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EVALUATION OF SIBED

Sweden - Israel test bed program
for IT applications



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Evaluation of SIBED

Sweden - Israel test bed program
for IT applications



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Summary

This report presents findings from the evaluation of the program SIBED – Sweden Israel Test Bed Program for ICT-Applications. SIBED is a bi-lateral program that has given Swedish and Israeli companies the possibility to apply for funding of their joint ICT-developments. It is a collaborative project between the states of Sweden and Israel, and is led by the Swedish governmental agency for innovation system, VINNOVA, and the Israel counterpart OCS/MATIMOP. SIBED was developed after a memorandum of understanding (MOU) between Sweden and Israel on co-operation in the field of industrial research and development. The overall objectives with SIBED has been to foster innovative and commercial IT-applications in collaboration between the ICT-industries in Israeli and Swedish companies.

The program has run for approximately 5 years. During the autumn of 2008 SIBED has been evaluated. The motive behind the evaluation is both to provide an analysis upon which decisions on a possible continuation of the program can be made, and to develop new insights about bi-lateral initiatives similar to SIBED. For this reason, the evaluation has reviewed the program approach in order to identify its weaknesses and strengths and to asses its value in terms of achieved goals. The evaluation has focused on three aspects of the SIBED program. First, the results and achievements of SIBED have been analysed. Second, the administration of the program has been examined. Third, the relevance of SIBED in relation to its objectives has been assessed. Based on these findings recommendations for SIBED as well as for similar RTDI program have been developed.

The results of SIBED

- SIBED has performed well in relation to its objective to support improvements or new ICT-innovations.
- The performance with regards to reaching the objective of commercialization of ICT-innovations could be improved.
- SIBED has strengthened the market position for a majority of the participating companies.
- SIBED has been rewarding to companies. They have gained access to new business networks, new knowledge about customer needs and developed new technology.
- OCS/MATIMOP and to some extent VINNVOA has gained new knowledge about managing a bilateral product development program.

The administration of SIBED

- Insufficient information to companies and matchmaking between companies.

- Less applications than expected have been received.
- In the selection of projects, there has not been enough emphasis on commercialization capabilities.
- The documentation, monitoring and evaluation of SIBED have not been sufficient in order to follow up the performance of SIBED.
- VINNOVA lacks both networks with businesses and experiences from matchmaking.
- If SIBED is to continue the role of VINNOVA needs to be further discussed in terms of how they can reach out to companies in a more efficient way.

The relevance of SIBED

- The SIBED approach stimulates an increased collaboration between the ICT-sectors in Sweden and Israel. However a broader focus than the ICT-sector could potentially result in even more industrial collaborations.
- SIBED is also an instrument for strengthening the ICT-sector in Israel and Sweden. The focus on collaboration between Israel and Sweden is relevant given the overall aims with the MOU to stimulate industrial collaboration. However, we should be sensitive to the fact that collaborations between other countries could just as well lead to new ICT-innovations.
- In order to strengthen the ICT-sector in Israel and Sweden the test bed and commercialization - focus is relevant.
- The funding model used in SIBED is both well-known and relevant. It secures that the companies are willing to invest in their own projects.
- Public funding as well as other types of public support such as matchmaking or assistance in finding venture capital etc. stimulates international RTDI collaborations.
- SMEs are in need of public funding to be able to make ICT-innovations.

Conclusions and recommendations

The evaluation demonstrates that there are several arguments for a continuation of the SIBED program. The main argument is that there is need for public funding in order for companies to engage in international RTDI collaborations. The evaluation has come to the conclusion that public support in terms of *both funding and other types of support such as matchmaking and promotion stimulates international RTDI cooperation between companies*. The support is needed for companies to overcome barriers such as difficulties in finding a partner and lack of resources to administer the collaboration. In the light of these findings it is important that bi-lateral RTDI cooperation programs are designed to involve a lot of promotion and matchmaking.

The evaluators argue that there are several aspects that need to be improved if the program continues.

- 1 It is unclear what the main objectives with SIBED are. It is not evident whether the main objective is to stimulate collaborations or to contribute to commercialized ICT-Innovation. Hence, is the main aim with SIBED to stimulate new collaborations between companies and other actors in different countries? Or is the main objective to stimulate new ICT-innovations? These questions are important to attend to as they will have an influence on the program approach.
- 2 The SIBED approach stimulates an increased collaboration between the ICT-sectors in Sweden and Israel. However, if SIBED will continue it is suggested that the potential for collaborations between Swedish and Israeli product development companies in the ICT-sector are further investigated. A broader focus than the ICT-sector could potentially be more relevant in relation to increasing industrial innovation collaborations between Swedish and Israeli companies.
- 3 There have not been clear definitions on what is meant with key concepts in SIBED: *improved ICT-innovations, commercialization and strengthened market position*. If SIBED is to be continued it is suggested that develop specific and common definitions for the program are developed. A clear definition of these key concepts is of importance in order to evaluate program performance and to identify which program activities are the most effective to obtain the objectives with SIBED.
- 4 SIBED has given rise to several additional results such as new networks and contacts, market knowledge, improved management skills, new distribution channels and references. These additional results are fundamental prerequisites for organizations to achieve sustainable growth. For this reason, it is recommended that these results are integrated with the main objectives with SIBED.
- 5 The SIBED approach stimulates an increased collaboration between the ICT-sectors in Sweden and Israel. However, if SIBED will continue it is suggested that the potential for collaborations between Swedish and Israeli product development companies in the ICT-sector are further investigated. A broader focus than the ICT-sector could potentially be more relevant in relation to increasing industrial innovation collaborations between Swedish and Israeli companies.
- 6 SIBED has succeeded in stimulating collaborations between companies, but has not reach the objective to commercialize ICT-innovations. The selection process has not always focused on the capability of companies to commercialize the ICT-innovations. If the program would like to perform better in relation to commercialization of products and services it is suggested that the program should focus more on this in the selection of projects.

- 7 SIBED has not reached its target group as well as expected. The information about the SIBED program seems to have been insufficient, which is indicated by the low number of applications. If SIBED is to be continued it is suggested that the information and marketing of the SIBED program is strengthened in order to increase the number of project applications and in order to improve the quality of these applications. One central aspect in relation to this is to examine how VINNOVA could strengthen its network with companies.
- 8 SIBED fits well with how OCS/MATIMOP normally works. VINNOVA on the other and is more focused on needs-driven research and has not had the necessary business network in order to reach the target group for SIBED during the program period. If the program is to be continued, the role of VINNOVA must be closer examined. One suggestion could be to cooperate with other parties in order to get access to their networks. VINNOVA may need assistance from other actors with a closer relationship to business in order to get in contact with the target group and to assist in matchmaking.
- 9 The documentation has been inadequate and the monitoring of projects is unsatisfying. The monitoring and evaluation system needs to be improved in order to assess the performance of the program. This is important both to identify problems, learn how to select the best projects and be able to assist companies so that they can improve their performance. Currently, the program does not have any measurable goals which make it difficult to make a fair judgement on program performance.
- 10 The evaluation suggests that public support in terms of both funding and other types of support such as matchmaking and promotion stimulates international RDTI cooperation between companies. The support is needed for companies to overcome barriers such as difficulties in finding a partner and lack of resources to administer the collaboration. In the light of these findings it is important that bi-lateral RTDI cooperation programs are designed to involve both promotion and matchmaking.

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1 Introduction

This report presents findings from the evaluation of the program SIBED – Sweden Israel Test Bed Program for ICT-Applications.

SIBED is a bi-lateral program that has given Swedish and Israeli companies the possibility to apply for funding of their joint ICT-developments. The program addresses companies active in the verification phase of new market-oriented ICT-innovations. It is a collaborative project between the states of Sweden and Israel, and is led by the Swedish governmental agency for innovation system, VINNOVA, and the Israel counterpart OCS/MATIMOP. SIBED was developed after a memorandum of understanding (MOU) between Sweden and Israel on co-operation in the field of industrial research and development. In brief, the MOU aimed at supporting industrial development, strategic alliances, professional networks and transfer of knowledge and competences between the two countries.

The program started 2002 and has been conducted in two phases - SIBED 1 and SIBED 2. The program has run for approximately 5 years which now enables an analysis of the results of the program as well as lessons learned. During the autumn of 2008 SIBED 1 and SIBED 2 have been evaluated. The findings of the evaluation are presented in this report.

1.1 The aim of the evaluation

The aim of the SIBED evaluation is twofold. *The operational motive* is to underpin the decision of a possible continuation of the program. One of the aims of this evaluation is therefore to review the program approach, identify possible problems and develop suggestions that can help improve the program. *The strategic motive* of the evaluation is to review the SIBED instrument in terms of the short-term and long-term results achieved and to identify its strengths and weaknesses in order to assess its value as an instrument for bi-lateral cooperation to support innovation. Consequently, the strategic motive is to develop new insights about bi-lateral initiatives similar to SIBED. The evaluation will therefore form the basis for decisions regarding the continuation of SIBED as well as for future bi-lateral programs similar to SIBED.

1.2 Outline of the report

This first part of the report has served as an introduction to the evaluation. Chapter 2 outlines the evaluation design and describes the methodological decisions that were made during the evaluation process. The evaluation

draws on different sources and methods for data collection – desk research on relevant documents, focus groups with experts from the ICST-sector, and interviews with participating companies and representatives from the two administrating organizations (VINNOVA and OCS/MATIMOP).

In chapter 3 the SIBED-program is introduced and described thoroughly. The chapter presents the overall aim and the intended effects of the SIBED program. Moreover, the role of the two organizations VINNOVA and OCS/MATIMOP that have administrated the program is described.

In chapter 4 the results of the evaluation are presented. Drawing upon the results achieved to date, chapter 5 elaborates on how the program and similar could be improved in the future. This final chapter includes therefore suggestions and recommendations on how SIBED as well as similar programs could be strengthened. Based on these findings the report also develops new insights about the value of bi-lateral initiatives similar to SIBED.

2 Methodology for evaluating SIBED

The evaluation methodology that has been developed takes its starting point in the evaluation questions posed by the commissioners, VINNOVA and OCS/MAMTMOP. The evaluation questions have determined the evaluation design. The table below presents the evaluation questions. The questions are presented in relation to different evaluation criteria.¹ Categorising the questions according to different evaluation criteria is a way to pinpoint the actual focus of the evaluation – i.e. what aspects of a program are to be scrutinized and investigated. The criteria also clarify what is intended and meant by the question.

Table 1: Evaluation criteria and evaluation questions

| Evaluation criteria | Evaluation questions |
|---|---|
| <p>Relevance The extent to which objectives of the intervention are consistent with beneficiaries' requirements, needs and priorities and financier's policies.</p> | <p>To what extent is the SIBED program relevant to companies?</p> <p>Is the focus of the SIBED program relevant to the companies?</p> <p>Has any shift taken place during the program period with regards to previous questions?</p> <p>Why is public funding needed?</p> <p>What are the fundamental motives for SIBED?</p> <p>Asses the importance of country characteristics that may affect program success.</p> <p>Why should implementation be the responsibility of VINNOVA and OCS?</p> |
| <p>Effectiveness The extent to which the intervention's objectives were achieved, or are expected to be achieved, taking into account how resources are converted to results. Positive and negative, primary and secondary effects produced by the intervention, directly or indirectly, intended or unintended.</p> | <p>To what extent does SIBED meet with its objective?</p> <p>Is SIBED run in an efficient way?</p> <p>Are there others effects?</p> |
| <p>Lessons learnt and recommendations</p> | <p>Describe the broad value of bi-lateral RTDI cooperation.</p> <p>The strengths and limitations of SIBED instrument?</p> <p>What could be done to improve the program performance?</p> <p>The usefulness of this form of international RTDI cooperation?</p> <p>Inputs for making priorities on future RDTI cooperation?</p> |

¹ The evaluation criteria used are based on the European Commission guidelines for evaluation.

