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Forschungs- und Technologieevaluierung

THEMA/TOPIC

Evaluation of ANVAR innovation refundable grants programme, 1993 – 1999

Katharina Warta, Alexandra Rammer

Torn between two lovers. Evaluating the Research Council Norway and its liaisons.

Barend van der Meulen

AKTUELL

The role of "councils" in research, technology and innovation policy

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Preface

When talking about evaluation the implicit understanding is 'evaluation of programmes'. In the history of the PLATTFORM FORSCHUNGS- UND TECHNOLOGIEEVALUIERUNG the major focus was on evaluation of programmes and on related methodological issues.

This volume of the PLATFORM■NEWSLETTER opens up a new chapter in the discussion of evaluation. It deals with 'evaluation of institutions' by presenting two exercises carried out very recently.

However, when looking into details, the distinction between programmes and institutions is somewhat blurred. Evaluating programmes without a minimum understanding of the institutional setting may lead to misleading conclusions. Likewise, evaluating institutions without understanding the shaping of institutional behaviour by successful and less successful programmes, easily leads to poorly based conclusions and recommendations.

This volume reflects the duality of programmes and institutions and the respective evaluation exercises. Accordingly, the first contribution deals with the **Evaluation of the French ANVAR innovation refundable grants programme, 1993–1999** (Katharina Warta, Technopolis France, and Alexandra Rammer, Technopolis Austria). In a strict sense, this exercise, carried out by Technopolis France in 2001, must be seen as a programme evaluation. However, since this programme can be considered as the very core activity of ANVAR, the evaluation of the programme is, to some extent, the evaluation of ANVAR itself.

The second paper **Torn between two lovers - Evaluating the Research Council Norway and its liaisons** by Barend van der Meulen (Centre for Studies of Science, Technology and Society, University of Twente) provides insight into the Research Council Norway. It looks back at ten years of operation of a unified funding body integrating all

relevant funding activities in the realm of research, technology, and innovation. This really big evaluation exercise was carried out in 2001 by a consortium, led by Technopolis UK, including two other foreign institutes, FhG-ISI (Germany) and University of Twente (The Netherlands), and two Norwegian, STEP and NIFU. It may provide a number of lessons, both for the forthcoming evaluation of the Austrian FFF and FWF and the lessons to be drawn.

Finally, we would like to inform our readers of our actual PLATFORM■MEETING: The role of "councils" in research technology and innovation policy - advising, shaping, evaluating policy. The Workshop took place in the Tech Gate Vienna, June 20th 2002. This meeting will be covered in our next PLATFORM■NEWSLETTER.

Fritz Ohler, Klaus Zinöcker

Evaluation of ANVAR innovation refundable grants programme, 1993 – 1999

Katharina Warta, Alexandra Rammer

Abstract

Since more than 20 years, the French innovation Agency ANVAR supports innovation projects of SMEs, mainly based on a soft-loan scheme that has been evaluated by Technopolis¹ in 2001 for the period 1993-1999. During these 7 years, “*l'aide au projet d'innovation*” has mobilized more than one billion Euros in soft loans and has contributed to the realization of around 7000 innovation projects in around 5600 companies. The global impact of the scheme is positive, with a majority of firms indicating an achieved or expected increase of turnover due to the project. A typology of firms based on the results of a questionnaire survey shows that the potential impact is especially high for young firms.

Introduction

The soft loan scheme “*aide au projet d'innovation*” of ANVAR, the French Innovation Agency, was externally evaluated in 2001. This evaluation was conducted by Technopolis France between the months of February and July 1, the final report being submitted in September.

In this paper we first provide an overview of the scheme. Second, the main results of the evaluation are summarised, presenting the methodology, the typology of companies that we have developed, the main results of the impact assessment and the appreciation of ANVAR's service provision. Finally, we present our general conclusions and recommendations about how to improve the scheme.

¹ The final report, the underlying dossiers and the English summary can be downloaded from the ANVAR's website, http://www.anvar.fr/act/html/f_LDI9-ImpactAide.htm

Overview of the scheme

The “*aide au projet d'innovation*” is part of a broader panorama of activities concerning technological innovation of the French government. ANVAR's action is aimed at companies with less than 2000 employees that are not affiliated to companies with more than 2000 employees.

Innovation aid in France was created and entrusted to ANVAR by a decree of July 13, 1979. The Aid has as objective the promotion of innovation and of technological progress; it applies to any stage of the innovative process. Financial support may not go beyond 50% of project related costs. It is granted as a soft loan, a credit that has to be paid back in case of success, otherwise it becomes a subsidy². An agreement with the assisted company defines the nature of return to ANVAR in case of success of the project.

The general mission of ANVAR was redefined by a decree of February 19, 1997, stipulating that the framework of the policy fixed by the government, ANVAR has the mission to support industrial development and growth via the assistance of innovation, notably technological innovation. With its expertise, the agency helps mobilising financial funds necessary for the companies' growth. A decree of Mai 31, 1997 added the support of feasibility studies to the service portfolio of ANVAR. Moreover, the technical innovations necessary for the development of new services were added as target group, of growing importance in France since the 1990s.

The agency is a regionalised organisation with headquarters in Paris and 25 regional delegations (RD)³. Since 1993, objectives for each RD are de-

² In certain circumstances, the scheme also allows for pure subsidies.

³ In 1999, ANVAR has 381 employees, 39% working at the headquarter and 61% in the regional directions. This relation has undergone a considerable change since 1989, where it was 50:50.

fined on an annual basis by the General Direction in collaboration with the RD concerned, the performance of which is evaluated the year after.⁴

Even if several studies concerning different aspects of assistance of ANVAR's action were realised in the past, the present evaluation is a novelty: up to now, the impact of the "aide au projet d'innovation" had never been assessed by external evaluators. This evaluation was commissioned by the responsible ministries, and is in keeping with the agency's wish to better adapt its action to client needs, aiming at the enhancement of the regional, national or even European innovation systems.

