Structure and strategy for regional learning and innovation

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Abstract

Development of codified and tacit knowledge is important for capacity building in regional communities. To do so regions need active co-operation and trust building between public organisations related to research and education, private companies and organisations and the civil society so as to cross sector barriers and to mobilise to meet regional challenges proactively.

In well-functioning regions, good networks have been established involving actors with reasonably clear roles related to initiative, innovation and other types of processes of change. Tradition and earlier development work will decide whether the key actors are public or private in any given region. This is not so important, as long as the system and the community function well. In public planning and development work, one ought to give support to and stimulate such networks, arenas and actors, instead of establishing alternative processes and networks.

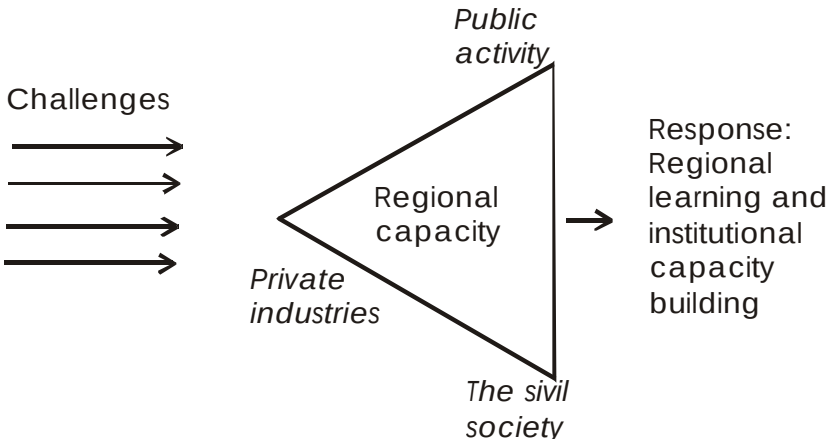
It is a different matter in regions where such structures are weak or non-existent. In order to take the initiative for change and to implement strategies, one needs a stable organising and responsible proactive organisations with high legitimacy in the regional community. Such processes must enjoy wide support in the regional community, mobilisation for change must take place from below and across a broad front. Actors from outside can stimulate such processes, but they cannot take responsibility for them. The role in building out the community that is held by democratically elected bodies, make it natural to demand or expect that such actors take an initiative towards improvement.

[1] Paper to the AESOP Conference in BRNO, 19 – 21 July 2000.

Introduction

In this article, the starting-point is that the ability of a region's business and industry for innovation and change is dependent on the conditions in the civic society, in public activity *(the public sector)* and in *business and industry* (see figure 1). The term region can have many meanings. In our context here, it refers to a geographical area between state and municipal level that appears as a homogeneous economic area in which business and industry are facing more or less the same challenges. The capability of a region to meet challenges is particularly dependent on how the various actors manage to produce and exploit competitive knowledge (Diez 2000). At the same time, challenges must be answered with strategies and measures which the whole community involves itself in and which are adapted to suit the situation and meet the challenges in the region in question (Stöhr 1990). The establishment and development of regional innovation systems requires certain conditions to be met. There needs to be an active business and industry with a high degree of co-location and co-operation, plus an active co-operation between various actors and organisations with competence in the field of developing and dispersing knowledge (Lagendijk & Cornford 2000, Storper 1997).

Figure 1. System challenges for regional learning and innovation



Challenges to be met in regional development

Bennett & McCoshan (1993) have assessed the British society's system of developing business and industry and human resources with special emphasis on local and regional development work. The systems for economic development, education and training (apprenticeships etc) are compared with similar systems in other countries. They conclude with discouraging assessments of the British systems in relation to the territorial and functional co-ordination of such development work and to the social results of these efforts. The conclusions about public activity are also relevant to the situation in Norway (and other countries):

?? To increase local development capacity, an integrated national strategy to co-ordinate among other things educational, industrial and labour market policy is necessary.

?? Domain defences between strong central organisations, sectors, segments and segment interests have to be dismantled, and innovation is needed that leads to the release of resources linked with such interests.

?? The centralised building of institutions with vertical offshoots leads to systems failure, a failure that can only be repaired through local institutions and initiatives, and through active learning

processes at all levels. This requires an active development programme led and initiated from the bottom upwards, in addition to a more integrated national allocation system.

Bennett & McCoshan's (1993) approach can be illustrated as a dynamic process in which society is continually challenged by changes created from without and within. Regional communities such as networks in business and industry, public activity and the civilian community (households, voluntary organisations, co-operating bodies etc) have a certain capability and capacity to meet such challenges. The results depend on how society manages to develop its abilities to react to such challenges, i.e. capability and capacity development that leads to a better response and thus better results. The need for the various parts of the system to co-ordinate their reactions is becoming greater all the time, in the opinion of Bennett & McCoshan (1993).

International trade agreements linked to EU/EEA, WTO etc and the general globalisation of business and society mean that the demands on and challenges facing Norwegian society are not very different from those that apply to Britain or other European states (Mariussen & Virkkala 1999). What can vary are the skills and prerequisites with which to meet these challenges.

