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# Innovation and action research

Bjørn Gustavsen

In the Western economies there is a growing focus on innovation as the key to economic growth. In spite of its orientation towards transcending the given, and creating something new, action research has so far played a limited role as a resource in innovation. Departing from practice-driven innovation and the need for collaboration between many actors, a key role for action research as promoter of joint inquiries in dialogical form and associated action is described and discussed, drawing on experiences from action research programmes in Scandinavia. The core challenge for action research is not only to promote certain forms of collaborative inquiry and action, but to reach a level of scale, or mass, that makes innovation possible.

**Keywords:** Action research, innovation, dialogue, social constructivism

## Introduction

As more and more mass production is moved out of the Western economies, these economies need to create products and services with a complexity and knowledge content that cannot easily be copied. This has brought the issue of innovation to the forefront, as the probably most important challenge these economies are facing.

While innovation in the nineteenth century was largely done by practical people facing practical problems, the post World War II period came to see science as the most important driver in innovation processes. Science is supposed to perform the basic leaps forwards in knowledge; innovation is a question of applying, exploring or exploiting these leaps.

This view on innovation as a “linear” process starting with science and ending with commercially relevant products and services has been questioned; in fact there are probably few issues that have been subject to more discussion in recent years. Since all actors, when they are facing the challenge of laying the ground for innovation, are looking for guidelines to the future, rather than interpretations of the past, one should expect action research to play an important role in these discussions. This form of research is, after all, a form that aims at structuring the actions of today so that they lead to certain outcomes in the future. In actual practice, the discourse on innovation contains few contributions from action research, and even fewer that gain recognition in the discourse. There are many explanations for this: one is that to introduce action research as relevant to a specific discourse is not only a question of arguing the positive benefits of this kind of research in the abstract. There is a need to specify, in concrete terms, how this kind of research actually can contribute. The purpose of this article is to describe and discuss one line of reasoning of relevance in this context, with associated examples.

### **Practice driven innovation**

When Ingvar Kamprad founded IKEA, the basic idea was to bring together two facts: (a) people do things in their homes (b) people have furniture in their homes. This idea emerged in a context as far removed from science as it was possible to come, at least in Sweden. The Småland region has the lowest average level of formal education in the country, no institutions of higher learning and very little orientation towards formalised knowledge. It was, and still is, however, the most highly industrialised region, with more than 40 % of the workforce employed in industry. Among the industries, furniture is a major one. In the beginning it was the ability of this local industry to participate in the project that made the realisation of the idea possible.

When this author had occasion to visit the region of Veneto in Northern Italy, as part of a delegation of representatives from the labour market parties in Norway, one of the cases to be presented was the Geox shoe company, perhaps the largest success in this field in recent years. The founder told how he, as a wine salesman with much walking to do, had started to wonder if it

would be possible to make a shoe that could breathe through the sole. To explore this idea he moved to the district of Montebelluna where a number of shoe producers were located from before. Here he got access to the practical experience needed to really make shoes, but could also embark on the process of solving all the problems associated with making the idea come real. In this context he also used research. One of the research organizations was, by the way, the Norway based SINTEF, due to their collaboration with Helly Hansen, a producer of breathing rainwear.

In this example, research played a role, but not as the generator of the core idea. The role was to support the development of the idea, through providing impulses pertaining to how to deal with some of all the problems that had to be dealt with in making the idea come real.

In this example, research was used to support the development of one single product. Generally, however, there are more products, processes and services involved, and a more permanent co-operation between research and enterprises:

Although generally known as a raw materials economy, Norway has a share of other industries as well. One is the microelectronics industry in the region of Vestfold, with the old naval base Horten at the centre. The industry employs altogether about 5000 people, distributed across about two hundred enterprises, the majority employing very few. Although a few belong to the world leading within market segments of some size – like SensoNor in sensors for the automobile industry, for instance in airbags, and Vingmed in technology for diagnosing heart diseases – the market segments are numerous and very small. How is it possible to sustain continuous processes of innovation in a large number of segments, when the resources available in each separate enterprise are very limited?