Approach

Our evaluation concerns the "procédure d'aide au projet d'innovation" over the period 1993 to 1999. The objectives of the evaluation cover the characterisation of ANVAR's action, the understanding of its impact, its relevance and the evaluation of the efficiency of its execution, as well as the national and international positioning of the scheme, and recommendations for improvement.

There is no unique methodology for evaluating the impact of a public programme⁵. Therefore Technopolis generally combines several complementary approaches:

- A postal questionnaire survey⁶ of clients and potential clients of the scheme

⁴ Until 1999, a mid-term evaluation was also performed.

⁵ See Erik Arnold, Katalin Balazs (1998): *Methods in The Evaluation of Publicly Funded Basic Research. A Review for OECD*.

⁶ 1200 questionnaires were sent out to companies that have benefited from the "aid", 300 to companies that have submitted a project that has been refused, and 400 to innovative firms that did not submit (based on the address file from the French tax credit system for research expenses, "Crédit d'impôt recherche"). The return rate within the sample of supported firms exceeded 30%.

- Visits of companies that have benefited from the scheme; in depth case studies of a selection of these companies⁷
- An analysis of the management and administration of the scheme by ANVAR, based on written documentation and on interviews with ANVAR's representatives at both headquarter and regional delegations
- An international comparison, analysing the organisation and impact of four comparable schemes or agencies: the agencies Statens nærings- og distriktsutvilingsfond (SND, Norway) and Enterprise Ireland, and the program of Small Business Innovation Research (SBIR) and the Manufacturing Extension Programme in the USA.

Main results

An evaluation of a public program generally refers to initial objectives and the means to attain these objectives. In the present case, the task of external evaluation has been complicated by the fact that "l'aide au projet d'innovation" only had global objectives formulated in its constituting decrees of 1979 and 1997, defining the missions of the agency and the basic procedures of the scheme. No complementary document is available where concrete objectives would be listed, we therefore analysed selection criteria of projects. This allowed us to isolate the following to prime objectives:

- Promotion of innovation
- Promotion of economic growth and job creation.

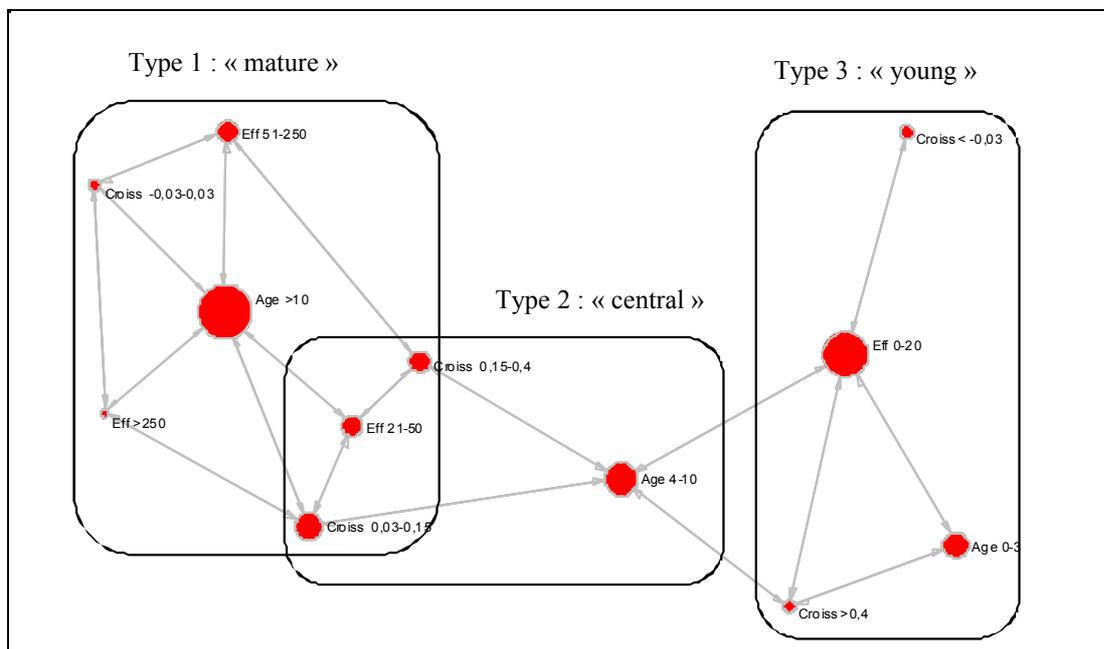
As will be discussed below, the results of our evaluation show that the scheme globally met these objectives.

⁷ 38 companies were visited in 12 French regions, companies were selected to reflect a large variety of situations. the sample respects sector and regional diversity as well as age and size.

“L’aide au projet d’innovation” has mobilised more than one billion Euros in soft loans during the period 1993-1999. It has contributed to the realisation of around 7000 innovation projects in around 5600 companies out of which 60% were less than 10 years old at the moment of the submission of their

project proposal. The assistance of ANVAR has supported innovation in a great variety of sectors, with ICT on top of the list. The analysis of annual budgets for soft loans shows that over time, the average size of the supported projects has considerably increased.

Figure 1 Typology of companies according to age, size, and growth



A typology of supported companies

Based on the results of the survey, three types of companies could be distinguished,⁸ with the age of companies appearing as primary variable and size and growth of the company as secondary variables:

- “Mature”. This type comprises experienced large or of medium sized companies, mostly with modest growth rates that can, for some of them, nevertheless attain 40%
- “Central”. Companies of this type are stabilised, aged 5 to 10 years, 21 to 50 employees, and with a growth-rate varying between 3 and 40%. This group probably represent the central clients of ANVAR.
- “Young”. This type comprises very young companies, mostly very small, with volatile growth rates at both extremes: either negative or very high, exceeding 40% per year.

