



Vinnova: Developing a new funding model for increased university-business cooperation

Vinnova, Sweden





General Information

Title	Vinnova's development of a new funding model for increased university-business cooperation
Pitch	An example of a funding model for increased university-business cooperation
Organisation	Vinnova
Country	Sweden
Author	Pierre Lindman (Technopolis Group)
Nature of interaction	<input checked="" type="checkbox"/> Collaboration in R&D <input checked="" type="checkbox"/> Commercialisation of R&D results <input type="checkbox"/> Mobility of staff <input type="checkbox"/> Academic entrepreneurship <input checked="" type="checkbox"/> Governance <input type="checkbox"/> Lifelong learning <input type="checkbox"/> Joint curriculum design and delivery <input type="checkbox"/> Mobility of students <input type="checkbox"/> Student entrepreneurship <input type="checkbox"/> Shared resources
Supporting mechanism	<input checked="" type="checkbox"/> Strategic <input checked="" type="checkbox"/> Structural <input checked="" type="checkbox"/> Operational <input type="checkbox"/> Policy
Summary	Vinnova is a government agency for innovation policy and according to their vision Sweden should be a world-leading country when it comes to research and innovation. Vinnova's purpose is to be part in creating an attractive innovation system in which companies and organisations want to invest and make business. Vinnova promotes sustainable growth by funding research and stimulating collaborations between companies, the public sector, universities and research institutes. In 2013, Vinnova and The Swedish Research Council received two separate assignments from the government, calling for development of a new model for performance-based research funding including a component that takes collaboration between HEIs and the surrounding society into account.



Introduction & Overview

1. BACKGROUND

Founded in 2001, Vinnova is a government agency for innovation policy. Vinnova has about 200 employees working in Stockholm and Brussels. The top manager of the agency is the Director General and is appointed by the Swedish government.

Vinnova's vision states that Sweden should be a world-leading country when it comes to research and innovation. Vinnova's purpose is to be part of creating an attractive innovation system in which companies and organisations want to invest and do business. Vinnova promotes sustainable growth by funding research and stimulating collaborations between companies, the public sector, universities and research institutes (henceforth referred to as the surrounding society). The Swedish government frequently receives policy advice by Vinnova, which possesses valuable expertise regarding development of innovation policy. Vinnova operates directly under the Ministry of Enterprise and Innovation and also acts as the contact agency for the EU framework programme for research and innovation. To increase its activities, Vinnova has close cooperation with other research funding bodies and organisations promoting innovation. Every year Vinnova invests SEK2.7b (€270m) in a variety of different initiatives.

Higher Education Institutions (HEIs) play a major role in developing and strengthening Sweden's innovation capacity, competitiveness and attractiveness. In international comparison, Sweden invests substantial resources in research and development (R&D) at HEIs. The Swedish HEIs' impact on the surrounding society is dependent on collaboration with companies and public organisations.

HEIs are active in a constantly changing global context, where mobility is growing and the competition for students and the best talents has intensified. The demands and education methods are also changing at the same time as expectations on contribution to collaboration activities with relevant stakeholders to develop society has increased. In 1997, the higher education law stated that interaction with the surrounding society would be considered as an official task for Swedish HEIs. Since then, Swedish policymakers and agencies have been working to support efforts to develop HEIs' interaction with the surrounding society.

The government's research and innovation bill from 2012 stated the importance of developing methods and criteria for evaluation of performance and quality in the HEIs' interaction with the surrounding society. In 2013, Vinnova and The Swedish Research Council received two separate assignments from the government, calling for development of the above-mentioned methods and criteria, and a request to propose a new model for performance-based research funding including a component that takes collaboration between HEIs and the surrounding society into account. Here, we speak of the performance-based part of the governmental direct appropriations, not other streams of external funding.

Vinnova was assigned the task to develop and design methods and criteria for evaluating performance and quality of the HEIs' interaction with the surrounding society, while The Swedish Research Council was requested to suggest a new model for allocating the performance-based part of the governmental direct appropriations. Both organisations were requested to offer each other help during the process, and to involve Formas and Forte, two other research councils (see below). Hence, the assignment is a prominent and highly important example of the work that Vinnova undertakes in order to support cooperation between HEIs and the surrounding society in Sweden. The assignment will be presented in more detail in the following sections.

2. OBJECTIVES AND MOTIVATIONS

Vinnova's general objectives and motivations as a government agency is to promote sustainable growth in Sweden by improving the conditions for innovation as well as funding research.