The table suggests that the program should be evaluated on its relevance and effectiveness. By assessing the program on these criteria the evaluation will also be able to provide conclusions about the program and the policy instrument as such, i.e. lessons learnt and recommendations for developing SIBED and for using similar instruments in other situations will also be presented by the evaluation.

Yet another point of departure for the evaluation methodology is that the commissioners VINNOVA and OCS/MATIMOP have expressed that the evaluation of SIBED should have a strong learning perspective. Hence, the aim of the evaluation is to develop an understanding of *how* SIBED has generated outcomes and impacts rather than just answering *if* outcomes and impacts have been generated. The overall aim of the evaluation is to develop knowledge and insights in how bi-lateral programs similar to SIBED simulate new industrial innovations and if it would be sensible to continue the programme and if so, with what improvements.

Based on the evaluation questions and the learning perspective of the evaluation, the methodology for this evaluation of SIBED is mainly qualitative in nature. In practice this means that the evaluation to some extent is participatory in the sense that the views and experiences of participating companies are essential for the assessment of the program. Therefore the methodology contains few specifically stated and quantitative success criteria to judge the programme. Another reason for a qualitative approach is that the program does not seem to have well defined measurable goals for its expected output, outcome and impact. If measurable goals should have been available they would have been used as performance criteria.

For a full account of the methodology for answering each of the evaluation questions refer to appendix 1. In summary, the evaluation methodology is based on three main sources of data collection: document studies, focus groups with experts from the ICT-sector, and interviews with participating companies and representatives of the SIBED program. Data collection has been preformed by the evaluation team in Sweden and during a mission to Israel, September 14-17 2008. We briefly describe the methods for data collection below.

Document studies

The document studies have looked into information gathered in applications, marketing material, MOU, project reports and other program documentations.

Focus groups

Focus groups have been conducted in both Sweden and Israel with 5-8 persons that represent the ICT-industry. The purpose of the focus groups was to obtain a view of to what extent the focus of SIBED is perceived as relevant among corporations in the ICT-industry in general not only among the companies that have chosen to participate in the program. The participants were recommended by VINNOVA, OCS/MATIMOP and business associations in both countries.

Semi-structured interviews

Semi-structured interviews have been conducted with two different groups of interviewees; 1) companies that have taken part in SIBED projects and 2) representatives of the program at VINNOVA and OCS/MAMPTIMOP.

The interviews with the companies have identified outcomes and impacts of the projects as well as developed an understanding of to what extent they perceive the focus of SIBED as relevant to their business and if the programme has been run in an efficient way. In total, 19 projects have received funding from SIBED 1 and 2. For 13 projects, we have interviewed representatives from companies that have had a leading role in the project and there by have good knowledge about the results in general. In 10 out of the 13 projects we have interviewed the representative from both the Swedish and Israeli counterparts. In two projects we have only talked to the Swedish company and in one project only with the Israeli company. The projects chosen to represent SIBED 1 were mainly conducted in the last phase of SIBED 1 in order to minimize the time lag between the projects and the interviews.

Three representatives of the program at VINNOVA and four at OCS/MATIMOP have been interviewed. The focus of these interviews has been to investigate in what way the programme has been run and to catch up there views on effectiveness and impact.

The majority of the interviews have been conducted face-to-face. In some cases when travel distance has made it difficult to meet interviews have been conducted over the telephone.

3 Background of the SIBED program

In this chapter we present the background and prerequisites of the program. The background is an important point of departure for the final analysis of the program. We first give a short introduction to SIBED, its aims and the intervention logic behind the program. Thereafter, the administration of the program in terms of application procedures and the role of the two administrating organizations are presented. In the final section, the scope of the program is described.

3.1 Introduction to SIBED

Through the joint program SIBED, Sweden and Israel are supporting development of IT applications. The bi-lateral program is, as described, above directed towards companies working with ICT-innovation in the verification phase – i.e. in the later phase of a product development. Thus, the program supports projects that intend to develop products using ICT or to stimulate development of test bed methodologies fostering a deeper end user understanding. SIBED has been carried out in two phases – SIBED 1 and SIBED 2. SIBED 1 primarily focused on wireless IT applications, whereas SIBED 2 has had a broader approach by focusing on IT-applications in general and IT-security.

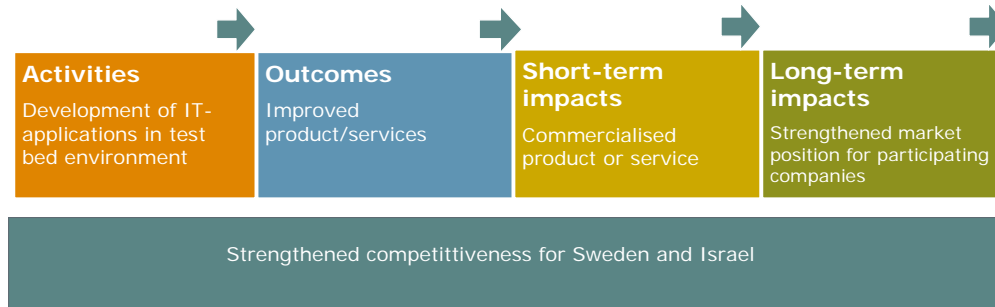
The aims of SIBED

In advance of this evaluation, a pre-study was carried out during which the aims of SIBED were clarified in collaboration with VINNOVA. In the pre-study the intervention logic for SIBED was presented that clarified what was expected to be achieved and how this was to be done. The intervention logic has been important for this evaluation since it has specified the aims with SIBED and has served as a point of reference through out the entire evaluation.

According to the intervention logic developed in the pre-study the overall aims with SIBED has been twofold. *First*, the program aims to fulfil the MOU and, hence, to contribute to increasing collaboration between the ICT-industries in Sweden and Israel, which in turn should strengthen the Swedish and Israeli innovation systems on ICT and reinforce their competitiveness globally in the area. *Second*, the aim is to foster innovative and commercial IT-applications in collaboration between the ICT-industries in Israeli and Swedish companies. Thus, after 18 months it has been expected that the projects should have resulted in improved products or services. It is also expected that these products or services should be

commercialized shortly after the project has finished. The expected long-term impact is that the participating companies should have strengthened their market position as a consequence of the commercialization. SIBED's intervention logic is illustrated below.

Figure 1



3.2 The administration and organization of SIBED

SIBED has been run by the Swedish organization VINNOVA and the Israeli counterpart OCS/MATIMOP. In this section we briefly describe the two organizations, their backgrounds and their role and function in SIBED. Thereafter, the application procedures and the coordination of SIBED are displayed.

VINNOVA

VINNOVA (The Swedish Governmental Agency for Innovation Systems) is a state authority that aims to promote growth and prosperity throughout Sweden. The main area of responsibility comprises innovations linked to research and development. VINNOVA's tasks are to fund the needs-driven research in order to contribute to a competitive business and industrial sector, and to strengthen the networks that are such a necessary part of this work. The Government of Sweden has commissioned VINNOVA to:

- contribute to making Sweden a leading research nation, in which research of high scientific quality is conducted.
- promote sustainable growth and increased employment by acting to increase competitiveness and the emergence and expansion of successful companies.
- support research and development work of the highest quality in areas such as engineering, transport, communications and working life in order to promote renewal and sustainable growth.

- stimulate Swedish participation in European and international R&D collaboration and in the exchange of experience in the field of innovation.²

VINNOVA is an organization that aims to foster innovation in different business areas in Sweden. In practice this means that VINNOVA is distributing funding to different research projects. This implies that VINNOVA usually supports needs-driven research rather than companies. VINNOVA has some other programs that focus on innovation- and commercialization. These processes are however focussed on the commercialization of research results. Over the past few years VINNOVA has also launched a few programs that are directed towards companies. This means that VINNOVA since the start up of SIBED has developed more contacts with and experiences from working with companies. Still, the SIBED project is an extraordinary program for VINNOVA since it is first and foremost directed to companies rather than to research institutes. In other words, administrating SIBED has been a new experience for VINNOVA in terms of financing corporate projects, working close to companies, and to stimulating their innovation processes.

OCS and MATIMOP

In Israel, there have been two organizations responsible for the implementation of SIBED – The Office of the Chief Scientist (OCS) and MATIMOP.

The OCS is part of the Israeli Ministry of Industry and Trade. The OCS is responsible for implementing government policy regarding support and encouragement of industrial research and development. The OCS tasks include:

- Expansion of industries' technological and scientific infrastructure
- The development of science intensive industry
- Employment placement for scientific and technological manpower
- Improvement of the competitiveness of the Israeli industry
- Increased national industrial production and balance of trade

MATIMOP - the Israeli Industry Center for R&D – encourages participation in the many international programs for bi-lateral and multilateral cooperation in industrial R&D and is responsible for implementing programs initiated by the OCS. MATIMOP is a public non-profit organization, founded by the three major associations of manufacturers in Israel. Its tasks include:

² <http://www.vinnova.se/In-English/About-VINNOVA/>

- Acting as a national contact point for most of the bi-lateral industrial R&D programs of the OCS, and providing services for the OCS international activities.
- Serving as the official Israeli liaison office for the EUREKA program, which helps companies and research institutes pool their resources in the development of leading edge technology.
- Operating the Israeli IRC (Innovation Relay Center) - a part of the European network, whose main objective is to enhance transfer of technologies, particularly for small and medium enterprises.³

OCS/MATIMOP works with a large number of different programs aimed to directly support businesses. There are programs to support start-ups, product development, an incubator program etc. Through these programs OCS/MATIMOP has developed an extensive network among the ICT-industry, including a data base that comprises addresses to a large part of the industry. The SIBED program is thus quite closely related to other programs at OCS/MATIMOP. However, SIBED was the first bilateral program that the organizations managed and therefore imposed new challenges.

As described above the two administrating parties have different experiences of helping to foster innovations. VINNOVA traditionally works with innovations in needs-based research, whereas OCS/MATIMOP supports innovation processes in companies. OCS/MATIMOP focuses on industrial R&D and, in contrast to VINNOVA, OCS/MATIMOP cannot support universities and general research. For this reason they have initially had somewhat different perspectives on how SIBED should be carried out and administrated. Furthermore, the legal frameworks in the two countries are different in terms of how public funding ought to be distributed to corporations. However, the two organizations have over the time developed a close collaboration and their roles have been chiselled out. Representatives from both organizations state that they have learnt from the experience of administrating SIBED together.

3.3 Submission, evaluation and coordination

The submission and evaluation of proposals has been coordinated by VINNOVA and OCS/MAMPTIMOP. Both VINNOVA and OCS/MATIMOP have been involved in evaluating proposals. Only the proposals accepted by both countries have received funding.

At the out set SIBED used a one phase procedure to evaluate proposals. During SIBED 1 proposals were submitted to OCS/MATIMOP and VINNOVA respectively. The two organisations then evaluated each

³ <http://www2.matimop.org.il/1/general/about.asp>

proposal independently and the program supported only the proposals that were accepted by both countries. According to the coordinators of SIBED the evaluation of proposals during SIBED 1 was the bottleneck of the program. The coordination between VINNOVA and OCS/MATIMOP was not efficient and resulted in long processing times. In practice there was a parallel submission/evaluation process. Mainly the problem was that one organization could discuss proposals, which had already been discarded by the other organization. Moreover, the evaluation was at times at a standstill in one organization while waiting for the results from the other organization.

