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EFFECTS OF VINNVÄXT IN SWEDISH REGIONS

Final Report



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Effects of VINNVÄXT in Swedish regions

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by

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Daniel Hallencreutz
&
Per Lundequist

Foreword

VINNVÄXT aims to promote sustainable regional growth by developing internationally-competitive research and innovation environments in specific growth fields. This is done by funding needs-driven R&D to strengthen the cutting-edge competence of the respective environments and by means of strategic efforts for the development of innovation systems.

Three calls have been published since 2002, and more than a hundred regional growth initiatives have applied for funds from VINNVÄXT. Eight of the initiatives have been selected as winners, and two more will join the group in 2008.

The principal aim of this study is to investigate the impact that VINNVÄXT has made on the Swedish regions, irrespective of whether support was granted to the applicants. The study addresses the impact not only of sources of inspiration in the growth-orientated regional development work, but also the more concrete structural effects of the work.

The conclusions presented in this report are strictly those of the authors, and VINNOVA has neither endorsed, nor offered any opinion on, the issues discussed herein.

VINNOVA in May 2007

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1 Introduction

VINNVÄXT is a competition. Financial support is guaranteed for 10 years. This long-term approach is built on a notion that growth initiatives need a long-term commitment, and that in the vast majority of cases it takes at least 10 years to actually achieve a sustainable effect. The idea of the programme is also to send a signal to prospective applicants that growth in the future must be based on innovation and renewal within a potentially strong area of growth – not merely on increased cost efficiency and/or upgrading of production technology. Furthermore, the programme emphasizes that international competitiveness is a prerequisite of long-term sustainable growth, and that in the long term it will be determined by our ability to exploit new and existing knowledge commercially, to do business and to earn money in a global market. For that reason, the capacity to develop a strong spirit of enterprise and a level of professionalism with a global outlook is also identified as a key factor in the programme. Finally, the competition also requires that government, university and industry should be able to coordinate their activities via systematic co-operation in a Triple Helix. This does not mean that everyone should think or do the same thing but that everyone should do what is important for them. Thus, the goals and driving forces of the individual players should be different but the systematic vision should be a shared one – to create an attractive and sustainable region of high growth. The programme is also characterized by an unequivocal growth logic and a clear idea of the conditions that must be in place to drive successful processes of regional development and growth. This growth logic emerged from a wide-ranging programme of preparation, a programme that began with the establishment of VINNOVA in early 2001.

The primary aim of this study is to examine the extent to which VINNVÄXT has in the broad sense had an **effect** in Swedish regions – from an “effect” in the sense of source of inspiration for growth-oriented regional development activities, to a more concrete, structural impact on the work of regional development. In the study, we start from the assumption that VINNVÄXT may be thought to have made two types of effect – theoretical and as a model and tool for how to go about generating growth and development.

The study is above all empirical and descriptive. Its aim was thus to try and identify and chart different types of effect and to illustrate a) whether they are perceived as positive or negative, and b) which factors lie behind these effects. As a result, the study does not try to describe the theorizations

behind the VINNVÄXT programme itself (e.g. Triple Helix and the innovation system approach), nor does it examine the relevance of these theories.

The empirical source material for the study was based on interviews. In addition, various written sources were used for background information and reference material, for example, documents on regional growth programmes, strategy documents, applications and assessments. The study was conducted during autumn 2005 and spring 2006.

This study was performed in two phases:

- Main study (26 initiatives): interviews with process manager and director of RGP (Regional Growth Programme).
- In-depth study (8 initiatives).

In each step, the focus of the issue and the selection of information providers shifted somewhat. In Phase 1 (the main study), the information providers consisted of the process managers and the director(s) of the RGP. In Phase 2 (the 8 case studies), the information providers were players connected with – but not necessarily a formal part of – the VINNVÄXT initiative. To a certain extent, we tried to select information providers who in various ways are part of the system of support for regional innovation. The study is based on the initiatives included in VINNVÄXT 1 and 2. These are of various types. They have different histories, are located in different geographical environments, and affect different areas of expertise and innovation systems. We have tried to deal with this complexity partly through an initial – stocktaking – main study and partly through a more indepth study based on eight initiatives. These initiatives were selected in such a way as to include at least one of the winners from the first round, one of the winners from the second round, one of the non-winning initiatives and finally one of the initiatives that came into the picture in VINNVÄXT 2.

1.1 Fact Sheet: Regional Growth Programme (RGP)

Since 2003, each of Sweden's counties has been obliged to produce an RGP document for the following three years. The purpose of the document, as stipulated by central government, is to outline the strategy for long-term economic growth and sustainable development in each of Sweden's 12 counties. The RGP is a central instrument of central government towards sustainable regional economic growth and development. The programme is elaborated in each region within a partnership of local and regional players (representing industry, academia and government). The programme consists of an analysis of regional growth conditions, a programme for sustainable

development from an industrial point of view and an agreement between the players on how to finance and implement the activities. Each of the RGPs is based on a separate analysis of a number of key strategic areas:

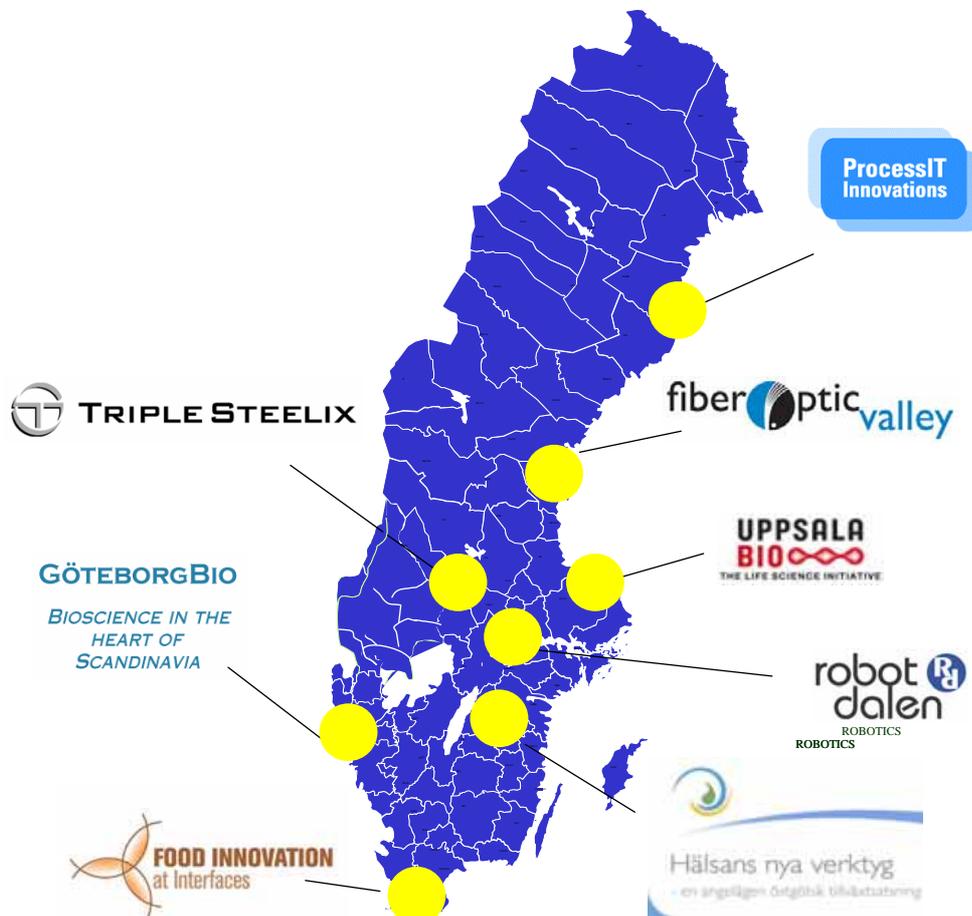
- Labour and skills supply
- Enterprise environment
- Cluster and innovation systems

The development and compilation of the RGP in each region is based on a process- and result-based method. This offers the scope for reconsideration and revision during the implementation process. One of the goals of the programme is to promote learning among stakeholders, during the compilation and implementation of the programmes.