⁸ This analysis is based on the calculation of co-occurrences of variables of the questionnaire survey. The software allows ceasing, organising, and analysing qualitative data from heterogeneous sources. See also A. Mogoutov & T. Vichnevskaja, Analyse exploratoire des données hétérogènes, miméo. Réseau-lu is hold by Aguidel (www.aguidel.com).

The majority of companies clearly relates to one of the three types, however, a minority of companies are atypical, as for instance very young companies with more than 250 employees emerging from a take-over, or very small companies, older than 10 years with negative growth performance. Another group of companies can't be related to a type for reasons of lack of information.

Impact and the appreciation of ANVAR's service provision

The overall conclusion of our evaluation is that the scheme complied with the two objectives referred to above. The majority of questioned companies estimate that their turnover has increased or will increase due to the aid; the results of the survey indicate that a third of the companies could increase their turnover and/or acquire new clients due to the supported project. A high number of companies report some impact on job creation or job maintenance around products or processes developed with the support of ANVAR. These results are based on good additionality: three companies out of four wouldn't have realised the project in the same way or wouldn't have done it at all *without* the support of ANVAR.

The typology based on the results of the questionnaire survey indicate that the net impact of the "aide" is potentially more important for companies of type "young" than of type "mature".

Detailed case studies show that the impact also depends on the position of the innovation project in the global activity of the company and the dynamics of its industry. Three configurations have been identified:

- The potential net impact⁹ of the contribution of ANVAR is very strong for "new" or "young"

companies, for which the innovation project is crucial and other sources of financing are limited.

- The additionality of the scheme is less certain for the "mature" companies. For projects in the core of a company's strategy, the high potential net impact diminishes with the companies' ability to finance parts of its R&D from cash-flow or from external private sources, whereas projects that are less central to the firms' activity may be abandoned once public financing ceases.
- Case studies show that in some leading edge industries companies could more easily obtain private funding in absence of the support from ANVAR. In this case, the company's choice to apply for the scheme could be part of a larger strategy, for instance to avoid conflicts between financial and technological logic of development.

The companies overall very well appreciate the non-financial support of ANVAR, mainly provided in the phase of the project definition. However, appreciation of service and advice vary according to company type. For instance, "mature" companies are most precise in their judgment of ANVAR's support. They explicitly appreciate ANVAR's financial analysis of the project, its support in starting phase of the project itself as well as the access to other sources of financing. "Young" companies show more difficulties to differentiate between services, recognising rather the global coverage.

Our analysis shows a strong convergence between the impact of the "aide" on the company level on the one hand, and the self-evaluation of ANVAR's collaborators on the other hand. As a consequence, if the companies experience the effects ANVAR pretends to provoke, and if the agency is so conscious about certain weaknesses of its action, one may

⁹ The terminology relating to evaluation used in this report is in line with the definitions proposed by the European Commission. According to these definitions, the net effect (or impact) corresponds to the change that can be attributed exclusively to a public intervention; additional-

ity consists of the results of a policy in relation to what would have happened without this policy intervention. The net effect is synonym of additionality.

make the optimistic hypothesis that improvements will show their effects on companies.

Conclusions and recommendations

The following conclusions and recommendations aim at supporting ANVAR in its effort to enhance the impact of the "aide au projet d'innovation". They are organised around three points:

- Impact of the procedure
- It's implementation
- Strategic objectives.

Is there a potential for an increase of the impact of the procedure?

Only 1943 out of 8310 existing dossiers of the period were closed at the moment of the survey. As a consequence, it has been impossible to give a complete statement about the impact of the procedure for the projects supported between 1993 and 1999. Anyhow, based on the results about the additionality of the scheme and on information collected in the companies, our observations provide some indications for room for improvement regarding impacts.

Impact is most important for "young" companies, often in traditional sectors

In the case of young and small companies with an innovation project mainly depending on the financing by ANVAR, the potential impact of the scheme is clearly positive. In the case of companies in leading edge industries, the judgment becomes more complex, as the company may more easily get private funds. Anyhow, the "labeling" effect of ANVAR may be crucial for small companies in leading industries, rightly to access complementary financing.

In the case of consolidated companies in terms of size and activity ("mature" type), the net impact of the public contribution to the innovation project risks to be weak or even to approach zero, especially if the supported projects are marginal in relation to the

firms strategy and the development.¹⁰ Given the needs of selecting between different R&D projects, the company may abandon the project without the contribution of ANVAR for reasons of lack of economic interest.

The support of consolidated companies can nevertheless complete the portfolio of project in an advantageous way: the experience of ANVAR shows that mature companies have a higher success rate in their innovation activity, they generally reimburse better than young or small companies.¹¹ Even if they may be less innovative than start-ups in leading edge industries, these companies constitute the major part of the French economic fabric, which is also forwarded as a good reason to support them in their innovative effort.

It was therefore recommended to reinforce an explicit targeting of companies, notably by integrating elements of the typology concerning additionality of the intervention, and to develop regular impact monitoring.

The capacity of firms to integrate the commercial and marketing aspect can still be reinforced

Our analysis shows that companies' needs are not satisfied concerning the commercialisation of their innovations. This observation is related to a weak exploitation of results ex post, and the difficulties recognized by ANVAR to provide commercial and marketing advise. Moreover, ANVAR appears to play an insufficient role in linking companies to external partners, both from finance and research. A further challenge lies in organisational advise, as companies tend to underestimate the importance of organisational adaptation, often a necessary

¹⁰ The analysis of the questionnaire survey indicates a *potentially* weak impact for 36% of companies of type "mature", 30% of type "central" and 21% of type "young".