By the launch of SIBED 2 the submission/evaluation process was re-organized in order to make it more efficient. A joint SIBED program directorate was established consisting of two members from VINNOVA respectively two members from OCS/MATIMOP. This re-organization meant that in the first phase of the application process proposals were sent directly to the SIBED directorate where they were screened. In this manner the submission/evaluation process was better coordinated between the two countries in that they could reject the ones that did not adhere to the formal requirements or were it for some other reason evident that they would not be approved for funding. This way there were fewer mismatches. In order to improve coordination and minimize the number of mismatches, i.e. were funding was approved in one country but not in the other, a two phase procedure was adopted in SIBED 2:

- 1 First phase: A description of the main goals and activities of the project, with focus on the tasks of each partner and the budget's estimation.
- 2 Second phase: Fulfil the proposals with Gantt chart, milestones and details on the budget and agreement between the partners.

The two phase structure was used in order to screen proposals at an early stage and allow more co-ordination between the OCS/MATIMOP and VINNOVA. Proposals that were prioritized in both countries in the first phase were invited to submit proposals in the second phase. In the second phase of the process, however, Israeli companies were asked to submit proposals according to the OCS/MATIMOP standard submission procedures.

The proposals have been evaluated according to a number of criteria. In the original set up of the program, to be valid for evaluation project proposals needed to be submitted by partners including at least one Swedish and Israeli commercial company, utilise a test bed environment and have an obvious advantage of the cooperation between the two participants. Moreover, they should be able to present how tangible results will be achieved. The applications have been evaluated on the following criteria:

- 1 Commercial aspects

- 2 Level of innovation
- 3 Economic potential of the proposed product/service
- 4 Added value of cooperation
- 5 Benefits to both sides

In the second phase of the process, as in SIBED 1, applications were submitted to each of the two agencies and evaluated according to the local procedures. A joint decision was thereafter taken by the representatives from OCS/MATIMOP and VINNOVA. During SIBED 2 the organizations discussed the projects over meetings, phone-conferences and e-mail. According to the representatives of VINNOVA and OCS/MATIMOP they developed a common understanding for which types of projects that were to be accepted.

In Israel, the evaluation had to comply with the standard procedures to a large extent. OCS is responsible for evaluating project proposals and approves funding – both for national programs and bilateral ones. A public committee lead by the chief scientist and comprising politicians, experts and others decides on funding. All funding decisions for national as well as bilateral projects have to be approved by the committee. The funds provided for SIBED were integrated into the total funding for projects and projects competed with other projects for funding, even though the international projects should be prioritised.

In Sweden, on the other hand, the program management at VINNOVA has had greater freedom in deciding what projects are to be financed. Furthermore, there has been a certain amount of money for the program and projects have thus only competed with other projects applying to SIBED.

3.4 The scope of SIBED

During each SIBED phase there have been a number of calls for applications. Within SIBED 1 there were three calls for applications, whereas SIBED 2 has had four calls for applications. There is no information about the total number of applications to each call nor do we know the total number of companies that applied to SIBED. From interviews conducted with people from the program directorate, we know that the number of applications has been decreasing over the program period. In the last call of SIBED 2, there were no applications that could be approved for funding.

As mentioned above, VINNOVA has not been able to provide us with the exact number of applications and granted projects, but representatives from the organization has made an approximation of the number of applications and companies involved. SIBED 1 had in total about 31 proposals including

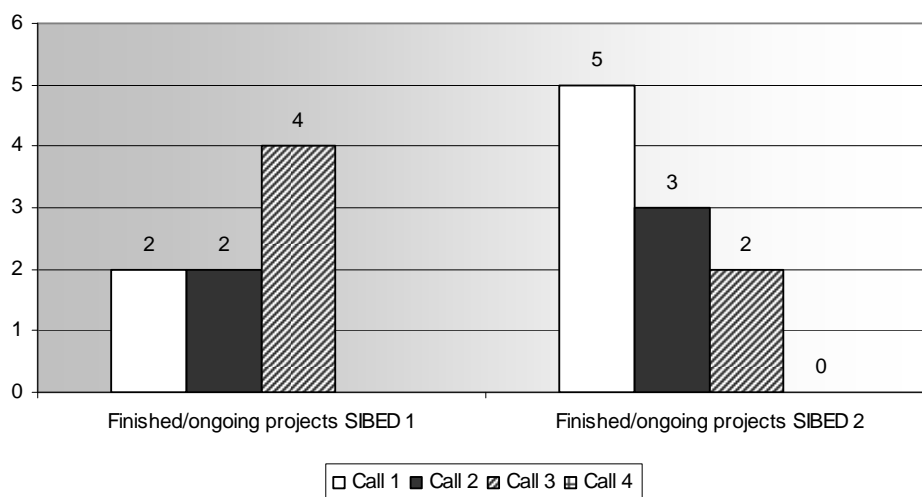
100 companies, from which 9 proposals received funding. SIBED 2 had in total about 27 proposals including 65 companies from which 10 received funding.

Table 2: Number of applications and granted projects in SIBED

| | Approx. no of applications | No of granted projects |
|---------|----------------------------|------------------------|
| SIBED 1 | 31 | 9 |
| SIBED 2 | 27 | 10 |

In total, 20 projects were approved for funding through SIBED. One of these applications was withdrawn, however, and one project was never completed. In the figure below the number of projects that were granted in the different calls of SIBED 1 and SIBED 2 are illustrated. The figure demonstrates an uneven distribution. In SIBED 1 the number of granted projects increased from call to call. In SIBED 2 we can observe the opposite development – the number of granted projects is instead decreasing. The reason for this is difficult to explain. One explanation could be that the awareness of SIBED as program increased during SIBED 1 which contributed to an increase of applications. In SIBED 2 the scope of SIBED was broadened from projects fostering wireless ICT-innovations to projects fostering ICT-innovations in general. Still, the number of projects granted decreased over time indicating that either the market was saturated or that the information about the existence of SIBED did not reach the target group as intended.

Figure 2: Number of granted project per call in SIBED



There are no exact figures on the funds that the program has granted projects. From Israel we have no estimate, since the funds for SIBED have

not been separated from other funds. In Sweden, there are no exact figures. Around 18 million SEK was paid out to Swedish companies in SIBED 1. In SIBED 2 the corresponding figure is approximately 27 million SEK.

In total, approximately 5 million EURO was committed to SIBED 1. In SIBED 2 around \$ 2 per year were committed to the program.

4 Findings of the evaluation

In this chapter the results of the evaluation are presented. As stressed in the introduction chapter the motive behind this evaluation is both to provide an analysis upon which decisions on a possible continuation of the program can be made, and to develop new insights about bi-lateral initiatives similar to SIBED. For this reason, the evaluation has reviewed the program approach in order to identify its weaknesses and strengths and to assess its value in terms of achieved goals.

The evaluation has dealt with a number of evaluation questions posed by VINNOVA, which were previously presented in chapter 2. The question mainly concerns the following aspects:

- the effectiveness of the program – i.e. to what extent have the activities within the program lead to achievement of objectives and additional effects?
- the effectiveness of the accomplishment of the program – i.e. has the different parts of the program been carried out in an efficient way?
- the relevance of the program for fulfilling the overall aims – i.e. do the activities within the program logically link to the overall aims? Are there essential prerequisites for achieving the objectives given within the program?
- the relevance of the program for the target group – i.e. is the focus of the program interesting and relevant to the companies addressed in the program?

In the following sections these questions will be dealt with. First, we attend to the effectiveness of SIBED in terms of results achieved and the administration of the program. Thereafter, we turn to questions about the relevance of SIBED. In this section the program approach is discussed in relation to the needs of the target group and in relation to the overall objectives with SIBED.

4.1 The results of SIBED

In this section the accomplishment of the program is discussed. This means that it is evaluated whether the objectives set up for the program have been achieved. *First*, it is explored whether they main objectives with SIBED have been reached. *Second*, we turn to the additional results of the program. The results are summarised in the textbox.

| |
|---|
| <p>Summary of the concluding results</p> <p><i>SIBED's achievement of its objectives</i></p> <ul style="list-style-type: none"> • SIBED has performed well in relation to its objective to supporting improvements or new ICT-innovations. • The performance with regards to reaching the objective of commercialization of ICT-innovations could be improved. • SIBED has strengthened the market position for a majority of the participating companies. <p><i>Additional results of SIBED</i></p> <ul style="list-style-type: none"> • SIBED has been rewarding to companies. They have gained access to new business networks, new knowledge about customer needs and developed new technology. • OCS/MATIMOP and to some extent VINNVOA has gained new knowledge about managing a bilateral product development program. |
|---|

4.1.1 Achievement of objectives

In order to evaluate the performance of SIBED, the goal achievement of the SIBED is explored. The overall aims for SIBED were, as described in chapter 3, twofold: First, the program should realize the MOU between two states – that is increase the collaboration between industrial research and development companies in the two countries. Secondly, the program should strengthen the Swedish and Israel innovation system on ICT, which in turn should reinforce their competitiveness globally in the area. More specifically, the main objectives – relating to the second aim - are as presented in the intervention logic:

- new or improved product and/or service
- commercialized product and/or service
- strengthened market position for participating companies

In this part we discuss the goal achievement of these three objectives. The two first objectives are summarized in the table below. Out of 13 projects that were covered in the interviews, 11 had led to a new or improved product or service. In four of these products or services had been commercialized at the time of the interviews.

Table 3: Achievement of objectives

| No of projects Interviewed | No of projects that improved a product | No of projects that commercialized a product |
|----------------------------|--|--|
| 13 | 11 | 4 |

New or improved ICT-product or service

As shown in table 3, from the 13 projects covered in the interview study, a clear majority had improved a service or product as a result of the

participation in SIBED. It should be noticed that three of the projects were still under progress at the time of the interview.

There is no clear cut definition regarding what it means to improve a product/service. The fact that no definition has been used has consequences when it comes to evaluating the results of the projects. The evaluators have had to assess whether or not a product/service has been improved based on how the participating companies have defined “improved ICT-innovations” for themselves. In most of the interviews, the companies state that they have developed a prototype for a product or service as a result of participating in the program. Often the development processes have focused on integrating existing technology and adjusting it to customer needs and preferences. As commented by one of the companies “It was mainly about integrating the solutions - the different parts were already in place”. Still, it needs to be recognized that some projects constituted extensive development processes.

To conclude, the program has succeeded regarding development of new or improved ICT-innovations. Still, it should be noted that there has not been a clear definition on what improved ICT-innovations actually means. As a consequence the participating companies have defined “improved ICT-innovations” for themselves. If SIBED is to be continued it is important to develop common definitions for the program in order to assess its impacts and performance.

Commercialized product or service

As shown in the table above, at the time of the interviews four of the projects had commercialized a product or service. The commercialization took place during or after the actual project period. Given the objective of SIBED to commercialize products/services better results could probably be expected. The number of projects in the program are too few to draw any conclusions about why certain projects did manage to commercialize their products/services and others not. However, the interviews demonstrate that there were several reasons why some companies had not commercialized the innovations.

- First, several companies did not see commercialization as the main objective of their project.
- Second, some of them argued that they saw a commercial potential in their innovation, but argued that they did not have the resources or the partners to go through with the commercialization.
- Third, a few companies had during the development process realized that there was no potential to market the product.
- Forth, some companies are aiming to commercialize the innovations further on. However, the time to market is very long in their industry,

Most of these companies were in the medical equipment market where clinical trials are required before commercialization.

To conclude, a minority of the interviewed projects have resulted in a new or improved ICT-innovation on the market. The findings raise a number of questions regarding the program and what can be expected from participating companies in terms of outcomes and impacts. As discussed above, many companies did not expect to commercialize a product/service. This implies that the commercialization objective has not been successfully communicated towards the companies and that OCS/MATIMOP has selected projects that did not have a clear commercialization focus. Moreover, some companies did not have the capability to go through with the commercialization. For these reasons, it is suggested that communication of the commercialization objective is improved in future SIBED programs. Moreover, it is suggested that the commercial capability of companies are attended to already in the selection of projects. In other words, it may be beneficial in addition to innovation level and commercial potential evaluate project applications on commercialization capability.