2 The VINNVÄXT Programme

VINNVÄXT was established in 2001. As we have seen, all in all eight initiatives have been selected as winners. The first round of VINNVÄXT was launched in spring 2002. From the initial applications, certain ones were then rejected, while others were given the opportunity to take their application further. In June 2003, three winners were presented – Uppsala BIO (biotechnology), *Robotdalen* (Robotics Valley) (industrial automation) and *Innovation Gränsland* (Border Region Innovation) (Functional Food). A further seven initiatives (known as the “7-ups”) were awarded continued support for the development of their processes prior to VINNVÄXT 2004. Round 2 (VINNVÄXT 2004) produced five winners: ProcessIT Innovations in Luleå/Umeå (IT), *Biomedicinsk utveckling i Västsverige*, (Biomedical Development in West Sweden) in Gothenburg (biotechnology), Triple Steelix in Borlänge (steel), Fiber Optic Valley in Hudiksvall and the south Norrland coastal region (fibre-optics), and *Hälsans Nya Verktyg* (New Healthcare Tools) in Linköping/Norrköping (Life Science, with a focus on health care).

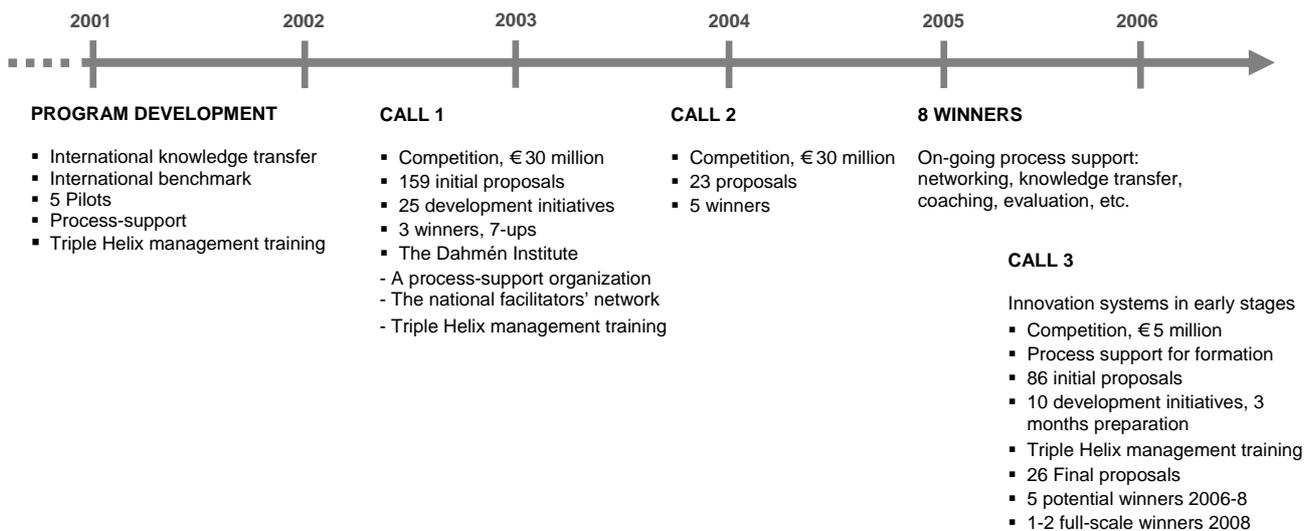
Figure 1: Map showing the eight winning initiatives in VINNVÄXT 1 & 2



The ideas behind VINNVÄXT emerged in 2001 during a wide-ranging research and analysis programme that was above all based on international benchmarking and the intelligence gained through the establishment of five pilot initiatives. This programme led to the first call for proposals in 2002, when three winners were chosen. This was followed by a full-scale call, following which we have today a total of eight actual winners. In 2005/2006, a third call was made. As planned, this brought five potential winners forward. These five will receive minor process support over the next two years, after which a further one or two full-scale winners will be selected in 2008. The five initiatives selected are:

- *Framtidens bioraffinaderi* (Biorefinery of the Future)(Örnsköldsvik)
- Smart Textiles (Borås)
- *Robusta intelligenta produkter* (Robust Intelligent Products)(Jönköping/Kronoberg)
- Printed Electronics Arena (Norrköping)
- Peak of Tech Adventure (Östersund/Åre)

Figure 2: VINNVÄXT – timeline



As regards VINNVÄXT, a number of characteristics had been identified within the framework of the programme – in the design phase for the programme itself – that were thought to typify successful growth regions and R&D environments. These characteristics were used for the selection of winners in the competition. Of course, the characteristics were also determined from various theories as to what creates competitiveness in a modern knowledge- and innovation-driven economy. However, for the purposes of this study we have decided not to enter into any detailed discussion of these theories.

VINNOVA points out that successful systems of regional innovation are characterized by the presence of (see www.vinnova.se):

- a shared strategic concept/vision for the region, within a profiled area, with a realistic assessment of the area's growth potential;
- focusing on/prioritization of a small number of future growth areas;
- a highly developed system of joint regional leadership in the three sectors of enterprise, research and government & public administration, that is capable of underpinning, driving, coordinating and building strategic alliances that develop and implement the strategic concept in practice;
- social entrepreneurs, identified and allowed freedom of action;
- a credible development strategy, with prioritized areas of action, capable of raising the innovation system to an internationally competitive level; this must be based on an analysis of the departure point of the region relative to the area of growth identified; foresight processes and technology scenarios are other useful *modi operandi*;
- development of existing or potentially strong research, training and knowledge environments in line with the strategic concept; this applies particularly to research expertise;
- research-based knowledge as a central element in achieving competitiveness in many growth areas;
- a geographical node with close proximity and high density, where a short physical distance, but also linguistic and social proximity, is important to the capacity for innovation;
- learning environments and learning situations created via a well-planned learning strategy and resources for learning;
- strong commitment by the enterprise sector;
- knowledge of business and development logic in the area of growth identified;
- long-termism – a perspective of at least 10 years.

In addition, within the VINNVÄXT programme, a specific development logic emerged – the VINNVÄXT logic – which manifested itself in somewhat different ways in the period in which the programme took place. We decided to summarize these manifestations into four main categories: the call for proposals and the long-term financing commitment, the Triple Helix based selection process, the process support and the interactive research (follow-up research).

Firstly, the competition phase (**call for proposals**) became integrated as an obvious starting point for VINNVÄXT, and also the element, along with the **long-term financing**, that most clearly characterized the programme. Secondly, VINNVÄXT developed a **Triple Helix based selection process** by establishing three separate panels (society/government, industry and

academia) and a programme board with decision-making authority, comprising representatives of the three panels. Thirdly, the VINNVÄXT programme is characterized by **ambitious process support** designed to develop an awareness out in the regions of what the implications are of building regional innovation systems and regional development processes focusing on renewal, innovation and economic growth. The fourth programme component, which may be described as a form of process support, consisted of the **interactive research** or follow-up research as defined for the purposes of the VINNVÄXT Programme. The aim of the interactive research is to link in expert action-oriented researchers or knowledge-oriented process consultants who participate actively in the initiatives in order to document what happens, how it happens and above all to help in identifying alternative procedures or strategies to realize the long term visions of the initiatives.

3 Phase 1 – The main study (23 initiatives)

The ultimate goal of Phase 1 was to try and gauge the influence (effects) of VINNVÄXT in the operational part of the initiative itself and on the work of promoting regional growth (the RGP process). Another important aspect was to try and analyze what is happening within the initiatives today, for example, in terms of activities, financing, which player(s) is/are the driving forces etc. To be more exact, the information providers were asked questions in these categories:

Process Manager

- Most important activities – which are prioritized?
- Key players – which are the most important driving forces?
- How is the initiative financed (other than by VINNOVA)?
- How effective is collaboration with research/university?
- Can you give examples of specific results – which do you think should be emphasized, e.g. new forms of collaboration between key players in the innovation system, any change in how university prioritizes areas of research, any change in society's view of the innovation system, new ways of organizing product and business development?

