

# **Evaluating the Role of HEIs´ Interaction with Surrounding Society** *Developmental Pilot in Sweden 2013-2016*

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EMILY WISE, MÅRTEN BERG, MARIA LANDGREN & SYLVIA SCHWAAG SERGER  
WITH MATS BENNER & EUGENIA PEREZ VICO

DEVELOPMENT

VINNOVA



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**Series:** Vinnova Report VR 2016:09

**ISBN:** 978-91-87537-55-4

**ISSN:** 1650-3104

**Published:** November 2016

**Publisher:** Vinnova - Swedish Governmental Agency for Innovation Systems/Verket för Innovationssystem

**Registration number:** 2012-02210

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# **Evaluating the Role of HEIs' Interaction with Surrounding Society**

*Developmental Pilot in Sweden 2013-2016*

EMILY WISE - LUND UNIVERSITY

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Production: Vinnova's Communication division

Cover photo: Matton

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# Preface

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Driven by increased expectations on the use of knowledge to benefit sustainable social development and growth, the government's research and innovation bill in 2012 highlighted the need to develop new incentives and structures to foster universities' interaction with surrounding society. Following this, the government assigned Vinnova the task of developing methods and criteria for assessing the performance and quality of universities' societal interaction.

In responding to the government assignment, Vinnova's ultimate aim was to strengthen the quality and relevance of research and education through developing the societal interaction of HEIs and in turn bolstering Swedish HEIs' attractiveness and competitiveness globally. Thus, our focus was not on creating metrics, but rather on designing an approach to incentivize HEI's own continual development of their interaction with surrounding society.

But how to influence such a development process in a meaningful way, especially given Sweden's diverse HEI landscape? Our answer was to devise a model for evaluation of societal interaction through a collaborative process *together with* Swedish HEIs and other stakeholders.

Starting in 2013, Vinnova has led an inclusive and interactive process to develop a model for evaluating HEIs' interaction with society. The process has leveraged external knowledge, international expertise, and most importantly actively involved 27 Swedish HEIs. As we near the end of our government assignment and look back, we take the opportunity to reflect on the process and its results – what worked well or less well? What did we achieve? What did we learn? What is still left to do?

This document tells this story – or at least the first part of the story, as the process has only just begun. It is not an academic paper or technical report, but rather an account of the last four years – including the facts, some illustrative examples of HEI activities, and reflections on the process and its results.

We thank all individuals from our participating HEIs and external panel of experts who provided their reflections as input to this report, as well as the authors for helping to turn it into this report. We also acknowledge that this story is told from our perspective – and doesn't necessarily represent the views of all those who worked with us over the last four years.

Stockholm, November 2016

*Charlotte Brogren*  
Director General

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<sup>1</sup> See: <https://www.kth.se/2.1231/historia/forskning/making-universities-matter-a-knowledge-platform-on-the-role-of-universities-in-society-1.654615>

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# Executive Summary

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Universities are operating in a rapidly changing global context – with growing mobility, intensifying competition for students and talent, changing demands and new methods of education, as well as growing expectations on contributing to societal development together with relevant stakeholders. In Sweden, the higher education law of 1997 made interaction with surrounding society an official “third task” of Swedish institutions for higher education (HEIs). In support of HEIs’ efforts to adopt a more systematic approach to societal interaction and leverage collaboration with other actors to strengthen the quality of research and education, Swedish policymakers and agencies have been working to support efforts to develop universities’ interaction with society.

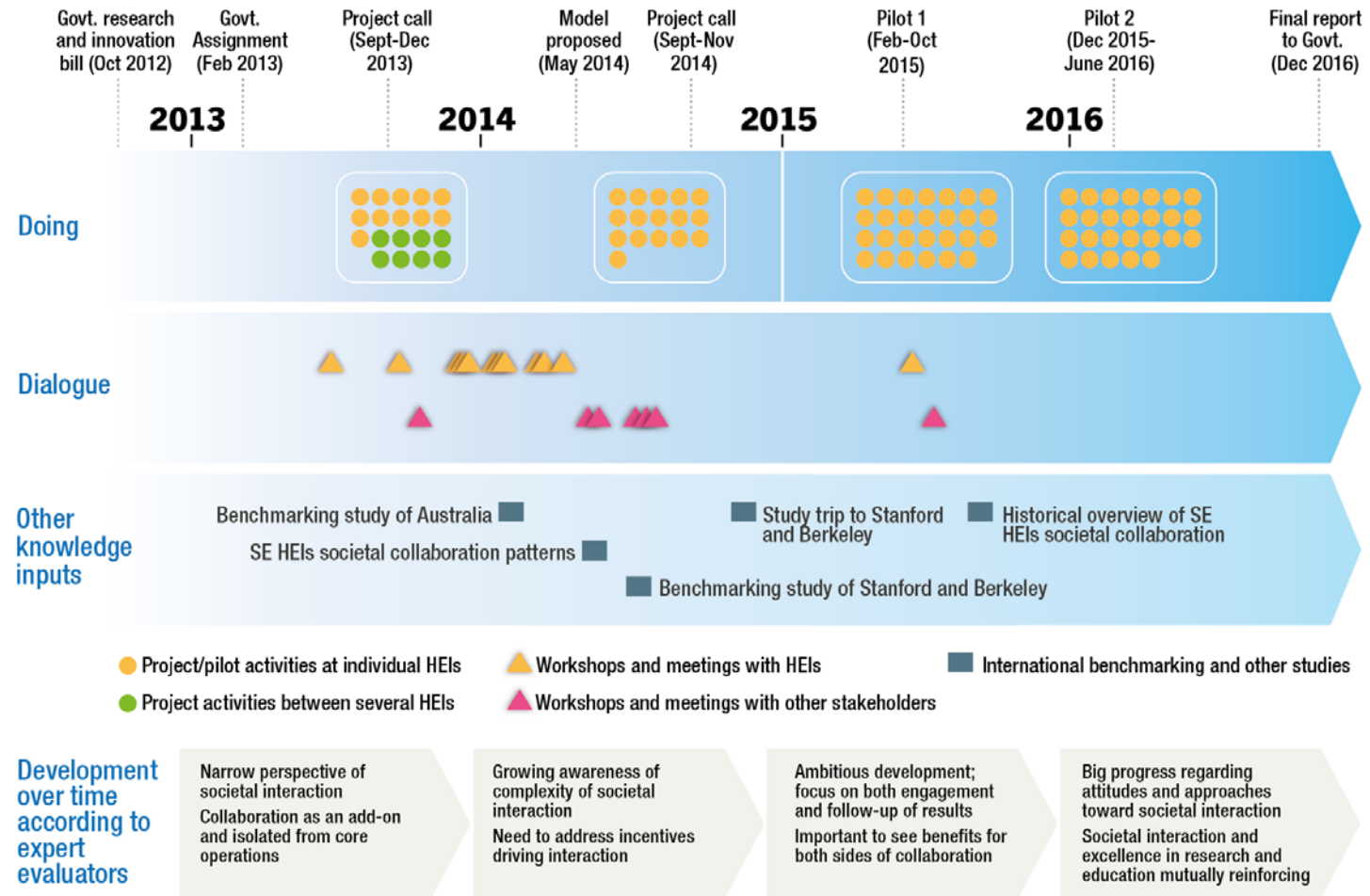
Vinnova (Sweden’s innovation agency) promotes sustainable growth by funding needs-driven research and stimulating collaborations between companies, universities, research institutes and the public sector. In addition, Vinnova provides expertise to government on the development of innovation policy, and serves as the national contact agency for the EU framework programme for research and innovation.

In response to national policy developments and a government assignment (in early 2013) “to develop methods and criteria for assessing the performance and quality of universities’ interaction with surrounding society”, Vinnova has led a collaborative process together with Swedish HEIs over the last four years (see Figure 1 below). **The process has involved a combination of exploration and knowledge development**, through international benchmarking and other studies, as well as interactive workshops and continual dialogue, **and experimentation and operational development**, through projects and pilots to mobilize and inspire activities and strategic change.

The process has resulted in the development and testing of a model for evaluating HEIs’ role in society. This kind of model for evaluation could be used to develop and reform existing systems for allocation of funding to Swedish HEIs by including quality and performance in societal interaction as a parameter. In addition, and perhaps more importantly, the process has helped to catalyze changes in both perceptions and attitudes about, and approaches for integrating societal interaction into core operations in Swedish HEIs.

This has served as a successful first step in developing HEIs’ role in society – and is part of an ongoing change process in Sweden.

Figure 1: Timeline of the Process Introduction



In October 2012, the government's research and innovation bill marked the start of new efforts to develop new incentives and structures to foster universities' interaction with surrounding society. For Vinnova, it was the starting point of a four-year process to respond to a governmental assignment "to develop methods and criteria for assessing the performance and quality of universities' interaction with surrounding society". In contrast to more conventional and limited definitions of societal interaction as outreach or knowledge dissemination and utilization activities, Vinnova sees societal interaction as an important enabling element in the core missions of higher education institutions (HEIs) that is based on a mutually beneficial interaction.

As the assignment is coming to an end in 2016, Vinnova has taken the opportunity to reflect on the process and its results, summarizing what has been done and what has been achieved, as well as summarizing key lessons and areas for further development.

Sweden is one of many countries who are working to develop approaches both to foster HEIs' role and impact in society, and to evaluate the benefits and effects of societal interaction. The aim of this document is to summarize and share Vinnova's experiences with a broader set of stakeholders in Sweden and internationally, including: ministries and government agencies with similar tasks in other countries, HEIs in other countries, collaboration partners of Swedish HEIs, and international policy organizations (e.g. the OECD). This document is not an academic publication or a technical report<sup>2</sup>; rather, the document is meant to be an "easy to read" account of the last four years – including the facts, some illustrative examples of HEI activities, and reflections on the process and its results.

Following this introduction, chapters 1-3 provide a brief description of the national context, Vinnova's mandate, and the government assignment. This is followed by an overview of the process – summarizing the project and pilot phases of the process, as well as the dialogue and other learning activities that took place from 2013-2016. Results and reflections from the experience (including project examples and quotes from a number of participating HEIs) are presented in chapter 5. Finally, chapter 6 summarizes a number of areas of development and next steps. Additional detail on some elements of the developmental trial are provided as an attachment.

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<sup>2</sup> Vinnova will submit its final report on the governmental assignment before the end of 2016.

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# 1 The national context

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Universities are operating in a rapidly changing global context. Growing mobility, intensifying global competition for students and talent, changing demands and new methods of education are some of the factors that are forcing universities to re-examine their role, functioning and position both in their surrounding society and in the global arena. Concurrently, both the tasks and the mandate of universities have grown. The increasingly central role assigned to knowledge for societal and economic development has resulted in a dramatic rise in the size of universities and the resources at their disposal (when looking at the sector as a whole). With this rise come growing expectations and pressures on universities to assume a broader societal responsibility and contribute to societal development, together with relevant stakeholders (see Schwaag Serger et al. (forthcoming 2016).

Swedish universities have a strong tradition of societal embeddedness and interaction with their respective local contexts – which has evolved over time (see for example Benner and Sörlin 2014). Historically, Swedish HEIs were relatively well-integrated with their local context. Up until the 1970s, societal interaction played an important role together with education and research, often in a very concrete manner: Medical professors headed hospital clinics, engineering and technical professors often had backgrounds in industry, while law and social science professors participated in governmental investigations, etc. Outcomes of this tight interaction were very influential, and included medical innovations such as the artificial kidney and beta blockers, as well as one of the first comprehensive school systems in the world.

Around the 1970s, this “combination and integration of tasks” changed, with more specialized professors focused on teaching and often not pursuing research, and research conducted by a smaller proportion of staff who specialized in particular research areas. Instead of being an integrated part of all “core operations”, societal interaction was placed under university leadership as an administrative task. This organizational norm still exists today – with a narrower focus on commercialization of knowledge in the form of patents and spinoffs (see for example Perez Vico et al. 2014). In addition, the Swedish university system has undergone a massive expansion, with a dramatic increase in the volume of students and staff in recent decades. This rapid organizational expansion may also be viewed as contributing to a decoupling of tasks. This decoupling has been further underlined by the government’s historical persistence in separating the universities’ funding streams for education and research. As a consequence of this evolution, a recent analysis concluded that:

*“some current characteristics of the Swedish university system are suboptimal and risk becoming serious challenges for Swedish universities and for Sweden as the global research and education landscape changes. In particular, Swedish universities are weakly organized, with a disjunction between teaching, research and interaction, with a strong tradition of internal recruitment, with unclear promotion patterns, with career paths heavily skewed towards research achievements, with a similarly skewed understanding of the meaning of ‘societal interaction’, and with teaching environments that are not sufficiently*

*attractive to compete at the top level internationally. If these issues are not addressed in their totality, Swedish universities risk becoming unattractive for students, faculty and collaborative partners.”*

Bienenstock, Schwaag Serger, Benner and Lidgard 2014, p.10.