Strengthened market position

One of the objectives with SIBED has been to improve companies' market position. A majority of the companies interviewed state that the participation in SIBED has influenced their market position to some extent. This indicates that an improved market position does not only occur as a consequence of commercializing a product, but can also come about for other reasons. From the interviews, we can distinguish a few different reasons as to why the market position has been strengthened. The most commonly stated reasons are exposure effects, new contacts with other companies, improved market knowledge and understanding of customer's needs. As one interviewee put it "we have developed an image of being a company that does not only deliver what is asked for, but also takes initiative". Other reasons are cooperation with companies that have distribution channels and market knowledge, access to new markets and references for future sales.

To conclude, despite the low degree of commercialization, most of the companies feel that they have improved their market position. The way this came about was primarily through the additional results of the participation, which are discussed in the next section. However, it needs to be recognized that there is no common definition of "strengthen market position" in SIBED. The companies have themselves assessed if their market position has been strengthened or not. As discussed in the two previous sections if SIBED is to continue it is suggested that specific and common definitions are developed in order to estimate program performance.

4.1.2 Additional results

The evaluation has also explored the additional results of SIBED for both companies and the administrating organizations OCS/MATIMOP and VINNOVA.

Additional results for companies

From the interviews we can conclude that other effects than product innovations, commercialization and strengthened market position have been achieved. The additional results are:

- new networks and contacts
- new market knowledge
- improved management skills (mostly among the Israeli companies)
- new distribution channels and references.

The participating companies perceive these additional results as valuable. Furthermore, elements from the technology developed have been used in other products or services and the companies have gained knowledge within new fields of business. The participating companies are content with these additional effects. To cite one of the interviewees; “We needed connections and help with market access, customer knowledge, management skills etc.”

Additional results for OCS/MATIMOP and VINNOVA

Indirect results have also been identified in OCS/MATIMOP and VINNOVA. Administrating SIBED opened up to organizational learning and development. The two organizations have different knowledge since they traditionally run different types of projects. OCS/MATIMOP had previously not managed a bilateral program themselves. However, they are used to working close to the businesses with support for product development. VINNOVA on the other hand, had no experience from working with late stage product development support, since its national programs normally focus on needs-based research involving research institutions. This meant that VINNOVA did not have many channels to get in contact with companies a large number of companies.

During the course of the program the two organizations and the people involved have developed common methods for managing the program. As described in chapter 3, the application process and the management of the program were transformed and developed during the course of the SIBED in order to make it run more smoothly. In general, people involved in running the program are pleased with the cooperation and agree that there has been a mutual process of adopting and learning from the challenges they have met. When programming SIBED there were many obstacles that needed to be overcome – both due to the different legal situations in Israel and Sweden

and as a consequence of the diverse experiences and procedures in the organizations. They have learnt from the experience and improved their cooperation and the administration of SIBED during the course of the program.

The organizations have not only exchanged thoughts on how to run the program in cooperation, they have also learnt from each others methods for working with innovation policy in general.

However, there is a difference between how representatives from the organizations perceive the organizational learning from SIBED. OCS/MATIMOP now use the management method developed through SIBED for their other bilateral programs. The main adjustments compared to their normal application and managing process is the two phase procedure and the program directorate. VINNOVA on the other hand, has not had the structures or the incentives in place to gain much from the SIBED experience. According to the representatives from VINNOVA, people involved have learnt a lot, this has not led to organizational learning since it had not spread to others at VINNOVA. One reason is probably the fact that the program differs to a large extent from the rest of VINNOVA's activities. This makes it more difficult to absorb the lessons learnt and apply them in other programs.

We can conclude that SIBED has given rise to several additional results for the participating companies such as new networks and contacts, market knowledge, improved management skills, new distribution channels and references. These additional results are of value in several respects. For an organization as VINNOVA the main objective is to further contacts between different actors in order to stimulate the innovation system in the country. From their perspective these additional results are of interest. If SIBED is to be continued we suggest that these additional results are related to the main objectives. Hence, is the main aim with SIBED to stimulate new collaborations between companies and other actors in different countries? Or is the main objective to stimulate new ICT-innovations? Or should SIBED contribute to both these objectives? These questions are important to attend to as they will have an influence on the program approach. For more on this see section 4.3.

Moreover, the organizations administrating SIBED have learnt form each other and from the experience of running a bi-lateral program aiming to contribute to innovations in corporations

4.1.3 Conclusions and suggested improvements

In this section we summaries the conclusions and suggested improvements of SIBED in relation to its results and performance.

Achieved results

The program has performed well in relation to its objective to develop new or improved ICT-innovations. SIBED has however not showed as good results as expected in relation to its objective to bring ICT-innovations on the market. As discussed above, many companies did not expect to commercialize a product/service and some did not have the capability to go through with the commercialization process. This implies the commercialization objective has not been successfully communicated towards the companies. For these reasons, it is suggested that communication of the commercialization objective is improved in future SIBED programs. Moreover, it is suggested that the commercial capability of companies are attended to already in the selection of projects. In other words, it may be beneficial to - in addition to innovation level and commercial potential - evaluate project applications on commercialization capability. It is thus of importance both to develop realistic objectives with SIBED and secure that the participating companies have the possibility and capability to reach these objectives.

Despite the low degree of commercialization, most of the companies feel that they have improved their market position. The reason for this was primarily through the additional results of the participation.

A common reflection is that there have not been clear definitions on what is meant with *improved ICT-innovations*, *commercialization* and *strengthened market position*. If SIBED is to be continued it is suggested that specific and common definitions for the program are developed in order to assess program performance.

Additional results

We can conclude that SIBED has given rise to several indirect results such as new networks and contacts, market knowledge, improved management skills, new distribution channels and references. These additional results are of value in several respects. For an organization as VINNOVA the main objective is to further contacts between different actors in order to stimulate the innovation system in the country. From their perspective these additional results are of interest. If SIBED is to be continued we suggest that these additional results are related to the main objectives. Hence, is the main aim with SIBED to stimulate new collaborations between companies and other actors in different countries? Or is the main objective to stimulate new ICT-innovations? These questions are important to attend to as they will have an influence on the program approach.

Moreover, the organizations administrating SIBED have learnt from each other and from the experience of running a bi-lateral program aiming to contribute to innovations in corporations.

4.2 The administration of SIBED

This section attends to the administration of the program - i.e. have the different parts of the program been carried out in an efficient way?

Secondly, this section discusses the role of VINNOVA and OCS/MATIMOP in administrating SIBED.

The results concerning the administration of SIBED are presented and discussed in the forthcoming sections. In the below textbox a summary of the results is presented.

Summary of the concluding results in section 4.2

The implementation of SIBED in relation to achieving the objectives

- Insufficient information to companies and matchmaking between companies.
- Less applications than expected have been received.
- In the selection of projects, there has not been enough emphasis on commercialization capabilities.
- The documentation, monitoring and evaluation of SIBED have not been sufficient in order to follow up the performance of SIBED.

The role of VINNOVA and OCS/MATIMOP

- VINNOVA lacks both networks with businesses and experiences from matchmaking.
- If SIBED is to continue the role of VINNOVA needs to be further discussed in terms of how they can reach out to companies in a more efficient way.

4.2.1 The implementation of SIBED

As described in the pre-study, in order to evaluate whether SIBED was run in an efficient way we take the intervention logic as our point of reference (see chapter 3). This means that for the program to have been run in an efficient way, the program should have been conducted in a manner that supports the intervention logic and thereby program performance. Drawing upon the intervention logic of SIBED we argued that at least four tasks need to be carried out in order for the implementation of the program to be efficient:

- 1 Informing the target group about the program to receive applications.
- 2 Selecting projects with prerequisites to achieve expected outcomes and impacts.
- 3 Supporting project implementation.
- 4 Monitoring and evaluation of projects

In the following we discuss how the organizations have dealt with these tasks.

Informing the target group about SIBED

In order to find projects with a good potential to fulfill the objectives of the program (described in chapter 3), there is a need to get high quality application. An essential step to achieve this is to reach out to the target group with the information about the program. Informing the target group is also important in order to guarantee a fair distribution of public funds.

SIBED has been marketed at ICT conferences and fairs, on the websites of the organizations and through contacts with companies. Since VINNOVA have had little experience from working directly towards enterprises, there have been few natural information channels to companies. As a consequence of the small network it was difficult to reach the target group with information about the existence of SIBED. OCS/MATIMOP on the other hand, already had these channels in place at the outset of the program and also had an easier task in getting the information out.

The number of applications to SIBED has, looking over the whole program period, been less than expected and the funds set aside for SIBED on the Swedish side could not be paid out in full since there were not enough projects eligible for funding. Moreover, several companies have been involved in more than one project. The people involved in implementing SIBED all agree that the market eventually became saturated due to the narrow scope of the criteria. However, there are more than 1000 companies working with ICT-innovations in Sweden and Israel respectively and only about 10-20 companies in each country have participated in the program. Taken together, this shows that either has the reach of information activities been too limited, and/or that the criteria for eligibility has been too strict.

To conclude, the information about the SIBED program seems to have been insufficient. One of the reasons for this is that VINNOVA did not have an existing network with companies when SIBED was initiated. This means that they do not have the same channels or networks to reach the target group as OCS/MATIMOP. If SIBED is to be continued we suggest that the information and marketing of the SIBED program is strengthened in order to increase the number of project applications and in order to improve the quality of these applications. In order to do so it would probably be valuable both to look into how VINNOVA could improve its network with companies as well as how both VINNOVA and OCS/MATIMOP in general could improve there effort and the activities undertaken.

Selection of potential projects

One important aspect of succeeding with an intervention like SIBED, is to give funding to the most potential projects – that is to the projects that have a great chance of achieving the objectives. For this reason, it is apt to evaluate whether the selection of projects have been efficient – in the sense

that the criteria or conditions for projects have been used as guidance in the selections processes. The criteria displayed in chapter three were:

- Commercial aspects
- Level of innovation
- Economic potential of the proposed product/service
- Added value of cooperation
- Benefits to both sides

However, it should be noted that the criteria used to evaluate the applications are described a bit differently in different program documents. For example, in the announcement of the second call of applications in SIBED 2 the first of the criteria above, commercial aspects is not included. Moreover, the criterion “the impact of the test bed environment on the project” was added.

The organizations argue that they over time have developed a common understanding for how to select projects. An important aspect of the selection process is that the small number of applications had the consequence that competition for funding was limited. Most applications corresponding to the formal prerequisites were selected for funding. In interviews with representatives with OCS/MATIMOP and VINNOVA it has been mentioned that they have been tolerant in the evaluation of projects in order not to reject any potential well performing projects.

Moreover, from interviews it seems that sometimes in the selection process technological innovation has been prioritized before commercialization potential. If the program would like to perform better in relation to commercialization of products and services it could be a good idea to focus more on this in the selection process.

As concluded above, most projects have not led to a commercialized product or service yet. Could the administration of SIBED have done more in order to reach a higher degree of commercialization? We see that the low number of applications made it more difficult to reach a high degree of commercialization. Furthermore, in order to achieve more commercialization it is suggested that the commercial potential is prioritized in the selection process. Moreover, we would also suggest that criterion commercial potential is complemented with the criterion commercial capability. In order to increase the program performance it may be beneficial to assess the capability that the companies have to actually carry out a commercialization process.