The main section of the analysis by Bennett & McCoshan (1993) is a survey of state investment and priorities (from the top) and the difficulties involved in integrating these in the development work of the regions. Special tensions are linked to the lack of co-operation between state sector bodies and regional actors (Friedmann & Weaver 1979). "Domain defence", a lack of co-operation and a lack of a national strategy for activities across sectors are considered to be the main problems. In particular, focus has been placed on how to establish and develop mutual learning processes. The main conclusion in relation to the vertical systems is that:

"..we have identified a national problem of "systems failure ". We have argued that this arises from the tension between national and local, frictions between public and private, and tire influence of the contrasted cultures and "histories" of different institutions, particularly between producers and clients. .. The conclusion has been that the major barrier to improving Britain's competitiveness has been an absence of INTEGRATION to achieve strategic economic goals. ..improving national capability requires a local client focused vision; ..local responsiveness, as `fitness for purpose ", will require major contrasts of fit between places depending on the nature of the local economy, its institutional structure, and its geography ". (Bennett & McCoshan 1993 p.203).

If one transfers this perspective to competence and capacity development – to develop “learning regions” (Asheim 1996) or “clusters” (Porter 1990) - the challenges to the system can be illustrated as in figure 1. At the regional level, there are three sub-systems which have to be made to function as well as possible as a collective unit: business and industry itself, public activity aimed at competence and capacity building and the civic community. Each of these sub-systems is linked together with both larger (national and international) and smaller (local suppliers, etc) systems that form the framework of terms and challenges (Stöhr 1990).

Co-operation, joint development work, the building of networks, interactive learning etc seem today to be the main strategies in use to get such systems to function together and to further regional development (Asheim 1996, Asheim & Isaksen 1997, Healey et al 1999, Koschatzky & Sternberg 2000). But basic to all this is the fact that it is human beings who develop, communicate, use and are bearers of knowledge and competence. Knowledge gathered in libraries, on the Internet, etc is passive and does nothing to further regional development unless it is activated and integrated in social processes (Amdam 2000), i.e. the development of human resources and competence. Even though it is possible for individuals to develop new knowledge, the recognition, further development, dissemination and use of such knowledge is linked to co-operation and networks between people and organisations - to social processes that require nearness (Törnquist 1997).

But what are the conditions necessary to enable such co-operation to function, and can it in fact result in regional development? Are there special barriers or challenges associated with co-operation and the building of networks between business and industry, public actors with knowledge (resources) and the civil community? And what form and content can and should such co-operation involve? My focus is regional planning and development: whether it is possible to change structures and institutions and to get systems to produce other and better results for society than has been the case?

Regional business and industry and challenges of knowledge

Seen in relation to the furthering of innovation in the economic life of the regions, what challenges can we see? There are tremendous challenges related to the development of interactive learning in the individual companies, in the co-operation between companies and between companies and other actors in society (Isaksen 1997, Storper 1997, Sternberg 2000), both intraregional and interregional (Arndt & Sternberg 2000). Strategies that the companies themselves choose, seem to a large extent to be dependent of both the economic structure and regional structure. In Arndt & Sternberg (2000) study of 10 European regions, the results verify that in spite of numerous network relationships on the national and international level small businesses are most likely to co-operate with others in their vicinity.

Nilsson (1998) points to the paradox that in e.g. "Silicon Valley", with its high degree of creativity and innovation activities of both knowledge and products, there is great openness between companies and between persons involved in such work, probably in order to reduce the risk of mistaken investment. A similar picture emerges from "learning regions" (Asheim 1996, Isaksen 1997), whilst established and stagnating business and industry and regions are more characterised by closed, internal processes of knowledge within companies and concerns (Storper 1997). What seems to be typical is that regions with a positive development have high internal powers of change, a high degree of open flow of knowledge between actors and a long tradition of growth (Nilsson 1998), often such that growth in some industries compensates for decline in others. The growth of new knowledge and competence comes in the form of self-development in existing businesses and environments, the transfer of knowledge between industries and companies, a high rate of establishing new companies based on knowledge and through the recruitment of young, well-qualified people.

Also in Norway we find considerable regional variations in development and the ability for innovation. In particular, the major urban areas have shown themselves to be growth areas for employment, but so have other regions without large cities and towns in western and southern Norway (Hansen & Selstad 1999, Isaksen & Spilling 1996). In other regions, such as Alta, Tromsø, Bodø and Lillehammer, public investment can have played a larger role in growth than private business and industry. At the same time, the Norwegian economy and labour market are changing rapidly, a situation that alters the challenges linked to the development of knowledge and competence. Some of the characteristics of this development are as follows:

?? *Internationalisation of business life* – while just a few regional industries were internationally integrated 20 years ago, most of today's industry and private business competes internationally or is under influence from abroad. To an increasing degree, both the public and private production of goods and services and their turnover are dependent on international standards and agreements, the buying-up of companies, product dominance etc, and expectations of products and services that to an increasing extent are influenced by international culture and marketing (Storper 1997, Mariussen & Virkkala 1999, Maskell et. al. 1998).