Contact Person(s)/ RGP

- Are you involved in any initiative that has participated in a VINNVÄXT call for proposals?
- Are these VINNVÄXT initiatives prioritized growth areas and an established part of the RGP?
- Is the VINNVÄXT initiative being held up as an example for how projects should be organized within the scope of work on regional development?
- Has VINNVÄXT influenced/changed the work of development in your region – which examples do you think should be emphasized, e.g. new forms of collaboration between key players in the innovation system, any change in how university prioritizes areas of research, any change in society's view of the innovation system, any change in the way businesses view regional development issues, new ways of organizing product and business development?

In the following sections, we will report on the results obtained from the responses in these interviews.

3.1 Which are the most important activities today?

In the case of the most important activities today, the following patterns emerged (Table 1).

Table 1: The most important activities today in the initiatives

Activity	Total	Number of winners
Develop a structural platform	14	7
Develop the organization	10	2
Mobilization	7	4
Demonstration and commercial exploitation projects	7	2
Financing	5	0
Regional development and change	5	0
New training	2	1

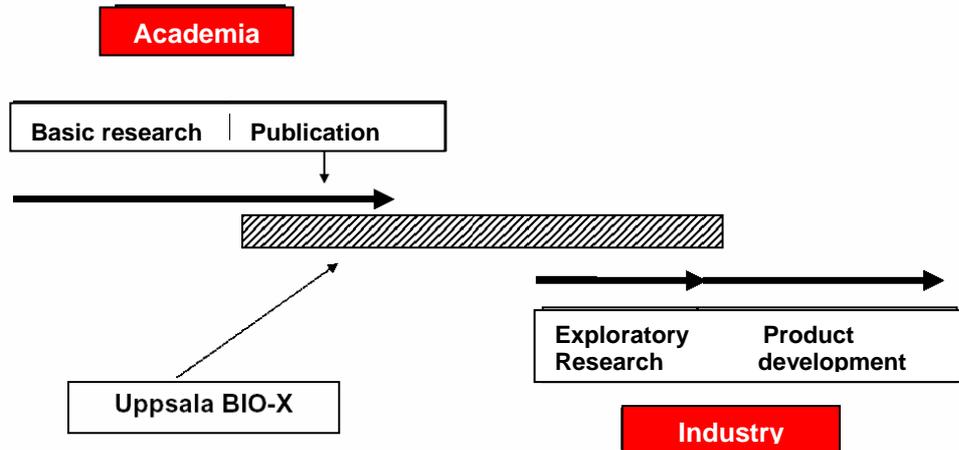
Absolutely the most important activity is developing a structural platform. Fourteen of the initiatives and practically all winners are working on this. The form of the structural platform may, of course, differ. It may involve the development of a new R&D strategy or coordination of a variety of innovation-supporting activities. If we take one of the winners as an example, Uppsala BIO, we can confirm that a structural platform is under development in the form of Uppsala BIO-X. Uppsala BIO-X is a cross-discipline, problem-oriented activity focusing on procedures, models and tools for the life sciences. The projects supported must be based on leading-edge research in cross-discipline groupings. This problem-oriented research must offer potential for creating new product opportunities for the industry of today and tomorrow. The projects must also incorporate a drive for commercial exploitation, not just an interest in research. According to Uppsala BIO's latest action plan, Uppsala BIO-X will:

- “Support ambitious cross-discipline projects with the potential for creating new opportunities for industry.
- Create new cross-functional forums. The BIO-Ångström Conference will be evaluated to decide whether the conference is to continue in 2006.
- Identify and support problem-oriented research areas.
- Support focused initiatives to create opportunities.
- Reduce cycle times for commercial exploitation of research-based ideas.”

Why, then, is this structural platform necessary? Figure 3, which is reproduced from Uppsala BIO's latest action plan, represents this graphically in the following way, namely that BIO-X – which will thus

become a long-term tool and “mindset” – will bridge the gap between basic research and exploratory research in industry.

Figure 3: Why does Uppsala BIO want to develop a structural platform?



Source: Uppsala BIO, Business Plan 2004–2005

Another area that many initiatives are actively working on – although only two winners, presumably because their organizations have to a certain extent settled down – is developing their organization. This may involve work on developing the organization or modifying the organization. Several of the initiatives studied have for example made personnel changes along the way. The activity may also involve developing a new R&D strategy focused on the regional innovation system. One example of an R&D strategy is the case of *Tunga Fordon* (Heavy Vehicles). The activity is described thus in *Tunga Fordon*’s status report in November 2005:

Tunga Fordon represents an area of focus for the engineering area of science at the University of Växjö. Projects have been conducted in workshop form in vibration technology, with the participation of companies, the University of Växjö, Blekinge Institute of Technology and independent experts. Through last year’s acoustics workshop, the University of Växjö has introduced acoustics as a standard component of engineering courses. The university intends to continue developing its resources and skills in the area, in association with Tunga Fordon

(Tunga Fordon, Status Report November 2005).

A third area is work on mobilization to bring players together. Here, it is often necessary to secure a broader support for the initiative. This is also very much to do with the fact that several initiatives will be working on

securing support for the notion of the importance of the initiative to regional development and change. Finally, it is important to note that several initiatives are engaged in activities intended to create demonstration and commercial exploitation projects. One such example is *Robotdalen* and its *Robot Till Tusen* (Thousands of Robots) project. This project focused on helping small and medium-sized enterprises (SMEs) over the robotization threshold. The idea is that the shift should increase the productivity and competitiveness of such enterprises. Within the framework of this project, more than 30 feasibility studies have been carried out at SMEs in the region, with very promising results. Of the enterprises examined, it is estimated that 50 percent could take the process of robotization further. This activity has considerably improved the conditions for retaining industrial production and expertise in Sweden. *Robot Till Tusen* has also generated five spin-offs in the form of new robotic products and activities. In addition, important strategic research in the area “Robotics for SMEs” has been brought to the fore jointly by the Mälare Valley University College and the University of Örebro on the basis of this project.

3.2 Which players are the driving forces?

As far as the driving forces are concerned, it emerged that nearly 45% (10 initiatives) are being driven by a Triple Helix constellation. Five of the initiatives are being driven by a university, six by the public sector, and two by a single player from the enterprise helix.

3.3 How are the initiatives financed?

Generally speaking, all the initiatives studied apart from four had a single source of financing. Many of the processes across Sweden that were initiated via VINNVÄXT have also sharply geared up their funding. Of course, forms of financing, as well as levels and the respective shares of different helices, vary from one initiative to another.

3.4 Changes in co-operation in research?

As for co-operation in research, we can infer from our interviews with process managers and RGP directors that this took place – or, more accurately, that changes took place here in nearly 60% of the initiatives (13). Two types of effect on research co-operation are identified: a relational effect, and a resource effect, e.g. new R&D resources came into being.

All of 11 out of 13 initiatives state that a relational change is identifiable, for example in the form of new partnerships or new training programmes or arenas. For example, in Triple Steelix, a roll-forming centre was established, a venture that, physically, will take over the premises of Crystal Valley.

Seven initiatives stated that a resource effect in the form of new constellations supporting R&D is identifiable. SLU (Svenska Lantbruksuniversitet, the Swedish University of Agricultural Sciences) and UU (the University of Uppsala), for example, have each committed themselves to BioFuel Region, and so have been added to the R&D constellations that support the initiative.

Other than the two above-mentioned effects, it may also be added that a number of separate incubator programmes (or the equivalent) were initiated. One example is the establishment of the Gothenburg Bioscience Business School, GIBBS. Another is the new open incubator facility established within the framework of The Packaging Arena by having Inova specialize into focusing on incubator activities alone. Another example is the Uppsala Innovation Centre (UIC), which is partly financed by Uppsala BIO and which is partly a result of Uppsala BIO's work on strengthening the environment for local innovation support. Uppsala Innovation Centre AB was established in 1999 for the purposes of managing incubator activities principally on behalf of companies linked to SLU and UU. Today, UIC supports the potential in new ideas from the universities, the public sector and private-sector enterprises. To consolidate these activities, several of the innovation-promoting players (including Uppsala BIO) have relocated to the *Mellanskogshuset* building.