Supporting project implementation

In this section we analyze how companies perceived their interaction with SIBED – during the application process and the project period. Participating companies are in general pleased with the interaction with SIBED. They feel that they have got support from OCS/MATIMOP and VINNOVA when it comes to the application process and reporting. The interaction with companies has been concentrated to monitoring that companies follow the project plan and the required financial reporting. A higher degree of contact and follow up during project implementation could have improved program performance and is something that needs to be taken into account if there is to be a continuation of the program. Being in contact with the projects gives the administering organizations a chance to see and point out if the project is not developing in the expected way.

The interviewees agree that there is a need for reporting in order to make sure that public funds are used in a correct manner and are pleased with the support they got from the directorate. However, there were several that thought that the application process was too extensive and time consuming, some of which claimed that this would prevent them from applying again or to a similar program. Also, some commented on the templates and the systems for reporting, which they thought were too rigid and not suited for the program. There have been fewer comments from the Israeli side about the application process, which could be due to the fact that SIBED followed more or less the standard procedure and that companies were used to how it works and know the system.

It has also been commented on the fact that the procedures, and the information required, differed between Sweden and Israel. This gave rise to additional administration in that much had to be done twice – in Israel and in Sweden. Furthermore, the differences between the countries caused some confusion regarding the funding, i.e. what the program would cover etc.

During the course of the program OCS/MATIMOP and VINNOVA have improved the application process. An important alteration was the introduction of a two phase application procedure in order to minimize the amount of mismatches. A two phase application procedure, though lowering the amount of time spent on projects that would not be eligible, causes more work for the one that got through both phases. VINNOVA and OCS/MATIMOP has also used the EUREKA framework as much as possible to avoid introducing yet another set of administrative tools and procedures to the companies. Furthermore, the directorate have amended the requirements for funding in order to make the demands put forward in the respective countries more uniform.

In conclusion, the support in project implementation has focused on the application phase. The companies are pleased with the cooperation with both OCS/MATIMOP and VINNOVA and have expressed that the organizations have given good support and been flexible in their approach. Still, several companies, especially in Sweden, have said that the administration around the program has been too time-consuming. The program management has made efforts to make the procedures as simple as possible. They could potentially look into the possibilities to unify the procedures in the two different countries even more and still follow the respective rules in each country.

Monitoring and evaluating projects

The fourth task of the program administration concerns monitoring and evaluating the achievements of the projects. The SIBED program has not had any success criteria or clearly defined objectives. Thus, it has not been clear to the projects what they are expected to achieve as a result of the participation in SIBED, which could be a reason to the low level of commercialization. Another implication is that it has not been possible to evaluate project performance against clear criteria. In other words, vague and imprecise goals make it difficult to make an overall evaluation of the program performance.

Furthermore, there has been no mutual structure for evaluation of the projects between OCS/MATIMOP and VINNOVA. There is a difference in evaluation tradition between Sweden and Israel. In Israel, specific programs are not evaluated. Instead, follow ups are made on a macro level based on the royalties companies pay. For the SIBED program the same procedure as for national programs has been followed. This means that projects have been evaluated according to whether or not they have developed a product or service and adhered to the project plan. However, no particular notice has been paid to the additional objectives set up for SIBED.

In Sweden limited evaluation has been carried out. The monitoring and evaluation has primarily been done through status reports and final reports. However, many of these reports have not been submitted by participating companies. This causes problems when it comes to monitoring and evaluating the projects and raises questions regarding the control of the projects.

There is no documentation of the total number of applications received in the different calls of SIBED. Nor do we know how many companies that have applied. This is the case both in Sweden and Israel. In Israel, it is only recently that this documentation has been collected and there is a need for more IT-tools at MATIMOP to improve the documentation process further. In Sweden, it has been difficult to get an overview of the material that

companies have sent, since it has not been properly structured at VINNOVA. Moreover, there is no information about the exact amounts paid to the projects or the total cost of the program.

To conclude, the monitoring and evaluation process of SIBED need to be improved if SIBED is to be continued. This is important in order to identify problems, learn how to select the best projects and be able to assist companies so that they can improve their performance. Moreover, a systematic monitoring and evaluation process is essential in order to assess the impacts of an intervention like SIBED.

4.2.2 The role of VINNOVA and OCS/MATIMOP in SIBED

This section gives an overall view on how well-suited and VINNOVA and OCS/MATIMOP are to manage the program.

As discussed in chapter 3 OCS/MATIMOP and VINNOVA have different objectives with their organizations. OCS/MATIMOP has more experience from working close to the businesses and the market. They already have contact with large parts in the ICT sector and have experience and systems for supporting companies. In order to stimulate product innovation it is important to be close to the market. It is essential to have a network among businesses in the sector. SIBED fits well with the OCS/MATIMOP normal work. They have the networks needed and the processes in place. There was need for some adjustment, but to a large extent they could use the normal procedures. VINNOVA on the other hand, has a different mission and way of working. VINNOVA normally provides funding for needs-driven research rather than product development. Moreover, VINNOVA does not work directly with businesses, but rather towards research institutions. Therefore, VINNOVA does not have the necessary business network in order to reach the target group for SIBED. However, it should be added that VINNOVA since the launch of SIBED also has initiated a few other programs which are targeted directly towards companies. VINNOVA is therefore to some extent increasing their network with companies.

Since promotion and matchmaking is suggested to be an important part of the implementation of SIBED, one could question the choice of VINNOVA as the Swedish organization responsible for implementing the program. VINNOVA has only limited experience from matchmaking whereas OCS/MATIMOP has more experience from this.

To conclude, if the program is to continue, the role of VINNOVA must be examined more closely. Should the focus of the program shift to fit VINNOVA better? Or what could be done for VINNOVA to be able to establish a business network and build experience around matchmaking? One suggestion could be to cooperate with other parties in order to get

access to their networks. In other words VINNOVA could still be managing the program but may need assistance from other actors with a closer relationship to business in order to get in contact with the target group and to assist in matchmaking.

4.2.3 Conclusions and suggested improvements

In this section we present the conclusions and suggested improvements when it comes to the administration of SIBED and the role of VINNOVA and OCS/MATIMOP.

The implementation of SIBED

In order for SIBED to be implemented in an efficient way four tasks need to be carried out: Informing the target group about the program to receive applications, selecting projects with prerequisites to achieve expected outcomes and impacts, supporting project implementation and monitoring and evaluation of projects.

To conclude, the information about the SIBED program seems to have been insufficient. If SIBED is to be continued we suggest that the information and marketing of the SIBED program is strengthened in order to increase the number of project applications and in order to improve the quality of these applications. One central aspect in relation to this is to examine how VINNOVA could strengthen its network with companies.

The evaluators also believe that the low number of applications limited the competition for funds which made it more difficult for the program to reach a high degree of commercialization. Yet another aspect of the selection process that probably has affected the possibilities to achieve commercialization is that commercial potential has not always been prioritized in the selection process. If the program would like to perform better in relation to commercialization of products and services it is suggested to focus more on this in the selection process.

In general, the support in project implementation has been satisfying and appreciated by the companies.

The monitoring and evaluation process of SIBED needs to be improved if SIBED is to be continued. This is important both to identify problems, learn how to select the best projects and be able to assist companies so that they can improve their performance. Moreover, a systematic monitoring and evaluation process is essential in order to assess the impacts of an intervention like SIBED.

The role of OCS/MATIMOP and VINNOVA

SIBED fits well with the OCS/MATIMOP normal work. VINNOVA on the other and is more focused on needs-driven research and has not had the necessary business network in order to reach the target group for SIBED during the program period. If the program is to continue, the role of VINNOVA must be closer examined. One suggestion could be to cooperate with other parties in order to get access to their networks. In other words VINNOVA could still be managing the program but may need assistance from other actors with a closer relationship to business in order to get in contact with the target group and to assist in matchmaking. Thus, these actors could contribute with new competences and could conduct other typed tasks than those that VINNOVA carries out today.

4.3 The relevance of SIBED

As presented above, the evaluation is derived around a number of questions posed by VINNOVA. The previous section in this chapter presented the evaluation findings with regards to the effectiveness of SIBED. This section deals with questions regarding the relevance of SIBED. More specifically, this section first attends to how relevant the approach applied in SIBED has been in order to reach its aims? And secondly, whether public funding is needed to achieve intended results? The results concerning the relevance of SIBED are discussed and presented in the forthcoming sections. The results are summarized in the textbox below.

Summary of the concluding results in section 4.3.3

The relevance of the SIBED-approach in relation to its aims

- The SIBED approach stimulates an increased collaboration between the ICT-sectors in Sweden and Israel. However a broader focus than the ICT-sector could potentially result in even more industrial collaborations.
- SIBED is also an instrument for strengthening the ICT-sector in Israel and Sweden. The focus on collaboration between Israel and Sweden is relevant given the overall aims with the MOU to stimulate industrial collaboration. However, we should be sensitive to the fact that collaborations between other countries could just as well lead to new ICT-innovations.
- In order to strengthen the ICT-sector in Israel and Sweden the test bed and commercialization - focus is relevant.
- The funding model used in SIBED is both well-known and relevant. It secures that the companies are willing to invest in their own projects.

The relevance of public funding in the ICT-sector

- Public funding as well as other types of public support such as matchmaking or assistance in finding venture capital etc. stimulates international RTDI collaborations.
- SMEs are in need of public funding to be able to make ICT-innovations.

4.3.1 The relevance of SIBED program in relation to its aims

In order to answer the question – if the program approach is relevant in order for SIBED to achieve its goals – we first need to take a closer look at the background of SIBED. SIBED was the result of a MOU between the Israeli and Swedish governments. The MOU was not particularly explicit on what was to be done in order to strengthen the collaboration between industries in the two countries. However, in cooperation between VINNOVA and OCS/MATIMOP the program SIBED was developed. The overall aims with SIBED were, as described in chapter 3, SIBED twofold:

- 1 The program should realize the MOU between two states – that is *increase the collaboration* between industrial research and development companies in the two countries.
- 2 The program should *strengthen the Swedish and Israeli ICT-sectors*, which in turn should reinforce their competitiveness globally in the area. More specifically, the aim of SIBED has been to generate new commercial IT-application products and services. Products and services that should be commercialised, which in turn would lead to strengthened market positions for the participating companies.

Increase collaboration between companies in Sweden and Israel

In order to implement the MOU the two countries decided to develop the SIBED program and thereby focus on collaborations between Swedish and Israeli companies in the ICT-sector. Furthermore, the programme approach focused even more specifically on the collaborations working with the later phase of ICT-products/services development using test beds. The motive behind this focus was that the ICT-sector is strong in both countries. Furthermore there was thought to be a win-win- situation between small Israeli ICT-companies with advanced technologies and innovations and larger Swedish firms knowledgeable in test bed methodologies. The Swedish firms would get access to technologies and to promote their test beds and the Israeli firms would get access to test beds to verify their innovations. Moreover, the often entrepreneurial Israeli companies could get improved management skills and find customers through large multinational companies such as Ericsson and TeliaSonera. During the program period it has turned out that the incentives for Swedish companies to engage in these collaborations are limited. The scope of the projects is too small to be interesting for larger companies on a strategic level. The participation of larger companies seems to have been initiated by individuals within the companies but the projects have not been prioritised by the organisation. The evaluation suggests that the initially chosen focus were probably not the most relevant to increase collaboration between industrial research and development companies in the two countries.

The program management has during the program period made several efforts to broaden the focus. They have moved from only including wireless ICT-applications to ICT-innovations in general. Furthermore they have accepted projects that have not used test beds and they have tried to stimulate cooperation between SMEs in both countries. Still the number of applications have remained lower than expected. Possible explanations to this are that the focus is still too narrow or that the information about the program has been insufficient. As mentioned before there are more than 1000 companies working with ICT-innovations in Sweden and Israel respectively and only about 10-20 companies in each country have participated in the program.