Vinnova's main objective with the government assignment is to strengthen the quality and relevance of research and education through developing the societal interaction of HEIs and in turn strengthening Swedish HEIs' attractiveness and competitiveness internationally. By completing its assignment, Vinnova aims to create even stronger incentives to develop collaboration between HEIs, companies and the public sector. It is of significant importance for growth and social development that research-based knowledge benefits society. To achieve this, it is important that the HEIs have an advanced understanding of the context and the needs of the surrounding society, and especially the business sector. Undertaking research and also education in cooperation with the stakeholders in society are key to achieve such an understanding.

The motives behind the government assignment concern a changed balance of the allocation of performance-based research funding. If the distribution formula of research funding contains a component of external collaboration, this creates an incentive for researchers and HEIs to further develop contacts and cooperative projects with both the private and public sector.

3. STAKEHOLDERS

The primary stakeholders involved include:

- ▶ *Vinnova*: The main responsibility of Vinnova is to strengthen HEIs' interaction with the surrounding society. Vinnova has involved all Swedish HEIs interested in being a part of the assignment. It has been a four-year long process. According to prior investigations or evaluations conducted in Sweden and abroad, it is difficult to design successful models for allocating research funding with a collaborative component. To take lead in developing a functional method and criteria for evaluating HEIs interaction with the surrounding society has been of profound importance to the agency.
- ▶ *The Swedish Research Council*: The Swedish Research Council has a leading role in developing Swedish research of highest scientific quality. The Council's general objective is to allocate funds for research, and to identify research areas for strategic

investment together with other research funding bodies. The Council also makes research results available to society. It furthermore assists the government in questions related to research policy. In this assignment, the Council is requested to suggest a new model for allocating research funding. Both the Swedish Research Council and Vinnova have been dependent on each other in order to complete their parts of the assignment.

- ▶ Formas: A Swedish research council and a government agency under the Swedish Ministry of the Environment and Energy. Formas' overall objective is to promote and support basic research and needs-driven research in the areas of environment, agricultural sciences and community building.
- ▶ Forte: A Swedish research council and a government agency under the Swedish Ministry of Health and Social Affairs. Governmental directives and an annual letter of appropriation, which applies to all Swedish agencies, guide its activities. Forte initiates and funds research in the areas of health, working life and welfare.
- ▶ Higher Education Institutions: Since HEIs are among the core stakeholders of the assignment, Vinnova divided the assignment into different phases and during the first phase, all HEIs in Sweden were requested to participate. 28 HEIs chose to do so. During the first phase, Vinnova mapped the 28 HEIs' experiences of engaging in collaboration as a work method. Not all 28 HEIs participated throughout the whole process of the assignment.
- ▶ Companies and the public sector: A variety of companies and a large part of the public sector are in need of collaboration with HEIs to take part of research that might be favourable for them. From the HEIs' point of view, good collaboration with companies and the public sector is important because of their role as beneficiaries to various research projects.



Implementation

4. INPUTS

The allocated government- budget for implementing the assignment was SEK30m (€3m) in 2013, SEK50m (€5m) in 2014 and SEK60m (€6m) in 2015 and another SEK60m (€6m) in 2016. This was complemented by Vinnova's own resources, amounting to additional SEK50m (€5m) during 2013 and SEK20m (€2m) in 2014. The resources during 2013 and 2014 were used by Vinnova to highlight good examples and to develop suggestions for the model, and the following years Vinnova used the allocated resources to test the model.

The first phase of the process included two calls (one during 2013, and one during 2014) focusing on mobilising and including Swedish HEIs in the process. All Swedish HEIs were invited to submit proposals. HEIs could submit either individually or with one or several other HEIs. The purpose with the proposals was that the HEIs should come up with ideas about how they could develop strategies and collaborative activities with the surrounding society. The main input from the HEIs during the first phase included the time and effort put into the proposals. To select suitable projects from the proposals, Vinnova used a group of experts consisting of both national and international experts, who evaluated each proposal. After careful selection, the calls in 2013 and 2014 resulted in 35 projects involving 28 HEIs. An important part of the assignment has been the involvement of and regular dialog with HEIs. Their help and knowledge have provided Vinnova with important input and mutual learning.

Vinnova has used knowledge from external researchers, which has been useful to the assignment in terms of input and analyses. The researchers' input and analyses have inspired Vinnova to introduce new ideas.

5. ACTIVITIES

Vinnova's projects often provide a wide array of collaboration activities between HEIs and the business sector, including *collaboration in R&D, professional mobility, commercialisation of R&D results and facility sharing*.