3.5 Has the Triple Helix approach left its mark?

Well aware that we have only scratched the surface, so to speak, of the regional innovation systems in Phase 1, it is nevertheless interesting to note that we seem to be able to identify a number of effects, partly in terms of collaboration and partly in terms of VINNVÄXT as an example/model.

As regards collaboration-related effects, we found that these are manifested both as new constellations and as various types of border-crossing to create more functional regions. One example is Triple Steelix. In somewhat simplified terms, it may be said that the nomination as winner of the second round of VINNVÄXT changed the view at regional level of “a traditional, old-style steel industry” into a widespread hope for a future as a high-innovation industry. Other ripples on the water included the establishment of new or half-new constellations (or entries into new areas). Two new “formalized” nodes/enterprise networks alongside *Tunnplåt i Borlänge* (Sheet Steel Borlänge) (Rostfritt i Avesta [Stainless Avesta] and *Beskärning i Sandviken* [Sheet Cutting Sandviken]) came into being /were integrated in Triple Helix. In addition, the collaboration is extending over three county borders and a cross-border collaboration between the nodes is under way.

Dalarna University College has further raised the profile of materials technology.

Other regional ventures refer to us. We are a model!

(Interview, process manager)

As regards Triple Helix as a model/example for other initiatives, a number of effects may be identified here too. One example is TPA (The Packaging Arena), where the region is using TPA as a model for development within the current *landshövdingeuppdraget* (county governors' assignment) on the defence industry realignment. The model has also been used in the IT and metalworking sectors. The following quote is from one of the representatives of the initiative:

IT and Metalworking are copying structures and ideas built up by TPA around the value star, Triple Helix, clusters and regional innovation systems are central to the work of development. Around 10 companies have visited the region to see what is happening. Two businesses have also been established as a result of TPA.

(Interview, process manager)

3.6 VINNVÄXT's effect on the promotion of regional growth?

As far as VINNVÄXT's effect on the promotion of regional growth (Regional Growth Programme, RGP) is concerned, we feel we can identify the following three main effects:

1) Initiatives within VINNVÄXT are consistently given high priority and are an established part of RGPs.

A first important conclusion that may be drawn from the results of the interviews in Phase 1 and an analysis of the actual regional growth programmes is that the initiatives are well established and given high priority. This is supported by the following quotations:

Yes, and specifically mentioned along with FPX and Triple Steelix.

(Interview, official at county management board/regional federation/municipality.)

Yes! BFR [Bio Fuel Region] is an important part of the development programme and an initiative that we have great hopes for.

(Interview, official at county management board/regional federation/municipality.)

Crystal clear priority. Uppsala BIO is a flagship project in RGP.

(Interview, official at county management board/regional federation/municipality.)

2) The Triple Helix approach is now taken for granted as a starting point for RGP initiatives

Another effect that we feel we can identify is that a shift seems to have taken place from the traditional type of partnership (“public-private”) to partnerships based on the Triple Helix. This implies both a greater willingness to establish integrated R&D environments, and to identify functional partners if the resource does not exist in the immediate region. One player expresses it thus:

We have to move from networks, via clusters to R&D-based innovation systems. There is a long way to go. We have to be long-term. Time is important. We are forced to be open to relationships outside Dalarna, for example other R&D environments. At present, we are bringing together players in Timber and Image/Printing to establish a coordinated initiative. The venture was inspired by Triple Steelix.

(Interview, official at county management board/regional federation/municipality.)

3) The Triple Helix approach has brought greater long-termism, a stronger focus on growth and a clearer definition of roles

As far as policy learning is concerned, we also feel we can see that policy learning at the regional level is taking place. This learning has been manifested, for example, in a clearer understanding – among a broad spectrum of players – of the necessity for focusing, growth and that promotion of regional development must be based on measures that stimulate innovation and long-term competitiveness. The following quotes are taken from our interviews:

The dialogue between university and society was initiated during the RGP. This has been reinforced via VINNVÄXT. VINNVÄXT has delivered new and improved collaboration between university and society, from the university viewpoint.

(Interview, University.)

VINNVÄXT has confirmed our approach while at the same time we have learnt about formats for integrating the element of R&D into the growth programme. We have carried out a wide-ranging analysis of the region’s generic innovation system structure. The system view is important. The conclusion is that

we must create an open generic platform via a diversified enterprise sector ... not individual downpipes, such as incubator facilities, for different sectors... with different skills. In this sense, Innovation i Gränsland (Border Region Innovation) has been good because it worked as a test pilot. Long-termism has been an important indicator of the importance of a long-term commitment. It is important in Gränsland since the industry is characterized by slowness to change. The view of growth has changed in as much as it is accepted to emphasize growth as an objective. Of course this also makes evaluation easier.

(Interview, official at county management board/regional federation/municipality.)

4 Phase 2 – seven case studies

In the preceding chapter, we reported on the most significant results from the first phase of the study. This chapter presents the results from the eight case studies performed. The purpose of these case studies was to interview players not directly connected to the actual core activities in the process management. The interviews are centred on two issues:

- 1 Has VINNVÄXT affected how people in the region work in growth- and enterprise-promoting initiatives, innovation support, commercial exploitation of research etc. (e.g. coordination between organizations, new initiatives/projects, new prioritizations by universities and other players, new ways of organizing product and business development)?
- 2 Has VINNVÄXT affected the work of your organization (for example, what you do, how you do your work, who you work with)?

Before presenting the most significant results, we will first describe the eight initiatives selected.

4.1 The seven case studies

4.1.1 Peak of Tech Adventure

Peak of Tech Adventure is an initiative based on tourism, sport and experiences in the County of Jämtland, above all in Östersund and Åre. The goal is to develop the region through the development of technology and services relating to tourism, winter sports and mountain activity experiences.

4.1.2 Triple Steelix

Triple Steelix is a steel industry programme in the Bergslagen region. The aim is to build on to the strong steel industry tradition in the region. The goal of Triple Steelix is to act as a coordinator and to orchestrate the activities conducted in both large and small enterprises and in research.

4.1.3 The Packaging Arena (TPA)

The goal of this initiative is to bring together world-leading expertise in the packaging industry and design. The idea is to establish a globally competitive innovation system in the interface between technological research, design and service development.

4.1.4 Biomedicinsk utveckling i Västsverige (Biomedical Development in West Sweden)

is linked to the tradition of research and product development in biomedicine that exists in Gothenburg in the field of biomedicine. Examples of pharmaceuticals with roots in research in Gothenburg include metoprolol (Seloken), omeprazol (Losec) and felodipin (Plendil).

4.1.5 Fiber Optic Valley

is a project to develop and test broadband technology based on fibre-optics. The aim of the initiative is to create Europe's leading innovation centre for developing and adding value to fibre-optic-based services for the home and applications for industry.

4.1.6 Kista Science City

is an ICT projects focusing on three strategic, mutually supportive areas of growth: mobile services, wireless systems and broadband systems.

4.1.7 Robotdalen

The goal of the *Robotdalen* (Robotics Valley) programme is to consolidate the position of the Mälare Valley as a leading world region in robotics research, development and manufacturing. The venture is backed by a number of players representing society, academia and industry in the Mälare region. *Robotdalen* focuses above all on three sectors: industrial robotics, field robotics and robotics in the care sector.

4.2 Results

What effects can be identified in the eight initiatives studied? We will present our empirical findings firstly by trying to exemplify various types of effect that we feel are expressed in the interviews. Finally, we will also try and summarize these findings via a matrix. As all matrices are to some extent simplifications, the reader should, of course, take this into account.

4.2.1 An awareness of VINNVÄXT and Triple Helix exists

One distinct finding is that VINNVÄXT is quite clearly well known. Even if it obviously has an effect here that to a certain extent we have interviewed players who are quite likely to be aware of VINNVÄXT through their activities, it is nevertheless fascinating to see that this was the case. In our interviews – in all eight cases, including those that to a degree have least to do with VINNVÄXT – all information providers had a point of view to express. Not necessarily a positive point of view, but a point of view even so.