Even in a sector like microelectronics, most of the innovation processes are made from practical experience and knowledge of markets. The practical experience is, of course, generally made on the basis of a high level of education, and working in an advanced technological context. It is, however, the people in the enterprises who are the key drivers in the processes of continuous innovation. Ideas and perspectives can emerge out of all activities in which an enterprise is regularly involved, from materials via processes to

market. Often it is the combination of ideas from different operations – where each idea may be quite well known – that constitutes the basis for the innovation.

As far as science is concerned, there is a co-operation with the regional university college. The main contribution from the college is education of engineers in microelectronics, to supply the enterprises with people with a relevant education. Along with this, there is, however, a growing contact around the use of research. This is not done by research providing basic ideas for exploitation by the enterprises, but mainly through the college adding elements to the experience driven processes. Each process implies confronting all the issues associated with bringing a product from idea to market, and research contributes to several. To do this it is not necessary to have world leading knowledge – something which a regional college of modest size can seldom have anyway – but to have the right knowledge in relation to each specific challenge.

To achieve this, there is a need for continuous mutual adjustments between the enterprises and the college. Unless the adjustments are close, the contributions of the university college will be of little value. These adjustments, in turn, demand a close collaboration, made possible not least by the fact that the college is located in the same place as the majority of the enterprises.

The enterprises need not relate only to the college, they also need to relate to each other. In fact, there is no way in which a small college can serve a large number of enterprises if they act without co-ordination. Against this background, about 40 of the larger enterprises have formed a formal network for co-operation, called Electronic Coast, which has come to constitute the main platform for co-operation with the college.

Successively, the network co-operation has moved beyond the co-ordination within education and technology, to encompass other issues. Central in this context is the need to develop the network itself. One response to the need is a management development programme where a core issue is to expose the participants to network-related issues of communication and self-reflection. Responsible for organising the programme is the college. A study

of the effects of this initiative on the strength and density of ties within Electronic Coast shows a clear positive development (Gausdal, in prep).

Another issue that has been taken up pertains to the work force and the local labour market. The enterprises are dependent on a qualified workforce, at the same time as they face a certain amount of risk; if a major effort at innovation does not pay off, people may have to be fired. If the next effort succeeds, there is a need to hire them anew, but by now they may have moved elsewhere and no longer be available. To counteract these problems, a number of the enterprises have developed a joint labour market, in the sense that they exchange people and tasks in situations where layoffs threaten some of the enterprises, whereas others may be able to find employment. So far, this has been a success.

### **Experience and innovation**

That there is often a major gap between science and innovation is not unrecognised. Rather, in several contributions to innovation theory this gap has been placed in focus. One example is Latour (1998), who identifies the gap as one between science and research. While science is the validation of knowledge according to a system of strict rules and criteria, research is much more of an open process characterised by imagination, vision, exploration and experimentation. What is called for in innovation is primarily research; science is more of a background. Gibbons et al. (1994) describe the major changes that are taking place in both science and research under the pressure to become more practically relevant. Cooke (in prep) underlines that innovation is exploitation of knowledge, not application. Although these – and many other – contributors to innovation theory place a strong emphasis on the break and non-linearity between science and innovation, they still have a preference for linking innovation to ideas generated in research and science, and a corresponding tendency to play down practical experience as a generator of innovation.

In the above examples, the point is that the core idea underpinning the innovation does not come from science. It may be more or less vaguely related to science, but the core emerges with actors who operate directly in the inter-

face between production and market. Research (which will be used to cover both research and science) is, however, not absent. It plays a role – and one of increasing importance - in the processes that are called for to make the ideas come real. When a local college can do this, it is because the point is not so much to have world leading knowledge within one specific area as to have adequate knowledge within a number of areas. The major challenge facing each supplier of knowledge is to be at the right place at the right time, and deliver those elements of knowledge that can help bring a specific product or service from idea to market. It is the close and continuous co-operation that makes this kind of relationship possible, since it makes it possible for the college to orient its efforts exactly towards those points where the enterprises face their needs. On the other hand: for this to function the sum total of enterprise-related tasks must constitute a meaningful whole for the researchers. Otherwise, the research tasks will appear as a haphazard running around, with little long-term positive consequences for the researchers and a corresponding negative impact on recruitment, effort and quality. Consequently, another side of the co-operation is to shape, organise and co-ordinate tasks in such a way that they constitute meaningful challenges also from the point of view of research.