Over time, government has implemented a number of initiatives and policies aimed at creating a more institutional approach to HEIs' interaction with the surrounding society<sup>3</sup>. The higher education law of 1997 made interaction with surrounding society an official “third task” of Swedish universities. Partially spurred by governmental initiatives and increasing autonomy over the past two decades, universities have started to adopt a more systematic view of interaction with surrounding society – developing strategies for cooperation with industry, public sector and civil society. This has led to changes in organizational structures, recruitment or other policies. However, there is broad variation in universities' perspectives on and approaches to ‘operationalize’ strategies for societal interaction – and often a disconnect between education, research and societal interaction.

In support of Higher Education Institutions' (HEI) efforts to adopt a more systematic approach to societal interaction – including stronger linkages with research and education – national policy actors and agencies work proactively to enhance universities' role in society in Sweden (see for example: Government Offices of Sweden 2015a, 2015b, 2016).

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<sup>3</sup> During the 1970s and 1980s, offices and publicly funded programs aimed at promoting cooperation between industry and academia were set up. Technology parks emerged, as did other forms of ‘intermediaries’ or ‘bridging functions’ between academia and the surrounding society, with a strong focus on the business sector in general and technology-based firms in particular.

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## 2 Vinnova's work with strengthening innovation through collaboration

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Vinnova (Sweden's innovation agency) promotes sustainable growth by funding needs-driven research and stimulating collaborations between companies, universities, research institutes and the public sector.

Vinnova manages programmes for strengthening Sweden's innovativeness. Some of the programmes involve funding of research, which is important for renewal of industry. In other cases, programmes develop the innovative capacity of specific target actors in society (such as knowledge-intensive companies, universities, colleges, research institutes and actors within the public sector). In addition, Vinnova provides expertise to government on the development of innovation policy, and serves as the national contact agency for the EU framework programme for research and innovation.

**Figure 2: Vinnova's three roles**



Among its target groups, Vinnova works with Swedish HEIs to support the development of their interactions with surrounding society – creating the conditions for increased relevance and utilization of universities' activities. Vinnova does this through developing and managing programmes (see examples in Box 1 below). In addition to these (funding) programmes, Vinnova responds to government assignments and conducts or commissions analyses on HEIs' role in society (both nationally and internationally).

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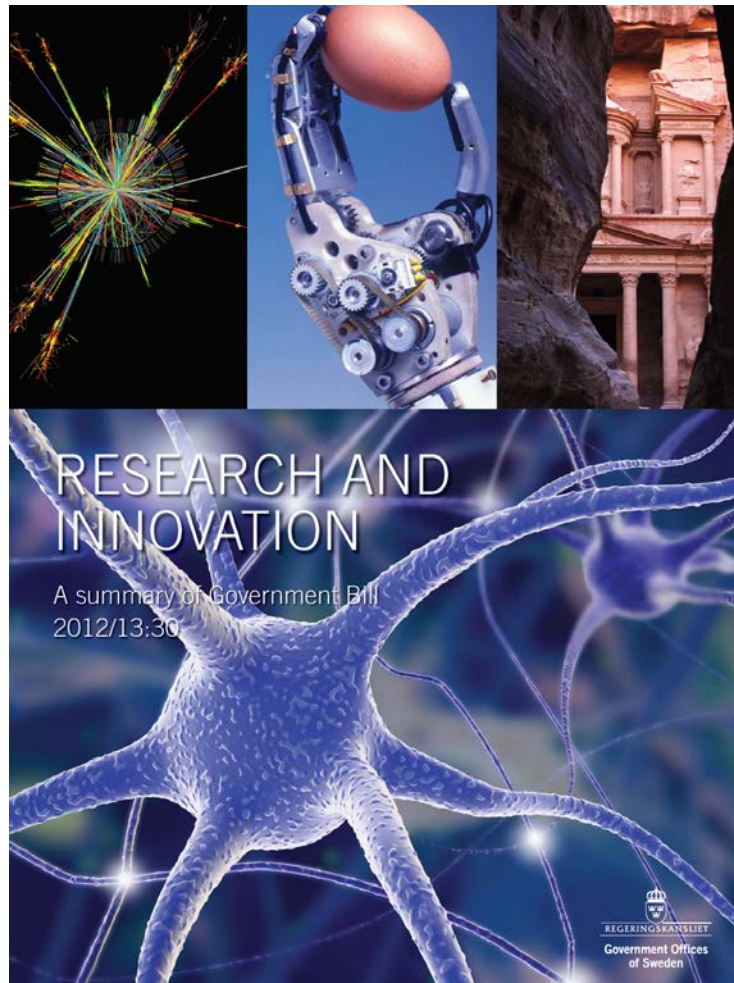
**Box 1: Example Vinnova´s ongoing programmes supporting HEIs' interaction with surrounding society**

- **Berzelii Centers.** A joint initiative of Vinnova and the Swedish Research Council launched in 2005, Berzelii Centres focus on excellent basic research – with a clear ambition for longer-term collaboration with external stakeholders (both public and private) to put research results to use. Four Berzelii Centres have been established, receiving up to 10 MSEK of support per year, over a ten-year period.
- **VINN Excellence Centers** provide a forum for collaboration between the private and public sectors, universities and colleges, research institutes and other organizations that conduct research. The Centers work with both basic and applied research – ensuring that new knowledge and technological developments lead to new products, processes and services. Vinnova funds each VINN Excellence Center over ten years. There are currently 17 VINN Excellence centers.
- **Mobility for Growth** supports experience researcher careers through mobility between different sectors (academia, industry, public sector and civil society) and international collaboration. The mobility can be both short (3 months) or long (up to 2 years) as well as both national and international through EU-programmes. Vinnova typically funds 50 % of the researchers' salary and travel expenses.
- **Structural support to universities** includes a wide variety of university initiatives aimed at developing their collaboration with surrounding society. This has been provided by Vinnova in connection with the agency's government assignment described in this report. The initiatives can be new infrastructure, new internal funding models, new research areas with a focus on collaboration with society etc.
- **Innovation offices** support students and researchers at universities to help them develop, commercialize and bring their innovations to society. Innovation support is provided through innovation offices located at university campuses around Sweden. Students and researchers can get free consultation and apply for initial funding for verification activities such as market analysis, IPR strategy etc.

### 3 The government assignment

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In light of the national context – with increased expectations on the use of knowledge to benefit sustainable social development and growth – the government’s research and innovation bill in 2012 highlighted the need to develop new incentives and structures to foster universities’ interaction with surrounding society.



*“It is of decisive importance for growth and sustainable social development, both in Sweden and globally, that research-based knowledge benefits society... To achieve this, it is important that appropriate incentives, structures and tools for the utilization of research are in place.”*

Government Offices of Sweden 2012/13:30, p.2.

*“The Swedish Agency for Innovation Systems should be tasked with designing methods to enable performance and quality in higher education and community partnerships to be assessed in terms of relevance and utilization. Based on this, the Agency should be able to allocate funds to the higher education institutions.”*

Government Offices of Sweden 2012/13:30, p.7.



Early in 2013, Vinnova and the Swedish Research Council received two separate government assignments calling for the development of new approaches to assess the performance and quality of universities' interaction with society, and propose a new model for allocating a proportion of research funding<sup>4</sup> to universities based on this. Vinnova was tasked to develop methods and criteria for assessing the performance and quality of universities' interaction with society while the Swedish Research Council was asked to investigate and propose a model for allocating research funding to universities involving peer review of research quality and impact. Both were requested to involve each other as well as Formas<sup>5</sup> and Forte<sup>6</sup> in the process.

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<sup>4</sup> The 2012 research and innovation bill proposed a new system for allocating a proportion (10%) of research funding on the basis of quality, as indicated by publications and citations of external funding of research. From 2014, this proportion was increased to 20%.

<sup>5</sup> The Swedish Research Council Formas – focused on research for sustainable development

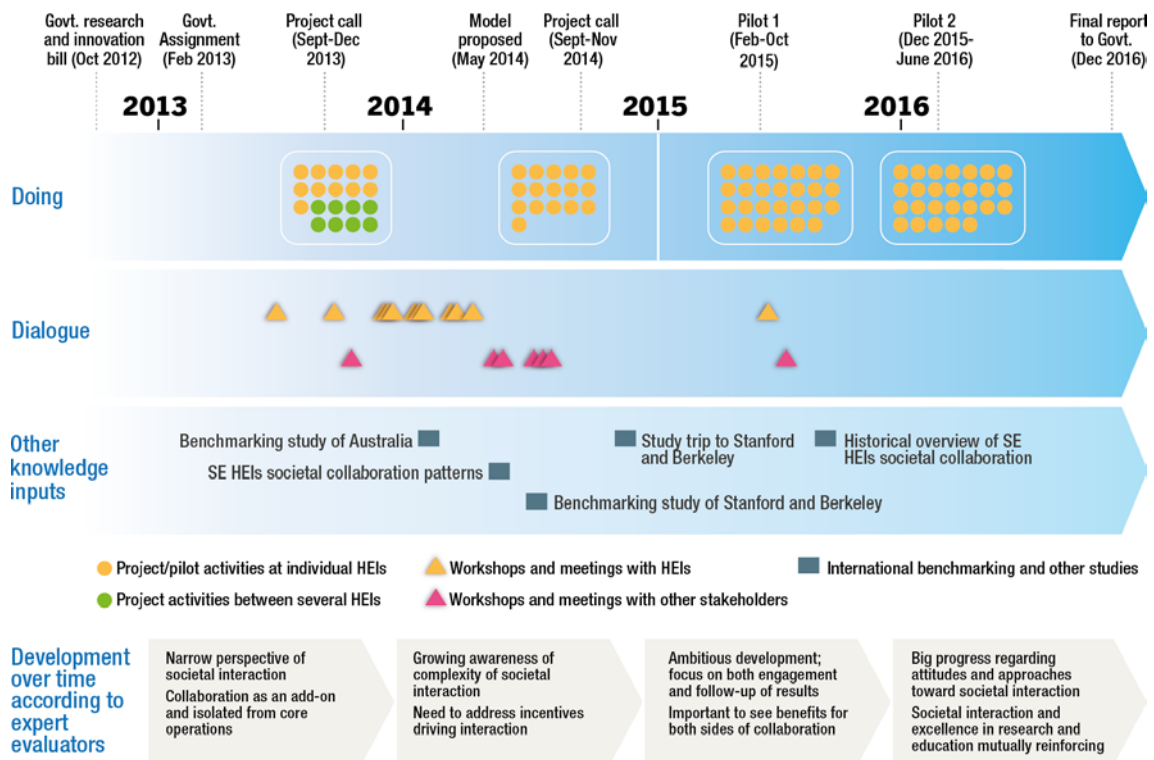
<sup>6</sup> Swedish Research Council for Health, Working Life and Welfare

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## 4 An overview of the process

Sweden’s public administration system is characterized by quite independent government agencies with considerable freedom of action. This loose system of governing policy relations means that there is usually a premium put on soft and interactive steering models. In interpreting the task assigned by government, Vinnova initiated a process that combined experimentation and capacity-building through projects and pilots to mobilize and inspire activities and strategic change, with exploration and knowledge development through continual dialogue and interactive workshops, as well as international benchmarking and other studies – see Figure 3 below.

**Figure 3: Timeline of the Process**



Experimentation and operational development at HEIs was supported through project calls in 2013 and 2014 (see section 4.1), and through piloting of the model for evaluating societal interaction (Pilot 1 and 2) in 2015 and 2016 (see section 4.2). Parallel to the “doing” activities, Vinnova established a continual process of dialogue with HEIs (see section 4.3), and leveraged knowledge from international experiences as well as commissioning and carrying out more in-depth studies (see section 4.4).

Through this combination of activities over time, Vinnova identified a number of key principles to guide its approach to developing the model (see below). Key among these was the acknowledgement of the diverse HEI landscape with different types of universities, different

regional contexts and strategies, different objectives and approaches to societal interaction, and the ultimate aim of institutional and systemic development.

Application of these principles led to an open, inclusive, interactive and iterative approach to developing a model (leveraging external knowledge, international expertise and involving 27 Swedish HEIs), which could be used as a tool to strengthen HEIs' capacity and strategic approach to interaction with surrounding society.

The process has resulted in the development and testing of a model for evaluating HEIs' societal interaction, which can be used to guide the allocation of funding. In addition (and perhaps more importantly), the process has helped to catalyze changes in both perceptions and attitudes about, and approaches for integrating societal collaboration into core operations in Swedish HEIs.