Given that the assignment had a duration of four years, a variety of activities were going on during different stages of the assignment. The two open project calls during 2013 and 2014 that were mentioned are good examples. The first project call in 2013 focused on supporting HEIs in their own processes for strategic development of their interaction with the surrounding society. The second project call in 2014 aimed at implementing the activities that HEIs considered most essential for strengthening interaction with the surrounding society. Within each project, there was a variety of different activities such as including students as a resource for societal interaction, constructing new collaborative tools, and using different networks and platforms to increase collaboration. During the project calls, Vinnova maintained a close dialogue with HEIs and other organisations in order to discuss the design of the model.

The open project calls resulted in Vinnova proposing a model for evaluating HEIs' interaction with the surrounding society. The idea with the model was to use it to develop and reform the existing model for allocating performance-based research funding to Swedish HEIs. The new model would include assessment of the quality and performance of societal interaction, something that the earlier model did not include.

The activities taking place during the first phase led to the activities taking place in the second phase. In 2015 and 2016, Vinnova tested the new model developed in the first phase through two pilots. The first pilot focused on evaluating HEIs' strategies and implementation plans, while the second pilot focused on evaluating their collaborative activities and results. In the first pilot, all HEIs were again invited to participate, but in order to get an invitation to the second pilot, participation in the first pilot was necessary. 27 HEIs participated in the first pilot and 26 HEIs in the second one.

Evaluations of the first pilot strategies and implementation plans were based on information provided by the HEIs and the information consisted of descriptions of their own context, self-assessment of their strategies and implementation plans and indicators defined by the HEIs themselves, as well as other documents that motivated and validated their self-assessment. Evaluations of the second pilot consisted of written material focusing on the HEIs' choice of activities and self-assessments of their collaborative activities and results. Vinnova also conducted interviews with representatives from various HEIs. Each participating HEI was asked to describe between five to ten different good practice collaboration cases with activities and results focusing on research and education. The cases were required to represent different types of collaborators within different areas of research and education.

A panel consisting of nine external experts undertook the evaluations of the above-mentioned material that the HEIs submitted. The composition of the expert panel aimed to include a variety of aspects such as good knowledge of the Swedish system for higher education and HEIs' particular conditions, national and international perspectives, practical and strategic experience with societal collaboration, and representation from a variety of disciplines. Besides this, the members of the panel represented HEIs, the public sector, industry and civil society, including different sectoral competencies.

The intention with Vinnova's proposed model from 2014 was described with the purpose that each HEI would be evaluated on its own role and context. Nevertheless, the expert panel considered it too difficult to assess all 27 HEIs individually. To make the evaluation easier to handle, the participating HEIs were categorised into six groups:

- ▶ Large comprehensive universities
- ▶ University colleges with disciplinary research domains
- ▶ University colleges without disciplinary research domains
- ▶ University colleges of fine applied and performing arts
- ▶ New universities
- ▶ Large specialised universities

The evaluation of the HEIs' collaboration with the surrounding society was based on four aspects. During the first pilot, the two aspects were strategy for collaboration and implementation of the strategy. During the second pilot, the focus was on collaborative activities and results. Based on the evaluation each HEI was given a rating based on three grades (for the first pilot: emerging, developed or well advanced; for the second pilot: good, very good or excellent). The part of the total budget of the assignment that related to the pilots, SEK60m (€6m) for each pilot, was allocated to the HEIs based on the ratings and the size of the HEI. Depending of the ratings, the HEIs received different proportions of funding. The HEIs in the first and second pilot that earned the rating well advanced or excellent received the highest proportion of funding. The share of the funding that was allocated due to the size of the HEI was based on the number of full time employees.

Beside the activities taking place during the first and second pilot, Vinnova focused on many different dialogue activities. Vinnova invited all HEIs in Sweden to participate in a reference group, and almost everyone accepted. Representatives from the HEIs were sent to participate in four workshops at Vinnova's headquarter. In addition, several workshops were held at various HEI campuses, which provided Vinnova with relevant input. Vinnova and The Swedish Research Council, together with the other research councils Forte and Formas, held regular joint meetings in order to synchronise their work and fulfil their respective tasks in the assignment.

Through the many activities along the course of the assignment, Vinnova identified some key principles that guided the work of developing the new model. Key amongst these principles was recognising the fact that the HEI landscape is very diverse with a variety of different types of institutions acting in different regional contexts and with different strategies and objectives. It has also been clear throughout the assignment that Swedish HEIs handle interaction with the surrounding society in various ways.