?? *Regional networking* – co-operation and networking between regional companies, suppliers, costumes, competitors, service providers and research institutes in clusters are important

(Amdam 1998). *"The paradox lies in the fact that sustainable competitive advantages in a global economy appear to increasingly develop at the regional level in the form of knowledge, abilities, relationships and motivation, which cannot be achieved by distant competitors."* (Arndt & Sternberg 2000: 467). The more knowledge-intensive the innovation activities of a business are, the greater the necessity of spatial proximity and of network ties. Decentralised competencies in innovation, diversified industrial networks, high-value education and research facilities and institutional "network moderators" are especially important (Koschatzky & Sternberg 2000).

?? *Market concentration and the establishment of chains* – from a structure with many small businesses in most sectors of industry, the development now is moving rapidly towards the establishment of concerns, trading chains and other forms of networks (Strøm 1999, Isaksen 1997). This means that the control over the means of production and the selection of goods is being taken out of the hands of the local community, the region and the country. This in turn also means that the opportunities for independent small and medium businesses and for establishing new businesses are very limited in established sectors like large sections of the primary industries, manufacturing industries and trade (Taylor 2000).

?? *Changes in patterns of industry* – the traditional primary industries like farming and manufacturing industry are experiencing a decline in the number of jobs – the growth industries are production-oriented service and in particular those activities that develop information (over 70% growth 1980-90) and service aimed at households. Especially production - oriented service represents a great challenge because job creation is so greatly concentrated on the major cities, especially Oslo (Hansen & Selstad 1999). Virtually half of those with a Master's Degree now live in Oslo and Akershus, the capital region of Norway.

?? *Market organisation of public activities* - earlier our society chose a public organisation of activities such as the postal service, telephone, electricity and energy production. It was felt that the market produced results that were less than desirable from the point of view of equality and an even distribution – both as regards marginal areas and marginal groups (Teigen 1999). The market organisation of such activities will give results that can lead to considerable negative consequences for those who are not resourceful enough to exploit the markets. The active use of e.g. the petrol tax in order to by way of the market reduce the use of private cars in built-up areas can have large negative consequences for the outlying districts where there is no alternative to the private car in connection with journeys to work, school etc.

?? *Competition between regions – also internationally* – In fields such as shipbuilding or the food industry, some fringe areas have lost out, others have done better and appear as national winners through developments the last 20 years. But with internationalisation everyone can become a loser if we do not manage to prevent future crises and ensure that "the winners" can survive in an international context (Isaksen 1997, Maskell et. al. 1998). This globalisation can even lead to a knowledge monopoly of the world cities (Taylor 2000).

?? *The communication society* – Roads and other forms of transport have always meant a lot to outlying districts, as well as to the towns. Many people today believe that we are in the middle of a new social revolution of equal importance as industrialisation, but this time linked to the enormous opportunities presented by information technology (Hansen & Selstad 1999). Regardless, in the time ahead there can be tremendous differences between those communities and businesses that have a safe and fast access to net-services of various types, and those who as a result of the lack of an infrastructure or knowledge are not able to make use of the new possibilities – which can have a centralising or decentralising effect, dependent on how we exploit the opportunities. At the same time, the traditional infrastructure of roads, ferries, harbours and air services are of vital importance to many fringe communities.

?? *Recruitment of leaders and specialists* – Both private and public businesses in outlying districts find it difficult to recruit well qualified leaders and specialists (Amdam 1998). In the business

world, this means that the company headquarters can be located where leaders and specialists want to live and work, in the public domain this means that one has to pay extortionate amounts in order to provide doctors etc. Such recruitment challenges would seem to an increasing degree to be linked to the fact that whole families must experience communities as being good and a challenge to live and work in.

?? *New demands on regional communities as "total communities"* – These and other features of development mean that regional communities compete in far more arenas than just providing jobs. Demands are strongly on the increase when it comes to quality in the job sector and in leisure activities and for various groups in society. Regional communities must at one and the same time be rural with good access to nature and the outdoor life, and urban with well developed private and public services (Amdam 1998, Healey 1997, Nilsson 1998). Regions must at the same time combine the traditional with the latest developments in society.

The rapid growth in employment in individual enterprises in services aimed at manufacturing, would indicate an increase in "outsourcing" of service production from manufacturing companies. This is a characteristic feature of the development of e.g. the conventional agricultural sector, where farmers today are specialists in production, while co-operative organisations and private companies specialise in the development, processing and marketing of the products (Strøm 1999, Morgan & Murdoch 2000). This means that many farmers and rural areas that are heavily dependent on farming, are almost void of marketing competence / knowledge and without insight into the workings of the market system, a fact which is very problematic with a view to rural development and local product development. If there is not a greater decentralisation of service industries aimed at production, this situation can easily repeat itself in other traditional industries and regions dominated by manufacturing.

The marked growth of many, small competence-related companies, has also resulted in the growth taking place in the larger towns (Hansen & Selstad 1999). Without stimulating measures, it is typical that new service industries, which are not linked to specially localised resources, grow up in the major cities or in special "learning regions" or "clusters" (Henry & Pinch 2000). Not until there are distinct advantages in being localised in other smaller places, due to increased competition, will these functions be spread to more periphery areas (Amdam 1983).

There are many indications that **established business and** industries, through various forms of vertical integration and "outsourcing", contribute to a centralisation of the working processes that depend on knowledge and the development of knowledge. Simultaneously, new enterprises grow up, e.g. closely linked to information and communication technology, in which various forms of knowledge development and dissemination are key factors (Henry & Pinch 2000). These companies are often flexible businesses dependent on highly qualified staff and localised in central areas. A lack of joint localisation between such service industries and research institutes aimed at assisting production and the companies actually involved in the production process, can lead to a weakening of the regional innovation system (Arndt & Sternberg 2000, Fritsch 2000).

