree, still is – based upon strongly redistributive principles. Finland, for its part, was affected by the fall of the Berlin wall and crisis in the former Soviet Union which resulted in the loss of an important market. Meanwhile, Norway and Scotland have benefited from North Sea oil rents and, especially in Norway, a fishing industry that has remained fairly profitable (SMEPOL 1999; NCM 1997).

It is important to be wary of GDP comparisons - in spite of their wide-spread use in the literature on the EU (NCM 1997; EU 2000). These comparisons (based on purchasing power parity) necessitate the conversion of money into a common unit. For example, the increase in GDP in Scotland could be partially attributed to a strong Pound sterling despite statistical attempts to minimize this phenomenon. In the same way the collapse of Swedish kroner and Finnish marks during the early 1990's could partially explain the reduction in GDP per capita.

Table 2 - Total Population ('000)

	Scotland	Sweden	Finland	Norway
1980	-	8 302	4 792	4 079
1990	5 027	8 526	4 975	4 233
1995	5 128	8 837	5 117	4 370
people/km^2	66	22	17	14
% change 80 to 95		+6.4%	+6.8%	+7.1%

Source : UE, 2000; adapted from NCM, 1997; Copus et al, 2000.

Between 1980 and 1995, population grew modestly in three Scandinavian countries.

Table 3 – Age and Education Structure, 1997

	Scotland	Sweden	Finland	Norway
less than 15 years	18.8%	18.8%	19.0%	19.7%
15 to 64	66.0%	63.7%	66.7%	64.6%
65 and over	15.2%	17.5%	14.3%	15.8%
higher education	26%	28%	19%	-
basic education	37%	23%	37%	-

basic education: equivalent of secondary school or less

higher education: equivalent of a college education (EU, 2000, p. 64).

Source : EU, 2000 and Copus et al, 2000.

The age profiles of the Scotland and Finland are similar, with Scotland<s elderly population only slightly higher. In Sweden and Norway, the population of those considered active (15 – 64) is relatively low while the elderly population is higher.

Table 4 – Economic structure (% of employees), 1997

	Scotland	Sweden	Finland	Norway
Agriculture, fishing, forestry	2.7%	3.1%	7.7%	4.7*
Industry	25,7%	25,8%	27,3%	23,2*
Tertiary sector	71,4%	70,9%	64,6%	72,1*
TOTAL employees	2 301	3 813	2 126	2 041
ratio of population ('95) to employment ('97)	2,23	2,32	2,41	2,14
unemployment '87	14,6%	-	-	-
unemployment '97	8,0%	10,4%	14,8%	4,1%

* For Norway, the numbers come from Copus et al (2000) and represent the primary, manufacturing and tertiary sectors. The Norwegian numbers are defined somewhat diferently than those for the other countries which makes comparisons with the other countries hazardous.

Sources : EU (1999) and Copus et al. (2000).

In terms of economic structure, Finland is notable for its large concentration of workers in sectors linked with natural resource extraction and its weak tertiary sector. Norway has a very low unemployment rate as well as a low dependency ratio (number of people per job). Scotland is close to Norway in terms of its unemployment and dependency ratios while Sweden and Finland suffer from high unemployment rates and a population that is not as engaged in economic activities.

2.3 Statistical Analysis for the Selected Peripheral Regions

The peripheral regions of the northern part of the European Union

The selected peripheral regions of the EU are the object of intervention at the European level. The interiors of Sweden and Finland have been classified by FEDER (up until the year 2000) as objective 6[2]: these are regions where population density is very low -- less than 8 per km^2. The majority of their coastal zones have been classified objective 2 (regions that specialise in manufacturing industries, with an unemployment rate greater than the EU average, and with declining manufacturing employment) or objective 5b (regions with low GDP per capita, a tendency towards population loss and a specialisation in agriculture).

In Scotland, the western part of Grampian – also the farthest from the oil producing region – is classified as objective 5, while the Highlands and Islands are classified objective 1. This last objective is for regions

[2] The "objectives" here serve to categorise the general nature of the selected regions.

where there is extremely low GDP per capita (less than 75% of the European average) or regions that merit specific attention. This classification differs from those used in Sweden and Finland, and does not necessarily indicate a fundamental difference between regions because objective 6 (see above) was created when Sweden and Finland joined the the EU, and only applies to the regions of these new member countries. Since 2000, the Scandinavian regions have joined Scotland in objective 1 of the 2000-2006 plan (see part 3).

Norwegian regions do not enter into these classifications because it is not a member country of the EU.

TABLES

Statistical tables are presented below with some commentary. However, the main objective of this section is to present an original compilation of data in order to be able to compare these regions and, importantly, to compare these regions to the Canadian ones under study.