### Key principles

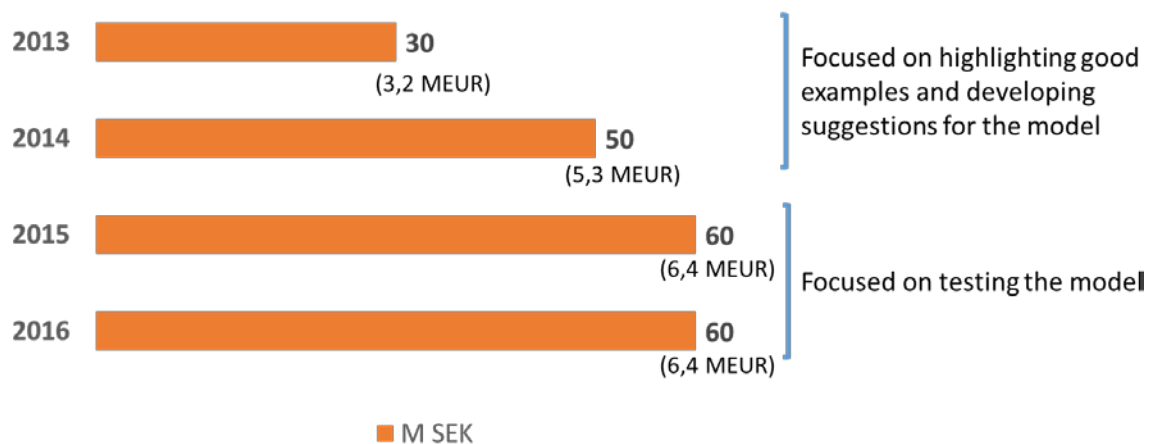
- HEIs must be involved in the process to develop the model in order to ensure that the result is adequately anchored and implementable.
- HEI's approaches toward interaction with surrounding society have different strategic objectives and operational effects – all of which have relevance.
- The ultimate aim (of the new model) is to strengthen the quality and relevance of research and education through developing the societal interaction of HEIs and in turn strengthen Swedish HEI's attractiveness and competitiveness globally.
- There is a need to highlight the merits of interacting with surrounding society through the new funding allocation model.
- Benchmarking with other countries and engaging international experts will help ensure a broader perspective and infuse new ideas.

### Implications

- All Swedish HEIs were invited to participate in the process. All participating HEIs received some level of funding to support the development of their approach to societal interaction.
- 27 Swedish HEIs were involved in the process to develop the proposed funding allocation model.
- The focus of Vinnova's work was on the development of an approach to incentivize HEI's **own** continual development of mutually beneficial societal interaction to enable their core mission, and not on the development of metrics for assessing types or degrees of societal interaction of Swedish HEI's.
- The resulting model is based on HEI's self-assessment and includes presentation of cases and indicators selected by the HEIs themselves, as well as other documentation to motivate the self-assessment.
- Vinnova conducted or commissioned various studies and involved international experts in the evaluation panels for both project calls and pilots.

The government-allocated budget for implementing this task was 30 MSEK in 2013, 50 MSEK in 2014 and 60 MSEK in 2015 and 2016 (see below)<sup>7</sup>. This was supplemented by Vinnova's own resources.

**Figure 4: Process and Budget for Vinnova's Commission**

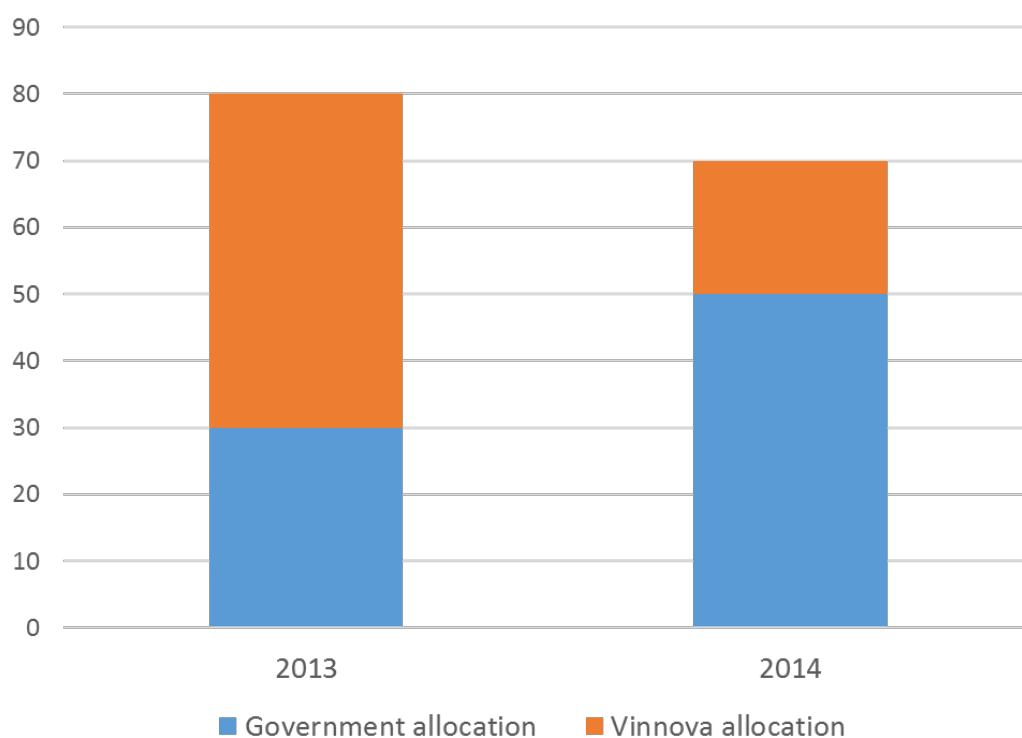


<sup>7</sup> Euro amount based on an exchange rate of 9,4 EUR/SEK

## 4.1 Project Calls 2013 and 2014

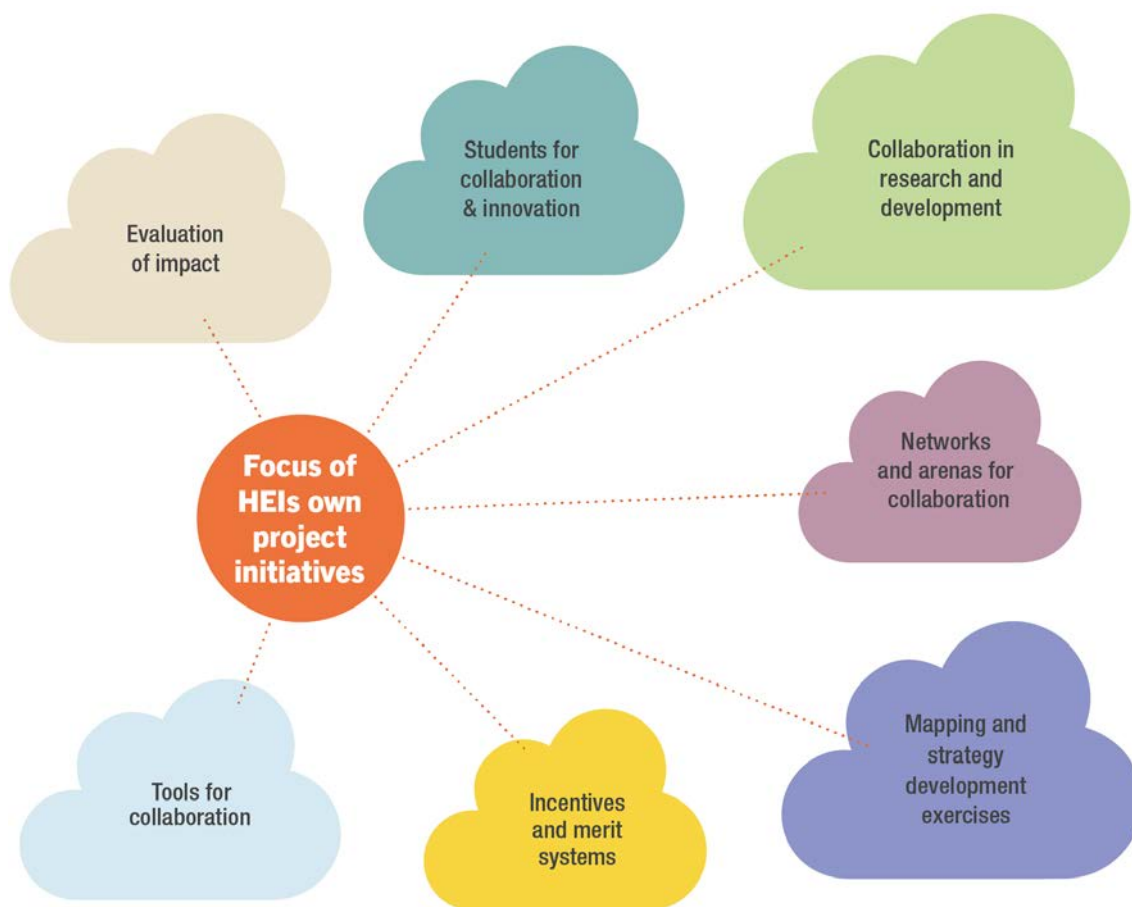
The first phase of the process was mobilizing and engaging Swedish HEIs in the work. This was done through two open calls (one per year) aimed at supporting HEIs' own ideas for strategic development of their interaction with surrounding society (2013), and the implementation of those strategic activities that HEIs themselves deemed most important for strengthening their interaction with society (2014). Proposals from HEIs went through an evaluation process of written descriptions of activities and interviews with proposed project leaders and university management. A panel consisting of both national and international experts evaluated the applications. In each phase, the government-allocated budget was combined with additional funding from Vinnova, resulting in total allocated funding of 80 MSEK (8,5 MEUR) in 2013 and 70 MSEK (7,45 MEUR) in 2014.

**Figure 5: Funding allocated for 2013 and 2014 calls (MSEK)**



All Swedish HEIs were invited to submit proposals in the calls. HEIs could submit individually, or in partnership with one or more other HEIs. The calls in 2013 and 2014 resulted in a total of 35 projects involving 28 HEIs – aimed at developing HEIs' own strategies and collaborative activities with industry, public sector and civil society. Of the 35 projects, 8 were conducted with 2 or more partnering HEIs. Projects targeted various types of activities (see Figure 6 below), including involving students as a resource for societal interaction; developing (or scaling up) collaborative tools, networks and platforms; conducting mapping and strategy development exercises; and creating indicators and models for evaluating impact. Some examples – illustrating the broad range of development activities undertaken at HEIs – are provided in the boxes below.

**Figure 6: Major themes of projects that were supported 2013-2014**



**Box 2: Developing incentives for societal collaboration (at Chalmers)**

Chalmers has a long and strong tradition of collaborating with the surrounding society. Collaboration occurs in many different forms, ranging from educating industrial Ph.D students to strategic, long-term agreements with key industrial partners. In order to further strengthen and develop collaborative activities, there is an internal and external need to understand what and how collaboration takes place and the results of such collaborative activities. This is the basis for the 2-year MuCh-project (Model for monitoring and development of collaboration activities at Chalmers) headed by Chalmers Innovation office.

The overall goal is to create a cost-efficient model for monitoring and developing collaboration activities, which is considered value-creating internally and implemented broadly across key areas such as individual incentives for collaboration, education, research departments, Areas of Advance, centres and strategic partnerships.

Project objectives include:

- create methods to manage and develop collaboration at university-level
- increase Chalmers' ability to identify and develop new forms of collaboration
- increase Chalmers' ability to communicate and report on collaboration results

This will make Chalmers a more attractive collaboration partner, where, for instance, researchers will be invited to participate in EU-projects more widely, and where educational programmes will be ranked higher by students through demonstrating strong collaboration between the university and society. The project will also support Chalmers' new model for faculty funding, where 10% of the governmental research funding will be distributed based on utilization of research, specifically collaboration projects and co-publications with companies, professional education, adjunct professors and industrial Ph. D students and stories on societal impact.

### **Box 3: KLOSS - Knowledge exchange and learning about strategic collaboration**

In KLOSS, 9 HEIs have collaborated on how to approach strategic collaboration. Strategic collaboration means an approach to the world at large that is based on the ambition to deepen the role of a higher education institution as a long-term skills resource and knowledge hub in the development of the community and the business world. By developing procedures for assessing and supporting prioritized forms of collaboration and establishing structured relationships, the institution can strengthen its long-term quality and relevance in both teaching and research.