It would also seem to be typical that businesses with roughly the same type of activity "cluster together" geographically (Porter 1990). An example is the group of ship constructors in Ålesund, closely linked to the shipbuilding industry on the northwestern coast of South Norway (Asheim & Isaksen 1997). In many fields, one can see an international development of such "clusters", in which a few environments with a certain geographical localisation are completely dominant. Such spontaneous and self-actuating localisations and links would appear to be vital in deciding who wins in the competition between regions (Nilsson 1998). Whatever the case, this means that in the context of regional industrial development, focus must also be placed on the localisation and development of services aimed at assisting the production process, especially the sector associated with developing and disseminating knowledge. This is essential both in order to develop traditional

industries, and so that the outlying districts can gain access to new businesses and industries and become attractive places for well-qualified young people to live and work.

Public competence activity and its connection with significance for innovations in regional business and industry

In modern regional policy, a great deal is expected of research, education and competence building as measures (Lagendijk & Cornford 2000). Can public competence and capacity-building activity actually function as a "development aid" in regional policy to further innovation, and if so, under what sort of conditions? Or is it more important to invest in "research-free" learning based on experience? Let us look more closely at some of the challenges and "hypotheses" in this policy field.

Do university and research environments result in the establishment of companies and the development of business and industry?

Examples that are often used to illustrate successful co-operation between research activity, the establishing of companies and regional development are to be found in the Boston region in the USA. Nilsson (1998) has studied in some detail the relationships in this region and some European metropolitan regions, and has discovered that the co-operation does not work anything like as well in the latter as in the Boston region. R&D activity is, of course, in itself not enough to further regional economic development.

In the case of Boston, Nilsson points to the fact that one university's policy (MIT with 10,000 students) seems to be far more decisive than the activities of a whole series of universities in the area (there are 36 universities and 255,000 students). Right from the start in 1861, MIT placed great emphasis on basing its activities on the area's industrial tradition and stimulated the staff to co-operate with local business and industry as advisors and in a research capacity. Special emphasis was given to establishing a research co-operation with large concerns and to making it easy for staff to establish their own businesses. The result was many new companies that have later become big concerns. The region has been among the foremost in developing and producing new technology and all the time in new fields. In fact, the region has long and positive experience in a close co-operation between research environments and business and industry, with spins-offs like unlimited access to risk capital, plenty of young people moving to the area, etc.

One of the other metropolitan areas studied by Nilsson (1998) was Copenhagen. This region boasts almost 2/3 of all research activities in Denmark, 71 % of the civil engineers that work in industry and it is indisputably the centre of research-based industrial production. In spite of all this, the region has a weak development of production in industry, which would seem to indicate that Danish industry has not had the ability to exploit the technological developments of recent years. Instead, there has been a formidable growth in the private service sector, which has compensated for a strong decline in traditional industries in the region.

In his studies of the importance of public research institutes in innovative networks in Barcelona, Stockholm and Vienna, Diez (2000:461) found that " .. *The results of the survey clearly showed that vertical cooperation partners, such as buyers and suppliers, and also service providers close to businesses, hold a higher status in the support of business innovation processes than research institutes do. … Small businesses are not reached by the research institutes.*"

As Rolv Petter Amdam shows (Amdam R. P. 2000), the courses in economics and administration at the regional university colleges in Norway have only played a marginal role in recruiting leaders for regional companies. Regional research institutes have also had difficulty in establishing active co-operation with regional economic environments. The establishment of state educational and

research institutions in a region does not in itself seem to lead to a more innovative business and industry, but variations exist, dependent on which teaching and research programmes they offer (Sæther et al 2000). When well-educated young people move to the area, this can, however, lead to the growth of new industries and more jobs, especially in the service sector. There seem to be barriers associated with the way established industries employ well-educated young people and the academic environments' (in)ability to make contact with existing business and industry, to create offshoots and to stimulate the establishing of new enterprises.

This illustrates how complex such connections really are (Diez 2000, Sternberg 2000). It may well be that a research environment is unusually innovative and is the source of many new ideas and products, but the environment itself and the regional community does not have the ability to translate this into economic activity and jobs. On the other hand, there may be other communities that enjoy this capability, even though they lack such research enterprises. In their discussion of learning societies and innovation systems, Asheim & Isaksen (1997) point out that the north-western corner of South Norway lacks heavy industrial research and educational environments that are linked to the local industrial enterprises. But is this necessary, if industry itself has the flexibility and competence to "steal" ideas from each other, from other environments and regions and translate these into good products (Diez 2000, Isaksen 1997)?