4.2.2 VINNVÄXT initiated/paved the way for systematic platform building

Another effect is that VINNVÄXT has initiated/paved the way for systematic platform building. By that, we mean that VINNVÄXT has made it possible in various ways for a regional innovation system to initiate a process of systematic platform building, which may take different forms. Metaphorically speaking, if the system were a piece of furniture – say a chair – the process could be to fit the pieces of an existing one together, or to buy a new one. In Gothenburg, GIBBS is to a certain extent a manifestation of the creation of something new. Aspects of the work of The Packaging Arena may also be characterized as such. On the other hand, *Robotdalen* and also Triple Steelix, for example, are characterized by the fact that the players involved in the initiative tried to “piece together” existing processes and players. The following quotations from our interviews support the above contention:

A shift has taken place from building networks among companies ... short-term concrete activities ... to building innovation systems... long-term technology development projects.

(Interview, innovation/business-promoting player).

One effect is the establishment of GIBBS and of a medically-oriented incubator facility, something that has been missing in the past.

(Interview, university)

4.2.3 The onward march of the knowledge-based economy (e.g. stronger link between society-academia) and the establishment of the Triple Helix concept as an approach

A further effect that we feel we identify is that the Triple Helix concept has become embedded. By this, we mean that the logic of VINNVÄXT has increased understanding of issues such as:

- networks as methodology in a context of growth – and not just to share costs but also to create new value;
- the importance of long-termism, new conditions for collaboration;
- more clearly defined allocation of roles and positioning (integration);
- focusing of resources/activity/players towards a vision.

To a certain extent, we feel that this is a manifestation of the onward march of the knowledge-based economy into Swedish regions. By that, we mean that knowledge – in different forms and in different guises – has become increasingly important in terms of the creation of long-term growth and

competitiveness. What is involved here is both cross-sectoral and cross-organizational knowledge. In the knowledge-based economy, it is knowledge and learning that are highly significant in terms of repositioning and change and the knowledge that exists at various intersections is perhaps the most important knowledge of all. In our opinion, it is in this light that we should view the effects that have been generated by VINNVÄXT. Or, more accurately: VINNVÄXT – and the logic that VINNVÄXT represents – is a manifestation of this knowledge-driven economy. Consequently, the effects that we feel we can identify are not only effects produced by VINNVÄXT. Let us exemplify this via a quotation from a player in Kista who had in fact participated in a VINNVÄXT process but who today is not closely linked to VINNVÄXT:

I believe in the Triple Helix concept. I saw work on our VINNVÄXT application as part of a process that had already been initiated in connection with our work on vision. I believe in working in this way. An important part of VINNVÄXT was to persuade the people living here also to feel that it is part of the environment. They shouldn't just go around complaining, they should feel that they are part of the process and capable of influencing/have a chance of influencing how it develops.
(Interview, university)

4.2.4 Increased or new co-operation (geographical or between players) and development of personal networks and relationships

As a result of the effect described in the previous section, co-operation has increased – between players and between regions. The clearest examples out of the eight initiatives are *Robotdalen* and *Triple Steelix*.

Closer contacts have been established between small enterprises and the universities in the region. Above all, Dalarna University College, which has an orientation that fits more comfortably with the region's engineering profile.
(Interview, official at county management board/regional federation/municipality.)

Robotdalen has increased information sharing across county borders. One important factor in this increased information sharing has been the various skills of the representatives of the nodes, at Västerås engineering, at Örebro innovation systems and at Eskilstuna business development.
(Interview, process manager)

The work on research strategy within the framework of Robotdalen has stimulated co-operation between Mälare Valley University College and Örebro University. One beneficial side-effect of the work on formulating strategic research for Örebro and the Mälare Valley within the framework of Robotdalen is that people now know each other better purely in the academic sector.

(Interview, university.)

4.2.5 Needs of industry in focus and the ability to engage enterprises

In the previous section, we discussed increased co-operation. One aspect of increased co-operation is that VINNVÄXT has led to a greater focus being placed on the needs of industry. This of course changes from one initiative to another. It appears that the initiatives where a more conscious attempt has been made to concentrate on “low hanging fruit” – such as *Robotdalen* for example – have been more successful in terms of engaging enterprises, especially small and medium-sized enterprises.

We have been very successful in engaging enterprises/industry in Robotdalen. The needs addressed in Robotdalen come from industry, then academic know-how is brought in.

(Interview, innovation/business-promoting player.)

At the same time, there have been other initiatives in which it was more difficult to engage enterprises, for example Peak of Tech. The explanation for this – and we will return to the point in the concluding chapter – lies in which activities have been prioritized, but also, of course the enterprise structure.

4.2.6 Change in allocation of resources (R&D profile training etc.)

One effect that is identified is that VINNVÄXT has brought about a change in the allocation of resources as regards, for example, R&D profile and training in the region. Examples are found all the way from upper secondary school courses to new research projects.

One favourable side-effect we saw from Robotdalen is a project on industrial robotics for upper secondary school pupils, conducted by Örebro University at Tullänge Upper Secondary School.

(Interview, university.)

The University has shifted its approach more towards a practical focus, and it is opening up to the needs of enterprises.

It is, of course, hard to single out VINNVÄXT as the only factor in this development.

(Interview, official at county management board/regional federation/municipality.)

The VINNVÄXT process has eased communications between the industry, society and university, for example in terms of course offerings and commissioned research.

(Interview, official at county management board/regional federation/municipality.)

4.2.7 VINNVÄXT has shown up areas of tension and resistance

VINNVÄXT has shown up tensions and resistance within a helix, between different helices and across administrative borders. Managing, dealing with and resolving such tensions and resistance is most likely an important precondition of long-term success. However, this indicates that what is not needed is a passive, consensus-based attitude. Indeed, a capacity for continuous review is essential. This argues that regional development processes and strategic projects are about building up the structural capital for the kind of conflict management that demands learning and change rather than locked-in positions – “learning by fighting”. One such tension and resistance may be found between the short-term needs of small enterprises and the long-term nature of the research.

4.2.8 A strong brand that communicates attractiveness and regional and international confidence

A last effect that may also be identified is that VINNVÄXT’s strong brand has in various ways created synergies. This is based on the fact that VINNVÄXT is perceived as a quality assurance factor, and something that players may use in various ways in their marketing, for example, to attract financing. Let us take two examples, from Gothenburg and Triple Steelix, to illustrate the above.

As a brand, VINNVÄXT has affected the collaboration with AstraZeneca positively. For example, the company highlighted Gothenburg’s VINNVÄXT gain as a sales argument in China. From the region’s point of view, it has been advantage to be able to demonstrate that it is a priority area that has been selected in competition with others, both to attract enterprises and for enterprises to attract customers.

(Interview, university.)

The municipality has gained a greater weight for its words when negotiating with enterprises, it has a network behind it. The

Triple Steelix network has created greater legitimacy for the existing local initiative, above all in contact with major enterprises.

(Interview, official at county management board/regional federation/municipality.)

5 Summarizing comments

The aim of this concluding chapter is firstly to provide a very brief summary of the most significant effects and to offer a few comments on a) whether the effects are positive or negative and b) whether the sustainability and diversity issue can be identified in terms of these effects. Secondly, this concluding chapter aims to discuss to some extent what factors influence any effects/lack of effects and what the implications are in terms of policy learning from this study.

5.1 What are the most significant effects?

In this study, we have tried to analyse any effects from VINNVÄXT as regards a) VINNVÄXT as a vision and concept and b) VINNVÄXT as a method and a tool. On both scores, effects can be identified. In the following, we summarize briefly our most general conclusions on this subject. These conclusions are based on both Phase 1 of the study Phase 2.

5.1.1 VINNVÄXT is a well-known brand

Firstly, it is interesting to note that VINNVÄXT is a strong brand. It is also interesting to note in this context that a market survey conducted in autumn 2003 indicated that VINNVÄXT showed a higher degree of recognition than the name of the public authority VINNOVA. This study does not in any way contradict that market survey.