Table 5a – GDP per capita (European Union average = 100, purchasing power parity)

	Scotland		**Sweden**			**Finland**			**Norway**		
	H&I	Gramp.	Övre	Mell.	Norra	Pohj.	Itä	Väli	Trond	Nord	Troms
1986	86.2	121.6	109.2	110.8	103.0	86.8	83.5	88.5	-	-	-
1996	80.1	126.0	96.9	99.3	97.0	82.7	74.1	83.1	101.7*	96.0*	107.0*
delta	-7.1%	+3.6%	-11.2%	-10.3%	-5.9%	-4.8%	-11.3%	-6.1%	+11.5%*	+12.0%*	+10.0%*

Table 5b - GDP per capita (relative to national GDP per capita)

	Scotland		**Sweden**			**Finland**			**Norway**		
	H&I	Gramp.	Övre	Mell.	Norra	Pohj.	Itä	Väli	Trond	Nord	Troms
1986	0.93	1.32	0.98	0.99	0.92	0.87	0.84	0.89	-	-	-
1996	0.81	1.28	0.96	0.98	0.96	0.85	0.76	0.86	0.83*	0.78*	0.87*
delta	-0.12	-0.03	-0.02	-0.01	0.03	-0.02	-0.07	-0.03	+0.01*	+0.02*	0.00*

* GDP/capita for Norway is for 1994. The increase has been measured for the period between 1991 to 1994. In table 5b 'delta' is a measure of the difference between regional growth and Norwegian growth.

Source : EU, 1999; adapted from the Nordic Council of Ministers, 1997.

The coastal regions of the North Sea – those located in Norway and Scotland – are distinguishable by their high level of GDP per capita (table 5a). Swedish regions, while close to the European average, suffered some major setbacks between the period of 1981 and 1997. This also occurred in Finland and in the Highlands and Islands of Scotland. Despite the fact that the period is different, it is still clear that the

peripheral regions of Norway have benefited from a marked growth in their GDP per capita. With respect to comparisons with national averages (table 5b), aside from peripheral regions in Norway, all peripheral regions are in decline (the only other exception being Norra in Sweden). However, despite improvements vis a vis the national average, the peripheral regions of Norway are still far behind, as are those of Finland.

All in all, the peripheral regions of northern Europe have a fairly stable population (table 6a). However, while most regions have seen a small decrease in population, some, notably those in the north of Finland, have seen an increase. Amongst the regions studied, the Grampian region is notable for its high population density. It should also be noted that, apart from the Pohjois in Finland, peripheral regions have a population growth that is smaller than the overall national growth rates and that their population as a percentage of total population has declined sharply (table 6b). In other words, these regions are experiencing a relative population decline, even if it is not always an absolute decline.

Table 6a – Total Population ('000)

	Scotland		**Sweden**			**Finland**			**Norway**		
	H&I	Gramp.	Övre	Mell.	Norra	Pohj.	Itä.	Väli.	Trond.	Nord.	Troms
1980	-	-	510	403	865	513	705	676	371	244	147
1990	-	-	516	397	862	544	707	699	378	239	147
1995	280	531	526	393	862	558	703	704	384	241	151
people /km^2 (95)	9.2	61.0	3.4	5.5	13.4	4.1	8.3	15.1	13.1*	9.8*	6.7*
% 80 to 95	-	-	+3.1%	-2.5%	-0.4%	+8.8%	-0.3%	+4.1%	+3.5%	-1.2%	+2.7%

Table 6b - Population as % of national population

	Scotland		**Sweden**			**Finland**			**Norway**		
	H&I	Gramp.	Övre	Mell.	Norra	Pohj.	Itä.	Väli.	Trond.	Nord.	Troms
1980	-	-	6.14%	4.85%	10.42%	10.71%	14.71%	14.11%	9.10%	5.98%	3.60%
1990	-	-	6.05%	4.66%	10.11%	10.93%	14.21%	14.05%	8.93%	5.65%	3.47%
1995	5.5%	6.0%	5.95%	4.45%	9.75%	10.90%	13.74%	13.76%	8.79%	5.51%	3.46%

* The number of people per square kilometre is estimated for the Norwegian regions.

Source : EU, 1999 adapted from the Nordic Council of Ministers, 1997.

The age structures of the regions for which we have data differ between the countries studied. However, differences are compatible with the differences in national profile noted above.

Table 7a – Age structure and education (1997)

	Scotland		Sweden			Finland			Norway		
	H&I	Gramp.	Övre	Mell.	Norra	Pohj.	Itä.	Väli	Trond.*	Nord.	Troms
less than 15 years	19.8%	19.0%	19.2%	18.0%	18.4%	22.0%	18.8%	19.8%	20.4%	20.0%	20.3%
15 to 64	64.7%	67.0%	64.1%	62.2%	62.0%	65.8%	65.4%	64.5%	62.8%	63.6%	65.8%
65 and over	15.5%	14.0%	16.7%	19.5%	19.8%	12.3%	15.8%	15.7%	16.8%	16.4%	13.9%
higher education	28%	29%	26%	23%	21%	20%	18%	18%	-	-	-
basic education	34%	35%	20%	24%	24%	23%	28%	29%	-	-	-

Table 7b – Age structure and education 1997, % national = 1.00

	Scotland		Sweden			Finland			Norway		
	H&I	Gramp.	Övre	Mell.	Norra	Pohj.	Itä.	Väli	Trond.*	Nord.	Troms
less than 15 years	1.05	1.01	1.02	0.96	0.98	1.16	0.99	1.04	1.04	1.02	1.03
15 to 64	0.98	1.02	1.01	0.98	0.97	0.99	0.98	0.97	0.97	0.98	1.02
65 and over	1.02	0.92	0.95	1.11	1.13	0.86	1.10	1.10	1.06	1.04	0.88
higher education	1.08	1.12	0.93	0.82	0.75	1.05	0.95	0.95	-	-	-
basic education	0.92	0.95	0.87	1.04	1.04	0.62	0.76	0.78	-	-	-

* The age structure for Trondelag is only for the northern part.