Important issues for collaboration examined and assessed by KLOSS institutions are:

- Continuously reviewing employees' conditions for collaboration with external stakeholders. In instances of hiring or promotion, a good track record in collaboration could be included in any assessments made in a clearer manner than is the case today. Also, conditions for personal mobility between academia and the world at large could be developed, including through new forms of part-time employment.
- Developing the strategic capacity for structured exchange with companies, public bodies and other organizations that complement spontaneous collaborative processes. A range of approaches and models for various forms of exchange are available, from arranging temporary meeting places to more long-term forms of exchange concerning particular areas and all-embracing partnerships with organizations particularly important to the institution.
- Establishing the work on strategic collaboration in both the academic management at all levels and among employees generally, and identifying responsibility for different processes and areas.
- Relying on the mechanisms for quality assessments that are integral to strong academic environments in order to dare to make ground-breaking prioritizations.
- Participating in and driving further discussion to maintain a link between the issues of "impact" on societal development and fundamental questions about the requirements to conduct top-quality teaching and research.

Consensus from the KLOSS project has been that the HEIs should not necessarily strive for more comprehensive collaboration in all its forms, but they have much to gain from more clearly including collaboration issues in the overall quality improvement work. This approach means that the HEIs should not give priority to supporting forms of collaboration whose costs in terms of time and resources are expected to be higher than their long-term benefit for teaching and research.

As a result of KLOSS, a continuation project, KLOSS AkUt on how HEIs should and better can manage mobility of researchers from academia to the rest of the world has been initiated. In the continuation project all nine plus two additional Swedish HEIs participate to construct and execute researcher mobility at each HEI. In total, 40 researchers from 11 different HEIs have been on a shorter mobility to another organisation with results and effects in- and outside the HEI monitored.

The experience from KLOSS AkUt show that there is a benefit when the HEIs are responsible for setup and execution of mobility projects as the projects become strategic and well anchored within the HEI. The learnings from KLOSS AkUt has become a base for a national programme to support mobility of researchers, from academia to society.

At the time of writing, a collaboration council has been set up with high level representation from all 34 Swedish HEIs. This council draws much experience from the KLOSS project.

#### **Box 4: Collaboration Arenas - CARENA**

Carena is a project including Jönköping University, University of Borås, Halmstad University, University of Skövde, University West and Malmö University. The project was created with the purpose to propose, implement and test a specific tool for strategic collaboration, hereafter referred to as collaboration arena (CA). A CA aims to create value for all participating organizations by naturally linking operational activities at each partner, with both higher-level subject specific collaboration as well as strategic collaboration at highest organizational levels. This means that the collaboration that individuals carry out at different organizational levels, can be linked to a structured and strategic collaboration between organizations.

The project studied collaboration from different perspectives. One was to define the concept collaboration arena (CA), and to show that interaction takes place at several different organizational levels, a layered model for collaboration was proposed. The definition and model were evaluated using interviews with representatives of existing CAs. The project had a significant practical part, i.e., the development of a number of CAs. These were used to develop the definition and model, and to identify recommendations for activities that should / should not be done when establishing a CA.

Regarding the results and long-term effects, the participating HEIs have already found that the layered model for strategic collaboration is a useful tool for developing collaboration with external partners. Many of the CAs implemented within the project can already demonstrate significant positive effects on, mainly, increased external funding of research. In addition, the CAs have contributed to the establishment of physical collaboration environments with great participation and interest from collaboration partners.

#### **Box 5: MINT (Mobility for value and growth), the alumni subproject**

Karlstad University, Linnaeus University, Mid-Sweden University and Örebro University have a well-established cooperation through the Innovation Office Fyrklövern, which includes a structured and systematic experience exchange. The four universities have similar challenges and opportunities and therefore benefit from joint development ventures.

The constellation has, for example, joined forces on three priority areas, packaged into the project MINT (mobility for value and growth). One of these areas aims to develop the alumni activities into a strategic cooperation tool, strengthening the links between education and the labour market and research cooperation.

Fyrklövern sees an opportunity to further increase the quality of education and advance the utilization of research results by developing processes for systematically involving alumni as resources in its cooperation. The developed processes and the activities organized will promote education and research as well as the areas in which the alumni are professionally active.

Examples of activities are:

- Alumni meetings and mentorship programs for interaction between alumni and students
- Supporting education-program coordinators in forming alumni groups as program resources, for instance as guest lectures and student project contacts
- Involving alumni as research partners and supporting mobility programs for interaction between academy, industry and the public sector
- Marketing of the alumni network and its value, for students and former students

With the joint approach, the four universities are able to both develop and secure that the alumni process becomes an integrated and important aspect in the future of the universities.

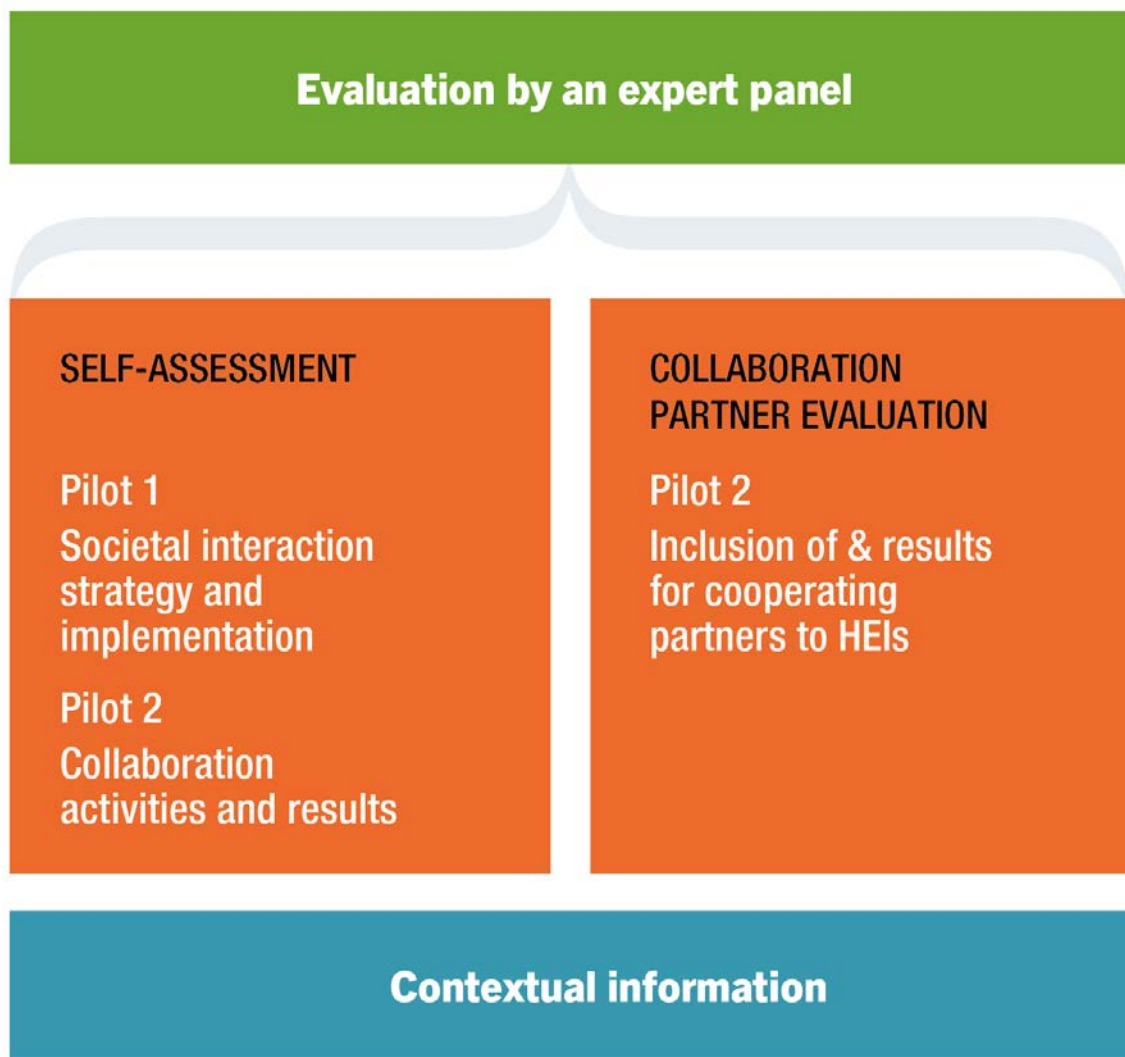
Parallel to the project calls, Vinnova initiated dialogue processes with Swedish HEIs and other organizations on the model design (see section 4.3).

In addition to successfully mobilizing the strategic development and implementation of activities to strengthen Swedish HEIs' societal interaction, the "project phase" (including the

parallel dialogue processes) resulted in a proposed model for evaluation of societal interaction. This kind of model for evaluation could be used to develop and reform existing systems for allocation of funding to Swedish HEIs by including quality and performance in societal interaction as a parameter.

Vinnova's proposed model for evaluating societal interaction was to be tested in two steps (see Figure 7 below): an expert panel's summary evaluation of HEIs' own self-assessment of their context and strategy for societal collaboration (pilot 1), and of both HEIs' self-assessment and partners' assessment of collaborative activities and results (pilot 2).

**Figure 7: Vinnova's proposed model for evaluating societal interaction**





## 4.2 Pilot Calls 2015 and 2016

The second phase of the process aimed at testing the proposed model in two steps. This was done through two pilot calls implemented during 2015 and 2016 (see Figure 8 below).<sup>8</sup> Pilot 1 focused on evaluating HEIs' strategy and implementation plans, and pilot 2 focused on evaluating HEIs' collaborative activities and results. 60 MSEK was allocated to each pilot call. All HEIs were invited to participate in Pilot 1; however, only those participating in Pilot 1 were invited to participate in Pilot 2. This was done to be able to perform a complete test of the proposed model.

**Figure 8: Overview of process for pilot calls**

	<b>HEIs' Input</b>	<b>International Expert Panel Evaluation</b>	<b>Allocation of Funding</b>	
<b>Pilot 1</b> (27)	<p><i>Written documentation</i></p> <ul style="list-style-type: none"> <li>• Background information on HEI's context</li> <li>• Self assessment of strategy and implementation</li> <li>• Documentation (or other) to validate self-assessments</li> </ul>	<p><i>Quality and performance of...</i></p> <ul style="list-style-type: none"> <li>• Strategy</li> <li>• Implementation</li> </ul>	<p><i>Assigning rating...</i></p> <ul style="list-style-type: none"> <li>• Emerging</li> <li>• Developed</li> <li>• Well-advanced</li> </ul>	<p><i>Budget of 60 MSEK for each pilot call allocated to HEIs...</i></p> <ul style="list-style-type: none"> <li>• Fixed amount of 500.000 SEK for each participating HEI</li> <li>• Remaining amount divided among HEIs based on their evaluation rating (pro-rated based on size of the HEI)</li> </ul>
<b>Pilot 2</b> (26)	<p><i>Written documentation</i></p> <ul style="list-style-type: none"> <li>• Description of 10 societal collaboration activities</li> <li>• Self assessment of activities and results</li> <li>• Documentation (or other) to validate self-assessments</li> </ul> <p><i>Survey of collaboration partners</i></p> <p><i>Interviews of teams from each HEI</i></p>	<p><i>Quality and performance of...</i></p> <ul style="list-style-type: none"> <li>• Activities</li> <li>• Results</li> </ul>	<p><i>Assigning rating...</i></p> <ul style="list-style-type: none"> <li>• Good</li> <li>• Very good</li> <li>• Excellent</li> </ul>	<p><i>Budget of 60 MSEK for each pilot call allocated to HEIs...</i></p> <ul style="list-style-type: none"> <li>• Minimum 1.500.000 SEK for each HEI</li> <li>• Remaining amount divided among HEIs based on their evaluation rating (pro-rated based on size of the HEI)</li> </ul>

27 HEIs participated in pilot 1, and 26 HEIs participated in pilot 2. Evaluations of pilot 1 applications were based solely on the written material provided by the HEI consisting of background descriptions of their own context, and self-assessments of their strategy and implementation plans, as well as HEI's self-defined indicators and other documentation to motivate and validate the self-assessment. Evaluations of pilot 2 applications were based both on written material provided by the HEI (consisting of a description of their choice of activities, as well as self-assessments of their collaborative activities and results – validated by documentation of results), a survey of collaboration partners, and interviews with university representatives. In pilot 2, each university was asked to describe 5 to 10 collaboration cases with both activities and results covering research and/or education. The cases for each HEI were also required to illustrate different types of collaboration partners as well as different areas of research and education. Vinnova also asked for contact persons for the selected cases from each

<sup>8</sup> Pilot 1 call opened February 2015, with a decision communicated October 2015. Pilot 2 call opened October 2015, with a decision communicated June 2016.

HEI. Based on the contact persons submitted, a survey was sent out to 293 collaboration partners, and achieved a response rate of 96%.

A panel of 9 external experts evaluated the applications. Members of the panel represented perspectives from HEIs, industry, public sector and civil society, and included different sectoral competencies/disciplines and 2 international representatives from Norway and Finland (see Appendix I for more detail).