Thus, all information providers participating in this study were aware of VINNVÄXT, even if they did not – *nota bene* – in all cases draw a totally clear distinction between VINNOVA and VINNVÄXT. In addition, all the information providers requested agreed to take part in an interview. The awareness of VINNVÄXT – and, of course, VINNOVA – varied from one information provider to another, as did their opinions, which were both positive and negative.

5.1.2 As yet, the effects have shown through most strongly in the operations- support environment

In our view, VINNVÄXT has had various effects in the regions we have studied. Such effects have taken place, above all in the “operations support” environment. Or, more accurately: the further from the core of the activity the respondent is, the more difficult it seems to be to identify specific effects. This is, of course, nothing peculiar or remarkable in itself, since it is

at this very point that many of the initiatives have focused activities, rather than moving out into a region on a broad front.

5.1.3 VINNVÄXT has created new constellations of players

One effect that we see as recurring is that VINNVÄXT has created new constellations of players. One underlying factor in this phenomenon is to be found in the actual logic of VINNVÄXT. The Triple Helix model and long-termism have been regarded as an alternative, and something new, and have been seen as an attractive option for new players to commit themselves to.

5.1.4 VINNVÄXT has above all changed relationships between players/organizations rather than internally within organizations

To a certain extent following on from the previous point, it may be affirmed that one of the effects of VINNVÄXT has been to alter various relationships between players. In this context, we feel that we can assert that this mainly concerns relationships between different players in the different helices. So VINNVÄXT does not appear – and perhaps it is a matter of time, and of course it remains to be seen – to have changed anything internally within the players' organizations. Here, too, the same rule applies: the further from an initiative that a player is, the less VINNVÄXT affects the internal operational workings of the organization itself. One such example is provided by ALMI, which on the occasions representatives were interviewed for the study indicated that they performed an observing rather than a directly active role. This was also true of universities and institutes of higher education. However, to a certain extent it appears that several of the institutes of higher education or the more recent universities have changed to a greater extent than the older ones. This, too, is perhaps something that is not actually surprising. To take Uppsala BIO and the University of Uppsala as examples, it is quite clear that Life Science had been prioritized long before the Uppsala BIO initiative came about.

5.1.5 Finally, VINNVÄXT is part of a larger process of change

Finally, one effect that we find is recurring, is that VINNVÄXT is part of a larger process of change (characterized by focusing, prioritization, knowledge and innovation and – above all – growth). VINNVÄXT – and the effects it has had – is thus an interaction between different processes. A further aspect of this effect, and one that they could and should be highlighted, is that VINNVÄXT demonstrates that a small financial investment can generate strong mobilization if allocated to the right players and activities, and phased into existing development processes.

5.2 Are the effects found to be only beneficial?

In the previous chapter, we suggested that not all the effects identified are found to be beneficial. A player may quite clearly identify an effect, but regard it as being negative in the innovation environment. In somewhat simplified terms, two types of criticism may be identified, each closely bound up with the other:

- Criticism of the overall logic of VINNVÄXT, or certain aspects of its logic.
- Criticism of a specific initiative, i.e. not of VINNVÄXT in itself

In the first case, the criticism may arise for example because in certain circumstances the competition element was more likely to reward those who are “good” at completing applications, rather than the projects that are actually growth-driven.

The competition aspect of VINNVÄXT seems strange. It seems that the important thing is to be good at completing applications. To us, it is about working in a concrete/result-led way. It is that which creates legitimacy. There are plenty of examples of results.

(Interview, process manager.)

The VINNVÄXT logic is also criticized on the basis that that conditions for engaging enterprises are complicated in the initiatives where the enterprise base is comprised of small businesses. A third criticism centres on the fact that VINNOVA – and VINNVÄXT – if anything create duplicate activities rather than new ones, or supplement an already existing regional structure.

VINNOVA should see the whole picture with its initiatives. Sometimes it seems that one part of VINNOVA gives money to one type of initiative. Then another part of VINNOVA gives money to the same thing again via VINNVÄXT.

(Interview, university)

There is an inclination for VINNVÄXT initiatives to want to become a new platform, rather than operating via the players already established in the innovation system. This seems slightly inefficient. It gets a bit too much working on network building.

(Interview, innovation-/enterprise-promoting player.)

As far as criticism of individual initiatives goes, it is not necessarily VINNVÄXT that is criticized but individual initiatives; how they function operationally and what strategic choices have been made. We feel we can identify four types of criticism in this context, namely that:

- process management is a closed system and not all players are “allowed in”;
- the needs of the enterprises are not focused on sufficiently;
- through VINNVÄXT, already established structures – e.g. in the innovation system support – have been duplicated without any actual gain in efficiency;
- the initiative does not prioritize strategic research.

In this context, it is of course important to remember that there will be different views on the initiatives performed, for example. So different players will interpret exactly the same effect in different ways, for example in terms of short-term, business-related goals or more long-term research goals, cf. the points reported above, where this very conflict is already evident.

One other aspect is the issue of gender equality, in that VINNOVA actively endeavours to integrate this issue into all initiatives. So a part of VINNVÄXT is also of course that the initiative should make a contribution to advancing equality from a gender perspective, and in doing so to further strengthen the innovation systems. VINNOVA itself formulates the objective in this way:

A compilation of how equality was taken into account in the applications in the first call for proposals in VINNVÄXT indicated a lack of gender perspective. As a result, before the second call for proposals, a restricted call was made to the projects that in the first round received development grants, to describe what actions they would take to ensure that the equality perspective would be included in the second stage of the call for proposals. All accepted the challenge and submitted applications. Three projects were awarded SEK 200,000 each to develop their idea and were allowed three months to deliver a description of their work. The aim was partly to contribute to the winners' work on developing applications from this perspective, and partly to help in ensuring that the equality perspective is taken into account by others intending to submit an application within the second call for proposals in VINNVÄXT. As a result, the initiative also became a pilot exercise for a tool for implementing equality.

(Programme Description, VINNVÄXT)

Is it possible to see any effect from these efforts so far? In our view, the answer is no, not directly. In any case, it is not something that emerges strongly in the interviews. To a certain extent, it is possible to see in some initiatives – such as Fiber Optic Valley and Future Position X, for example

– an attempt to incorporate the equality perspective more actively. This is, perhaps, partly because Fiber Optic Valley was one of the initiatives that was awarded funds to develop its applications. In conclusion, it is important to point out here that this does not mean that equality issues from a gender perspective are totally redundant in other initiatives. The point is, rather, that no specific effect from VINNVÄXT can be identified in this context.

5.3 What influences the effects, what are the mechanisms behind the patterns?

The purpose of this section is to highlight the factors that we consider influence the effects that we think we have identified in this study. More precisely, the following mechanisms/factors may be recognized. They are not ranked relative to each other, partly because several of them are closely bound up with each other.

5.3.1 Generally increased interest in national and regional system policy – “VINNVÄXT was in tune with the times”

In certain experience-based industries – such as the music industry – it is sometimes said that success is due to luck, timing and talent. VINNVÄXT of course has a history. A history that extends further back in time than the design phase itself for the programme, which took place in late 2000. One important explanation firstly for why VINNVÄXT has had an effect is of course that the programme was in tune with the times. It came, so to speak, at the “right” time, in the sense that greater interest had become focused on establishing a systematic perspective on enterprise and innovation issues. An important first stage was a study carried out by Michel E. Porter in 10 countries (including Sweden) in the late 1980s to try and demonstrate which elements are crucial in determining how long-term industrial innovation and competitiveness are created and sustained in a particular country. In parallel with rising interest in the cluster approach, interest also grew in the innovation systems approach. Bengt-Åke Lundvall was the first to coin the expression “national innovation systems”. He used the expression in a chapter that appeared in a book published in 1988 on technical policy strategies and industrial competitiveness in Japan (Freeman 1995:5). In 1992, this was followed up by *National Innovation systems: Towards a Theory of Innovation and Interactive Learning* (Lundvall 1992), a book that is often cited in the list of references to literature that addresses issues of business competitiveness from a territorial perspective.