Source : EU, 2000 et Copus et al (2000).

In most regions, with the exception of Grampian, Övre and Troms, the proportion of population of active age is lower than the national average (table 7b). Also, aside from Grampian Övre and Troms, the proportion of elderly is higher. Pohjois, which incorporates Lappi territory, is the only region where there is a much higher proportion of youths than the national average, although it should be noted that the Norwegian regions also have a fairly high proportion of youths. In sum, northern peripheral regions in Europe have a more elderly and fewer "active" people than nationally. The exeptions to this are Grampian, Övre, Pohjois and Troms.

Considerable differences exist between the regions studied in terms of economic and employment structure (table 8). Swedish and Norwegian regions are much more tertiarised than their Scottish and Finnish counterparts. This does not necessarily reflect the overall national economic structure (table 4). While regions in Scotland and Finland have less than 68% of their workers employed in the service sector, the Swedish and Norwegian regions, with the exception of Norra (67.5%), have more than 70% of

workers in these sectors. In Norway, there is a high percentage of service providers (especially business services). In Sweden, it is the public service sectors (including government, education, medical services etc.) that are strongly represented.

Table 8 – Economic structure, 1994 (% of employed)

	Scotland		**Sweden**			**Finland**			**Norway**		
	H&I	Gramp.	Övre	Mell.	Norra	Pohj.	Itä	Väli	Trond	Nord	Troms
Agriculture, fishing and forestry	5.7%	6.1%	2.6%	3.4%	3.0%	8.7%	12.7%	12.4%	9.0%	9.5%	8.3%
Secondary, mines, energy	26.1%	30.4%	17.2%	17.4%	22.9%	20.5%	19.0%	24.3%	15.1%	14.1%	9.9%
Construction			6.8%	8.3%	6.6%	6.1%	5.0%	5.0%	5.9%	5.9%	6.2%
Retail	68.0%	63.2%	9.9%	10.2%	10.5%	8.9%	9.1%	9.3%	12.8%	11.1%	12.2%
Tourism			2.3%	2.9%	2.2%	2.9%	2.3%	2.0%	2.9%	3.1%	3.5%
Transpo and commun.			6.7%	7.1%	5.5%	6.9%	6.6%	6.0%	6.7%	9.9%	8.4%
Business services			1.3%	1.7%	1.2%	2.0%	2.1%	2.0%	6.1%	4.5%	5.3%
Public services & other			53.2%	49.0%	48.1%	43.9%	43.2%	39.1%	41.8%	42.0%	46.2%
TOTAL	134 400	274 300	219 902	168 655	351565	163 363	201 628	216 579	154 607	93 903	62 187
ratio pop 95 : employ 94	2.08	1.94	2.39	2.33	2.45	3.42	3.49	3.25	2.48	2.57	2.43
unemploy 87	13.8%	10.0%									
unemploy 97	8.4%	4.8%	13.3%	13.0%	12.3%	18.6%	18.7%	14.9%	5.7%**	6.2%**	5.5%**

* For Scotland, only three sectors were available : agriculture, industry and services (EU, 2000). The numbers for Scotland are for 1997.

** For Norway the unemployment rates are for 1996 (NCM, 1997).

Source : Calculated from : EU (2000) and NCM (1997).

The agricultural, fishing and forestry sectors in Sweden are relatively unimportant in comparison to Norway and Finland, where they account for 8% or more of total employment. Scottish regions are marked by a relatively weak tertiary sector and average proportions of employment in the renewable resource sector. In Scotland, and particularly in Grampian, a high proportion of jobs can be found in manufacturing, construction and extraction activities, more so than in any other region analysed.

In socio-economic terms, Scottish regions stand out: they have an unemployment rate that is low, as is the case for Norway, as well as a low population to work ratio (also known the dependency ratio). Each job “sustains” only two people whereas all of the other regions are marked by ratios of 2.3 or more. On the other hand, the situation is more worrisome in the Swedish and Finnish regions where the unemployment and dependency rates are significantly higher. These are the same regions that experienced a decline in GDP per person (table 5a). It should be noted that differences in age structure do not account for all of this variation in dependency ratios since age structures do not differ radically across the regions studied whereas dependency ratios do. Higher dependency ratios can be explained by institutional factors (such as employment insurance, family customs etc.) as well as economics (number

of available workers, technologies, growth/decline in certain sectors, unemployment...) and demographics.

This brief statistical survey makes no claim to being exhaustive. However, in the absence of comparable data for the regions retained, these figures will at least permit general comparisons to be made across European regions, and between European and Canadian regions..

CONCLUSION : COMMON ASPECTS OF NORDIC PERIPHERAL REGIONS

Nordic peripheral regions face several common challenges which touch upon economic development in their territories. Aside from the problems generally associated with rural zones, such as a lack of services and infrastructure, the majority of the regions studied face the problem of population loss, especially of working age people: this will have direct repercussions on their future capacity to develop. Their GDP per capita is, in general, weaker that that of their respective countries and this weakness vis a vis their respective countries is increasing (except in Norway).