Another activity was a survey. The survey was designed by Vinnova together with the Swedish Association of Local Authorities and Regions (SKL), and the employers' organisation Teknikföretagen and five HEIs. The survey was made for the HEIs' collaboration partners. The purpose with the survey was to gather sufficient information about partners collaborating with the HEIs, but also to support future work with the collaboration partners.

6. OUTPUTS

The assignment resulted in a model for evaluating HEIs' interaction with the surrounding society with respect to research and innovation. The assignment has made it clear that it is possible to measure and evaluate collaborative performance in research and education. However, it is important to remember that Vinnova has not tested the model in full scale since the two pilots aimed at testing different parts of the model. It will eventually be up to the Swedish government to decide if the model should be implemented on a national scale.

The main steps in the model for evaluating HEIs' interaction with surrounding society:

An international expert panel will make a collective assessment of the quality of Swedish HEIs and their collaborative activities. The expert panel shall consist of representatives from both HEIs and the surrounding society.

The panel makes an overall assessment with particular regard to the different nature of Swedish HEIs.

Examples of material for the panel to evaluate may be how HEIs work with collaborative strategies, if collaboration is meritorious to the employees, and other activities such as collaborative research training and participation in the public debate.

Both HEIs themselves and the collaboration partners will provide the panel with the necessary material.

Many of the HEIs that participated in the assignment between 2013 and 2016 have concluded that the assignment has resulted in a stronger peer network between Swedish HEIs. It has also resulted in a shared and general understanding of the valuable of interaction with the surrounding society. The participants have gained a better knowledge of how interaction with the surrounding society can strengthen the quality of education, research and innovation.

Vinnova's work all in all over the years has resulted in increased attention among Swedish HEIs to the importance of collaboration with the surrounding society and its possible contribution to research and education. Particularly, the special government assignment described here has led to a further development of the HEIs' perspectives and operational work with respect to their collaboration with the surrounding society. It is also clear that the HEIs have used the activities in the assignment to take the opportunity to increase their focus on developing collaboration with the surrounding society. Vinnova noticed an increase in commitment amongst the HEIs in developing their own collaborative activities with the surrounding society.

Some outcomes are of the nature that they might only be seen after the assignment is completed. HEIs and other stakeholders might start new interesting collaboration projects, and publish the results of their research together.

7. IMPACTS

During the time that the assignment has been active, Vinnova has noticed how HEIs have adopted a broader perspective on the importance of collaboration with the surrounding society, both in terms of strengthening quality of education and research, and in terms of providing important impact for society, something which, as mentioned in the beginning, is in fact

stated in the Swedish higher education law. According to the participating HEIs, the assignment has been good help in mobilising and engaging their employees in different strategic activities.

Since the assignment was completed in the later part of 2016, much of its impact have not yet materialised, but Vinnova's purpose is that the model should be used for allocation of funding and therefore strengthen and develop HEIs' interaction with the surrounding society. It is difficult, or impossible, to estimate the benefits for all before the model has been implemented on a national scale and even used for a few years.

Impact on society is connected to HEIs developing new research, either by themselves or with other stakeholders, and therefore eventual impact of this kind might not be visible until some-time after the assignment is completed.





Support & Influencing factors

8. SUPPORTING MECHANISMS

The model that Vinnova has been assigned to develop, is itself the supporting mechanism that the Swedish system of distributing governmental direct appropriations has been missing so far. The new model is supposed to introduce sufficient incentives for the HEIs to further develop and intensify their collaboration with the surrounding society. The new model will reward those HEIs that are successful in doing so, as the model contains the described component of external collaboration with the surrounding society, besides other more traditional and obvious components of science quality, like publications and citations.

9. BARRIERS AND DRIVERS

There are several drivers that influence the UBC activities at HEIs in a positive way. A powerful driver for all stakeholders involved is that they are goal-oriented. The HEIs are driven by a desire to constantly develop themselves and to perform better. Through increased quality in their research they get more attention and better reputation, which in turn make them more visible as research partners and to students. They are also driven by an ambition to make their education relevant and up to date, for instance through developing their curriculum together with industry.

The private sector is in many ways driven by a desire to find the best competence available for their operations. It is important to the private sector that students acquire relevant competence so that they become employable for the companies. It is also important to some companies to be able to recruit researchers.

One barrier Vinnova has faced during the assignment is the fact that HEIs often object to too much governmental steering; they often protect their academic and organisational autonomy quite strongly. But at the same time, HEIs are dependent on governmental funding to be able to improve their research and educational activities.