The question is whether such an area could actually do this even better and more effectively if there was in the region a well-equipped R&D environment that could assist the companies and (like MIT) transfer the entrepreneur culture to students and employees. Such "learning or dialogue processes" must as their starting-point have the actual situation and needs of business and industry. The challenge is to get the actors in business and industry and in the R&D and consultant environment to speak to each other in such a way that it is possible to develop mutual understanding and trust and mutual knowledge aimed at concrete action (Storper 1997), which need proximity (Arndt & Sternberg 2000) and no cultural and institutional barriers (Koschatzky 2000). It is not sufficient to activate random individuals in companies when both management and staff need to change their understanding and practice. Proximity is not enough, if the R&D environment does not have the finances, ability, will and competence to enter into meaningful dialogue and co-operation processes with business and industry. Business leaders must also experience the contact as valuable - and not such that researchers have to be taught by business and industry and that they "steal" ideas and solutions, in the way several of the executives in large concerns in the north-western corner of Southern Norway claim has been their experience (Amdam 1998).

Is education and research activity important for regional social and industrial development?

Even if it is not possible to point to so many direct innovations in business and industry as a result of regional state R&D institutions, they can still be important indirectly. From the point of view of regional economy, such activities must be compared with other export activities. The establishing and running of such institutions is to a great extent financed by way of the national budget, i.e. that the activity earns "export revenue" for the region. For example, in the Volda region the 220 staff and over 2400 students at the University College provide the region with revenue that forms the basis of at least as many jobs in various service industries (probably about 250, Mønnesland 2000). With a regional population of around 18,000, it would not be wrong to claim that well over 10% of the population are directly dependent on the University College, probably more. Analyses carried out by Mønnesland (2000) show that the University College and its students are responsible for 13.4% of the regional GNP. The environment also provides the basis for more advanced service industry than the region would have had without that environment, for example Norway's largest mail order bookshop and the second largest in the sale of books on the Internet.

Another "quantitative" argument is tied to the fact that vocational education ought to take place regionally because this helps to keep the younger generation in the region. But the regionalisation of education also creates other challenges. An important link in the development of regional

knowledge and industry would seem to be that young people move away to other communities and receive impulses that they bring back with them. Much of the "French" industrial (self)development in western Norway would appear to have just such a background (Wicken 1997), often by established industries and companies being further developed through impulses from others. Nilsson (1998) also points to the vital role of people who move to, and back to, the area in creating social and industrial change, since they are often not tied by the traditions, norms, etc that form a barrier to change.

Private business and industry that competes on an international market is open to outside impulses. In fact, it is a pre-requisite for survival, while the educational system, both because of its economy and traditions, seems to be far more closed. A close co-operation is actually necessary in order that business and industry can stimulate the public system for the spreading of knowledge! This raises the question of whether a good deal of such dissemination of knowledge and teaching today can in fact be best organised by private business and industry itself, in close co-operation with public actors.

Regional identity and self-esteem are important for regional development. A typical feature of modern society is that, if members of that society wish to live in a certain local community or region, the opportunities for doing so exist for those who are well qualified. Modern communication systems make it possible to distinguish between dormitory communities and job networks in a completely different way than previously (Törnquist 1997). This means that if an area is attractive initially as a place to live, so that the "migrants" move there, this will in itself create new jobs (household services), but also in that well-qualified people move in and bring their work with them or establish their own companies (Nilsson 1998). In this perspective, it is the migrants who are the bearers of innovative capabilities in society and business and industry. Ought the strategy be to develop strong local and regional identities in young people, so strong that they want to return after having gained valuable impulses and knowledge in other regions?

Is investment in special programmes the solution for building innovative competence in business and industry?

National public organisations like the Norwegian Research Council have, among other things, responsibility for producing and spreading knowledge to enterprises and business environments. And as Isaksen (1997) points out, such activity involves great challenges, both in the actual dissemination process and the learning process that follows. The normal dissemination model is often instrumental and linear. There is great faith in printed matter and lectures, whilst the needs of both business and industry and society as a whole very often require more interactive and dynamic learning. But this demands that those who are to disseminate have both knowledge of their subject and competence in communicating - that they from a human point of view are capable of and have the resources to participate in ongoing mutual processes that are designed to spread knowledge and develop competence and knowledge (Amdam 2000, Lagendijk & Cornford 2000). This requires the establishment of local and regional networks based on voluntary personal and balanced communication and mutual learning between "communicator" and "participant". It also takes time to develop personal networks and build mutual trust between the actors, and to focus on the real challenges and needs.

One of the most common approaches nowadays is the organisation of national development work as separate programmes on a limited time-scale. In principle this means that separate organisations and separate networks are established for each individual programme. Which actors are involved is often characterised by competition (e.g. between research environments and researchers) and which enterprises are mobilised as partners. If it is not possible to build upon previously established networks and co-operation, this means that new patterns of co-operation have to be established all the time and that those that are established easily break up when the programme or project is over. As has been pointed out, among others by leaders of industry in the north-western region of

Southern Norway, this also leads to a situation in which their requirements as to knowledge often have to be adapted to suit the planned programme from above instead of such investments taking note of actual needs (Amdam 1998).

Typical of many regional innovation systems that work well is long-term co-operation between personal actors who trust each other. Personal contact with and confidence in clients, suppliers, banks, consultants etc are, among other things, emphasised by leaders in business and industry as being particularly vital in the initial stages (Amdam 2000). For example, Danish furniture manufacturers have co-operated on average for 13 years with their main suppliers and customers (Nilsson 1998:96). This applies in particular to small companies that have a lesser capability and capacity and less time than the larger concerns to establish and maintain new relationships.