¹¹ Potential impact is strong or medium for 58% of companies of type "mature", for 62% of companies of type "central" and for 72% of "young" companies.

condition to access new markets in the long run. A stronger focus on the upstream analysis of the firms capacity to integrate the commercial and marketing aspects in the analysis of an application, accompanied by reinforced expertise on commercial feasibility of projects are recommended. After selection, firms should be coached to prepare project follow-up, and oriented towards the financial world after the project.

Management and administration of the scheme: Systematise the “exploration” phase

Within ANVAR, the exploration¹² phase is little formalised, and practice varies between regions. Whereas dossiers mainly “arrive on their own” in the big regions, elsewhere ANVAR’s *chargés d’affaires* have to seek potential clients actively. Generally, this activity – even in case of good performance - is poorly recorded, as the formal relation with a company begins at the moment it submits its first project proposal. An internal “good practice guide” and the definition of a regional portfolios of innovative companies to be followed closely should allow for a better capitalisation on past experience.

Management and administration of the scheme: The assessment of applications

The Technical Direction of ANVAR manages a database of technical experts for the assessment of applications. Even if the average number of assessments per expert is relatively equally distributed over the period 1993-1999, a small number of experts is used for very often. To assure a better equilibrium, we recommend a regular renewal of the expert-stock, the additional use of foreign experts on highly specialised domains, and an internal random control on samples of applications.

Specific treatment for young firms

Young companies often discover what management is about at the same time they start their first project with ANVAR. They could therefore benefit from complementary services other than financial aid, especially concerning their connection to external partners. We therefore recommend to provide specific services for young companies and to provide coaching to starting entrepreneurs.

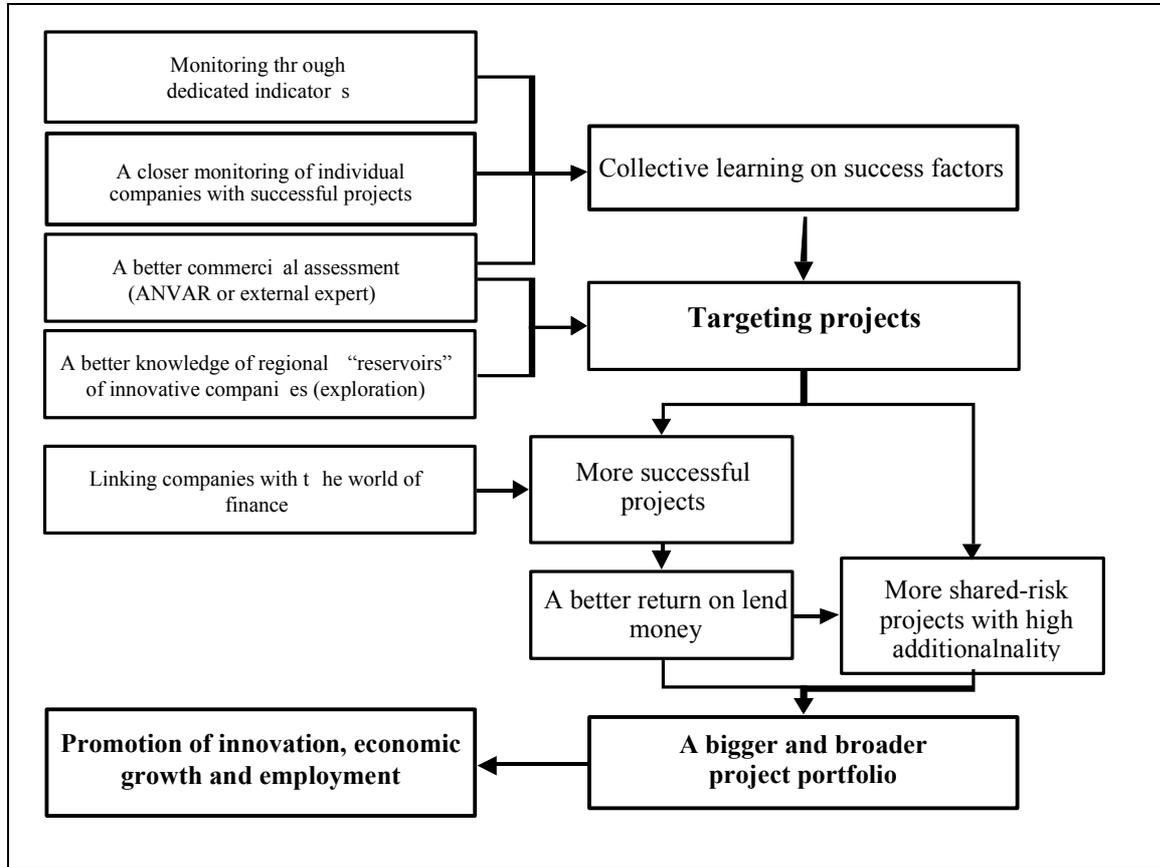
Specific treatment of new recruits at ANVAR

In recent years, ANVAR has recruited a lot new employees, increasing the need for internal training, and causing credibility problems towards company directors, facing now young and relatively inexperienced *chargés d’affaires*. Once again, a formalisation of the exploration phase and the improvement of the information system are recommended. Moreover, the attraction of “seniors” to the organisation, stronger linkages of regional delegations with regional centres of competence, and an exchange of personnel with ANVAR’s sister organisations in Europe are recommended.