Despite this, the situation in certain regions – such as those in the north of Norway as well as the city of Oulu in Finland – is less worrying. Still, it is important to understand the reasons why this is so. These regions benefit from high rents accrued from resources while draining population away from their "back country" areas. In sum, it can be said that the situation of the majority of peripheral regions in Nordic countries, and especially those areas that are outside of the influence of certain urban areas, is preoccupying.

PART 3 – REGIONAL POLICY IN NORTHERN EUROPE

We have attempted, in this section, to identify specifically regional and territorial policies. However, overlap between different policies has rendered the task difficult. Indeed, policies that affect particular territories are not always territorial or regional policies. Rather, it is emphasised repeatedly in reports by the Rural Development Committee of Scotland (RDC 2001 a, b, c, d) that the policies which have the most marked effect on regions are those operating at the national level. For example, the difficulties experienced by Scottish fisheries can be attributed to the value of the pound sterling relative to the other European currencies (RSC 2001d, p. 111), and this same phenomenon has also negatively affected tourism. The price of fuel, which is very high in Europe, has had a dissuasive effect on tourism in outlying areas (RSC 2001d, p. 93). Fuel price also poses other more general problems for economic development in distant regions (RSC 2001d, p.88).

Our comparative tables in the preceding section confirm the importance of the "national effect". Whilst each region has some specificity, the best way of predicting the economic health of a region is to observe the health of the country to which it belongs. The only exception is Scotland where Highlands and Islands

are closer to the overall Scottish profile while Grampian exhibits quite distinct characteristics. However, even Grampian, due to its dependence on the petroleum sector, is affected by national (and international) economics (i.e. demand for and supply of petroleum).

Marsden and Bristow (2000) highlight another important aspect of policies which have a territorial or regional effect: their large number. Despite limiting their analysis to policies which affect the agricultural sector in Scotland - i.e. they are looking at one sector in a given territory - they identify multiple types of policy intervention from local land-use planning to European-wide agricultural policies, as well as specifically regional policies at the local, Scottish, British and European levels. Aside from the difficulty of studying the effects of such policies (the subject of their article), the authors point out the overlap between sectoral, environmental, social and economic policies, as well as the variety of levels at which policies are implemented (Europe, Great Britain, Scotland, local). In a study limited to Nordic regional institutions, Mariussen et al (2000) emphasises the variety and number of interveners in the area. The report's principal conclusion is the need, as well as the difficulty, of co-ordinating this multitude of different institutions. It is instructive to note here that most of these institutions have a different definition of what constitutes the Nordic region. For example, the Arctic Council extends all the way to Canada while the council of Baltic Maritime States is limited to the Baltic sea (Mariussen et al 2000, pp. 6-7). In addition, the Nordic region is frequently only a small part of the area covered by an intervening organisation. For example, the EU covers all of Europe, while the CMPR (Conference of Maritime Peripheral Regions) represents all those European countries with coastlines.

Despite this complexity, it remains possible to identify the basic structures of territorial intervention, even if it is much more problematic to determine *all* of the policy interveners who have some influence over the territory. In the next section, we will present an overview of regional policies in Europe. This is follows by a brief description of regional policies in each of the countries analysed.

ABSENCE OF PROGRAMS THAT ARE DESIGNED SPECIFICALLY FOR PERIPHERAL REGIONS

Europe has no program that specifically addresses the development of peripheral regions as we have defined them. The notion of “peripheral region” in Europe tends to refer to the southern states such as Portugal, Greece, southern Italy and Spain, which have per capita GDPs far below those of northern countries. From this perspective, the centre of Europe is a pentagon with summits in London, Paris, Milan, Munich and Hamburg (EU, 1999a). At most, the peripheral regions of Nordic countries are perceived as having weak economic structures which suffer from remoteness relative to central Europe, but which benefit from transfers which ensure a high standard of living (Vandermotten and Marissal 2000).

As it happens, the development of nordic peripheral regions is effected indirectly by way of policies addressing rural areas. European integration has tended to shift the responsibility for elaborating local economic development strategies from local to supra-national institutions.

3.1. SUPRA-NATIONAL PROGRAMS

There are three major supra-national institutions that address rural development in northern European countries: the OECD, the European Union and the Nordic Council of Ministers (NCM, 1999). This section will present a brief overview of recent trends in regional policy for the zones which we are studying.

OECD

The OECD is an important institution dedicated to research and discussion of public policy issues affecting its member countries. Its territorial development service has a mandate to help "...member countries conceive, develop, implement and evaluate policies to help regions and cities realize their potential, sustain healthy competition, create employment and generate wealth" (OECD 1999).

Recently, the OECD has identified an evolution in the conception of territorial policy. Today, "...efforts are focussing on the competitiveness of regional economies which must exploit their characteristics and strengths; on the promotion of sustainable development; on the organisation of public institutions – notably thought public-private partnerships – ; and on co-ordination with regional and local authorities" (OECD 1999).

In recognition of the increasing impact of globalisation and technological change on the capacity of different regions to develop, and recognising also the importance of local initiatives as solutions to these problems, the territorial development arm of the OECD has maintained the LEED (Local Economic and Employment Development) for another five years to 2005. One of this program's aims is the identification and evaluation of public and private initiatives which, in co-operation with local networks and partners, can support employment, social cohesion and entrepreneurship (OECD, 2000).