While concepts like “innovation systems” and “triple helix” (Etzkowitz & Leydesdorff 1997) can be applied to the Vestfold electronic industry co-operation, its roots in practice driven innovation makes it different from what is typical in science driven innovation. In the last case relatively few actors are generally involved; usually a combination of scientists, experimentalists, business strategists and venture capitalists, while, say, ordinary employees are generally absent. They may enter the picture, but only at the stage when the main outline of the product or service is defined and the challenge is to get the production apparatus on its feet. In experience driven processes, the impulses out of which the basic idea for the innovation emerges, generally comes from a wider circle of actors. To lump these – and other – configurations of actors together under one heading like “innovation system” is legitimate only when the perspective on the interaction characterising “the system” is rather undifferentiated. In most innovation theory, this is the case in the sense that relationships are something that either exist or not, at best divided

into a few levels, like “strong”, “medium” and “weak” (i.e. Granovetter 1973). If we shift the perspective towards other forms of theory like interactionism and constructivism (ie. Shotter 2005; Shotter & Gustavsen 1999), the picture changes quite radically. The process of creating the appropriate forms of interplay between people moves into focus, with a corresponding need for a substantial conceptual apparatus and associated research efforts to grasp the various issues involved in establishing and maintaining a process of communication and shared work.

### **Constructing the interaction**

While the notion of “triple helix” may look simple on paper, descriptions of actual examples of efforts to create interaction between enterprises, research and public authorities – like Totterdill (in prep) – show immensely complex processes, taking years to build up and further years for the benefits to emerge, to which can be added still further years to counteract the setbacks.

Experience from a broad range of action research projects,<sup>1</sup> indicate that to establish the requisite forms of interplay is, in itself, a demanding process. Haga (2005) reports a case where two process companies located along the same fjord recognised that they would have obvious benefits from co-operating, one of them being that one of the enterprises could use waste from the other in its own processes. From recognizing the possibility to carrying it through was, however, a complex process. Co-operation did not primarily demand declarations from top management; the critical issue was to involve all the people in both enterprises that had to be involved to meet all the practical, everyday challenges that had to be handled for the co-operation to provide the benefits sought for. This actually implied mobilising everybody within the enterprise, not least, by the way, the shop floor operators who had to handle most of the issues involved.

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<sup>1</sup> Most of the following cases emanate from the Value Creation 2010 programme and its predecessor Enterprise Development 2000. The programme is initiated and financed by the Research Council of Norway, the Norwegian Confederation of Business and Industry, the Confederation of Trade Unions and Innovation Norway



Qvale & Holstad (2005) describe the transformation of an old but substantial industrial area, that was triggered off by the usual process of outsourcing and downscaling of employment that generally takes place in environments of this kind. The transformation has implied new relationships on a number of levels within a number of areas. All plants have needed to step up internal processes of modernisation to become more competitive. Together they have developed a number of new services within areas like maintenance and training, partly to rationalise support functions, partly to create new services to sell. Together with local and regional authorities, they are creating a new resource platform, centring around the building of a pipeline for North Sea gas. Excess laboratory capacity has provided the platform for the formation of new activity, one of them a laboratory for research and development within new areas like pharmaceuticals. To achieve the new level and scope of co-operation it has been necessary to overcome numerous blockages and hindrances, some of them with roots back to the original formation of the industries, about 100 years ago. Class, politics, education, outlook and much more play a role for what happens when people try to build new relationships. Conflicts between people that need to work closely together can be overcome only by organising new settings for discourses, that imply meeting under new circumstances and discussing new topics (Pålshaugen 2004). They also demonstrate the complexities involved in generating these new discourses, and the need for third parties that can set new stages.

Obviously, the road to fruitful co-operation is sometimes shorter. Sometimes, however, there are also setbacks that need new initiatives. Claussen (2003) describes a network of engineering enterprises that was formed in 1989, and for a time represented a platform for fruitful discussions between managers and experts from the participating enterprises. After a while, however, the momentum started to peter out. With one exception, none of the enterprises represented in the network are large from an international perspective. The distance from management to ordinary workers are short in this kind of enterprise, and exercises like development of quality systems will tend to run idle if the employees are not included in the process. To include the employees in general in processes that do, at the same time, cross the boundaries between enterprises is, however, no simple task and probably one

of the reasons why almost no network oriented innovation theory mentions the employees as participants in the process. In this case, new arenas and meeting places were developed, that could not only trigger off relevant activities among the employees, but also link it to the network co-operation.