General conclusion

If the improvements proposed above were realised, a higher pay-back rate should arise as an intermediary effect, that would allow to finance more innovative projects. In other words, the project portfolio of ANVAR should be increased and broadened (Figure 2). An operational control system for the management and administration of ANVAR could be the anchor of the process of improvement. This system should become a single common instrument for all administrative levels of ANVAR, with a definition of annual objectives on the one hand and performance indicators on the other hand, based on regular monitoring of the activity of the agency’s collaborators.

¹² The phase in which innovative companies/projects are identified.

Figure 2 Recommendations and expected effects

With the present evaluation, ANVAR has made a major effort in evaluating its action with the help of an independent bureau and objective methods. Major room for improvement remains concerning

- The definition of objectives
- The targeting of projects
- The efficiency measurement and its benchmarking, both nationally and internationally.

Overall however, the impact of ANVAR's procedure is high, and the procedure is recognised as relevant instrument within French innovation policy.

References

B. de Laat, K. Warta, K. Williams, A. Rammer, E. Arnold: Evaluation de la procédure d'aide au projet d'innovation de l'ANVAR, Rapport final (1999)

B. de Laat, K. Warta, K. Williams: Evaluation of ANVAR's "Aide au projet d'innovation". Paper presented at the OECD, Nov. 2001.

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Torn between two lovers – Evaluating the Research Council Norway and its liaisons

Barend van der Meulen

In 1993 the Norwegian government decided to merge the then five research councils into one council. At that time, it was already decided that by 2000 the council would be evaluated. End of 2000, the Norwegian Ministry of Church Affairs, Education and Sciences (KUF) commissioned the evaluation to an international consortium led by Technopolis (UK).¹³ The evaluation team got time and resources to make a full evaluation of the research council including its framework conditions. Sixteen reports were produced, which in were synthesized in a final report that was delivered December 2001.¹⁴ This article addresses both the design of the evaluation as well as some of its main results. It will be argued that for an evaluation of a research council as an intermediary body it is insufficient to look only at the policies, procedures and performances of the organization itself. A system perspective is required that takes into account the constraints and opportunities the organization contextual offers. Especially the way it is governed and its relative position towards the research and innovation performing sector are to be included.

The first part of the paper describes the history of RCN and the evaluation study, including some choices made about the organization of the evaluation team. The legacies of the five former research

councils included the exclusive relationships some of these councils had with some ministries, with some industry and with some research performing organizations. Most of these stakeholders supported the new council and hoped that their interests could be served even better. The new council started with many lovers, but they turned out to be jealous lovers. The second part presents results of the evaluation of the internal organization of RCN and its relation with two lovers: the government and the scientific community. The concluding section presents the main overall conclusions for the evaluation and draws lessons on the evaluation of research councils in general.

The evaluation design

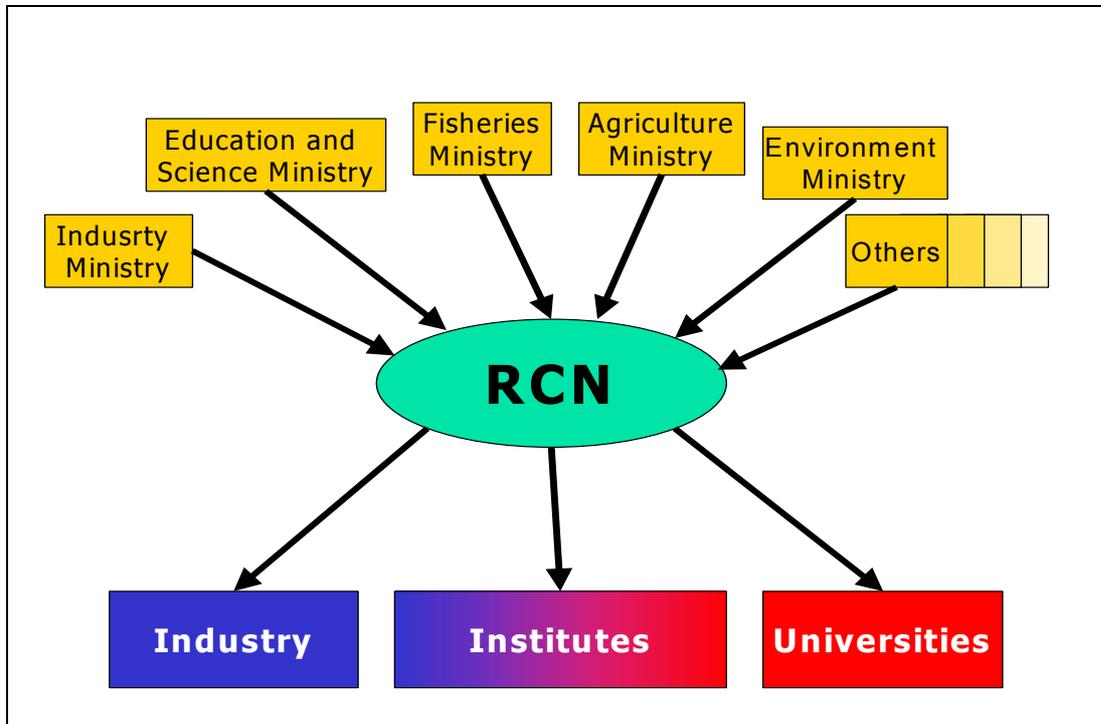
Research councils are part of the intermediary structure between governments and the research and innovation level. They can be found in every Western country, and some parts are recognizable and international similar, but their specific organizational and institutional setup is often a result of contingent national developments.¹⁵ In Norway before 1993 when RCN was formed, this intermediary level consisted of five independent research and innovation councils. Three councils had a mission to fund innovative research for respectively industry (NTNF), agriculture (NLVF), and fishery (NFFR) and acted as agencies for the respective sectoral ministries. In addition there was an agency for applied social science (NORAS) which had responsibility for funding policy oriented research. The fifth council (NAVF) was a traditional basic research council, concentrating on responsive mode funding and organised in disciplinary division. However, the environmental research division acted de facto as a research council of the ministry of environment.