Regional Policies of the European Union

Most of the following information has been obtained from the web site of the European Commission (http://europa.eu.int/comm/regional_policy/index_fr.htm, consulted in March 2001). Other sources of information are referenced directly in the text.

The FEDER Program

The European Union's structural funds were created to support regions in difficulty. These funds grant "financial aid in order to resolve structural economic and social problems, with the goal of reducing inequality between different regions and different social groups". Amongst these funding programs, FEDER (European Fund for Regional Development) is aimed at financing regional development initiatives that favour the most under-developed areas. During the 2000-2006 period, FEDER will grant financial aid under two regional development objectives. These objectives are the following:

1. promotion of development and structural adjustment in under-developed regions (areas where the per capita GDP is less than 75% of the European average, as well as the northern regions of Sweden and Finland).

2. transformation of regions that have been seriously affected by industrial decline.

Objective 1 is, for the period of 2000-2006, the most important in terms of funds allotted (136 billion Euros, or 64% of the entire structural fund budget). The objective is also the one which will have the greatest effect on peripheral regions of northern Europe, including a special mention for regions in northern Finland and Sweden. This mention was included in view of integrating Finland and Sweden in the EC in 1995 (NCM, 1999). At that time the Swedish and Finnish objective was distinct (objective 6): the two objectives - 6 and 1 - have now been rolled into one. Since 2000, Scottish regions are no longer accepted as part of objective 1, but the Highlands and Islands will benefit from transition measures until 2005-2006. Also, several areas in the Lowlands, particularly in the south, are affected by objective 2. Similarly, a few Finnish and Swedish areas are included in objective 2. Finally, objective 2 includes most of the regions that were affected by the old objectives 2 and 5b (EC, 1999b).

The LEADER Program

As a complement to these regional aid programs, the structural funds of the EU participate in financing community initiatives whose aim is to resolve specific problems. These are considered special interventions that are proposed to member states by the Commission and comprise three aspects that differentiate them from other measures financed by the structural funds:

- bottom-up project development
- encouragement of international and inter-regional cooperation
- priority given to local and community objectives and priorities

For the 2000-2006 period, the Commission is supporting four community oriented initiatives. One in particular, LEADER+ (Liaison Entre Actions de Développement de l'Économie Rurale, or links between action for the development of the rural economy) is oriented towards rural development. While this program makes up only a minute part of the structural fund budget, its approach merits some attention. Its objectives are "... to incite and aid rural actors to reflect upon the potential of their region with a long term perspective" (see LEADER: www.rural-europe.aeidl.be). Innovation and partnership are seen as essential elements in the selection of projects to be financed. Down the line, the program evaluates the success of each project and examines the possibility of it being transferred to other regions in the EU. Finally, the program aims at disseminating the results via a central 'observatory'. LEADER+ is the third LEADER program of the EC, following LEADER I (1991-1994) and LEADER II (1994-1999).

Numerous LEADER - financed initiatives have attempted to harness the decentralising potential of IT. For example, in the Hebrides, located northwest of Scotland, a base of specialised tele-workers has been developed (Paterno 1998). This frequently cited example remains an exception due to the fact that this type of activity of often attracted to zones near urban centres (Vendramin and Valenduc, 1998; Bristow et al 2000). Amongst the reasons cited to explain the success of this project –which has led to 200 jobs in the islands as well as exports to the USA – are the population's high level of education and a maritime culture that is somewhat more adaptable and open to the exterior than some land-based communities (Paterno, 1998). This example is important in that it shows that in some cases, geographic isolation can be overcome.

The "Northern Periphery" Program

Amongst its numerous projects, FEDER also supports some programs that facilitate regional planning within transnational zones that have similar characteristics. The "northern periphery" zone was identified as a zone with very low population density, large distances to overcome and a harsh climate. It is made up of regions in the north of Finland, Sweden and Norway as well as the north of Great Britain (Scotland). Financial programs are oriented towards the provision of services, economic development and the creation of information exchange networks. This last objective is the basis of an interesting project that aims at collecting and transferring knowledge pertaining to the development of rural and northern regions (see the web-site of Arkleton under the banner "Rural Transfer Network" : www.abdn.ac.uk/arkleton/npp/). Details of the other projects are available through the program site (www.sctornordic.com/northernperiphery/). It should be noted that for the 2000-2006 period, this project is part of a community initiative called INTERREG III (www.inforegioo.cec.eu.int/wbpro/prord/prordc/prordc17_fr.htm).

The Nordic Council of Ministers xxxx

Created in 1971, the Nordic Council of Ministers is comprised of official representatives from the five Nordic countries (Denmark, Finland, Iceland, Norway and Sweden) with a view to improving cooperation and exchanges between them. This cooperation includes 2 committees specially oriented towards questions of regional development, agriculture and forests. They are identified by the acronyms NÄJS and NÄRP (NCM 1999). In 1996 and 1997, these two committees collaborated on the preparation of a group of projects regarding:

- the development of work opportunities in the service sector where there is a low population density
- policies that could favor the development of tourism in rural regions (through education and experiential exchanges)
- the creation of a Nordic group to aid small food production industries (helping out with marketing, development of new techniques, education and information exchange)

In July, 1997, the Nordic Council of Ministers created the "Nordic centre for spatial development", better known by its acronym NORDREGIO. The mandate of this organization is to establish a professional environment for research, documentation and education regarding spatial development from a northern European perspective. Its aim is also to favour exchanges between countries, Nordic or not, in order to further knowledge and manage and coordinate appropriate actions. The fields of study include development of peripheral regions, linking the centre to the periphery, the growth potential of different areas, the creation of new evaluative indicators and finally, an evaluation of public policies regarding development (www.nordregio.se).