In several cases efforts to promote networking come to little, in spite of the obvious advantages. Halvorsen and Tunhøvd (2003) describe a case where service deliverers to the Oslo airport joined each other to have a common platform, for instance for negotiating with the airport management, but also for co-ordinating services between them, and for developing new service packages together. This effort did, however, not mature into fruitful action: The initial commitment from the more than 300 generally small enterprises involved, was not strong enough to ensure the input of sufficient resources to create a fruitful dynamics, and the lack of a fruitful dynamics reduced the interest in expanding on the network idea.

These are some examples – however briefly recounted – of the challenges and complexities associated with establishing co-operation, be it under the heading of “triple helix”, “innovation systems”, “network”, “cluster” or any other concept. There is, however, a further challenge emerging: When knowledge is to be applied or developed in a context where the leading element is a dialogue between a number of actors, the knowledge as such becomes subject to new requirements:

### **Interaction and knowledge**

An innovation process can be made subject to description and analysis, like all other social events, when it has taken place. When launching the process, the perspective is, however, different. At this time it is not known to what extent the process will be successful; often not even what a successful process will imply. What knowledge do the actors involved need at this stage?

Lacking the possibility of describing a process that has not taken place, it is common to turn to the description of processes that have taken place; generally descriptions of what other actors have done and associated theories. How useful are such descriptions?

It is fairly clear that they can never be automatically applied. All innovation processes have some characteristics that are unique. In fact, if it is to be believed that organisation matters, the point must be to do something original also in terms of organization, otherwise the outcome of the process will not be original. On the other hand: stories of what has happened elsewhere have their functions.

Much action research experience indicates that such stories – and associated recommendations – must be seen as generalities on offer. By this is meant that the stories claim validity in other places than those where they originally unfolded, at the same time as no such validity can be taken for granted. Claussen (2003) describes the introduction of quality management and business process re-engineering as internationally given procedures for a group of engineering firms. The international systems clearly performed the function of drawing attention to issues the enterprises needed to consider, and for this reason had an important function. Recommended steps and procedures did, however, not fit local circumstances and could not be applied through a form of simple deductive logics. Instead, the participants had to turn to their own histories, experiences and contexts and develop their own responses to the quality challenge. In this way the knowledge from outside has more of a dialectical than a linear function: Certain processes are triggered off, as often as not implying rejection of “general truths” and the establishment of new “local truths” instead. On the basis of experience from action research, Elden (1983) argues that understanding a situation demands a “local theory”. In constructing a local understanding, the point is not to reject general theory, but to use it to trigger off local processes that will eventually acquire their own characteristics (Pålshaugen 2004). It is the combination of elements that is specific to each local process, not necessarily all the elements, or inputs. A large number of co-operation schemes call, for instance, themselves “clusters”. The notion of “cluster” obviously has a motivation- and mobilisation effect. If attention is given to detail it is very difficult, however, to find two cases that are alike.

One reason why understanding has to be a local process where generalities are inputs, is that in most cases today there are many generalities that all claim relevance. Eagleton (2005) uses the concept of “the theory boom”

about research, that has by now made general theories so many times about so many issues that it is almost impossible to find one's way in the theoretical landscape. This may be more or less true; the ultimate point is that whatever process for whatever purpose has to be built on a discourse where the actors concerned can settle discursively the issues that arise between them.

If we see the best understanding of a situation as answering to the idea of the best argument in Habermas' analysis of communication (1994), one consequence is that the best understanding cannot be found through one understanding overrunning all other understandings, but only through a free and open discourse, where *all* competing understandings are not only treated with respect, but presented as well as possible. If one understanding wins the argument because all the other understandings have been badly presented, it will hardly be the best understanding (Bohman 2004). Consequently, it is a major requirement of the process that it can promote a wide range of arguments reasonably well. This is rather different from developing one single perspective, and trying to get this accepted through some form or other of persuasion.