¹³ The consortium consisted of three foreign institutes, Technopolis – UK., ISI- Germany and University of Twente, The Netherlands, and two Norwegian, STEP and NIFU, and was led by Erik Arnold, Stefan Kuhlmann and Barend van der Meulen.

¹⁴ The reports can be downloaded from www.technopolis-group.com/reports/index.htm

¹⁵ See e.g. Arie Rip, Barend van der Meulen, 1996, The Post-modern Research System, *Science and Public Policies*, 23, 343-352.

Figure 3



In the eighties a range of procedures and arrangements were created to coordinate between the councils and manage Norway's investments in emerging technologies, but not very successfully. Early nineties a government committee proposed a radical solution. To improve coordination between applied and basic research and across disciplines the five councils had to be merged. According to the proposal of the committee, the new council should have a strategic role within the research system. In order to enable horizontal coordination, the different ministries would bring in most of their research funding into the research council, and have it be managed by the council. The council would fund research within and for industry, institutes and universities in an integrated way. (Figure 1)

The mission of the new council was necessarily a broad one and can be summarised as:

- RCN shall produce useful national and sectoral research policy advice to the government, based on an holistic national perspective;
- RCN shall fund research to meet social and industrial needs, taking account of users' needs and promoting the uptake of results;
- RCN shall fund the high-quality basic and applied research needed in the national system of knowledge production, seeking to integrate the two as far as is appropriate while securing the place of basic research;
- RCN is tasked with strategic responsibility for the research institute sector in Norway;
- RCN is tasked with promoting the interaction of Norwegian knowledge production with the international knowledge production system;
- RCN shall use appropriate and efficient processes (including evaluation) and organizational structures in performing its tasks.

The strategic role, the relationships with different stakeholders with a wide range of interests, and the broad mission are reflected in the design of the evaluation. The evaluation consisted of different components to take into account the different kind of performances of RCN. Moreover, a mix of methods was used to obtain robust results through triangulation. To account for the position of RCN as an intermediary organization, four different parts can be distinguished.

Two parts concentrated on RCN's performances in relation to science and innovation, the first of these two by looking at RCN's role in relation to industries and societal needs. This was evaluated on the one hand mainly through a survey among firms who got funding for commissioning projects at institutes and universities and on the other hand as interviews with ministries who, in the Norwegian constellation, act as spokespersons for the societal needs. In addition an analysis was made of innovation role of RCN in relation to other innovation agencies. The other one of the two parts, was the evaluation of RCN's performance in relation to the dynamics of research and research organizations. This part included a survey among researchers from research organizations, case studies of the impact of RCN funding on the dynamics of research groups, a bibliometric analysis of Norway's international position and interviews with universities and institute directors.

In addition to these performance oriented parts, we evaluated the internal organization of RCN by quantitative analysis of its funding processes and qualitative analysis of the internal processes, coordination and strategic instruments. In addition the funding portfolio of the six divisions were reviewed by panels of international experts. The fourth component was an evaluation of the relation of RCN and the government through an analysis of the history of the decision to create RCN, and evaluation of current governance practices, including the budgeting processes.

The work was distributed over the different partners in the team and overseen by a management team with the three principal investigators of the main organizations in the consortium. As the evaluation was conducted in a high stake contexts - as said many of the previous lovers had become dissatisfied and found that the council paid too less attention to their interests - the ministry had insisted that the evaluation had to be done by an international consortium. The consortium included two Norwegian institutes, but in a contractor role to the international team and not involved in the analytic and conclusive work.

Because of the antagonistic positions of the main stakeholders, no reference group with stakeholder representatives was included. As a guarantee for the quality of the evaluation work, and as a sparring partner, the consortium had included an international panel with evaluation experts and high level researchers of intermediary organizations from other countries.

Research Council Norway in context

The organizational charter of RCN can be interpreted that RCN should be a unified body with a central strategic role. However the development of its limited budget, the differences between the missions of the organizations research divisions as well as the relationship with the government did not facilitate this.

Organizationally, the broad mission was translated into a structure with six operational divisions, each with an own divisional board and a division director (See textbox). The organization as a whole is led by a General director and a Main Board, staffed with a strategy division, a division for public relations and information and a division for organization and finance.

Textbox 1**Divisions of Research Council****Norway***Research Divisions*

- Bioproduction and Food
- Culture and Society
- Environment and Development
- Industry and Energy
- Medicine and Health
- Science and Technology

Staff Divisions

- Strategic Planning
- Organization and Finance
- Public Relation and Information