The model Vinnova proposed in 2014 was described with the intention that each HEI would be evaluated on its own role and context. The expert panel considered this to be too difficult to assess for all 27 pilots. Therefore, in evaluating the proposals the participating HEIs were categorized into six groups<sup>9</sup>: large comprehensive universities<sup>10</sup>, university colleges with disciplinary research domains<sup>11</sup>, university colleges without disciplinary research domains<sup>12</sup>, university colleges of fine applied and performing arts<sup>13</sup>, new universities<sup>14</sup>, and large specialized universities<sup>15</sup>. The evaluation of societal interaction of each participating HEI was based on four aspects:

- 1 Strategy for collaboration (pilot 1)
- 2 Implementation of the strategy (pilot 1)
- 3 Collaborative activities (pilot 2)
- 4 Results (pilot 2)

Each aspect was evaluated using 2-3 criteria (see Appendix I). Based on the evaluation, the expert panel then assigned a rating to each applicant: emerging (grade 1), developed (grade 2), or well-advanced (grade 3) for Pilot 1; good, very good, or excellent for Pilot 2. The resulting groupings are presented below (see Figure 9 and Figure 10). The total budget (60 MSEK for each pilot call) was then allocated to each HEI based on a combination of the evaluated rating and size of the HEI.<sup>16</sup> (Additional details are presented in Appendix I.)

The HEI pilots included many outstanding examples of collaborative activities. Some examples are provided in the boxes below:

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<sup>9</sup> The grouping of HEIs is based on groupings made by the Swedish Higher Education Authority, with additional categories. The groupings have been used in previous work and reports on the Swedish HEI system and were therefore regarded with legitimacy.

<sup>10</sup> University of Gothenburg, Linköping University, Lund University, Stockholm University, Umeå University, Uppsala University

<sup>11</sup> Blekinge Institute of Technology, Jönköping University, Malmö University, Mälardalen University

<sup>12</sup> University of Borås, Dalarna University, University of Gävle, Halmstad University, Kristianstad University, University West, Södertörn University

<sup>13</sup> Royal College of Music in Stockholm

<sup>14</sup> Karlstad University, Linnaeus University, Mid Sweden University, Örebro University

<sup>15</sup> Chalmers University of Technology, Karolinska Institutet, KTH Royal Institute of Technology, Luleå University of Technology, Swedish University of Agricultural Sciences

<sup>16</sup> In both Pilots 1 and 2, each applying HEI received a fixed amount of 500.000 SEK + a variable amount based on the evaluated rating and size of HEI.

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**Box 6: Marine archaeological method development at Södertörn University**

For over a decade, a group of researchers in marine archaeology have worked closely together with instrumentation and documentation companies. The companies provided critical instrumentation such as remote operated underwater vehicles to expeditions as well as measurement and documentation technology, enabling key archaeological discoveries of significant scientific value. One example is the discovery of “the Ghost ship” in the Baltic Sea that initiated a large international research project. The discovery, data gathering and documentation of the ship benefited greatly from the parallel and collaborative development of instrumentation between the research groups and engaged companies. In turn, the companies accessed experimentation and testing possibilities, refining their products.

**Box 7: The Center for Education and Research on Addiction (CERA) at Gothenburg University**

CERA is an interdisciplinary research centre focusing on research and education in the field of addiction that builds on long-term collaboration across scientific disciplines and between diverse actors such as the local municipality, the county council, and governmental organizations. A significant benefit for research is the increased capacity to identify central research questions and organize the work in an interdisciplinary manner. As regards education, the collaboration has resulted in a unique master’s program that diffuses the knowledge developed in the centre. Knowledge diffusion is also enabled through continuous dialogue, evaluations, discussions and networks. This has rendered societal impacts in the form of practical implementations in health care and regulations, as well as increased awareness of the importance of evidence-based practice within addiction treatment.

**Box 8: Working with schools to foster and secure aspirations for higher education at Örebro University**

Since 2003, Örebro University and the municipality have been collaborating to encourage young people from non-academic environments to engage in higher education. With the ambition of a continuous presence in the everyday life of youths, activities include study support and study technique courses, role-model days, campus visits and mentoring projects. This has rendered significant results in the academic engagement of targeted groups. From the perspective of universities, a benefit is the access to new perspectives and ideas from non-academic environments that bring an opportunity to conduct and develop socially relevant teaching and pioneering research.

**Box 9: Student placements at Kristianstad University**

For several years, Kristianstad University has had the vision to produce the most employable students in Sweden. Student placements that integrate practical experiences into the learning process have been a significant part in realizing this vision. Currently, the university offers at least five weeks of placement as part of all undergraduate and most graduate educational programmes. To strengthen the learning experiences of students, the university offers training for the external supervisors that are appointed to each student. The student placement activities, including supervisor training, are specially designed in collaboration with external stakeholders to suit the particular context. The extensive experience of student placements has created research opportunities, and currently the university hosts a research platform on student placements and professional learning. Students gain valuable work-life contacts and a deeper theoretical understanding by applying it practically. External stakeholders get to know potential employees before employment and develop a deeper dialogue with the university – enabling the university to adapt educational programmes to future needs.

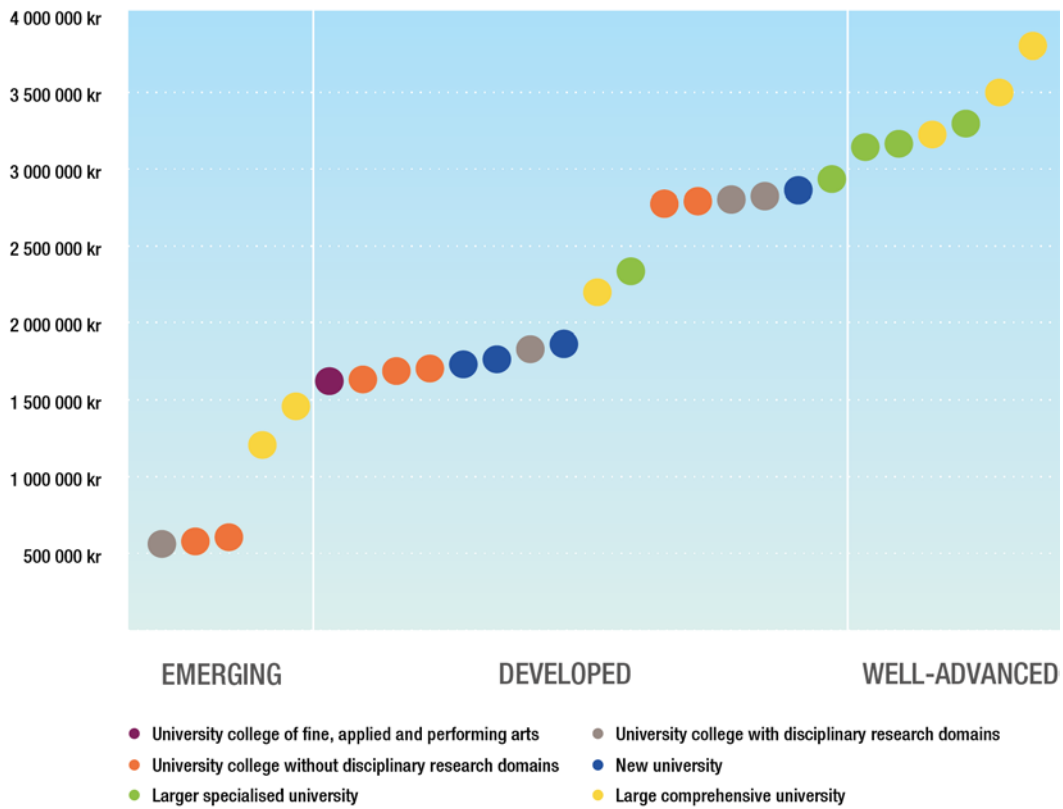
**Box 10: Berzelii Centre EXCELENT at Stockholm University**

In 2007, the collaborative research centre Berzelii Centre EXCELENT was founded. It combines material science with environmental and organic chemistry. Currently, 12 external partners and three university departments are included. EXCELENT has provided opportunities for sharing infrastructure, developing research agendas, exchanging personnel and pooling resources around research, resulting in an internationally prominent research environment at Stockholm University. The pharmaceutical company AstraZeneca is one of the key partners in the centre, and their researchers engage with faculty through collaborative research and PhD training, resulting in significant numbers of patents, papers and models. The participation has rendered AstraZeneca access to cutting edge research and prominent scholars which has furthered their leadership in catalysis in organic synthesis.

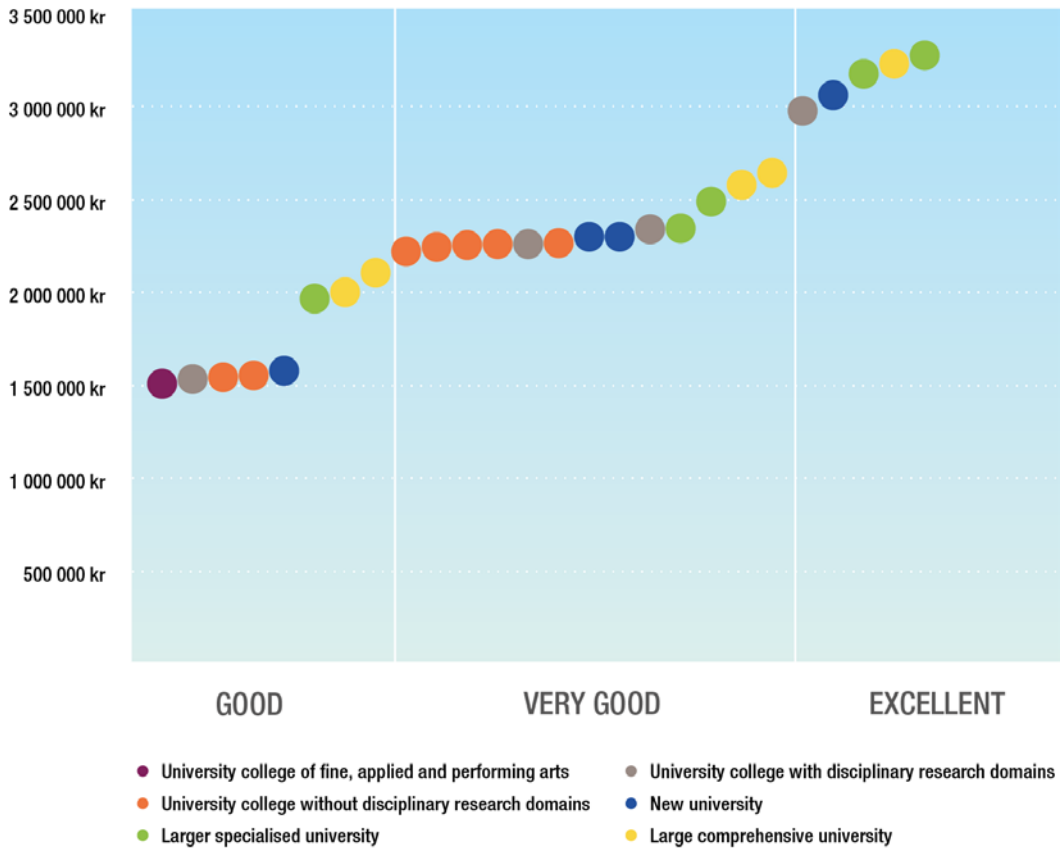
The results from Pilot 1 and Pilot 2 provide a number of observations:

- Contrary to what might be expected, it is not only well-established universities specialized in engineering, technology or medicine that do well. Newer and smaller regional university colleges also appeared among the most favourably evaluated HEIs in both pilots.
- Having the best strategy does not ensure having the best collaboration patterns and impacts. Only 4 of 12 HEIs that were most favourably evaluated in Pilot 1 were also favourably evaluated in Pilot 2.
- Evaluators remarked that it was relatively easy to find flaws in HEIs' descriptions of their strategies for interaction while at the same time it was easy to be sympathetic to descriptions of collaborative activities and results.
- The most favourably evaluated activities and results are not only found at the HEIs that were considered to have the best strategies. In general, more than 40% of HEIs had more favourably evaluated strategies than results.

**Figure 9: Pilot 1 Evaluation Results and Allocation of Funding**



**Figure 10: Pilot 2 Evaluation Results and Allocation of Funding**



### 4.3 The critical importance of dialogue

As previously mentioned, a key principle of Vinnova's approach for responding to the government assignment was having an inclusive and iterative dialogue with HEIs and other key stakeholders. In order to mobilize and engage HEIs in the process, and establish common principles for developing the model, Vinnova invited all Swedish HEIs to participate in a reference group. Almost all HEIs accepted<sup>17</sup> – sending deputy vice-chancellors for societal collaboration, heads of innovation, or similar representatives to participate in (four) structured workshops (at Vinnova). To ensure a wider understanding and anchoring a broader involvement of HEIs in Vinnova's efforts, additional workshops were held on HEI campuses. Although it was difficult to get unanimous perspectives from the diverse set of HEIs, the reference group provided very valuable input to Vinnova.