Can it be the case that investment in programmes favours the large companies, who are often also represented on the organising committee for the programme etc? Is it at all possible to reach the many small businesses through investment in centralised development programmes? Is it not completely necessary to establish local and regional networks and co-operation programmes in order to reach the many small businesses, and that such structures need to be reasonably permanent over a period of time? As Arndt & Sternberg (2000) have shown, research institutes co-operate more with big companies then SME's.

Is the sector organisation in the public sector an obstacle to regional innovation?

One of the great challenges facing regional development, is the conflict between functional and territorial development and control in our society (Friedmann & Weaver 1979, Bennett & McCoshan 1993). As a result of the widespread public sector organisation, activities such as e.g. research, education and the dissemination of knowledge considered to be the responsibility of a particular sector, from the Ministry of the Church, Education and Research (KUF) at the top and down to state, county and municipal institutions as the executive bodies.

In the same way as in. e.g. regional policy, we can refer to a narrow and a broad field of policy. The *broad educational policy* views education as a tool for the development of society, making it coincide with and an integral part of the whole of social policy and the broad regional policy. The perspectives discussed in the previous section belong to a large extent in this field of policy. The narrow *educational policy*, on the other hand, is concerned with an optimum production of education, of the relationship between fully qualified examination candidates and costs etc. Instead of complex and wide-reaching aims and expectations to the institutions involved, designed to maximise the development of society, the sectorial aims of education are clear and simple - as are the systems that reward performance and achievement.

Pushed to extremes, this means that KUF expects other sectors to organise, be responsible for and finance the broad educational and competence policy. All public enterprise has enormous regional consequences, in some fields greater than in others. Even so, it is typical that the sectors attempt to ignore this fact. Sector policy is set up against regional policy, and regional policy is in itself "sectorised" as the responsibility of a sub-department in the Ministry of Local Government and the Regions.

As with other developments in society, regional development is linked to the development of certain geographical areas such as a state, a job market or a commune. In many contexts, the state is too big and divided into too many sectors, and the communes are too small to be in a position to function effectively as political partners in co-operation with other actors in society.

If we ignore the present boundaries etc, the county commune could be a political organisation on a level where modern regional development of society might be its main responsibility. If so, this task would require that the county commune was able to function as a territorial "power balance" to

sector policy thinking, for example by allowing them to have at their disposal measures that could be used on the basis of regional considerations. These could be co-ordinated with national sector measures so that this resulted in a broad educational and competence policy, industrial policy, transport policy etc. (Amdam 1998, 2000) – a comprehensive regional development policy.

In the free county experiment in Aust-Agder and Nordland, the main idea was to achieve a better co-operation between various public agencies at the county level, and especially to direct the functional measures more effectively to various areas. The result was a great success (Amdam 1996a). In the county planning process, by way of regional development programmes (Amdam 1998) and in Swedish regional development contracts, the aim is to achieve a better co-ordination in a given area of both the functional and area-specific policies and use of measures. But there is a long way to go, as long as the mental image held by our governing system is functional and not territorial.

In many ways, most of the county communal activity today is "contract production" of services for the state. The communes and county communes have become the most important producers of welfare in the welfare state, while their fundamental political responsibility, to develop the whole of society in co-operation with all the other actors, is easily pushed into the background. This also applies to the policy of establishing competence on a broad basis.

The civil society and business and industrial development

International research shows that the most distinct differences between communities and regions that do well in international competition and those that do not, is that the latter have poorly developed social institutions and organisations (Bennett & McCoshan 1993, Stöhr 1990, Nilsson 1998). The successful regions have a rich organisational life, the inhabitants take responsibility, there is good and open communication between key social actors, the political organisations and institutions enjoy popular support and they work for their region locally, regionally, nationally and internationally and in relation to sectors and organisations (Putman 1993, Törnquist 1997).

Regions that function poorly are characterised by "hierarchy" and "power centralisation", i.e. elites and routines have been established that are more concerned with controlling and restricting initiatives, especially if they have been taken by others than the "chosen few". The "third sector" (the civil society) is poorly developed and there is poor communication and co-operation between political bodies, market institutions and the "third sector" (Stöhr 1990). Such features can be reinforced if the society has a "wage earner culture" with class conflicts rather than a more egalitarian "independence culture" (Wicken 1997).

A pre-requisite for, among other things, innovative activity in business and industry is to succeed in involving the whole community in innovative development processes. This requires social structures that support and pass on creative thinking and innovation, flexible institutional structures and a high degree of local interaction and co-operation - a local community spirit with which to meet common challenges. In addition to industrial entrepreneurs, "social entrepreneurs" are also necessary, i.e. internal and/or external development agents who can be participants and stimulate others in such mobilisation processes (Amdam 2000).