In the late 1990s and the early 2000s, the view of clusters and systems of the innovation changed somewhat, from serving more as an analytic tool to an operational tool for investing in growth, enterprise and innovation. This view was also stressed in the Swedish government’s bill on regional policy

(2001/02:4). The importance of agglomerations (or clusters, if you like) and innovations (or innovation systems, where R&D is transformed into money, if you like) in boosting growth and increasing the competitiveness of businesses is summed up thus:

The capacity of businesses for innovation in learning too a large extent develops by the interaction between different players, and geographical closeness is important in this context. The transformation and competitiveness of industry may therefore best be understood from a perspective where the individual enterprise is considered as part of a system, consisting of all the enterprises, organizations and other players with which the enterprise interacts. The measures taken to develop enterprise should increasingly be characterized by an approach in which enterprises are considered as elements of systems – innovation systems and clusters.

(A policy for growth and vitality throughout Sweden. Bill: 2001/02:4.)

In many cases, it also emerges in the interviews that “VINNVÄXT was actually nothing new”. So, it is said, a process of change was already taking place in the regions, that VINNVÄXT, so to speak, could slot into. This notion is exemplified by a number of quotations:

You could say that VINNVÄXT has urged co-operation around the vision already produced. However at the same time it is important to emphasize that the work of readjustment had much greater importance.

(Interview, official at county management board/regional federation/municipality.)

VINNVÄXT as a concept fitted neatly with how we work in the region. VINNVÄXT lined up closely with the RGP and we have a long tradition of Triple Helix co-operation. So VINNVÄXT has not generated any new co-operation or changed any overall area of focus. On the other hand, it has strengthened and structured the existing co-operation, above all between the social sector and academia.

(Interview, official at county management board/regional federation/municipality.)

What is in tune with the times... governed by the 2001 bill ... result of many years of international collaboration and learning or the VINNVÄXT programme is uncertain. (Interview, official at county management board/regional federation/municipality.)

I don't want to take anything away from VINNOVA. VINNOVA is one player of many. VINNVÄXT, however, has not had more than a marginal effect.

(Interview, official at county management board/regional federation/municipality.)

5.3.2 The VINNVÄXT logic

Another important factor explaining the effect of VINNVÄXT is the VINNVÄXT logic itself. The Triple Helix model and long-termism have been regarded as an alternative – something new. This has enabled the negative effects of “project fatigue” identified in some cases to be overcome. Long term, this has created support and commitment from key players outside the traditional applicant organizations, which in itself has created conditions for renewal. Another interesting point here is the fact that VINNVÄXT is not a traditional tool of research financing, and so the programme has created new arenas for interaction. VINNVÄXT seems to be increasingly engaging key people in large corporations at both senior and middle management level. As a result, VINNVÄXT has – obviously to a greater or lesser extent – had an effect outside the “established” players in regional development.

A further dimension of this logic is process support. Initially, a five-day course in Triple Helix Management (THM) was produced, including a theoretical section based on case studies and a practical session in the form of 10-year simulations of a hypothetical development process. Nearly 250 people took part in these courses in 2002. The THM course was then developed into a 1-day course, attended by nearly 900 people over a three-year period. This extensive training programme has influenced attitudes, use of language and practices.

VINNVÄXT as a modus operandi has filtered through into how growth issues are addressed in the region. Its philosophy has been absorbed, for example in the work on the Petrochemicals Project, an application that that lost but today continues with the same modus operandi.

(Interview, official at county management board/regional federation/municipality.)

5.3.3 Triple Helix expertise of the process management

A third factor that explains the degree of effect is the capacity of the process management to communicate the vision and objectives of the initiative, and to build up different types of new relationship between the players in the innovation system. We refer to this as the Triple Helix proficiency of the process management. At the same time, it is important to bear in mind that

this should not consist simply of “networking”. Of course, both short-and long-term delivery must be included.

5.3.4 General links to R&D in the sector

Another factor that will influence any effect is the R&D links and tradition of the sector/area of proficiency. Here, clear differences are evident between an industry closely linked to research, such as biotechnology, and experience-based ventures such as Peak of Tech. Furthermore, it is obvious that a learning process is involved. One such learning process has been identified within the *Tunga Fordon* (Heavy Vehicles) initiative.

R&D is a process of maturity at enterprises. It develops in pace with a growing need for increasingly sophisticated proficiency.
(Interview, official at county management board/regional federation/municipality.)

Another important aspect in this connection is the enterprise structure in the initiative. Effects in small-enterprise-intensive initiatives seem more difficult to detect, or in any event take longer to emerge.

The businesses do not see the value of participating in the initiative. The application documents write of innovations and other concepts. Businesses do not understand how this can create value in the short term.
(Interview, official at county management board/regional federation/municipality.)

5.3.5 Initiative’s specific R&D strategy and other types of strategy

Another aspect that appears to influence the degree of effect is the strategy that the initiative has chosen. That perhaps is not particularly surprising in itself. For example, let us take the two winners from the first round of VINNVÄXT – *Robotdalen* and Uppsala BIO. *Robotdalen*, for example, focused initially on activities with short-term objectives (such as *Robot till tusen*), while Uppsala BIO focused to a somewhat larger extent on the perhaps slightly longer-term – from the viewpoint of effect – venture Uppsala BIO-X, which aims to create a platform for structural change in the interaction between research and academia.

Projects/activities that deliver results/publicity in the short term have been prioritized to generate support from government and industry. It is important to be able to deliver results in the short term. This creates legitimacy.
(Interview, process manager.)

At the same time, working with activities designed to produce results in the short term is not entirely uncontroversial. There may thus be a conflict between activities designed for results in the short term, and longer-term research ventures. Certain initiatives have also pointed out that it cannot entirely be taken for granted that leading-edge research produces growth.

Our point here is not to decide what is the right or wrong strategy, but to highlight the fact that the specific R&D strategy of the initiative and other types of strategy appear to influence the degree of effect.

5.3.6 Time that the initiative has been in progress

Finally, it is of course also a fact that the time the initiative has been in progress will determine any effect. This, of course, makes it complicated to assess in quite general terms what the longer-term impact and effects of VINNVÄXT will be.

5.4 What conclusions can be drawn regarding policy learning at process level?

One overarching challenge for the initiatives was to manage the complex structure represented by a regional Triple Helix system. However, the programme was designed to try and support the initiatives in this work. This is a difficult task, since different types of organization work to a different time frames and organizational logics, while at the same time being exposed to different types of external pressure. The empirical findings of this study do not contradict that the above would not be the case.

Nevertheless, it seems that one or two structural factors are crucial to the establishment of effective Triple Helix co-operation (see for example Etzkowitz, 2005). One such factor is the capacity of organizations for clearly defining different roles. An important dimension of the process of regional transformation for growth is that knowledge and understanding should exist, within different parts of Triple Helix, of each other's strengths, weaknesses and actual conditions. This could be termed "learning by writing", meaning in this context that the initiatives should strive to use analyses, factual material, visualizations, indicators etc.

However, Triple Helix co-operation is based not just on a passive, consensus-based attitude, but rather on a capacity for continuous review: regional development processes and strategic projects are therefore about building up a structural capital for this kind of conflict management. A structural capital that is based on learning and change, rather than locked-in positions. We call this "learning by fighting".

In somewhat simplified terms, it could also be concluded from this study that a theoretical understanding on the part of the individuals who are to take part in the process of regional change is not enough. What is also needed is experience-based knowledge that can only be gained through individuals having in reality knowledge and experience – and networks – from several Triple Helix fields. One aspect of this study is that experience-based knowledge is facilitated by mobility. There is evidence to suggest that via its Triple Helix perspective VINNVÄXT has been partly responsible for a certain increase in mobility. Above all, VINNVÄXT has emphasized the importance of the gain from, and possibilities, for mobility. Finally, an important question is how greater personal mobility between different parts of the Triple Helix can be stimulated.