In parallel to the dialogue process with HEIs, Vinnova held a number of presentations and dialogue meetings with other important stakeholders such as: the Confederation of Swedish Enterprises, the Association of Swedish Higher Education, the Swedish Association of Local Authorities and Regions, Teknikföretagen (an employers' organization representing technology companies), Research Institutes of Sweden (RISE), the Swedish National Union of Students, and union representatives. In addition, Vinnova and the Swedish Research Council – together with Forte and Formas – held bi-monthly meetings to coordinate their activities in relation to their respective government assignments.

The interactive process also included workshops with Teknikföretagen and the Swedish Association of Local Authorities and Regions (SKL), as well as five HEIs, to design a survey for HEIs' collaboration partners. The survey was designed to take approximately 15 minutes to answer, to give the evaluators sufficient information on the experience of partners collaborating with HEIs, and to be useful for HEIs in their own future management of collaboration partners.

These dialogue activities helped to ensure a more common understanding of the concept and benefits of societal interaction, as well as common principles and tools for the model.

### 4.4 Other learning activities

As part of the commission, Vinnova was asked to explore and learn from other experiences internationally. Together with the Research Council, Vinnova investigated experiences in a number of countries (Denmark, Netherlands and UK), and Vinnova conducted a more in-depth study of Australia's system for evaluating the quality and effects of university research and societal interaction.<sup>18</sup> The study in Australia included benchmarking with governmental agencies responsible for assessing research quality, as well as interviews with Australian HEIs that had begun undertaking reforms to their approaches for societal interaction. In addition to studies of international experiences, Vinnova commissioned a number of analyses of the history

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<sup>17</sup> More than 130 individuals from 27 of Sweden's 48 HEIs participated in the reference group/dialogue process.

<sup>18</sup> See Vinnova report: *Australien - Utvärdering av forskningens kvalitet och effekter samt samverkan med det omgivande samhället vid universiteten*. Delstudie inom regeringsuppdrag N2013/1162/FIN, Våren 2014.

and current patterns of Swedish HEIs' role in society<sup>19</sup> and participated in a benchmarking of American universities (Stanford and Berkeley).<sup>20</sup>

In addition, Vinnova organized a study visit for Swedish HEIs to the Bay Area in November 2014. The purpose of the trip was to provide inspiration and contacts for HEI representatives involved in the Vinnova-led process of developing the model for evaluating interaction with society. The delegation consisting of representatives from 14 HEIs visited Stanford University, the University of California San Francisco and the University of California Berkeley, universities characterized not only by academic excellence but also a strong culture and tradition of interacting with society.

These type of learning and knowledge development activities are a key component of policy and programme development at Vinnova – to embed latest knowledge (and academic ‘state-of-the-art’) and ensure quality in the work. Over the years, Vinnova has funded several centers for innovation research (Circle, Ciir, Cesis)<sup>21</sup> to expand the understanding of innovation processes and policy. In 2015, Vinnova decided to initiate new knowledge platforms for research and analysis around topics relevant to Vinnova’s activities. One knowledge platform concerns the knowledge triangle and will (over the coming years) examine the funding streams to universities, the leadership inside universities, the support structures for interaction with society, and the impact of societal interaction on the quality of education and research.

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<sup>19</sup> Including: Perez Vico, Hellström, Fernqvist, Hellsmark and Molnar (2014). *Universitets och högskolors samverkansmönster och dess effekter*; Benner and Sörlin (2015). *Samverkansuppgiften i ett historiskt och institutionellt perspektiv*; and others in list of references and additional reading.

<sup>20</sup> See SNS report: Bienenstock, Schwaag Serger, Benner and Lidgard (2014). *Utbildning, forskning, samverkan – Vad kan svenska universitet lära av Stanford och Berkeley?*

<sup>21</sup> Circle (Centre for Innovation, Research and Competence in the Learning Economy), Lund University and Blekinge Institute of Technology. Ciir (Centre for Inter-Organizational Innovation Research), Luleå University of Technology and Umeå University. Cesis (Centre of Excellence for Science and Innovation Studies), Royal Institute of Technology and Jönköping University.

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## 5 Results and reflections from the experience

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The process resulted in a model for evaluating HEIs' interaction with surrounding society regarding both research and education – tested by Swedish HEIs – which can be used to develop and reform existing systems for allocating funding to universities. Input on further developments of the model have been provided by the external evaluating panel. Further input will be collected from Swedish HEIs during the fall of 2016.

In addition to testing the proposed model, many participating HEIs expressed that the process between 2013-2016 has resulted in a stronger peer network (or collegium) among Swedish HEIs, a shared and more holistic understanding of mutually beneficial interaction with surrounding society, and better knowledge of how societal interaction can strengthen the quality of education, research and innovation.

*Beyond the results from individual projects, an important result was the network established between the universities – where we were able to develop a shared perspective on the definition and importance of societal interaction, and how it can be used to improve the quality of research and education. The development efforts – across so many universities at the same time – has provided both legitimacy and additional strength and vigor. It would have been impossible for any individual university to achieve such change on their own. To change the system, everyone has to take part.*

Peter Värbrand, Deputy Vice Chancellor responsible for external relations at Linköping University.

The process has contributed to a clear development of HEIs' perspectives and operational work which integrate societal interaction into core operations (see Figure 11 below). This trend in systemic change among HEIs in Sweden is a very positive result, as the focus of Vinnova's work was on developing an approach to incentivize HEI's *own* continual development of their role in society.

*The process has given more attention to societal interaction and its contribution to research and educational excellence, and has provided the opportunity to put more focus on developing societal interaction (activities, organizational structures).*

Peter Aronsson, Pro-Rector responsible for collaboration with society at Linnaeus University.

*The main result was putting societal interaction on the agenda. It will take a long time to communicate, internalize and integrate the concept in all parts of the university, but the process has provided credibility and legitimacy and gotten the ball rolling all over Sweden. The (developmental/change) process has progressed much faster with national backing and other universities undertaking similar work.*

Agneta Marell, Deputy Vice Chancellor responsible for external relations and innovation at Umeå University.

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*It is a complex process (to integrate societal interaction with core activities) ...to adjust perceptions of interaction with society...moving from understanding societal interaction as a third task, to understanding societal interaction as an integrated part of our approach to education (research and innovation) activities. The Vinnova-led activities over the last four years have put societal interaction on the strategic agenda – at university, but also national level.*

Andreas Jacobsson, Dean of Education at the Faculty of Technology and Society at Malmö University.

*Everything Vinnova has done has contributed to a notably increased focus on and more systematic efforts to develop societal interaction at our universities.*

Peter Värbrand, Deputy Vice Chancellor responsible for external relations at Linköping University (see also Box 11 and Box 12 for a description of Linköping's experience and initiatives).

#### **Box 11: Initiating strategic change at Linköping University**

Linköping worked with communicating the value of societal interaction (as a tool to strengthen the quality of research and education). "For a long time, universities have been focused on excellence as measured by publications and (research) funding. It's important to develop a more balanced view – that excellence is also about using knowledge and research results in a productive way." (Peter Värbrand, Deputy Vice Chancellor responsible for external relations at Linköping University)

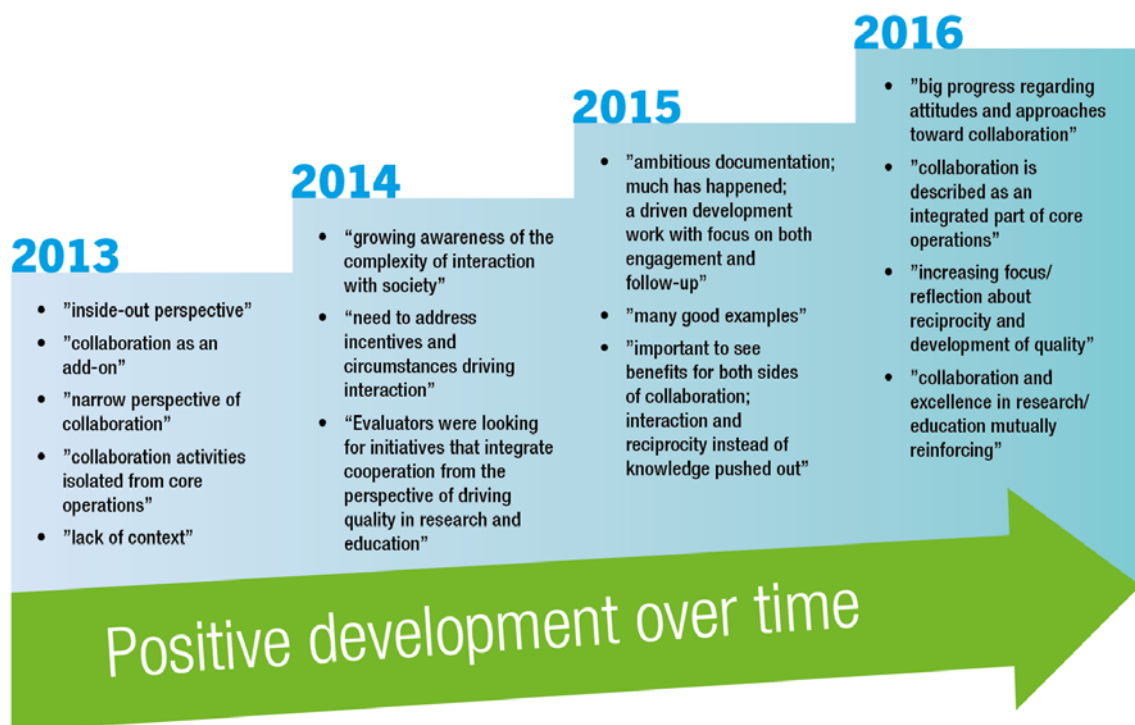
The Vinnova process has contributed to an improved understanding of societal interaction – helping universities to mobilize individuals and develop their own processes. At Linköping University, this improved understanding and focus on societal interaction has resulted in various adjustments to internal processes, including the revision of employment regulations to include societal interaction (i.e. use of knowledge or research results) as a possible assessment criterion in, for example, promotion.

External evaluators observed that HEIs' project applications in 2013 had rather narrow perspectives on societal interaction (focusing on activities that were related to the utilization of research) and provided limited background information on their context (particularly in relation to national and international trends and benchmarks). HEIs' role regarding societal interaction was often viewed and managed as an add-on – isolated from core operations in research and education. By 2014, HEIs' applications demonstrated a growing awareness of the changing nature and increasing complexity of interaction with society (e.g. through the increasing emergence of large scale collaboration projects which combine industry, academia and the public sector in an effort to tackle societal challenges). There was a stronger emphasis on developing strategies, impact metrics and cooperation models, and interesting initiatives involving students and alumni, or appointing "collaboration coordinators". However, evaluators felt that the additionality and lasting impact of proposed initiatives was not evident in some of the proposals, and that few proposals showed a clear concept of how interaction with society can be seen and used as a way to improve the quality of research and education. Experts acknowledged the challenge of proposing isolated initiatives vs driving change in culture and values, driving forces and incentive structures.

Self-assessment and supporting evidence submitted for the pilot call in 2015 demonstrated a further development in HEIs' approach to working with societal interaction, as well as more

detailed descriptions and documentation of their context and activities. Evaluators highlighted many good initiatives, while underlining the challenge of achieving a balance between broad strategies and concrete implementation including incentive structures and follow-up measures. By the final pilot call in 2016, self-assessments together with interviews with HEIs demonstrated that societal interaction had become a more integrated part of core operations. HEIs had adopted broader perspectives on the value of societal interaction – both for strengthening the quality of research and education and providing beneficial impacts for society. HEIs highlighted that the process over the last four years had helped mobilize and engage a broader range of university personnel in the strategic work, and hoped that momentum could be maintained (see Figure 11 which is an attempt to capture this development as expressed by HEIs and expert evaluators).

**Figure 11: Development of HEIs’ perspectives and operational work over time (according to observations expressed by HEI representatives and expert evaluators)**



The external evaluators felt that the process had resulted in an engaged (committed) development work among HEIs in Sweden, that self-assessments described a rich flora of collaboration activities, and that the process had contributed to affecting institutional (and policy) development. They challenged HEIs to continue developing new approaches (with a variety of societal partners) that addressed their particular context – using external benchmarks for inspiration. Evaluators also highlighted the need to develop structures for incentivizing and following-up results of societal collaboration. The panel also expressed that they would like to see HEIs work with new and more ambitious forms of interaction activities which also challenged their collaboration partners to develop their ability (for example in addressing societal challenges).