One part of the SIBED focus that seems to be relevant in order to stimulate RTDI cooperation between companies is the focus on late stage product development. Several companies and experts have pointed out that in this stage there are less IPO-issues since the collaboration is more about integrating that innovating together.

To conclude, the initial set up of SIBED was not successful in stimulating collaborations. It is unclear whether the current somewhat broader focus of SIBED is more relevant. If SIBED will continue it is suggested that the potential for collaborations between Swedish and Israeli product development companies in the ICT-sector are further investigated. Moreover, the evaluation results indicate that late stage product development is a relevant focus to stimulate RTDI cooperation.

Strengthen the Swedish and Israeli ICT-sectors.

The second aim of the SIBED program is to generate new commercial IT-application products and services. In order for the program approach to be relevant in relation to this aim it must meet the needs of the target group, i.e. Swedish and Israeli ICT-companies engaged in producing product and service innovations. As presented previously four essential conditions need to be fulfilled in order to receive funding from SIBED:

- 1 collaboration between a Swedish and Israeli company,
- 2 development of ICT – in test bed environment,
- 3 commercial potential of the project, and
- 4 a principal model for financing the project (50 % from SIBED, 50% from other sources).

For the program to be relevant these conditions should be in line with what the companies feel they need to develop new products and services. In the following sections the relevance of these four focus areas are discussed in terms of how relevant they are to companies in the ICT-sector.

1) Collaboration between a Swedish and Israeli company: SIBED has financed collaborative projects between Israeli and Swedish companies. In order to receive funding projects need to have one Swedish and one Israeli main part in the project. The main argument among the interviewed companies is that it is relevant for Swedish and Israeli ICT-companies to collaborate in projects such as SIBED since the two countries have a rather well developed ICT-sector.

Even though, it can be argued that there are synergies between the ICT-industries in Israel and Sweden it is not self-evident that companies from these countries collaborate. Several of the interviewed companies argue that it is only because of SIBED that they have searched for a partner in Sweden or Israel. Otherwise, they could have match up with a partner in another country or even in the same country.

To conclude, this focus area has made it necessary for companies to look to Sweden and Israel, which has lead to increasing contacts between the industries in the two countries. Given the aim to contribute to increased collaboration between the two countries this focus of SIBED is relevant. However, given the aim to contribute to innovations in the ICT-sector the focus is not necessary relevant since other types of collaborations could just as well lead to new ICT-innovations. There is at the moment nothing that points to the fact that new innovations in the ICT-sector could not be developed in synergetic collaborations involving companies from other countries.

2) Development in test bed environments: One of the initial prerequisites to obtain funding from SIBED was that the projects develop their products or services in test bed-environments. Basically this means that each project should validate the function of the product or service by testing it on the end-consumers. However, it should be noted that this prerequisite seems to have changed over time. It has been indicated that the projects in the later phases of SIBED 2 has not been required to verify their innovations in test beds.

Companies and industry experts have expressed that test beds are relevant for developing ICT- innovations with market potential. Moreover, Israel and Sweden has several other national programs that aim to develop innovations in the ICT-sector. These programs focus on the level of innovation in the products or services, which in other words implies that they finance projects in earlier phases than SIBED. However, none of these require that developed products or services should be tested. The test bed-focus has made it possible for companies to try out their products and analyze their function in relation to the end-consumers' needs.

To conclude, the test bed-focus is an important part of the SIBED program approach as it secures that developed product or service will be interesting to the market in the end. This implies that SIBED is financing projects in later stages rather than projects that are in a very premature innovation phase. Therefore, given the overall purpose of SIBED to make it possible for companies to commercialise new and developed ICT-products or services the test-bed condition seems apt. However, the communication of this focus area seems to have changed over time. In some cases it has been perceived as a condition, whereas in other cases it has not.

3) Commercialization potential: In general this condition seems rather obvious since one of SIBED's objectives is to commercialize ICT-products and services. However, it has been unclear to participating companies if and then when they are expected to commercialize. As stressed previously it is important to communicate the commercialization objective to companies. However, we suggest that there is not relevant to have fixed time-span for when this is to happen. The ICT-sector is diverse in terms of what types of products are developed, which market the products are directed at and what types of regulations that influence the process. For example some of the companies participating in SIBED are developing new medical technology, which is a long term process restricted by several regulations such as the requirement to verifying products on patients. Others aiming for a broad market of end consumers have shorter lead times.

In conclusion, the commercialization potential of the projects financed through SIBED seems as an obvious condition. However, it is important that project performance with regards to commercialisation is evaluated based on individually set timeframes since SIBED is directed towards a broad spectrum of companies developing various kinds of products in the ICT-sector.

4) Funding model: The principal model for financing the SIBED projects implies that half of the project costs are funded by SIBED. This funding model is a common model when companies receive public funding in Sweden. In Israel companies that receive public funding also need to pay back the initial funding once the company is successful in whatever they have developed success. This implies that Israeli companies - if they succeed with the projects - need to re-pay the funding by paying a certain percentage of the revenues.

There seems to be general acceptance of the fact that the companies finance half of the project cost. Criticism about the funding model has instead focused on the size of the support. The main criticism from experts in the Swedish ICT-sector is that the funding is dispersed among too many projects and companies. Instead, it has been suggested that smaller number

of projects and companies should receive larger funding in order for them to have enough resources to carry out the development processes and to conclude the commercialization process.

To conclude, the condition that corporations themselves also need to finance their own projects is appropriate since it indicates that the companies believe in the projects and are willing to invest. It has been suggested that smaller number of projects and companies should receive larger funding in order for them to have enough resources to carry out the development processes and to conclude the commercialization process.

4.3.2 The relevance of public funding

One of the central evaluation questions posed by VINNOVA is whether and why public funding is needed in the ICT-sector. SIBED has been programmed in a manner that should both stimulate collaborations between companies in Sweden and Israel and stimulate the development and commercialization of ICT-innovations. In this section we look in to the need of public funding to make these things happen.

Several barriers to international collaboration have been put forward in the evaluation. Companies argue that public funding is needed to stimulate international RTDI collaborations, especially when involving SMEs, since it is too resource demanding to engage in these collaborations. It is resource demanding both to find a partner and to perform the collaboration. In addition to the discussion on public funding, the evaluation has found that that it is just as important to discuss public involvement not only in terms of financial resources but also in terms of other types of resources. Companies that engage in international RTDI cooperation may also have a need for other support such as assistance with matchmaking with suitable collaborative partners. Moreover, companies have mentioned that it is important that public bodies promote programmes such as SIBED to encourage the companies to pay attention to the possibility of cooperating with an international partner. Several companies have expressed that they would not have considered collaborating internationally if they had not been informed that there was a program. Furthermore it has been put forward that public programs reduces the feeling of risk involved with collaborating with a foreign partner. Hence, it is also important to analyze if VINNOVA and OCS/MATIMOP also could assist companies taking part in SIBED through other means than purely financial.

If we instead discuss the relevance of public funding to contribute to ICT-innovations the arguments are different. The scope of this evaluation is too small to assess whether there is an actual need for public funding to drive new ICT-innovations. There are other more comprehensive studies on this

issue. However, it could be mentioned that during this evaluation small and medium sized companies have underlined that they have a need for external funding of their innovation projects. Several of them stress that the funding from SIBED has been a prerequisite for going through with the innovation. Therefore, from their perspective external funding in this area is necessary in order to stimulate innovation. Some companies have mentioned venture capital as an alternative to public funding. But many of them have also said that seeking venture capital may be a difficult process because of tough competition or because of the fact that the entrepreneurs get less control over their ideas and their companies.

To conclude, public funding is relevant in order to increase collaboration between industries in two specific countries. The evaluation has also showed that other types of public support such as matchmaking are asked for by companies wanting to engage in international RTDI collaboration. Based on only this evaluation it is difficult to assess whether there is an actual need for public funding to drive new ICT-innovations in general.

4.3.3 Conclusions and suggested improvements

In this section the previous discussions on relevance of SIBED are summarized.

The relevance of SIBED in order to achieve its aims

The SIBED approach stimulates an increased collaboration between the ICT-sectors in Sweden and Israel. However, if SIBED will continue it is suggested that the potential for collaborations between Swedish and Israeli product development companies in the ICT-sector are further investigated. A broader focus than the ICT-sector could potentially be more relevant in relation to increasing industrial innovation collaborations between Swedish and Israeli companies.

SIBED is also an instrument for strengthening the ICT-sector in Israel and Sweden. The focus on collaboration between Israel and Sweden is relevant given the overall aims with the MOU to stimulate industrial collaboration. However, we should be sensitive to the fact that collaborations between other countries could just as well lead to new ICT-innovations. In order to strengthen the ICT-sector in Israel and Sweden the test bed and commercialization – focus of SIBED is relevant. The funding model used in SIBED is both well-known and relevant. It secures that the companies are willing to invest in their own projects. Nevertheless, it has been suggested that smaller number of projects and companies should receive larger funding in order for them to have enough resources to carry out the development processes and to conclude the commercialization process.

The relevance of public funding

The evaluation has found that public funding is relevant in order to increase collaborations between industries in two specific countries. The evaluation has also showed that other types of public support such as matchmaking are asked for by companies wanting to engage in international RTDI collaboration. It is difficult to assess based on only this evaluation whether there is an actual need for public funding to drive new ICT-innovations in general.

5 Lessons learned and recommendations

This report concludes with lessons learned from the evaluation and provides recommendations on how SIBED could be improved and how future bi-lateral RTDI cooperation could be developed. First, aspects of the specific SIBED program are discussed. Second, more general lessons learned and recommendations for bi-lateral RTDI cooperation are discussed.

5.1 Concluding summary from the evaluation of SIBED program

The evaluation has shown that the program has succeeded when it comes to fulfilling the objective - product or service development. However, as stated above the program has not performed quite as well as expected in relation to its objective to commercialize products or services. The program was also expected to give involved businesses a stronger market position. Even though few projects resulted in a commercialization, a majority of the companies feel that they have strengthened their market position through SIBED. The reason for this was primarily through the additional results of the participation such as for example new business networks and references. These findings raise questions regarding to what extent the program has fulfilled its aims and objectives.

When SIBED was launched both administrating organizations - VINNOVA and OCS/MATIMOP - had limited experience from running bi-lateral RDTI programs. During the course of the program the management has been developed and challenges faced have been dealt with. Only a few persons have been involved in managing the project and these have developed strong personal ties. As a consequence to their ambition to find solution and adjust administration of the program they have managed to develop joint working processes even though the systems, rules and regulations are different for VINNOVA and OCS/MATIMOP. Using as much as possible from the EUREKA framework has also supported the cooperation. Strong support from top management in the organisations is mentioned as another success factor.

The organizations have learnt from each other and from the experience of running a bi-lateral program aiming to contribute to innovations in corporations. New knowledge has been created when it comes to implementing bilateral programs and from each others methods for working with innovation policy in general. This effect has been more pronounced in

Israel, however, where the experiences from SIBED have been used in the implementation of other bilateral programs. In Sweden, the knowledge created through SIBED has not been dispersed into the organization to any large extent yet. In the future, we see that the organizational learning should be improved in order to gain more from the experience.

The evaluation suggests that in SIBED public support in terms of both funding and other types of support such as matchmaking and promotion have stimulated international RDTI cooperation between companies. The support has helped companies to overcome barriers such as difficulties in finding a partner and lack of resources to administer the collaboration. The main arguments for a continuation of the SIBED program is: 1) the need for public funding to engage in international RTDI collaborations; and 2) the participating companies stress that the participation has been rewarding in terms of improved products/services and strengthened market position.