3.2 NATIONAL PROGRAMS

The following sections have been, in large part, extrapolated from four literature reviews prepared by the Arkleton Centre under the Rural Transfer Network Program (RTN 2000a, 2000b, 2000c; Persson 2000). Other sources are included directly in the text.

Finland

Prior to its entry into the EU, regional policies in Finland were reflective of ministerial differences with little overall coordination evident (Eskelinen at al. 1997). The need for harmonisation with the EU led to the adoption of a new Regional Development Act that includes six programs oriented towards specific regions, with an emphasis on rural regions.

A national program, POMO, was developed using the LEADER program as a model in order to provide similar support and opportunities to areas not affected by LEADER. The University of Oulu also has provided a significant amount of support and research in developing locally appropriate development programs in Finland's peripheral regions (www.kake.oulu.fi/kkke/index.htm). These new approaches to regional development have touched upon connection between villages, accessibility, the use of IT and new cooperative activities.

Sweden

Sweden is without a doubt the furthest advanced country in terms of local development action plans in rural regions. After a number of northern communities raised the alarm, a massive popular movement was launched during the late 1980's under the slogan: "all of Sweden must live" (NCM 1999). The movement was comprised of approximately 1000 local development groups in 1989 and has continued to grow in popularity to around 3500 active groups. Cooperation that surpasses traditional boundaries (political parties, municipalities, old and new members of communities, young and old people etc.) has been touted as the movements strongest asset. Finally, a web-site (www.bygde.net) has become an important web resource and has allowed the easy exchange of information.

The national agency responsible for rural development (www.glesbygdsverket.se) analyses the needs of rural communities, supplies information for both public and private sector actors and proposes a variety of solutions. This organization also coordinates the regional development programs of the EU such as LEADER.

Norway

In Norway, the Fund for Regional Development and Industry is the main public institution for regional aid. It is sustained largely by the Ministry of Commerce and Industry as well as the Ministries of Local Government and Regional Development (http://odin.dep.no/krd/engelsk/dep/om_dep/).

Regional public policy has seen a change of orientation since the early 1980's. Today, the emphasis of intervention is more on regional and local actors (bottom-up) as opposed to industrial subsidies distributed by central institutions (top-down).

Recent regional policy has attempted to attack the population decline in certain regions. Nevertheless, new regional economic strategies have begun to focus on innovative growth capacity. It is within this context that the NT program has been developed with the objective to encourage the creation of new innovative activities in the northern regions of Norway. This program has helped the growth of productivity

for several businesses -- especially in the fishing sector – principally through capital financing for new machines and equipment.

Scotland

Historically, rural policies in Scotland were based around agriculture. Even today, the SERAD (Scottish Executive Rural Affaires Department; www.scotland.gov.uk) formulates sectoral policies (agriculture, fishing and environment) as opposed to territorial ones. Nevertheless, a more formal approach to regional development was adopted in 1996 with the creation of the Rural Strategic Support Fund (www.scotland.gov.uk/news/2000/12/se3229.asp). The objective of these funds are to favour economic and social development of rural communities by finding local partners and financing local initiatives.

Moreover, the Scottish government has recently given the private sector and local authorities more autonomy and leeway in matters of economic development. In this context, the Highlands and Isles Enterprise Network ("HIE Network": www.hie.co.uk) and the Scottish Enterprise Network ("SE Network": www.scottish-enterprise.com) were created. These two organisations intend to maximise the use of existing resources in each region with services and support from a variety of regional offices.

CONCLUSIONS

Our conclusions can be related to three different themes: 1) the impact of IT on regional development; 2) recent changes in regional development in Nordic countries; 3) emerging policy directions in regional development.

Territorial Impact of the Information Economy

The literature consulted does not seem to indicate a major change in the spatial evolution of national economies. Instead, it confirms the continuation of existing patterns. As results are dependent on the scale of geographical analysis, it is obvious that there will exist differences between countries. However, the general impression left is one whereby national economies and the forces of spatial concentration -- favoring large urban areas and their neighboring regions – continue to prevail over decentralization towards peripheral regions. This definitive concentration of population and economic activity does not necessarily contradict the observed reduction in regional disparities of per capita income and productivity. Still, until an accurate geographic analysis is attempted, one could argue that there has been an increase in the gap between outlying regions and other parts of the country.

This trend seems rather unfavorable to peripheral regions, both with respect to the changing geography of economic activity and the income gap. It suggests that the increasing importance of the "knowledge

economy" will only emphasize the geographic concentration of economic activity. Thus, the impact of new information and communication technologies (IT) will only serve to prolong this trend. These conclusions are based, first of all, on the analysis of "new" elements of economic growth, and second, on the impact of IT on the behaviour of economic actors.