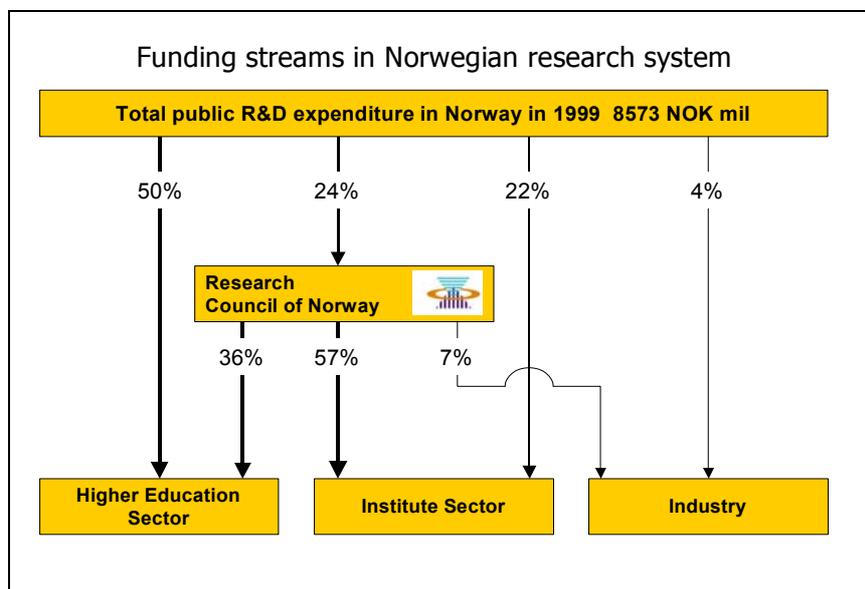
Some parts of the organization are indeed designed to the new missions, while others still clearly bear the legacy of the older councils. Industry and Energy for instance is seen as the follow up of the NTNF, and Bioproduction and Food as a merger of the agriculture and fishery councils. With the legacy came also different operational practices and ideas on the mission of an intermediary body. In its first years the organization had to cope with strong internal fights, which could only be solved by replacement of the key organizational figures. From 1995 to 1999 the organization gradually converged to a common identity and a shared set of funding instruments. The evaluation of the internal functioning of the council showed that within the organization few practices were at place through which the organization could systematically develop its strategic role. Development and use of strategic policy instruments, like evaluation, port folio management and foresight, took off only in recent years and depended too much on separate initiatives.

The divisional structure as a whole reflects the broad mission, but most of the divisions have implicitly a smaller mission by focusing more on industrial needs, governmental needs, or disciplinary developments. These differences are also seen in differences in funding instruments each division uses. The organization as a whole distinguishes between independent projects (responsive mode), three kind of research programs for basic research, user oriented research and policy oriented research respectively, and infrastructural funds for institutes and strategic initiatives at universities and institutes and for equipment. The Industry and Energy division has put all its money in the user oriented programs only, while Medicine and Health division makes use of all the funding mechanisms, but the institutional funding.

Looking to the budget position of the Research Council the picture of one, central strategic organization within the system gets more affected. Of all total public funding only 24% of the goes to the Research Council. The other 76% goes directly to the universities (50%), the institutes and even some to industry (See figure). This implies that with regard to the universities, the relation between the general university funding and research council funding is about 5.8:1. In other countries with a comparable dual financing system this figure normally is around 4:1.

In addition it should be said that for some of the institutes although the research council is responsible for their funding, the amount of funding is determined by the government and the research council has little possibility to allocate at its own discretion. Some of the ministries still fund institutes directly, and do not accept the role of the research council in managing the institute sector.

Figure 4



Also in some other respects the divisions are bound to the different ministries. The council gets its funding from fifteen ministries with which it has to have yearly budget negotiations and frequent meetings about the budget spending. 60% of the budget comes from the Ministries of Education and Sciences and for Industry respectively. The Ministries for Agriculture, for Environment and for Oil and Energy provide between 7% and 10% each of the total budget. The other 13% comes from the rest. The evaluation also showed that over time an increasing part of this budget was allocated to the council as earmarked funding. The complexity of the yearly budgeting process as well as the decreasing trust of the ministries in RCN's role has induced a tendency to earmark more and more funds – sometimes at a level that funding decisions de facto depend on these earmarks and not only on the outcomes of peer evaluations. Ironically, the internal budget competition between the divisions makes the divisions sometimes ask for earmarking

Again, break down figures per division reflect large differences in actual mission and position of the divisions. The Bioproduction and Food division is mainly funded by two ministries (for agriculture and for fisheries) with strong own research strategies which

are translated in specific earmarks. Industry and Energy and Science and Technology, both funded mainly by the two main funders of RCN as a whole have more strategic possibilities. Culture and Society also has such possibilities for its funding for disciplinary research, but in addition has to manage funding from 14 ministries for action oriented research. The latter implies a heavy administrative load related only to the budget meetings with each of these ministries.

RCN and dynamics of research

Agencies like research councils are depending in their performance on researchers and research performance organizations. Through research and research output this performance level creates the actual performance which legitimizes the council. Already at an early phase in the evaluation, through scooping interviews and information from Norwegian colleagues the evaluation team knew that researchers at universities, state colleges and institutes were very critical about the research council. The survey among researchers therefore explicitly asked researchers about experiences, not on opinions. This turned out to be very useful. The results revealed the criticism on the councils role and func-

tioning, but those who had no or little experience were more critical than those who had actual experience with applying for funds and with getting proposals accepted. But even those with experience were very critical about the way the council procedures to evaluate the proposals. The results also indicated that the council in its funding and its membership of program committees and reviewers mainly relates to senior researchers at the four universities at professorial level. The questions on the output of the different funding modes showed that their results were according to their aims (scientific products dominating the responding mode funding, and user oriented products the program and user controlled funding) and at sufficient level.

The outcome of the bibliometric evaluation converges with these findings. The bibliometric overview indicated Norway lacks behind other Scandinavian countries in terms of international output and visibility. But as researchers funded by the council seemed to do better than other researchers, this weak international position cannot be attributed to the way the council operates. The council funds the more international oriented researchers with higher international outputs.