*It was a truly interesting experience to be part of the Vinnova initiative on societal interaction of Swedish universities. It was very encouraging to see how much the universities' own understanding and strategic thinking developed during the project, which highlights the value of such exercises beyond the funding allocated. Furthermore, it was enlightening to see how many different ways there are to implement such societal interaction and do that well - one size clearly does not fit all. If there was one lesson learned, I would say that the commitment of the university president is vital to success; leadership of these activities just cannot be delegated to the "office of external relations" however competent and capable staff it may have.*

Prof. Tuija I. Pulkkinen, Aalto University, Vice President for Research and Innovations, member of the expert evaluation panel.

*The pilot activities (led by Vinnova) are an important contribution both to supporting the development of higher education institutions in Sweden, and to developing research and innovation policy and to nudge for impact and cooperation with public, civil and business sector. There was a notable development over time – starting with concern over indicators to focusing on the development of approaches, partnerships and affecting organizational change. The process seems to have supported the universities' understanding and internal activities of societal interaction, and also to learn from each other. The pilot has inspired us in The Research Council of Norway in our dialogue process on societal interaction with our universities.*

Anne Kjersti Fahlvik, Research Council of Norway, Executive Director for Division of Innovation, member of the expert evaluation panel.

HEIs themselves have expressed the benefits of getting inspiration and learning from one another.

*The process provided us with an opportunity to work systematically together with other universities on addressing barriers and developing responses to common questions (about e.g. how to organize, how to document the effects, etc.). We have all been able to learn and get inspiration from each other. This has served as a strong catalyst to speed our development process.*

Peter Värbrand, Deputy Vice Chancellor responsible for external relations at Linköping University.

*One of the most positive aspects of the process was the opportunity to work with other universities to develop new approaches to integrate societal interaction in the development and implementation of educational programmes – to strengthen the quality in education. By working together and getting inspiration from each other, we all experienced a stronger momentum for change and were able to adopt new approaches to merit evaluation systems, evaluation of teaching and development of new educational programmes.*

Andreas Jacobsson, Dean of Education at the Faculty of Technology and Society at Malmö University.

### **Box 12: A group effort to integrate societal collaboration in higher education**

Starting with the project calls in 2013 and 2014, Malmö University, Linköping University and Umeå University joined forces to develop methods for documenting societal collaboration activities in education and to create new incentives for integrating societal collaboration into higher education. The project involved over 30 education programs, and about 180 teachers and program directors have been interviewed about their collaboration activities at the three HEIs. This led to an increased interest in developing cooperation with society in education, as well as to a better understanding of what such collaboration can mean and how to strategically include it in the education programs. In addition, it also had an impact on the work with quality assurance in higher education. An example of this is that the discussion about collaboration is often linked to students' ability to achieve their learning goals.

The activities resulted in a two publications, as well as a peer learning – gathering 22 HEIs (in April 2016) to share experiences and initiate new development activities (see <http://samsak.mah.se/>). The publications serve as guide on how as a HEIs structure education programs to assure and control what aspects of society the students get to interact with and also make sure that the students are aware of what life after graduation expects of them.

Drawing from input from expert evaluators and observations from the process, Vinnova has drawn a number of lessons learned.

**The active involvement of and dialogue with HEIs throughout the process was key.** HEIs' involvement not only provided helpful input, strong anchoring, and mutual learning, but it also catalyzed their own development activities – strengthening the system overall.

*Initially, the process was focused on developing a metric-based model for assessing societal interaction. Vinnova adjusted course – which was a smart idea. The new process (based on setting own priorities and self-assessments) gave universities more room to structure their own work.*

Peter Aronsson, Pro-Rector responsible for collaboration with society at Linnaeus University.

*It was positive that Vinnova led such an inclusive process with HEIs – maintaining a continuous dialogue and providing funding to allow us to develop different new forms of collaborative activities. The process has contributed to an increased focus from university leadership on collaboration with industry and society, and new operational approaches (developed in projects...even with other HEIs).*

Anders Malmberg, Deputy Vice-Chancellor at Uppsala University.

**A small amount of funding can mobilize many people, activities and organizational learning.** The funding provided by Vinnova served as an incentive and catalyst for mobilizing more people and other resources to strengthen and speed up existing societal interaction activities in HEIs. The funding also provided the means for HEIs to explore challenges and develop new responses tougher.

*It's been extremely beneficial to work together with other universities. The (small) project funding that Vinnova provided in early phases (to develop activities with others) was crucial to provide legitimacy, structure, and mobilize action and other resources to work with these questions. It's impossible to develop new approaches that reach all areas of the organization without an external catalyst (and resources).*

Agneta Marell, Deputy Vice Chancellor responsible for external relations and innovation at Umeå University.

**Evaluation of HEIs' societal interaction is possible; evaluation exercises should stimulate operational development for all types of HEIs.** HEIs' interaction with surrounding society can be evaluated by assessing a combination of strategies, activities and results. Evaluation exercises should support HEIs' continual operational development (rather than focus on shorter-term outputs from collaborative activities), and should thus be conducted no more often than every fourth year.

**Interviews with HEI teams were critical to understanding and evaluating HEIs' particular context and portfolio of activities.** The written input and survey of collaboration partners provided key information, yet the interviews provided a means of clarifying and synthesizing many pages of documentation and understanding how the prioritized cases fit with the HEIs' strategic development.

**The survey of collaboration partners had a limited value in the evaluation process.** The evaluators found that the survey of collaboration partners did not provide useful or reliable input for the evaluation in its current form. Evaluators emphasized nonetheless that getting collaboration partners and societal actors' views and assessment of the quality of interaction with HEIs is an important input when evaluating HEIs. They suggested that interviews or references from relevant actors might be a better approach than a formalistic survey targeting only people likely to give positive superficial statements.

**Leveraging external researchers to follow the process and provide input and analyses helped strengthen the knowledge base.** Various analyses and benchmarking with other countries have helped inspire new ideas – driving quality and ensuring legitimacy in the work.

**The process has initiated changes to attitudes and approaches among HEIs in Sweden, yet there is more to be done.** Integrating societal interaction into HEIs' core operations is a long-term process requiring systemic change. Vinnova perceives that the trial has provided legitimacy and gotten the ball rolling, yet momentum in developing a new “culture of interaction” must be maintained.

*The change process (engaging HEIs, broadening perspectives of societal interaction, and catalyzing more focused strategic and operational development of HEIs' work with societal interaction) has been the most important result. We've managed to plant a seed and initiate changed behavior among Swedish HEIs. But there is still a way to go to get societal interaction to be integrated as part of HEIs' DNA.*

Charlotte Brogren, Director General at Vinnova.

Rather than coming up with a simple model for a quantitative or indicator-driven assessment of interaction as originally envisaged, Vinnova ended up with a model which they believe is more effective in achieving the overall goal of the exercise, namely to support HEIs' development and improve the quality of research and education through societal interaction. From the first call to today, external observers and those involved witness a clear trajectory of learning and sped-up progress in their work with societal interaction. Changes are not limited to traditional external collaboration offices (working with commercialization or external relations). Rather, the process has tapped into a widely perceived need for HEIs to think more strategically about their role in society, and has provided a good way to channel reflection into new activities and

development of operations. The process has also catalyzed efforts to communicate the benefits and impacts which may eventually lead to indicators and models for articulating HEIs' role in society, and impact the system as a whole.

The process has been a valuable learning experience for Vinnova on how to communicate intentions, channel feedback and organize calls to target specific objectives while at the same time encourage and allow for HEIs' own experimentation and mobilization. One outcome of the interactive and iterative process with HEIs was that Vinnova ended up abandoning its original idea of an indicator-driven and based model. Thus, the process has also advanced Vinnova's efforts to promote policy-learning and experimentation.

Overall, the process has resulted in what experts deem to be a functioning model for both assessing and incentivizing HEIs' interaction with society. However, it should be pointed out that there is a challenge in moving from the current stage which focuses on developing capacities and stimulating or bolstering HEIs' efforts to strengthen their strategic approach to interaction with society to a future stage where the model would be used to evaluate performance as a basis for competitively allocating large shares of funding to HEIs. Such a transition would require further iteration, development and learning. Among other things, it would require a more transparent and sophisticated model for allocating funds.

## 6 Future areas for development and next steps

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The process conducted over 2013-2016 has resulted in a model for assessing the performance and quality of HEIs' interaction with society, which can be used for allocating funding. Yet a number of areas for development remain. A number of areas highlighted from the external evaluating panel include:

**HEIs should continue to develop their incentive structures, and measures and approaches to follow-up results from societal interaction.** The development of HEIs' perspectives and operational work is the key result from this process. It is important for Vinnova (and other national agencies) to continue working together with HEIs to support their work to develop incentive structures, systems for measuring and following-up results, and learning from each other (as well as HEIs internationally).

*The final result (of the process) can be a model for allocating funding. But maybe this isn't the most productive end. Perhaps it is better to use funding as a symbolic marker to catalyze continued development and optimize the whole system, rather than putting too much focus on optimizing particular indicators to get more funding.*

Peter Aronsson, Pro-Rector responsible for collaboration with society at Linnaeus University.

**Need to continue progressing from successful examples and individual (project) initiatives to a longer-term, sustainable culture of interaction.** Momentum should be maintained. This could be done through a "Pilot 3" focused on particular areas for development e.g. incentive structures, follow-up systems, and/or support infrastructure for societal interaction. The project and pilot phases conducted to date have shown that providing a little money can incentivize the right trends in development of universities' role.

**A future model should combine strategy, results and self-assessment in one step.** In the proposed model and pilots, the evaluation of strategy and implementation was taken as a first step, and the evaluation of collaborative activities and results was taken as a second step. These two aspects should be evaluated together.

**The level of funding that should be allocated based on this model is still a point of discussion.** In the government research and innovation bill currently guiding policy, 20% of HEI research income is "performance based". The model for assessing HEIs' interaction with society could be one of the approaches used for allocating "performance based" funding – providing all HEIs with some funding based on their "societal interaction performance". However, it is not yet decided if the model will be used to allocate funding to HEIs, and (if so) what share of funding will be allocated based on this model and who should be assigned the task of evaluating how the funds should be divided. It is recommended that additional tests and development of the model be implemented over time. The cases and experience overall show that interactive processes contribute to capacity-building, networks and resource mobilization.

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*The evaluation model and its translation into allocating funding had some major problems. First, the “divided evaluation” of strategy and implementation (in pilot 1) and activities and results (in pilot 2) did not work well. HEIs were judged on their organizational and governance structures in isolation from their results, and partly based on a highly normative view of how universities should be governed. Resulting ratings were not transparent, and the feedback provided was not so helpful in guiding improvements. Finally, the allocation of funding did not take the size of individual HEI’s into account more than marginally – resulting in highly skewed “collaboration performance bonuses” for smaller HEIs with “good grades”, and high “collaboration performance fines” for larger HEIs generally. This was not so critical in the pilot phase, as funding amounts were quite low. However, this model should not be used to allocate larger sums of research funding.*

Anders Malmberg, Deputy Vice-Chancellor at Uppsala University.

In the final phase of addressing the government commission, Vinnova is hosting two dialogue meetings with HEIs during the fall of 2016. These meetings have the aim of summarizing and communicating the process and its results to Swedish HEIs, as well as gathering final input from HEIs on results and what has been learned. This input from HEIs will be used in drafting the final report on the assignment – to be delivered to the government by end-year.



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## Appendix: Evaluation panel and process

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The composition of the expert evaluation panel aimed to fulfill a variety of characteristics:

- Good knowledge of the Swedish system for higher education and HEIs' particular conditions
- National and international perspectives
- Practical and strategic experience with societal collaboration
- Representation from a breadth of disciplines (mirroring those of Swedish HEIs as much as possible)

The panel was comprised of 9 members. Of the 9 members, 5 had organizational affiliation outside of HEIs, and 4 had affiliations within HEIs. Members of the panel represented perspectives from HEIs, industry, public sector and civil society, and included different sectoral competencies/disciplines and 2 international representatives (from Norway and Finland). The members of the expert panel are presented in the table below.