New and emerging activities related to the knowledge economy (thus, intensive in artistic creation) are sensitive to economies of scale and other positive externalities that are associated with large cities and the geographic concentration of business. In this context, the concentration of brain power in large cities (partially as a result of a brain drain from peripheral regions) could continue to damage peripheral regions in the future. This is not to say that knowledge based activities cannot grow in peripheral regions, but that comparative advantage is increasingly being lost by peripheral regions. The presence of a large workforce with varied skills is a competitive advantage, especially when one considers that most economic activities, including the transformation of primary resources, are based on the need for diverse skills. In order to predict the probable impact of IT on geographic restructuring of economic activities, it is useful to look at the impact analog technologies (telephone, telegraph, radio and TV) have had on geography. Overall, it can be said that none of these technologies had a discernable effect on, or challenged the forces of economic concentration. One could even argue that analog communication technologies even accelerated urbanisation and the concentration of economic activity.

Three reasons can be put forward that explain the positive relationship between new communication technologies and the forces of concentration.

1) new products focused on technology (television, film production, equipment and telecommunications) are very responsive in economies of scale;
2) electronic communications are complements, and not substitutes for inter-personal contact, and also could *increase* the demand for interpersonal contact and thus for places (such as cities) where such contact is easy;
3) the introduction of cost saving technology facilitates the centralisation of control (management) activities including coordination and production especially in economies of scale

Trends in regional development in Nordic countries

Our statistical analysis of peripheral regions in Nordic countries reveals a worrying situation. In general , even if there is not a systematic decline, there has been a decline in GDP when compared to national averages. The population, for the most part, is older and more dependent while economic structures – especially in Finland and Sweden – are largely based on employment in the public sector. Statistical analysis combined with studies published by various European and national organizations allow us to

conclude that peripheral regions in northern Europe face very similar challenges to many regions in Canada.

The main exceptions to this are areas that benefit from a rich base in natural resources, particularly oil (Norway, Scotland). These regions are capitalising on a long term economic boom – exacerbated by cyclic points – and salary growth. However, these regions are more and more aware of the transitory nature of this prosperity. The slow-down of new exploratory activities entails some important changes. For example, elevated salaries amongst the local population may be sensitive to future changes and have adverse effects. Similar worries exist in the forestry sector. Large pulp and paper industries have created salary and work conditions that are hard for small and medium enterprises (SME's) to imitate. In other words, even those regions that are prosperous are faced with particular difficulties that are becoming more and more worrisome.

Despite these trends, there are several positive signs of hope: the city of Oulu in northern Finland with its high-tech industries (including Nokia) and university, merits further study. The city of Tromso in northern Norway, despite being dependent on the public sector, has a successful university that has succeeded even though predictions for its failure were common when it was founded in 1972. Tromso also benefits from being a city attached to maritime research and tourism. It should also be noted that while both of these areas are urban, they act as service centres for their respective peripheral regions and as such, have been successful and should be examined further.

Finally, the fishing and fishery products industry, while still a traditional activity, seems to be relatively prosperous and, for certain enterprises in Norway, a focus for innovation (SMEPOL 1999). This prosperity is based in continuing profit which could possibly be sustainable. However, if this is to continue, it would be advantageous to not only study fisheries management, but also the impact new fishing, transportation and treatment technologies are having on the sector.

Emerging policies in regional development

At risk of oversimplification, we are grouping regional policies under four headings:

1) central policies (national, European) that are aimed at aiding under-developed regions by funding infrastructure and industrial re-construction projects;
2) national policies focused on transfer payments, mainly with the goal of social equity, in order to ensure a minimum standard of living amongst all peoples living in the country;
3) local development policies that aim to stimulate local actors, notably community groups, business associations and local development agencies;

4) “a-spatial” policies that are focused on a sectoral approach, national or European, that have an affect on regional development

Regional development policy making has not changed dramatically over the past two decades. For this reason we have consistently used the term “emerging” to describe regional economic development. What has changed has been the amount of influence between each of the above mentioned themes. Transfer payments in order to achieve social equity (number 2) are being reduced everywhere, notably in Sweden, as a result of the retreat of the state from social programs. State subsidies for business (in order, for example, to have businesses set up locally) have been reduced due to bad press and international trade agreements that have reduced the ability of states to intervene. Funding from FEDER (of the European Union) is focused primarily on infrastructure development, similar to federal-provincial agreements in Canada related to regional economic development. In Europe, as in Canada, public infrastructure projects (ports, roads, parks etc.) continue to be of major importance.

Meanwhile, in Europe and Canada, a change in discourse has been noticed over the past two or three decades. There is less of an emphasis on “hard” investments (in terms of physical capital) and more of an focus on “soft” investments in human and social capital. This is a trend that has been observed by some international development organizations (World Bank, CIDA etc.). In essence, it is the advent of local, bottom-up development (see number 3 above). The concept of local, bottom-up development engenders the concepts of partnership, concentration, information exchange, local entrepreneurship, etc. The LEADER program of the European Union subscribes to this approach. The recent arrival of concepts of “social capital”, a new and fashionable idea, does not fundamentally change the problem: how can a territory (region, community) become more dynamic, innovative and productive? How can activity be encouraged amongst different actors? After twenty or thirty years of experimentation with different formulas of social and local action it is evident that there is no one straightforward answer to all of these issues. In Europe, as in Canada, solutions are, and will need to be, numerous and varied.