However, the evaluators would like to stress that there are several aspects that need to be improved if the program continues. There have been problems with not reaching the target group, which is evident in the rather low number of applications. As mentioned previously it is unclear if the main aim of SIBED is to stimulate collaboration or ICT-innovation. Moreover, the documentation has been inadequate and the monitoring of projects is not sufficient. The next section discusses different aspects that the evaluators feel should be considered if the program continues.

5.2 Suggested improvements

In this section we present suggestions on how the program could be improved for future rounds. The first three areas, the main aim with SIBED, the focus of SIBED and roles of OCS/MATIMOP and VINNOVA are focusing on strategic issues. The following areas are dealing with more operational aspects.

5.2.1 The main aim with SIBED

There is one central issue that ought to be dealt with if the program continues – namely the main aim with SIBED. As discussed previously it is difficult to develop a relevant program approach if there is no common view on the overall aim with the program. Today, the program tries to combine the aims of stimulating collaborations with companies in Israel and Sweden and strengthening the ICT-sector in these countries by supporting development of ICT products/services that can be commercialized. The program focuses on the second part. However, the implementation of the program has in many ways rather supported the first aim. The administering organizations have not clearly communicated to all projects that the

objective is to commercialize the improved product/service. Moreover, several projects that have been selected were in such early phases of development that it must have been clear to the selecting parties that commercialization would not be a direct result of the project. Consequently, the program has performed well with regards to improved products/services and improved business networks.

In order to develop a relevant program approach it is necessary to understand what the program should accomplish. If it is more important to stimulate collaborations than to end up with commercialized products and services, the program approach should reflect this. The objective of commercialization requires that late phase development projects with great commercialization potential and capability are funded. If collaboration in RTDI between Swedish and Israeli companies is of interest then the selection criteria could be very different. We would recommend that the main aims of the program are discussed in order to develop a suitable program approach.

Finally, it is important to bear in mind that the aims with SIBED should reflect the intentions in the MOU. This implies that the program should support collaborations between Sweden and Israel in the ICT-sector.

5.2.2 The focus of SIBED

The evaluation has raised questions about whether or not the current focus of SIBED is relevant in relation to its aims. The initial set up of SIBED was not successful in stimulating the objective of the MOU i.e. RTDI collaborations between Swedish and Israeli companies. Since then the focus has been broadened but is still on the ICT-sector. There is still a problem within the program with few applications but the evaluation has not been able to determine if this is due to insufficient promotion of the program or if the criteria for eligibility is still too narrow. Therefore it is suggested that the potential for collaborations between Swedish and Israeli product development companies in the ICT-sector are further investigated in order to decide whether this is a relevant focus for the continuation of the program.

When considering the future focus of SIBED we would like to recommend that a few additional aspects are considered. First, would it be possible to apply a bottom-up approach for the program? A bottom-up approach means that all RTDI between Swedish and Israeli companies will be eligible to apply for funding. Funding would not be restricted to certain projects in certain industries nor to certain phases of development. The purpose would be to make sure that the implementation of the MOU does not exclude

potential fruitful cooperation between Swedish and Israeli companies. The bottom-up approach is used by OCS/MATIMOP in other programmes.

Secondly, would it be possible to apply a bottom-up approach and still chose certain focus areas? The purpose of choosing focus areas is to make sure that it is possible to promote the program and offer matchmaking. The evaluation findings show that promotion and matchmaking are stimulating international RTDI cooperation. However, it would be impossible for the administrating organisation to effectively promote a program to a target group comprising of all companies in Sweden and Israel that are working with innovation.

The SIBED program has also specifically focused on projects involving test beds and with commercial potential. The findings show that test beds are relevant for the ICT-sector but might not be if another sector is chosen as a focus area. If the focus on test beds is no longer relevant it might be worth changing the name of the program. In other words, the current name of SIBED (Sweden- Israel Test Bed) should not limit the development of the program. Whether or not the commercialisation focus is relevant if the program continues depends on what is decided in relation to the aim of the program, as discussed earlier.

Finally, we would like to suggest that any discussion about the future focus of the program is related to the capability of administrating organisations. For example, the mentioned bottom-up approach requires the ability to evaluate applications from different fields. OCS/MATIMOP has a system for this that potentially could inspire or function as a role model for VINNOVA. Moreover, there may be potential to focus on several areas that are more in line with the general objectives of the organisations. A focus with a closer connection between innovation and research might be more relevant to VINNOVA.

5.2.3 Roles of OCS/MATIMOP and VINNOVA

The final remark in the previous section suggests that the future aim and focus of SIBED should be discussed in relation to the capability of administrating organisations. If the future target group of SIBED will still be companies there is a need for improving VINNOVA's network with companies. One suggestion could be to cooperate with other parties in order to get access to their networks.

5.2.4 Common definitions

A common reflection is that there have not been clear definitions on what is meant with *improved ICT-innovations*, *commercialization* and *strengthened market position*. If SIBED is to be continued it is suggested that develop

specific and common definitions for the program are developed. If it is unclear what is meant and it is impossible to decide what actions will be most effective to obtain these objectives. Moreover, it becomes difficult to evaluate program performance.

5.2.5 Reaching-out and matchmaking

The evaluation shows that companies feel that finding the time to consider international collaborations and an appropriate partner are barriers to international RTDI-cooperation. Therefore the evaluators recommend an increased effort to promote and assist with matchmaking in the future. This requires that VINNOVA finds ways to reach-out to companies. Moreover, the program should devote more resources to these matchmaking activities.

5.2.6 Improve performance with regards to commercialization

If the program continues to have commercialization as an objective the evaluators would like to recommend the program to consider the following to improve the program performance. It is suggested that communication of the commercialization objective to projects is improved in future SIBED programs. Moreover, it is suggested that the commercial capability of companies are attended to already in the selection of projects. In other words, it may be beneficial to in addition to innovation level and commercial potential evaluate project applications on commercialization capability.

Finally, we should recognize that there are frameworks and legislative rules restricting the involvement of public organizations in companies' commercialization process. One suggestion on how SIBED could provide prerequisites for companies to carry out commercialization is involving and cooperating around the projects with venture capitalists. Systematic cooperation will help venture capital to step in when public money is no longer allowed to be used.

5.2.7 Monitoring and evaluation

The evaluators have had difficulties to get an overview of relevant project documentation from VINNOVA. The evaluators strongly recommend that the administrative procedures are improved. The lack of documentation makes it difficult to communicate the program to external parties, to evaluate it on correct information and to learn for the future.

The evaluators strongly recommend that the programme develops a monitoring and evaluation system. Currently, the program does not have any measurable goals which make it difficult to make a fair judgement on

program performance. It could be considered if the projects should submit joint final reports.

5.3 Bi-lateral RTDI cooperation program

The experiences from SIBED provide lessons about the policy instrument of bi-lateral RTDI cooperation between companies as such. In this section we first argue that public support is needed to stimulate international RDTI cooperation between companies, especially SMEs. Thereafter, we look into the motive of bi-lateral instruments compared to multi-lateral instruments. Finally, we discuss what lessons can be learnt from SIBED about how to set up the cooperation between the administering organizations in other programs.

5.3.1 Public support stimulate international RTDI cooperation

The evaluation suggests that public support in terms of both funding and other types of support such as matchmaking and promotion stimulates international RDTI cooperation between companies. The support is needed for companies to overcome barriers such as difficulties in finding a partner and lack of resources to administer the collaboration. In the light of these findings it is important that bi-lateral RTDI cooperation programs are designed to involve both promotion and matchmaking.

5.3.2 Bi-lateral versus multi-lateral RTDI cooperation programs

As mentioned in the previous section of this report companies need a push and support to engage in international RTDI cooperation. Thanks to close cooperation between the foreign counterparts when managing a bi-lateral program this can be offered through promotion and matchmaking. With the multilateral programs the initiative is to a higher degree left to the companies. However, in order to support international RTDI cooperation there should be opportunity for companies that have the strength to initiate cooperation themselves to get support no matter in what country they find their partner. In this respect the multilateral instrument is complementary because it allows a much wider scope of cooperation.

5.3.3 Cooperation between administering organisation

The experience with SIBED has showed that there is a challenge in setting up a model for cooperation between the administering organisations due to different rules and systems. The major success factors in the case of SIBED has been that there has been only a few people involved and these have developed close personal relationships and common willingness to find solutions. Strong personal relationships are probably always valuable and the fact that SIBED was a small program should have helped in this matter.

Based on the findings of this evaluation we would also like to propose that when managing bi-lateral programmes jointly it is important to develop common and clearly stated aims and objectives with the program. The SIBED program has to some extent failed in this respect which has affected program performance negatively since the implementation of the program has not been analysed in relation to a clear vision.

OCS/MATIMOP has used many of the formal features of the cooperation model from SIBED, with the two stage application process and the directorate, in several subsequent programs with other countries. This does however not automatically mean that this model is also relevant for VINNOVA in other programs. In our view, this solution is fairly specific to the system in Israel where all the funding decisions are taken by the committee in OCS/MATIMOP. Rather than just copying this model for future programs it is suggested that VINNOVA study its own rules in relation to models used by other countries in order to find an approach towards cooperation with other countries. There will most certainly always be a need for some adjustments in relation to the rules of the specific partner.

6 Appendix 1: Method, evaluation questions and indicators

The overall methodology for evaluation SIBED was presented in chapter 2. This appendix gives an account for the approach used for answering the evaluation questions posed by VINNOVA. In relation to each evaluation question central definitions, the indicator that helped us to answer the question, and the data collection method that was used to answer the question is presented. The approach presented below, was the initial approach which was adjusted during the evaluation. Since we could not obtain all necessary data some adjustment had to be made during the course of the evaluation.

Evaluation question 1: To what extent is the SIBED program relevant to companies?

The first question relates to the organization or programming of SIBED. Thus, we interpret the question as a matter of understanding to what extent companies developing ICT-applications in Israel and Sweden perceives SIBED as a relevant program. In order to answer this question we suggest that both quantitative and qualitative data is needed. First, it would be valuable to compare the number of companies that have sent in applications with the number of companies that constitute the total population. This would in a blunt indication on the relevance of SIBED by demonstrating how many companies of the total population that have applied for SIBED.

Secondly, participating companies in the program and experts from the ICT-sector will be interviewed concerning their view on the relevance of the program. The experts will be addressed in focus groups. The optimal way of evaluating the relevance among the target group would have been to ask a large sample of companies within the target group. However, to understand how they view the relevance of the program it is necessary to conduct fairly in-depth interviews and to perform a complicated data collection exercise, which would not be feasible within the budget of the evaluation. Focus group interviews with experts representing the target group offer understanding about the target groups reasoning concerning relevance, even though it might not give a perfectly representative picture of the target groups opinion, and is therefore viewed as a valid alternative approach.

| Evaluation criteria | Evaluation question | Definitions related to the indicators | Indicator | Data collection |
|---------------------|--|--|--|---|
| Relevance | To what extent is the SIBED program relevant to companies? | <p><i>Companies:</i> all companies in Sweden and Israel developing ICT - applications = total population</p> <p><i>Relevant:</i> it should be considered valuable for companies to developing ICT-applications in collaboration between companies in Sweden and Israel</p> | <p>Number of companies applying in relation to the total population</p> <p>View on relevance of experts for the ICT-sector</p> <p>View on relevance of the participating companies</p> | <p>Document study on the number of companies that have applied to SIBED compared with the approx number of companies in the total population</p> <p>Focus group</p> <p>Interviews</p> |

Evaluation question 2: Is the focus of SIBED relevant to companies?

The second evaluation question concerns the focus of SIBED. Thus, the second question is not seeking to capture the number of companies that find SIBED relevant but rather to explore which parts of the program they find most appealing and/or less appealing. Focus is interpreted as the four essential conditions of the SIBED program: (1) the collaboration between a Swedish and Israeli company, (2) development of ICT – in test bed environment, (3) the commercial potential of the project, and (4) the principal model for financing the project (50 % from SIBED, 50% from other sources).