MEMBER NAME	ORGANIZATION	POSITION	COUNTRY	SECTORAL COMPETENCY/ DISCIPLINE
JOHAN ANCKER	(previously) Teknikföretagen <sup>22</sup>	(previous) Head of Industrial Development	Sweden	Engineer, knowledge of Swedish industry
FAYYAD ASSALI	Red Cross	Project Manager	Sweden	Business, civil society experience
ROMULO ENMARK	Swedish Defense University	Vice-Chancellor	Sweden	Humanities, university management
MARIE ERNESTAD	Region Västerbotten	Head of R&D	Sweden	Social Work, region and municipal experience
ANNE KJERSTI FAHLVIK	Research Council of Norway	Director of Innovation	Norway	Life Sciences, business, research council experience
PIA KINHULT	European Spallation Source	Advisor	Sweden	Political Science, public and region experience
PETER LARSSON	The Swedish Association of Graduate Engineers	Head of Liaison Department	Sweden	Engineer, knowledge of unions and education
ANNIKA PONTÉN	Swedish Higher Education Authority	Head of Analysis Division	Sweden	Political Science, university evaluation experience
TUIJA PULKKINEN	Aalto University	Vice-Chancellor of Innovation	Finland	Physics, university management

The pilot 1 evaluation was focused on strategy and implementation, and the pilot 2 evaluation was focused on the portfolio of collaborative activities and results, as well as the HEI's general context. In pilot 2, each university was asked to describe 5 to 10 collaboration cases with both activities and results covering research and/or education. The cases for each HEI were also

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<sup>22</sup> an employers' organization representing technology companies

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required to illustrate different types of collaboration partners as well as different areas of research and education (social sciences, medicine, engineering, humanities etc.).

The model Vinnova proposed in 2014 was described with the intention that each HEI would be evaluated on its own role and context. The expert panel considered this to be too difficult in the pilots. A more relative assessment was therefore applied, and applications were categorized into six groups of HEIs<sup>23</sup> and evaluated relative to each other by making distinctions between the applications in each group. Evaluators assessed the quality and performance of each applying HEI based on four criteria (see below).

1 *Strategy for collaboration* (pilot 1)

- Documented strategy with clear goals decided by HEI central leadership
- Well-anchored and communicated strategy
- Continual follow-up and development of the strategy

2 *Implementation of the strategy* (pilot 1)

- Integration of and resources for societal collaboration in HEI's core processes (research, education and innovation)
- Incentives for societal collaboration in HEI's internal resource allocation systems, and in recruiting and promotion systems
- Follow-up of strategy used to develop HEI's internal processes

3 *Collaborative activities* (pilot 2)

- Collaboration partners and other societal actors are involved in HEI's core processes
- (Broad) scope and portfolio of societal collaboration activities (in research, education and innovation)
- Continual follow-up and development of collaborative activities

4 *Results* (pilot 2)

- Valuable impacts on collaboration partners and society
- Results from societal collaboration used to develop HEI's own core processes

In pilot 1, evaluators based their assessments solely on the written documentation provided by the HEIs. In pilot 2, assessments were based on written documentation, results from the survey of the HEI's collaboration partners, and interviews with 2-4 people from each HEI.

Following individual assessments (based on written documentation), the expert panel reviewed the applications (one group at a time) – calibrating their assessments and assigning a rating<sup>24</sup> to each applicant. In pilot 2, interviews with 2-4 people from each HEI<sup>25</sup> provided an additional input before the evaluation panel assigned a rating. The total budget (60 MSEK for each pilot call) was then allocated to each HEI based on the following principles:

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<sup>23</sup> comprehensive universities, regional university colleges with research areas, regional university colleges without research areas, universities of art, new universities, and large specialized universities

<sup>24</sup> emerging (grade 1), developed (grade 2), or well-advanced (grade 3) for Pilot 1; good, very good, or excellent for Pilot 2

<sup>25</sup> Interviews with teams from 26 applying HEIs were conducted over two days.

- The HEIs that received a rating of well-advanced (pilot 1) or excellent (pilot 2) received a higher funding allocation than those HEIs receiving a rating of developed (pilot 1) or very good (pilot 2). These, in turn, received a higher funding allocation than those HEIs receiving a rating of emerging (pilot 1) or good (pilot 2).
- Within each respective group, HEIs received the same amount of funding based on the evaluators' rating. In addition to the "rating-based" funding, each HEI received a funding allocation based on the size of the HEI (determined by the number of full-time employees).

The principles used for allocating funding in pilots 1 and 2 should not be seen as Vinnova's final suggestion (to government) on how funding related to HEIs' societal interaction could be allocated. Rather, these principles were developed for use in the pilots with a focus on incentivizing good performance rather than on a fair allocation model based on the size of each HEI. The principles for allocation have to be reconsidered if societal interaction is to be included in the system for allocating funds to Swedish HEIs. Parameters such as size of each HEI (and others) need to be carefully considered.

The international/external perspectives in the evaluation panel provided important insights. It was good to have a mix between national and international experts. The interviews with teams from the applying HEIs also provided a good complement to the written documentation that was submitted.

The survey with HEIs' collaboration partners in Pilot 2 consisted of 10 questions and was designed with input from stakeholders such as: the Confederation of Swedish Enterprises, the Swedish Association of Local Authorities, Regions, Teknikföretagen (an employers' organization representing technology companies) and others. A test survey was then developed with 5 interested HEIs and tested on 15 respondents who have significant experience in collaboration with one of the HEIs. The survey was primarily tested to ensure relevance and understanding of the questions.

A full-scale survey was then conducted as a part of Pilot 2. In the Pilot, Vinnova asked for contact persons for the selected cases from each HEI. Based on the contact persons submitted, a survey was sent out to 293 collaboration partners – with a resulting response rate of 96%. The collection and data management of the survey results was contracted to Statistics Sweden (an administrative government agency responsible for developing, producing and disseminating official statistics). In terms of value in the evaluation, the survey did not provide "additional information" but rather confirmed information already provided by the HEIs. In the future, alternative approaches to gather collaboration partners' perspectives should be explored to ensure more value in evaluations.

# Vinnova´s publications

November 2016

See vinnova.se for more information

## Vinnova Analysis

### VA 2016:

- 01 Vinnväxt - Ett innovativt program i takt med tiden
- 02 Årsbok 2015 - Svenskt deltagande i europeiska program för forskning & innovation
- 03 Effektanalys av Vinnväxt-programmet - *Analys av effekter och nytta*
- 04 Chemical Industry Companies in Sweden - *Update including data for competence analysis*
- 05 Energibranschen i Sverige fortsätter växa - *Analys av företag i energibranschen 2007-2014 - branschdelar, åldersstrukturer, jämställdhet och kompetens*
- 06 Omvandling och fasta tillstånd - *Materialvetenskapens etablering vid svenska universitet*
- 07 Svensk konsultsektor i ny belysning - *Utvecklingstrender och dynamik*

### VA 2015:

- 01 Årsbok 2014 - *Svenskt deltagande i europeiska program för forskning & innovation*
- 02 Samverkansuppgiften i ett historiskt och institutionellt perspektiv
- 03 Långsiktig utveckling av svenska lärosätens samverkan med det omgivande samhället - *Effekter av forsknings- och innovationsfinansierings insatser*
- 04 Företag i Tåg- och järnvägsbranschen i Sverige - *2007-2013*
- 05 FoU-program för Små och Medelstora Företag - *Metodologiskt ramverk för effektanalyser*
- 06 Small and beautiful - *The ICT success of Finland & Sweden*
- 07 National Research and Innovation Councils as an Instrument of Innovation Governance - *Characteristics and challenges*
- 08 Kartläggning och behovsinventering av test- & demonstrationsinfrastruktur

### VA 2014:

- 01 Resultat från 18 VINN Excellence Center redovisade 2012 - *Sammanställning av enkätresultaten. (For English version see VA 2014:02)*

- 02 Results from 18 VINN Excellence Centres reported in 2012 - *Compilation of the survey results. (For Swedish version see VA 2014:01)*
- 03 Global trends with local effects - *The Swedish Life Science Industry 1998-2012*
- 04 Årsbok 2013 - *Svenskt deltagande i europeiska program för forskning och innovation.*
- 05 Innovations and new technology - *what is the role of research? Implications for public policy. (For Swedish version see VA 2013:13)*
- 06 Hälsoekonomisk effektanalys - *av forskning inom programmet Innovationer för framtidens hälsa.*
- 07 Sino-Swedish Eco-Innovation Collaboration - *Towards a new pathway for shared green growth opportunity.*
- 08 Företag inom svensk massa- och pappersindustri - *2007-2012*
- 09 Universitets och högskolors samverkansmönster och dess effekter

## Vinnova Information

### VI 2016:

- 01 Projektkatalog Utmaningsdriven innovation Steg 1-2015 - *Initieringsprojekt*
- 02 Projektkatalog Utmaningsdriven innovation Steg 2-2015 - *Samverkansprojekt*
- 03 Projektkatalog Utmaningsdriven innovation Steg 3-2015 - *Följdinvesteringsprojekt*
- 04 Årsredovisning 2015
- 05 FFI Årsrapport 2015 - *Samverkan för stark svensk fordonsindustri och miljöanpassade samt säkra transporter*
- 06 Innovation för ett attraktivare Sverige - *Sammanfattning*
- 07 Utmaningsdriven innovation - *Samhällsutmaningar som tillväxtpotentialer (for English version see VI 2015:11)*
- 08 Vinnväxt - *A programme renewing and moving Sweden ahead*

### VI 2015:

- 01 Insatser för innovationer inom Hälsa
- 02 FFI Årsrapport 2014 - *Samverkan för stark svensk fordonsindustri och miljöanpassade samt säkra transporter*
- 03 Social innovation - *Exempel*
- 04 Social innovation
- 05 Årsredovisning 2014
- 06 Sweden needs FFI (*for Swedish version see VI 2015:10*)
- 07 Innovation för ett attraktivare Sverige - *Underlag till regeringens politik för forskning, innovation och högre utbildning 2017-2020 - Huvudrapport*
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- 09 Replaced by VI 2016:07
- 10 Sverige behöver FFI (*for English version see VI 2015:06*)
- 11 Challenge-Driven Innovation - *Societal challenges as opportunities for growth (for Swedish version see VI 2016:07)*

### VI 2014:

- 01 Tjänsteinnovationer 2007
- 02 Innovationer som gör skillnad - *en tidning om innovationer inom offentliga verksamheter*
- 03 Årsredovisning 2013
- 04 Replaced by VI 2016:08

- 05 Replaced by VI 2015:01
- 06 Din kontakt i EU:s forsknings- och innovationsprogram
- 07 VINNOVA - Sveriges innovationsmyndighet. (For English version see VI 2014:10)
- 08 Visualisering - inom akademi, näringsliv och offentlig sektor
- 09 Projektkatalog Visualisering - inom akademi, näringsliv och offentlig sektor
- 10 VINNOVA - Sweden's Innovation Agency (For Swedish version see VI 2014:07)

## Vinnova Report

### VR 2016:

- 01 Third Evaluation of VINN Excellence Centres - AFC, BiMaC Innovation, BIOMATCELL, CESC, CHASE, ECO2, Faste, FUNMAT, GHz, HELIX, Hero-m, iPack, Mobile Life, ProNova, SAMOT, SuMo & WINGQUIST
- 02 Third Evaluation of Berzelii Centres - Exselent, UPSC & Uppsala Berzelii
- 03 NOVA - Verktyg och metoder för normkreativ innovation (for English version see VR 2016:06)
- 04 Forskning och utveckling för ökad jämställdhet - Följeforskning om Vinnovas regeringsuppdrag avseende behovsmotiverad forskning för ökad jämställdhet 2013-2015
- 05 This is about Change - Ten years as an on-going evaluator of the Triple Steelix initiative (For Swedish version see VR 2015:05)
- 06 NOVA - tools and methods for norm-creative innovation (for Swedish version see VR 2016:03)
- 07 Flaggskeppsfabriken - Styrkor i svensk produktion
- 08 Flaggskeppsmetodiken - En arbetsmetod för industriellt erfarenhetsutbyte
- 09 Evaluating the Role of HEIs' Interaction with Surrounding Society - Development Pilot in Sweden 2013-2016

### VR 2015:

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- 04 Future Smart Industry - perspektiv på industriomvandling
- 05 Det handlar om förändring - Tio år som följeforskare i Triple Steelix (For English version see VR 2016:05)
- 06 Evaluation of the Programme Multidisciplinary BIO - The strategic Japanese-Swedish cooperation programme 2005 - 2014
- 07 Nätverksstyrning av transportinnovation
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- 03 Googlemodellen - Företagsledning för kontinuerlig innovation i en föränderlig värld
- 04 Öppna data 2014 - Nulägesanalys
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- 06 The many Faces of Implementation
- 07 Slututvärdering Innovationslussar inom hälso- och sjukvården

### VR 2013:

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- 02 Second International Evaluation of the Berzeli Centra Programme
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- 08 Second Evaluation of VINN Excellence Centres - BiMaC Innovation, BIOMATCELL, CESC, Chase, ECO2, Faste, FunMat, GigaHertz, HELIX, Hero-m, iPACK, Mobile Life, ProNova, SAMOT, SuMo & Wingquist
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