10. FUTURE CHALLENGES

HEIs' interaction with the surrounding society, which can be used for allocating resources.

It is important that HEIs continue to develop their internal structures and indicators and follow up on their interaction with the surrounding society. Vinnova needs to continue its work with HEIs, and to support their development work. Vinnova and the HEIs need to continue to learn from successful examples and individual initiatives in order to achieve a long term and sustainable way of interacting with surrounding society.

The model itself can be improved, and a future model, according to Vinnova, should combine strategy, results and self-assessment. In Vinnova's model and the pilots, the evaluation of strategies and implementations was seen as one separate step and the evaluation of collaborative activities and results as another step. Vinnova suggests that in the future, these two steps should be evaluated as one step.

The amount of funding that should be allocated based on Vinnova's model is still up for discussion. In the government research and innovation bill from 2012, it is stated that 20% of HEIs' research funding should be based on their performance. However, it is not yet decided if the model is going to be the way according to which the government allocate its funding, and neither is it decided how large proportion of the total governmental direct appropriations that should be based on performance. Furthermore, the weight that the collaboration component should carry, is not decided either. Extended tests and further development of the model might very well be called for.

11. CONTEXT

Sweden is among the nations worldwide that devote the most money to research relative to its population. Sweden's expenditures for R&D is in total 3.42 percent of GDP.

The business sector accounts for around 70 percent and the higher education sector for 27 percent of this spending. Companies largely fund their own research, but receive some contributions from the government and abroad. The public sector finances R&D through grants paid directly to higher education institutions and through support for research councils and sectoral research agencies. In addition, several research foundations have been started with public funds, providing research funding in excess of SEK1.2b (€130k) annually. By far the greatest share of publicly funded research in Sweden is conducted in higher education institutions. Research institutes account for only a small share, which distinguishes Sweden by international comparison.

12. KEY SUCCESS FACTORS

There are a number of key success factors that contribute to the accomplishment of the assignment.

First of all, the active involvement of and dialogue with HEIs throughout the assignment was very important to achieve a positive result. Their involvement provided Vinnova with important input and mutual learning, and it catalysed HEIs' own development activities and strengthened interaction throughout the system. Vinnova's active dialogue and involvement of HEIs gave them the opportunity to develop their collaboration with industry and society, and it provided them with new operational approaches.

Another key success factor lies within Vinnova's expertise and knowledge. Vinnova has conducted many large-scale government assignments during the years, which have built up a substantial pool of internal expertise within the organisation, related to both research, education and innovation.

It is important that the stakeholders trust each other and that there is a transparency in the work methods. The stakeholders need to understand that they all can benefit from participating in the assignment, and to have an open dialogue is a helpful tool in doing so.





Further Information

13. MONITORING AND EVALUATION

The assignment as a whole has not yet been evaluated, but some activities during the assignment have been based on evaluations.

The conditions for the HEIs participating in the assignment are very different, either when it comes to size of their organisation, or if research or education is their main focus, but also when it comes to the field of study which they operate on.

In 2015, a group of four students from the computer games degree won *Best Computer Game* 'Commemorations 2015' awarded by the Catalonian Regional Government.



14. LINKS

Vinnova website: <http://www.vinnova.se/en/>

Vinnova programme to support UBC

<http://www.vinnova.se/sv/Var-verksamhet/Innovationsformaga-hos-specifika-malgrupper/Universitets-och-hogskolors-strategiska-samverkan/Stora-puffar/Steg-2-projekt/> (In Swedish)

Interview Vinnova General Director about UBC <http://www.tidningencurie.se/debatt/vimaste-belona-samverkan-mellan-larosatena-och-samhallet/> (In Swedish)

Evaluating the Role of HEIs' Interaction with Surrounding Society <http://www.vinnova.se/PageFiles/751335326/Bilaga%20.%20Evaluating%20the%20Role%20of%20HEIs%20Interaction%20with%20Surrounding%20Society.pdf>
<http://www.vinnova.se/PageFiles/751335326/2013-03216%20Slutrapport%20K3-uppdrag%20samverkan%20PDF.PDF> (Final report in Swedish)

Suggested model for the evaluation of UBC

<http://www.vinnova.se/PageFiles/751335326/Bilaga%203.%20F%C3%B6rslag%20-%20modell%20f%C3%B6r%20samlad%20bed%C3%B6mning%20av%20samverkan%2020140514.pdf>
(In Swedish)

15. CONTACT PERSON



Maria Landgren
Programme Manager
The Division for Operational Development and Analysis at Vinnova
Maria.landgren@vinnova.se