The core point is that knowledge and interaction cannot be kept separate. Knowledge that is to play a role in processes that are essentially interactive needs a shape and form that suits this kind of process. In a process of interaction statements must, for instance, link to each other. There will not be much interaction if A gives a lecture on one topic, B on a second topic, C on a third, and so on, however relevant the topics may be to the content of the process. The point about having a number of actors working together is that the ideas, perspectives and arguments join each other. To join each other they must be part of the same conversation and fit each other in a dialogic process. In a real process of innovation conversations do, furthermore, not float freely. The conversations all the time have to lead to specific outcomes and these outcomes constitute the context for the continued discourse. Each separate actor operates between three poles: his or her own knowledge, experience and perspectives; those of the other actors in the process and, thirdly, what outcomes the process produce. Unless impulses emanating from all three poles join each other, fit each other and create an interesting dynamism there will be no innovation.

### **Discourses and action research**

To help structure discourses, and to act “within” them, is the core activity of most contemporary action research. Often identifying itself through concepts like inquiry, qualitative inquiry, appreciative inquiry, co-operative inquiry, dialogue, democratic dialogue, and similar, the need to discursively construct understandings is placed in focus (Reason & Bradbury 2001). There are differences, and what school of inquiry would be most appropriate, depends on circumstances that vary from case to case. In all cases, however, the point is that action research works together with other people on the task of understanding the situation and improving on it.

Action research as specific schools of thought in social research can, however, have two limitations in contexts of this kind:

The first is to focus exclusively on the social and psychological aspects of the innovation process, and neglect the other ones, such as technology and economics.

The second is to focus on processes in small groups, with limited consideration of the interaction between such groups and other groups, and of the broader social environment in which each group is embedded.

As far as the first point is concerned, process and content can only be separated analytically. A conversation is always about something and this something is, in enterprise-based processes of innovation, in most cases technologies, products and services. While social science based action research cannot go into the technological content of the process, it is important to be aware of the point that the way in which the process is structured influences the way in which this content is played into the process. A major purpose of action research oriented towards issues of innovation is to open up for a more fruitful interaction between social and technological development. Levin et al. (2002) show, for instance, why the use of cross-disciplinary teams is often necessary in the design of production plants, if the design is to adequately reflect human and social concerns. It is insufficient for knowledge of this kind to reside in a “human resources manager” or similar, to play a role of importance it needs to be discursively present on line in the design process. This point will, however, not be pursued in this context. Instead, the focus will be

on the question of the broader context of each specific effort to use action research to promote innovation

### **Practice driven innovation and the need for a context**

When Ingvar Kamprad was able to turn his idea into one of the most profitable business ventures the world has ever seen, it was because the idea emerged in a context. This context was not only a regional furniture industry, but an industry with which the Ikea founder had established contacts. He could move fairly directly from idea to the first efforts to make it real. The need for a context emerges from all examples above and indeed from almost all other examples of successful innovation that can be found (i.e. Cooke & Piccalagua 2002).

The need for a context is not only owing to the need to move from idea to practice, but also the need to have access to a broad range of potential and actual inputs, even in the development of the core idea of the innovation. The notion of network is one way of approaching this need. However, the discourse on innovation has already come to emphasise perspectives that are often even broader, such as districts and regions. This is the point where a major challenge to action research emerges:

The notion of “action”, as developed by action research, has generally had a small group context. The reason is simply that it is impossible to act in relation to a wide but diffuse set of actors. How can action supported by research reach out in scope and magnitude? This has been the core issue in several action research programs in Scandinavia after 1980, including the ongoing Value Creation 2010 in Norway. Below we will look at some of the main steps involved in the evolution of these programs:

The roots are found in the early 1980s, when a period of much debate and conflict concerning issues in working life was replaced by one of more co-operation. In Sweden and Norway the labour market parties made agreements on local development (Gustavsen 1985), and in both countries research was pulled in to help make the agreements come real. The processes to actually unfold became highly complex, and in this context only a few points can be brought forth:

While action research efforts in working life in the 1960s and 70s had been strongly oriented towards design of jobs and workplaces, the programs to emerge in the 1980s placed a main focus on the communication between the actors concerned, and between these actors and research (Gustavsen 1992; 2001). The reason was not to perform “a linguistic turn” per se, but to respond to a growing need just for innovation, or rather for improvement, as it was generally called at the time. Whereas implementation of ideas about socio-technical design implies seeking a theoretically pre-defined optimum, a focus on communication could be kept more open and future oriented. Focusing on communication means to focus on the tool in which the future is shaped, not the future itself.