In addition to these quantitative evaluation, we made 23 case studies of the impact of RCN funding on the dynamics of local scientific research. The 23 cases were selected by a diverse case selection to assure that we would cover most of the specific funding and research dynamics patterns within the Norwegian scientific organizations. Apart from additional insight in the role of RCN, the case studies also shed light on the backgrounds of the dissatisfaction among researchers with RCN. The case studies revealed that research in Norwegian universities tend to be organized at individual level or within very small groups, who apart from funding for salaries get hardly any institutional funding for doing research. That implies that within the universities there is a relatively large research population which depends for the running costs of research on external funding. RCN is the main resource, but its budget is in relation to the

budget is in relation to the institutional funding marginal and insufficient to cover the funding needs. Universities tend to spread their funds equally and appoint researchers rather easily at professorial rank. The result is an internal egalitarian culture which induces de facto a very strong competitive system. This strong competition puts extra pressure on the legitimacy and reliability of the assessment and selection procedures of RCN – and management of this competitive system is an important role of RCN.

The case studies revealed also other roles of RCN in the Norwegian science system. The first role is simply to enable doing research by funding it. This seems evident, but is a specific effect of the universities spending most of their institutional funding on researchers salaries. The implication is that researchers are to some extent indifferent where the money comes from and from which kind of funding stream within RCN, as long as it enables them to do research.

A third role, more important in terms of RCN's mission is that infrastructural funds and program funding enable individual researchers to develop small groups of about 4-6 researchers. Infrastructural funds are set up for this purpose, but program funding is not – and this role is also not reflected in the survey results. However, we found that research programs create niches within the funding landscape that ascertained researchers in specific areas that they can get a small research group funded. An important aspect is that through relating to these programs, which have a lower entrance barrier than the other RCN funding modes, researchers learn to acquire funding. RCN's procedures and funding modes induce an effect which is known in the sociology of science as the Matthew effect: Those who have will get, those who have not, will be taken even the little they have. In other words: those who have acquired RCN funding learn how to write the proposals, will be able to develop research competence and reputation, and thus can do better in next years. The importance of this mechanism is shown

by a comparison of the development of the small groups grown from program funding - who sustain through this effect - and those grown with infrastructural funds. The latter who are endowed with relatively large grants for several years, tend for some time not to compete for more funding. At the end of the 4-5 years grant period they have no real foothold in the funding dynamics and fear that after the grant the group reduces in size again.

Conclusions

In terms of evaluation methods the evaluation of RCN shows the necessity of a system perspective for evaluating organizations like RCN. System evaluation does not imply that the whole system should be subjected to the evaluation, but that organizations are looked upon, analyzed and assessed within their context. The results show that RCN's performances depend on its own internal organization as much as on the governance relation with its principal and the ability of research organizations and industry to transform RCN's funding actions into scientific and innovation performances. In terms of evaluation methodology this was reflected in the broad focus of the evaluation.

In terms of evaluation perspective system evaluation implies that not just the performance of the organization is at stake, but also whether within the specific system the organization is appropriate and should continue as it is. Considering the difficulties RCN went through and the antagonistic positioning of the main stakeholders the easiest answer could be that the experiment should not be continued, and not to be copied abroad. That answer is a too easy one from a system perspective.

The evaluation of RCN's organization showed that it had improved in many ways, but at the same time failed to fulfill some of its core mission tasks. It had insufficiently developed its strategic vision on and role in Norwegian research and innovation system, the budgeting system was too complicated to make any strategic choices and its grant selection processes were not transparent enough. The evaluation

team had to conclude as well that the framework conditions were far from being optimal. The government had not given the council sufficient resources, nor sufficient room for own choices to enable the council to develop its strategic role. The research sector and the innovation sector were not modern enough, and restricted the strategic possibilities of the council.

The ultimate question - not in the terms of reference explicitly formulated, but clearly in the mind of the main stakeholders as we experienced in interviews - we had to answer whether the council should continue or, as many in Norway had hoped for, been split up again. The evaluation team and panel in the end concluded, on the experiences in the previous year that another reorganization would throw the council back again in terms of strategy development. But we also didn't want to suggest that business could go on as usual. Therefore, by way of conclusions we formulated some stretch goals to which RCN could work with government to capture really the benefits of having one council. These stretch goals were (summarized):

- Increase of the capacity within RCN to develop and implement strategies
- Increase funding of R&D in Norway to OECD average
- Improve the research management within the ministries;
- Replace complicated annual budgets by multi annual budgets;
- Increase freedom for RCN to manage the research institute sector.

These stretch goals can facilitate to reorient the council towards its mission and develop enabling structures instead of constraining framework conditions in cooperation with government, industry and research organizations and other stakeholders.

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The role of "councils" in research technology and innovation policy – advising, shaping, evaluating policy

Workshop in Vienna, June 20th 2002

In some countries councils play an important role concerning the strategic orientation of technology policy. As a result, some advantages and disadvantages can occur which have to be analysed in detail: the robustness or non-robustness of the system against lobbying, new roles and functions for the ministries concerned, asymmetric information, completing or overdeterminating the policy system, and so on. Moreover, councils could have different tasks, the dominant one however is policy advice on which we will concentrate at our meeting.

Leading Questions of the Meeting:

- Do councils improve the working of the policy system - and of the innovation system as a whole?
- Where do the members of the council come from? Who decides on the composition of the council?
- Which strategic functions do councils have, which should they have?
- Do councils improve the evaluation culture?
- How does counselling, strategic planning and evaluating match?

Organisation

The meeting was a joint initiative of the German "Degeval Working Group Evaluation of Research Technology and Innovation Policy" (Degeval stands for "Deutsche Gesellschaft für Evaluation") and the Austrian "Plattform Forschungs und Technologieevaluation"

Speakers:

Susanne Bühner (Fraunhofer ISI, D)
"International comparison of scientific advisory bodies"

Andreas Stucke (Wissenschaftsrat, D)

Michael Binder (Austrian Council for Research and Technology Development, Generalsekretariat)

Esko-Olavi Seppälä (Science and technology policy council of Finland)

Erik Arnold (Technopolis Brighton, GB)
"The Norwegian RCN"

A joint initiative of



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Medienhinweis:

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