There are two lessons to be learned regarding local development. First, the Nordic and European experience seems to confirm the need for flexibility when creating local development policy. Thus, local groups, businesses and development actors should be allowed considerable room to maneuver when implementing policy and using funds. There should be a considerable amount of support for variation amongst different actors in order to have the most appropriate and flexible solution to any given problem. Thus, this underlines questions of control and monitoring by central agencies that allot funding. Based on the circumstances, the mediation between central control and local autonomy will vary greatly.

Secondly, local development policy rarely considers the comparative advantages on one region vis a vis another in order to develop the most appropriate and coherent overall national policy. Discourse

surrounding local development seems to be oriented towards a more limited approach to development without considering some of the larger contextual changes that a patchwork of local strategies may have. This highlights the increasing decline in importance of the theme of central control (number 1) as the trend over the past twenty or thirty years has favoured local development.

This does not mean that there should be a cessation of experiments involving local development at all. Instead, there should be an increased focus on local development strategies. However, the time has come in which to critically evaluate, based on the results of the past two decades, what kinds of policies are most appropriate. It would be naive to assume that solutions to the problems of peripheral regions can be solved exclusively by local development initiatives. In this sense, it is easy to see how the discourse of local development has impeded some areas by not focusing on structural factors in national economies that have facilitated the present economic geography (such as theme number 4, relating to national sectoral policies). Thus, actions of solidarity amongst peripheral regions (in terms of innovative activities and resources) may have been able to avert some of the negative aspects of what has happened over the past four decades.

It is useful to note that some Nordic authors, as is the case with some Canadian authors, insist that problems associated with peripheral regions are to be blamed and linked with national or European policy and influence on the evolution of the comparative advantage of these regions. In Europe, as in Canada, it is likely that the impact of policies such as types 1, 2 and 3 (all regionally focused) have been negated by the impacts of policies such as number 4. Some say that territorial impacts will be equalized over time as this is the nature of market democracies. Should we then be surprised that trends in one country, despite political intervention, resemble those occurring in other countries? In order to have a real impact, policies based on peripheral regions need to be defined in concert with the characteristics of the region in question. They also need to be designed with a strong understanding of the different forces at play, including national and international (i.e. European) sectoral strategies that are not be designed with peripheral regional development foremost in mind. However, a more profound reflection on these questions and the nature of these politics is beyond the mandate of this literature review.

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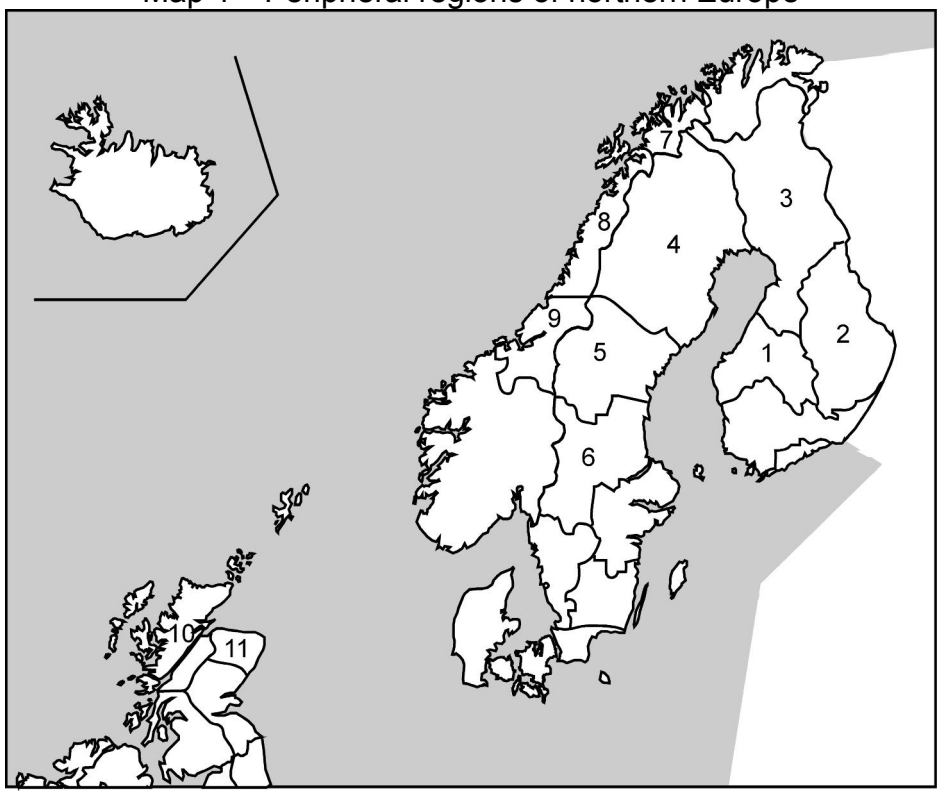
Map 1 – Peripheral regions of northern Europe



1. Vali-Suomi, Finland
2. Itä-Suomi, Finland
3. Pohjois-Suomi, Finland
4. Övre Norland, Sweden
5. Mellestra Norland, Sweden
6. Norra Mellansverige, Sweden
7. Troms, Norway
8. Nordland, Norway
9. Trondelag, Norway
10. Highlands & Islands, Scotland
11. Grampian, Scotland

Map 2 - Peripheral regions of eastern Canada