A second main point in this phase was to make each enterprise project orient itself outwards, in the direction of other enterprises and other external actors. For this reason, the basic unit of development in the LOM program in Sweden was defined as four enterprises in co-operation. The reason was to make the enterprise actors accustomed to working across enterprise boundaries from the beginning of the process. Networking demands much learning, and this learning has to start at some point. Action research support was to be given to each unit, and as far as possible include all four participating organisations in specific events (Gustavsen 1992).

When the enterprises had become accustomed to working together in small networks of four, the idea was to link such units into broader networks. The program turned out to be too narrow a framework for carrying out this chain of evolutionary steps, a process that turned out to have a high degree of complexity (Naschold 1993). It did, however, succeed to an extent sufficient to demonstrate its viability. Altogether four more substantial networks appeared (Engelstad and Gustavsen 1993). The most complex one was the network emerging in the region of Värmland, with the Karlstad University as research support. This network came to encompass 15 different configurations of co-operating organizations, ranging from industrial enterprises via municipal services, to initiatives to create new activities in the region (Engelstad 1996; Räftegård 1999). When differences even within one network were large, they were even larger when comparing the networks. It had to be ac-

cepted that the process could take on a number of different shapes, and that each shape could need a specific configuration of knowledge.

This was one of the experiences that formed the background for Enterprise Development 2000, a program to appear in Norway in 1994 (Gustavsen et al. 2001). In this programme much more effort was placed on constructing each of the projects within the program. From the beginning a broad distribution across the country was aimed for, and more specific requirements concerning number of researchers and enterprises involved, and the relationships between them, were applied. Each project was expected to go through the same cycle – from single enterprises to small groups of enterprises to broader networks of enterprises – but to do it in different ways and developing different knowledge as part of the process. In actual practice the projects came to span from fish processing industry in the northernmost part of the country, to heavy process industry in the south. Engineering, furniture, meat processing and other industrial branches were represented, as well as a scattering of non-industrial sectors.

A core tool in this program was the dialogue conference (Gustavsen and Engelstad 1986; Gustavsen 2001). This is in itself a face to face event, but with participants from more than one organisation, the events can forge links between organisations. By focussing on communication as such, the events provided experiences and skills that could be applied by the participants in relation to other actors. In this sense the results of a successful learning was first and foremost the ability of each actor to relate to new actors and widen the circle of people in the process.

To support the outward directed development of communicative skills, a number of conferences were organised, with a “ripples in the water” effect through their location in space and time. A further part of the same strategy was to infuse other bodies – ranging from workplace meetings via project groups to co-operation councils – with the notions of dialogue applied in the conferences (i.e. Bakke 2001). In this way, arenas, events and bodies that were in existence anyway, could be brought to carry the same communicative message.

The geographically distributed projects – or modules as they were called in the programme – as expected developed differently (for overviews covering the period up to around 2000, see Gustavsen et al. (2001) and Levin



(2002)). The most clear cut example of a development corresponding to the original intentions can be found in the Rogaland-Hordaland region: Initially starting with two existing networks of engineering firms, the activities have grown to encompass close to 10 networks with about 10 000 workplaces. The core contribution from action research has been to organise a long series of communicative events, but not in an event-by-event fashion. Rather, each separate event has been part of an overall strategy where the point has been the continuous development of relationships, each step bringing the process closer to the notion of regional development (Hansen & Claussen 2001; Claussen 2003). Other modules in the program encompass the Nordvest Forum network, a mixed network of industries and services with about 50 enterprises as owners, and another 100 as users (Hanssen-Bauer 2001); the Grenland Industrial Cluster encompassing process plants belonging to some of the largest industrial groups in Norway (above; Qvale & Holstad 2005); and the overlapping networks now characterising the aluminium industry at Raufoss (Johnstad 2004).

In all cases, it was not innovation that formed the point of departure, but simply the need to survive and grow in business terms. Initially, focus was mostly on the idea of continuous improvement rather than on innovation. The networking allows, however, the experiences of each actor and enterprise to be enriched by being contrasted with the experiences of others, and the actors can easily form alliances within the networks to explore specific ideas. As the co-operation evolves, the focus more and more turns towards innovation.