Stöhr et al (1990) believes that the fundamental pre-requisites for development, initiative and entrepreneurial capability, are to be found latent in all populated areas, in urban as well as outlying districts. Through studies of more than 50 examples from the whole of Europe, they found these common features as regards what stimulates and prevents a regionally initiated development:

Entrepreneurs. In virtually all the examples of industrial development, as well as of social changes, the initiative was taken by certain *key individuals,* entrepreneurs. Very often it was not those one would have expected to have played such a key role, that is local administrators and politicians or leaders of industry, but "unconventional" initiators such as a local vet, a doctor, a retired officer or other "social activists", i.e. many "informal" entrepreneurs. This finding corresponds with Norwegian surveys, see e.g. Arbo & Bukve (1990). And such entrepreneurs can work in support of both collective and private activities. For example, the establishment of co-operative business organisations and educational and advisory institutions from 1860 onwards, was extremely important for the industrial development in many local communities and regions in Norway (Teigen 1999).

Networks and arenas. The existence of entrepreneurs was an important but not sufficient prerequisite. To be effective, the entrepreneur (especially an external one) had to have access (or gain access) to existing local information and knowledge through *social and institutional networks.* They had to work through local networks, or if necessary adapt/change or establish such networks. It was particularly important to establish new relationships and networks, if there locally had been different fractions that were isolated from or hostile towards each other. Like local development agents the entrepreneur had to build up new arenas and networks in order to link together various local actors and institutions, and to motivate them to co-operate.

Very often *external threats* were necessary to make the actors motivated for such co-operation, or to let new actors become involved. Furthermore, it is important to have *high local mobility of relevant knowledge and information* along formal channels such as e.g. a local newspaper, the professional press or as intensive social interactions. Ringholm et al (1994) have shown that the planning processes linked to communal and county communal strategic industrial planning in the main have functioned in this way when this work was initiated in accordance with the new guidelines from the Ministry of Local Government and Regional Development (KRD).

Local identity. The key actors must be able to identify with the local community and take an active part in it, but do not need to live locally or to have moved back there. In fact, people who have moved back to the area often find it easier to take the initiative and to gain space for action (Nilsson 1998). An externally recruited leader of a local factory in an international concern can also lead internal and external innovations. The pre-requisite seems to be that the actor in question can expect greater advantages from local rather than external co-operation or interaction. An example is Stabburet's pizza production in Stranda. Threatened with closure and with knowledge of the concern management's line of thinking, the workers increased productivity by 40% in an active co-operation with the local chief executive (who was an outside man) and the commune, while workers at other factories went on strike. The result was that the total production of pizza was transferred to Stranda (Amdam et al 1995).

Dialogue, trust and partnership - strategies for the development of regional competence

Co-operative processes between private business and industry, public sector activity and the civil society are closely linked to the development of the regional community's capability and *institutional capital* (see figure 1). Healey et al (1999) divides institutional capital into knowledge resources, relational resources and the capability to mobilise.

?? The regional community's reservoir of *knowledge resources* depends on supply and use of a broad wealth of knowledge and competence, the continual reflection on and development of range and frames of reference for this knowledge, the broad involvement of actors and the continual introduction and invention of new ideas and a renewal of those already established.

?? *Relational resources* are linked to partnerships, networks and co-operation and power relations and structure between actors, and can, among other things, be developed through a strengthening of relationships and channels between actors, the development of clear nodes to which as many actors as possible have access and support, the linking of networks by establishing common arenas and joint processes etc.
?? What is essential, however, is that in order to register, develop and exploit such resources, the regional community must have the ability to *mobilise* in relation to challenges. To do this, the community needs agents of change (entrepreneurs), arenas, access to methods of mobilisation and not least a common understanding of and acceptance of visions, possibilities and the room for action.

Key factors are trust, co-operation and relationships between people (Amdam 2000). Törnquist points to the different development in human beings' technical range and reach. Technical range is linked to the possibilities for moving material, people and information geographically. Especially the technological revolution has meant that the technical range has "exploded" in the last 100 years. In the context of technical range, the whole world is rapidly becoming a "global village". On the other hand, the human reach associated with biological and mental capacity, to the ability to understand and include the world around us in a mental sphere or field of interest. This reach is changed through one's own experiences and through impulses and information from outside. At any given time, something is either within or beyond a person's reach.

This field of tension is particularly noticeable when it comes to competence development. On the one hand, there has never before been so much knowledge so easily accessible as there is today, especially via the Internet and other modern aids. On the other hand, this knowledge is not of any use until it comes within human reach, it must be understood and learnt and it has to be recognised as important for one's own business, personal development, in fact for the development of society. In fact, it may well be the case that the ever-increasing amount of knowledge mixed together with empty information and disinformation make such learning more difficult than earlier. The interference is simply too loud or great. If this is correct, it means that there is no point in focusing on the production of general information and the external passing on of this in connection with regional development work, but rather on:

?? *Production of knowledge* that is related to the region itself, to the business and industrial situation in the area, specially strong and weak aspects, challenges, capabilities etc in business and industry and in society at large. What is it that is special and characteristic? What sort of production does the area enjoy special advantages for, on the basis of locally based knowledge and tradition which can be further developed to form new products and open new markets through development and a fresh supply of knowledge? The goal is to increase the competence resources in the region.

?? *The capture and sieving of external knowledge* that can help to increase the capability to meet new challenges and to implement changes. The focus has to be on the reception of knowledge, passing it on internally and learning in business and industry as well in the community; on processes that function from the inside and outwards and which contribute to expanding the human reach. How can we stimulate people to go out and grasp the knowledge they need? The aim is to increase the relationship capital in the community.