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Fiber Optic Valley Handlingsplan (Action Plan) 2005, version 05-05-04

Appendix – VINNVÄXT initiatives included in study

Biomedicinsk utveckling i Västsverige (Biomedical Development in West Sweden)

CRYSTAL VALLEY - ett dynamiskt innovationssystem (a dynamic innovation system)

EcoGas Syd (EcoGas South)

Europeiskt Centrum för Träbyggnation (European Centre for Timber Construction)

Hampeinstitutet (The Hampe Institute)

Hälsoteknikalliansen (The Health Technology Alliance)

IGIS

Innovation i Gränsland (Border Region Innovation)

Innovationssystem för utveckling av biodrivmedel (System for Innovation in Development of Biofuels)

Intelligent Vehicles and Transport systems, IVTS

iWood - tillväxt i den trämekaniska industrin i norra Sverige (Growth in the Timber Engineering Industry in northern Sweden)

Livets nya verktyg (New Tools for Life)

Mobile City Initiative

Peak of Tech Adventure

ProcessIT Innovations

ReFine

Robotdalen (Robotics Valley)

Spel- och Filmverkstaden (Theatre and Film Workshop)

Stockholm Bio Region

The Fiber Optic Valley

The Packaging Arena

Triple Steelix

Trådlösa förbindelser (Wireless Connections)

Tunga fordon (Heavy Vehicles)

Uppsala BIO

Växtfabriken - alternativet för hållbar utveckling (The Growth Factory –
The Alternative for Sustainable Development)

VINNOVA's publications

May 2007

See www.VINNOVA.se for more information

VINNOVA Analysis

VA 2007:

- 01 Nanoteknikens innovationssystem
- 02 Användningsdriven utveckling av IT i arbetslivet - Effektivvärdering av tjugo års forskning och utveckling kring arbetslivets användning av IT. *For brief version in Swedish and English see VA 2007:03 and VA 2007:13*
- 03 Sammanfattning - Användningsdriven utveckling av IT i arbetslivet - Effektivvärdering av tjugo års forskning och utveckling kring arbetslivets användning av IT. *Brief version of VA 2007:02, for brief version in English see VA 2007:13*
- 04 National and regional cluster profiles - Companies in biotechnology, pharmaceuticals and medical technology in Sweden 2004. *Only available as PDF. For Swedish version see VA 2005:02*
- 05 Nationella och regionala klusterprofiler - Företag inom fordonsindustrin i Sverige 2006
- 06 Behovsmotiverade forskningsprogram i sektoriella innovationssystem
- 07 Effekter av den svenske trafikksikkerhetsforakningen 1971-2004. *For brief version in Swedish and English see VA 2007:08 and VA 2007:09*
- 08 Sammanfattning - Effekter av den svenska trafikksikkerhetsforskningen 1971-2004. *Brief version of VA 2007:07, for brief version in English see VA 2007:09*
- 09 *Under production.* Summary - Effects of Swedish traffic safety research 1971-2004. *Brief version of VA 2007:10, for brief version in Swedish see VA 2007:07.*
- 10 *Under production.* Effects of Swedish traffic safety research 1971-2004. *For brief version in Swedish and English see VA 2007:08 och VA 2007:09*
- 11 Svenskt deltagande i sjätte ramprogrammet. *Only available as PDF*
- 12 The role of Industrial Research Institutes in the National Innovation System
- 13 Summary - User-driven development of IT in working life - Evaluating the effect of research and development on the use of information technology in working life. *Brief version of VA 2007:02, for brief version in Swedish see VA 2007:03*

VA 2006:

- 01 End of an era? Governance of Swedish innovation policy. *For Swedish version see VA 2005:07*
- 02 Forskning och utveckling vid små och medelstora företag. *Only available as PDF*
- 03 Innovationsinriktad samverkan. *Only available as PDF*
- 04 Teknikbaserat nyföretagande i Sverige 1990 - 2003. *Only available as PDF*
- 05 Offentligt stöd till universitetens samverkansuppgift - en internationell kartläggning. *Only available as PDF*
- 06 Inkubatorer i Sverige - analys av indikatordimensioner och nyttoeffektivitet. *Only available as PDF*

VA 2005:

- 01 Wood Manufacture - the innovation system that beats the system. *For Swedish version see VA 2004:02*
- 02 Nationella och regionala klusterprofiler - Företag inom bioteknik, läkemedel och medicinsk teknik i Sverige 2004. *For English version see VA 2007:04*
- 03 Innovation policies in South Korea and Taiwan. *Only available as PDF*
- 04 Effektanalys av nackskadeforskningen vid Chalmers - Sammanfattning. *Brief version of VA 2004:07, for brief version in English see VA 2005:05*
- 05 Impacts of neck injuries research at Chalmers University of Technology - Summary. *Brief version of VA 2004:07, for brief version in Swedish see VA 2005:04*
- 06 Forskningsverksamhet inom produktframtagning i Sverige - en ögonblicksbild år 2004
- 07 En lärande innovationspolitik - samordning och samverkan? *For English version see VA 2006:01*
- 08 Svensk trafikksikkerhetsforskning i tätposition - Framträdande forskare och forskningsmiljöer i statligt finansierad trafikksikkerhetsforskning 1949 - 2005

VINNOVA Forum

VFI 2007:

- 01 Universitetet i kunskapsekonomin (*Innovation policy in Focus*)

VINNOVA Information

VI 2007:

- 01 Forska&Väx - Program som främjar forskning, utveckling och innovation hos små och medelstora företag
- 02 MERA-programmet - Projektkatalog. *For English version see VI 2007:03*
- 03 The MERA-program - Projects. *For Swedish version see VI 2007:02*
- 04 DYNAMO 2 - Startkonferens & Projektbeskrivningar
- 05 IT för sjukvård i hemmet - Projektkatalog
- 06 VINNVÄXT - Ett program som sätter fart på Sverige! *For English version see VI 2007:09*
- 07 Årsredovisning 2006
- 08 Het forskning och innovationskraft - VINNOVA 2006
- 09 VINNVÄXT - A programme to get Sweden moving! *For Swedish version see VI 2007:06*

VI 2006:

- 01 VINNOVAs verksamhet inom Transporter. *For English version see VI 2006:07*
- 02 Årsredovisning 2005
- 03 Paving the Road. *For Transport Innovation and Research*
- 04 Drivkraft för tillväxt. VINNOVA 2005. *For English version see VI 2006:08*
- 07 VINNOVA's activities within the Transport Sector. *For Swedish version see VI 2006:01*
- 08 A driving Force for Growth. VINNOVA 2005. *For Swedish version see VI 2006:04*
- 09 Komplexa sammansatta produkter - Projektkatalog 2006
- 10 VINNVINN - Mötesarena för nya affärsmöjligheter och arbetstillfällen
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- 14 Arbetslivsutveckling - VINNOVAs satsningar inom arbetslivsområdet
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- 17 E-tjänster i offentlig verksamhet. *For English version see VI 2006:18*
- 18 E-Services in Public Administration. *For Swedish version see VI 2006:17*
- 19 Effektiv Produktframtagning - Projektkatalog 2006

20 Forskning och innovation för hållbar tillväxt

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- 05 Den dubbla vinsten. VINNOVA 2004
- 06 VINNOVA - For an innovative Sweden!
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- 10 Innovationsprocesser i Norden - Ett program för organisering av utvecklingsarbete med bred medverkan. *Only available as PDF*

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VP 2006:

- 01 På spaning efter innovationssystem. *For English version see VP 2006:02*
- 02 In search of innovation systems. *For Swedish version see VP 2006:01*

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- 01 Kunskap för säkerhets skull. Förslag till en nationell strategi för säkerhetsforskning. *For English version see VP 2005:03*
- 02 Strategi för tillväxt - Bioteknik, en livsviktig industri i Sverige
- 03 Knowledge to safeguard security. Proposals for a national strategy for security research. *For Swedish version see VP 2005:01*
- 04 Produktionsteknik & Fordonstelematik. Förslag till FoU-program
- 05 VINNOVA's views on the European Commission's proposal for the Seventh Framework Programme on Research & Technological Development 2007 - 2013. Position paper

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- 05 Utvärdering VINNVINN Initiativet
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- 12 Om rörlighet - DYNAMO-programmets seminarium 12 - 13 juni 2006
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VINNOVA's mission is to promote sustainable growth
by funding needs-driven research
and developing effective innovation systems

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