The research groups that are to provide the action research support have to create the forms of knowledge that are needed to make each specific configuration moving. On a general level, this implies research under headings like communication, dialogue, networking, cluster, region, learning, development coalition and so on. Looking at the more specific details emerging under these umbrellas, the differences emerge. The knowledge needed to bring a group of heavy process plants further along the road to innovation is not identical to the knowledge needed to bring, say, a group of tourist resorts along the same road. In this way each research group becomes more and more strongly interwoven with its own local-regional partners, to eventually form a symbiosis where the contributions from each participant is not easily singled out.

### **Transcending the level of the region**

This kind of process takes care of the problem of mass up to a point; units that can be characterised as regions. The kind of regions with which there is experience from action research in Scandinavia are, furthermore, relatively small. What about higher levels of social organisation? This point has come into focus in recent years:

Imagine that we have a number of regions, each region running its own research-backed innovation process: how can the regions be brought to learn from each other? What must be done is to proceed in the same way as inside each region. The process is bottom-up; experiences in different enterprises and workplaces are matched against each other, not to settle issues of generalisation, but to provide each process with ideas for possible use. The same procedure has to be applied in linking regions to each other. This is the background for an ongoing project that aims at comparing regions from the perspective of learning from differences.<sup>2</sup> While the intention is to cover the whole of Scandinavia, the project covers at the moment three regions in Sweden and three in Norway, co-operating in pairs. The purpose is to use comparisons to uncover the characteristics of each process, so that each process can get a richer array of points and experiences on which to draw in its own work. An example:

The development of microelectronics in Vestfold (above) has a number of points in parallel with the information- and telecommunications technology development that has taken place in the region of Blekinge in Sweden, centring on Karlskrona, Ronneby and Karlshamn. The regions are of approximately the same size, the growth centres are to a large extent old naval bases, the types of actors on the scene are roughly parallel. By making a more thorough comparison (Uhlin et al. in prep) it is, however, not least the differences that come to the surface. Blekinge experienced a very strong development in the 1980s, when new opportunities, in particular in telecommunications, were explored with several thousand new workplaces as a result. To a large extent this was thanks to a small group of actors who were able to pull resources

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<sup>2</sup> This project is developed jointly by the Value Creation 2010 programme in Norway and The Swedish State Agency for the Promotion of Innovation Systems (Vinnova).

into the region, as well as to mobilise local actors to jump on the wagon. The development in Vestfold has taken place over a much longer period of time and contains no major jumps. Insofar as the 1980s may have provided an opportunity for a major leap also in microelectronics, it was not utilised. With an organic development over a long period of time, the leadership functions were far more distributive in Vestfold, and there was no small group of actors who could launch and carry through a major strategic plan for the region. On the other hand: when the setbacks came in the 1990s, and Blekinge had to see a number of workplaces again disappearing, Vestfold was then less affected. The much stronger horizontal links between actors made them better at shouldering problems associated with setbacks and downsizing, for instance the joint labour market mentioned previously. With the setbacks there has also been a breakdown of the central leadership in Blekinge; lacking such a leadership in the first place a similar development has not occurred in Vestfold.

This is not the place to expand on this example (for a broader presentation, the reader is referred to Uhlin et al. (in prep)). It is obvious, however, that even a comparison in a very sketchy form can be useful. The Blekinge actors can be brought to give more attention to the density and solidity of horizontal links and ties, the Vestfold actors can be brought to think about their mechanisms for growth, and how to utilise strategic openings in the environment. The purpose is, however, not to stay content with broad comparisons, but to go, in co-operation with actors directly concerned, into details such as the composition and functions of steering committees and other bodies and arenas with leadership roles, what notions of dialogue are operative, what groups of employees are active in the process, and so on.

Linking regions is the next major step in a bottom-up strategy for experience-based innovation. The nation state may be next in line, but this belongs to the future. In the development from the grass roots of experience-based innovation to the level of national policies and measures, the major gap today is between the region and the bodies and actors of the nation state. The nation state largely performs its functions on the basis of non-discursive impulses, generally of an abstract nature. This seems to be the case more or less irrespective of the size of the nation state in terms of territory and population. It has, as pointed out by, for instance, Toulmin (1990) and Scott (1998) more to

do with the way in which the nation state works than with the magnitude of the issues that it works with. Even though this is the point of departure, there are differences between nation states. As the Scandinavian countries are concerned, Finland has developed a discourse on innovation that is more continuous between “top” and “bottom” than is the case in the other countries (Arnkil et al. 2003). There are, of course, differences also within each nation state, with some agencies acting more discursively than others. This issue can, however, not be pursued in this context.