?? *The linking of internal knowledge production* and the grasping of knowledge externally into joint learning processes which further the development of the region as a special area -and of business and industry as part of this whole. This will require processes and arenas in which key actors meet each other and develop genuine and deep-rooted dialogue that can lead to the sharing of ideas, the generation of ideas, innovations and the building up of trust (Amdam 2000), i. e. to mobilisation.

Those of us who are on the outside, cannot grasp what exists in certain persons' or region's reach and what they need of new knowledge. Only they alone can do this themselves through their own processes of development and recognition. What we on the outside can do, is to remove institutional frameworks and obstacles to such processes, e.g. by altering rules, changing the working methods of public activity, by arranging for private activity, incitement, the creation of arenas and other contact work. One must also change attitudes, counteract destructive "precedence" and tradition, and otherwise stimulate people and areas to themselves work actively to develop the reach between each other. This requires networks between persons, but first and foremost binding co-operation based on trust. Networks are the most essential means of linking a group of actors to others whom they influence or are dependent on in some way or other. Networks are also a mechanism for the exchange of information and service in support of economic development. But to achieve an active regional development, the actors also have to undertake to co-operate. In the opinion of Bennett & McCoshan (1993 p.212), this requires of regional public and private actors:

- Acceptance of long-term development structures and strategies, and binding co-operation to achieve change and improve quality
- Acceptance of an active involvement that aims to change the working methods of each individual actor, and the working methods of co-operating actors, in order to establish a total system that functions better.

The above demands may result in the development of *partnerships* throughout the system (Mariussen & Virkkala 1999). Partnership can range from consent between actors to work together towards common goals (e.g. the free county experiment) to formal agreements that regulate work sharing and responsibilities (Glosvik & Amdam 1997). In the span of possibilities, the actors can co-operate as relatively equal partners. Even so, it is important to recognise that the parties are not equal. The co-operation will be more important for some actors than for others, and actions can be "forced on or dictated to" some actors out of consideration of others, e.g. because of economic strength or the actual possibilities of implementation, on the basis of the needs of all involved. Such circumstance must be recognised by the co-operating partners and if necessary, by way of compensation for disadvantages in the short or long term. Trust and partnership must be based on the fact that all actors are responsible for ensuring that no one loses out as a result of the co-operation. Partnership is a means of stimulating long-term co-operation between actors that will extend their reach.

If partnership that builds competence and extends reach is to be developed, it demands great changes of the actors themselves, which will take time. One cannot expect that e.g. public sector agencies suddenly and spontaneously will accept new roles and the increased influence of private actors. It requires co-operative learning processes that make sure that the actors understand that partnership is a more effective way of working than alternative, domain limited and national standardised strategies. This requires work processes and changes step by step, from a reactive to a proactive approach based on regional challenges. The goal must be to develop proactive public agencies as well as private enterprises and organisations. By way of an active and long-tern partnership, these will be able to create a self-supporting local and regional development. Proactive organisations and working methods mean that the actors themselves take the initiative to co-operate with other actors instead of waiting for them (Amdam 1998). Especially in public activity that is responsible for business support services, it is normal for the applicants to get in touch, whilst "active contact work" is easily felt to be a situation in which not all the parties involved are treated as equals.

Proactive work involves systematic differential treatment in order to reach concrete goals. To succeed, one has to pick out those persons and businesses that show an ability for innovation and change and that can involve others through their own networks. Those who are mobilised must also help to mobilise others (Friedmann 1992). But this requires political and social legitimacy, and a

common understanding of the fact that this is the right strategy with which to achieve long-term aims in developing business and industry and society as a whole.

It is with good reason that Michael Storper (1997) points to dialogue and trust as the two most important strategies for breaking out of institutional chains in complex communities and organisations. But dialogue and creating trust require continual and long-term relationships between actors, with e.g. the development of mutual and balanced dependency (Amdam 2000). The challenge is of course: How can one establish far-reaching and essential dialogues between actors and gradually build up trust between them, when to begin with, there are no relationships, arenas or processes that make this natural? And if the distrust between actors is strong: How does one arrange for conversations that can clear up these relationships? These are essential questions in all learning systems. If one does not succeed in these efforts, it will not be possible to develop learning economies or learning societies (Amdam 2000). In other contexts, the challenge is more fundamental: What can be done when vital groups of actors with relation to competence do not exist at all?

In well-functioning regions, good networks have been established involving actors with reasonably clear roles related to initiative, innovation and other types of processes of change. Tradition and earlier development work will decide whether the key actors are public or private in any given region. This is not so important, as long as the system and the community function well. In public planning and development work, one ought to give support to and stimulate such networks, arenas and actors, instead of establishing alternative processes and networks.

It is a different matter in regions where such structures are weak or non-existent. In order to take the initiative for change and to implement strategies, one needs a stable organising and responsible proactive organisations with high legitimacy in the regional community. As I have shown above, such processes must enjoy wide support in the regional community, mobilisation for change must take place from below and across a broad front. Actors from outside can stimulate such processes, but they cannot take responsibility for them. The role in building out the community that is held by democratically elected bodies, make it natural to demand or expect that such actors take an initiative towards improvement. As an aid, one can use mobilising planning methods like; for example, those discussed in Amdam (1992, 1995).

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