When regions become the core unit of development and action, at the same time as they also become the focus of theoretical developments that aim at catching the critical features of each regional process, the issue of what happens to general theory emerges. As has been touched upon above, general theory does not disappear but it no longer rules the ground. General theories are perspectives on offer, but it is up to each and every configuration of regional actors to decide what elements of general theory to pull in and how to combine them. What this process implies for the formation of theory in the long run is a discussion that cannot be done in this context. This discussion will have to follow up on the point made by Toulmin (1990): The kind of general theory that has been seen as the core target of the development of social research, is strongly associated with the nation state and the global community to emerge in the interplay between the nation states. When the region to an increasing degree moves into focus, the formation and role of social theory will have to change. Post-modernism is, however, not the answer. For a region to improve and thrive, the point is just a rejection of the notions that anything goes and that nothing is comparable to anything else. The point does not lie here but in the shift in what is the focal point of the theory formation process and the purposes that theory are to serve.

### **Concluding remarks**

When, in the period around World War II, the view that abstract science could create powerful practical innovations gained ground, the impacts on science itself were as important as the practical ones. It was not only research on nature and technology that received a powerful impulse to turn basic, pure

and abstract, so did most other branches of research, for instance research aiming at clarifying the nature of the innovation processes. The vision was to create a theory that laid bare the essential characteristics of all innovation processes; a theory that would, in turn, rationalise innovation policy and lead all local processes to a successful outcome, provided that the theory was applied.

This kind of theoretical vision has been attacked from numerous positions – phenomenology, pragmatism, hermeneutics and many more – and is defended by few today. When post-modernism started to rule the ground, the impression that “anything goes”, instead started to gain terrain.

For research with the intention of influencing practices, none of these positions are possible. The reason why it is not possible to subscribe to one single “truth” on any specific point is argued above. What, however, about the post-modern perspective? This becomes paralyzing when it is presumed that it is science, or research, which is to define a foundation. As a social activity, subject to all the challenges, pressures and doubts of all social activities, research cannot expect to carve out a position that makes it unnecessary to face all the choices other members of society have to face. Like all other members of society, research will have to find its “foundation” among the myriad values, positions, arguments and ideas that characterise society in general. Even in this context, choices do, however, not have to be arbitrary. This author finds “the democratic turn” in critical theory, argued in particular by Habermas (1994; cfr. McCarthy 1976) quite convincing, not as theory, but as commitment to democracy as a historically validated bundle of practices.

The need for pluralism, discourse, and orientation towards the future is particularly pronounced when talking about innovation. The line of reasoning argued above does, however, not have to be limited to innovation. It is interesting to note that Bohman (2004) on the basis of recent developments in critical theory, argues the same position as globalisation is concerned. It is easy to imagine an extension to other concepts and concerns.

As it becomes increasingly clear that the realisation of important social values is not a question of a blind generation of knowledge, but a question of constructing something new in landscapes that are open also as theory is concerned, action research moves increasingly into focus. It faces, in this sense, and after more than 50 years of academic controversy and mostly small and

scattered projects, a historical opportunity. To utilise this opportunity, the call is, however, not only for the ability to relate to practical processes as participants. Each specific process of innovation can demand a substantial number of actors, at the same time as each process needs to be embedded in an environment of a broader process and so on. From this perspective, the main point is not to help small groups of actors stand apart from their environment, but to help the environment as a whole generate as many combinations of innovative actors as possible.

Practical processes cannot be supported purely on the basis of instrumental values. There is a need for more than this. This “foundation” must, however emerge from considerations of preferred practices, for instance democracy as something validated by history and human preferences. If this is chosen as the closest, it is possible to come to a foundation, a further argument is added to the need to become involved, not in any kind of innovation, but in innovation anchored in ideas from many actors, who need to collaborate to make their ideas come real. Only in this way can democracy serve innovation and – even more important – innovation serve democracy.

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