Two indicators have been developed in order to answer this question. First, the view on the four parts of SIBED will be examined among the experts from ICT-industry – i.e. the experts that are chosen to represent the ICT-industry and that take part in focus groups. Secondly, the view on the different parts of SIBED will be examined among the participating companies.

| Evaluation Criteria | Evaluation question | Definitions related to the question | Indicator | Data collection |
|---------------------|--|---|--|---------------------------------------|
| Relevance | Is the focus of the SIBED program relevant to the companies? | <p><i>Focus:</i> the essential conditions that forms SIBED</p> <ol style="list-style-type: none"> 1) Sweden/Israel 2) development of ICT-application – in test bed environment 3) commercial potential 4) model for financing the project | <p>The view of the experts from the ICT-industry on the different parts of the SIBED program</p> <p>The view of the companies taking part in SIBED on the different parts of the SIBED program</p> | <p>Focus groups</p> <p>Interviews</p> |

Evaluation question 3: Has any shift taken place during the program period regarding relevance of the program?

The third evaluation question deals with how the relevance of SIBED may have shifted over time. Investigating this should among other things consider if the shift in focus between SIBED 1 and SIBED 2 has influenced the relevance of SIBED. Has the modified focus from wireless ICT-applications to ICT-applications in general affected the relevance of the program to the target group? Moreover, is it possible to see if the relevance of the program to the target group in general has shifted since the program started?

Two main indicators have been formulated. First, we will examine if there has been a change in the number of applications over time. We will specifically analyze if there are any differences in the number of applications between SIBED 1 and 2. A change in the number of applications over time and between SIBED 1 and 2 would indicate that the relevance has increased or decreased. However, in order to obtain a better understanding and validate the quantitative data we also suggest that representatives of the SIBED board as well as representatives from the ICT-sector are asked about their view and experiences of the relevance of SIBED.

| Evaluation Criteria | Evaluation question | Definitions related to the question | Indicator | Data collection |
|---------------------|--|-------------------------------------|--|---|
| Relevance | Has any shift taken place during the program period with regarding the relevance of the program? | <i>Shift</i> : Change in relevance | <p>Change in number of applications per call in total and in SIBED 1 respectively SIBED 2</p> <p>The views of the representatives from SIBED on a shift in the relevance of the program</p> <p>The views of the experts from the ICT-sector on a shift in the relevance of the program</p> | <p>Data of applications provided by VINNOVA and OCS</p> <p>Interviews with representatives from SIBED</p> <p>Focus groups</p> |

Evaluation question 4: Why is public funding needed? What are the fundamental motives for SIBED?

The fourth evaluation question should be answered with a qualitative approach. By asking the participating companies in SIBED how they value the SIBED program and to what extent they would have carried out their projects without SIBED we will obtain an indication on why public funding is needed. In addition to the interviews with the companies interviews with representatives of SIBED and experts from the ICT-sector should be conducted. The interviews with representatives of SIBED also aim to derive information about their view on public funding in relation to SIBED and RTDI cooperation in general.

Thus, it is essential to capture the respondents view and opinion of the value that this type of funding brings to the ICT-industry. Six main indicators are formulated. See table below.

| Evaluation Criteria | Evaluation question | Definitions related to the question | Indicator | Data collection |
|---------------------|--|-------------------------------------|--|-----------------|
| Relevance | Why is public funding needed? What are the fundamental motives for SIBED? | N/A | The view of participating companies on the importance of funding to conduct their SIBED project | Interviews |
| | | | The extent to which interviewed participating companies say that they would have carried out the project without support from SIBED | Interviews |
| | | | The share of the interviewed participating companies that have ongoing projects similar to their SIBED project without public funding | Interviews |
| | | | The view of participating companies on why or why not public funding is needed to stimulate RTDI cooperation in the ICT-industry in general | Interviews |
| | | | The view of representatives of the SIBED program on the need for public funding to stimulate SIBED-like projects and RTDI cooperation in the ICT-industry in general | Interviews |
| | | | The view of experts from the ICT-sector on the need for public funding to stimulate SIBED-like projects and RTDI cooperation in the ICT-industry in general | Focus groups |

Evaluation question 5: To what extent do country characteristics affect the program success? (assess the importance of country characteristics that may affect program success).

The fifth evaluation question draws attention to the bi-lateral aspect of the SIBED program. The questions should identify possible obstacles that are country specific and that influence the program in one way or another. Open

questions will be asked to companies that have participated in SIBED about how and in what way country characteristics have affected the project.

| Evaluation Criteria | Evaluation Question | Definitions related to the question | Indicator | Data collection |
|---------------------|---|---|--|-----------------|
| Relevance | To what extent do country characteristics affect the program success? | <i>Country characteristics:</i> country specific obstacles that are identified by the respondents | The view of the sample of participating companies on country specific obstacles. | Interviews |

Evaluation question 6: Why should implementation be the responsibility of VINNOVA and OCS?

The sixth evaluation question concerns the responsibility for as SIBED. Are VINNOVA and OCS/MATIMOP the appropriate institutions to share responsibility of the program given their respective commission? Is the focus of SIBED in any way not in line with the normal work of the respective agencies and if yes how does this affect the appropriateness of the organizations to share the responsibility of the program. We suggest that the question is explored in interviews with representatives for SIBED. These persons can be understood as experts in this area and their knowledge about innovations systems as well as public funding is therefore relevant.

| Evaluation Criteria | Evaluation question | Definitions related to the question | Indicator | Data collection |
|---------------------|---|-------------------------------------|---|-----------------|
| Relevance | Why should implementation be the responsibility of VINNOVA and OCS? | N/A | The view of the representatives of SIBED on VINNOVA's and OCS/MATIMOP's appropriateness for being responsible of implementing SIBED | Interviews |

Evaluation questions 7: To what extent does SIBED meet with its objectives?

The seventh evaluation question aims at establishing the intended outcome and impacts of SIBED. The intended outcomes and impacts have previously been formulated in the intervention logic. This part of the evaluation seek to evaluate to what extent these objectives have been established.

Two of the objectives – new or improved product and/or service and commercialized product and/or service – will primarily be accounted for in quantitative terms. However, the interviews with respondents will also seek answers on why or why not the results have been accomplished.

The evaluation of the third objective – strengthened market position for participating companies – will be based on the opinions hold by the

respondents. They will be asked to elaborate on the correlation between their participation in SIBED and their market position.

| Evaluation Criteria | Evaluation question | Definitions related to the question | Indicator | Data collection |
|---------------------|--|--|---|---|
| Effectiveness | To what extent does SIBED meet with its objective? | <i>Objectives:</i> New or improved products and/or services | Share of projects that have led to a developed new or improved service or product | Interviews and other documentation handed in to SIBED directorate |
| | | Commercialized products and/or services | Share of companies that have launched products/services developed as a result of SIBED | Interviews and other documentation handed in to SIBED directorate |
| | | Strengthened market position | Share of companies that have sold products/services that have been developed as a result of SIBED | Interviews and other documentation handed in to SIBED directorate |
| | | | The view of participating companies on the importance of SIBED for their market position | Interviews |

Evaluation questions 8: Is SIBED run in an efficient way?

The eight evaluation question centers on how SIBED has been carried out and implemented. *Efficient way* implies that the program has been conducted in a way supporting the intervention logic and thereby program performance. Drawing upon the intervention logic of SIBED we argue that efficient way should involve at least four tasks for the program organization: (1) Informing the target group about the program to receive applications (2) Selecting projects with prerequisites to achieve expected outcomes and impacts. (3) Supporting project implementation (4) Monitoring and evaluation of projects. The evaluation will investigate if the program organization has carried out these tasks in a way supporting the realization of the intervention logic and efficient use of resources.

The indicators used to answer these questions are description of how works processes have functioned from documentation and interviews with participating companies and representatives of SIBED. Furthermore the evaluation will with the same data collection methods look into the usage of recourses.

| Evaluation Criteria | Evaluation question | Definitions related to the question | Indicator | Data collection |
|---------------------|-----------------------------------|---|--|----------------------------------|
| Effectiveness | Is SIBED run in an efficient way? | <i>Efficient way.</i> The program has been conducted in a way supporting the intervention logic and thereby program performance | Description of work processes and usage of resources from program documents The view of representatives of SIBED and participating companies on how work processes have functioned and resources have been used | Document study Interviews |

Evaluation questions 9: Are there other effects of SIBED?

The ninth evaluation question explores if other effects of SIBED than the intended effects have come about. Additional effects could be several such as improved knowledge, an increased business network etc. Open questions will be directed to both the participating companies as well as to representatives of SIBED in order to grasp their view on the effects that have occurred as a consequence of SIBED.

| Evaluation criteria | Evaluation question | Definitions related to the question | Indicator | Data collection |
|---------------------|--------------------------|--|---|-----------------|
| Impact | Are there other effects? | <i>Effects:</i> is to be identified by the respondents. Examples on other effects could however be new knowledge, improved test bed environment, a new business network etc. | The view of the sample of participating companies on the overall effects of SIBED | Interviews |
| | | | The view of the representatives of SIBED on the effects of SIBED | Interviews |

Evaluation questions 10: What is the broad value of bi-lateral RTDI cooperation?

The tenth evaluation question aims to explore to what extent bi-lateral RTDI co-operations are of value to companies. This question will be attended to in overall analysis. Hence, the question is partly being answered by other questions in the evaluation. However, in order to obtain information on how companies themselves value this form of cooperation interviews will be conducted with participating companies, experts representing the ICT-industry and with representatives from SIBED.

| Evaluation criteria | Evaluation question | Definitions related to the question | Indicator | Data collection |
|---------------------|--|-------------------------------------|--|-----------------|
| Impact | The broad value of bilateral RTDI cooperation? | N/A | The view on bilateral RTDI cooperation held by the sample of participating companies | Interviews |
| | | | The view on bilateral RTDI cooperation held by the experts representing the ICT-industry | Focus groups |
| | | | The view on bilateral RTDI cooperation by the representatives of SIBED | Interviews |

Evaluation questions 11: In what different ways does the SIBED program contribute to Israel's and Sweden's competitiveness?

The last questions concern the long-term impacts of SIBED. It is beyond the scope of this evaluation to actually establish whether the competitiveness of Sweden or Israel in the area of ICT-innovations has been strengthened or not. Instead, this question should be interpreted as understanding in what way SIBED could contribute to the competitiveness of the countries. The question will partial be answered in the analysis based on the overall data collection. However, the question will also be directed to representatives of SIBED. They will be asked to elaborate on the relationship between the outcomes of SIBED and the competitiveness of the countries.

| Evaluation criteria | Evaluation Question | Definitions related to the question | Indicator | Data collection |
|---------------------|--|---|---|-----------------|
| Impact | In what different ways does the SIBED program contribute to Israel's and Sweden's competitiveness? | <i>Competitiveness:</i> Improved possibilities for companies in Sweden and Israel to compete internationally with their products and/or services. | The view on competitiveness of representatives from SIBED | Interviews |

7 Appendix 2: The evaluation team

Members in the advisory board for the evaluation

Björn Österlind, VINNOVA

Peter Stern, VINNOVA

Israel Shamay, OCS/MATIMOP

Eli Baran, OCS/MATIMOP, The head of the ICT sector at the Office of the Chief Scientist

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Tor Minde, Ericsson Research

Karl-Einar Sjödin, consultant and expert on ICT-sector in Sweden

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Karl-Einar Sjödin, consultant and expert on ICT-sector in Sweden.
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Advisor in Israel

Eli Baran, OCS/MATIMOP, The head of the ICT sector at the Office of the Chief Scientist.

Consulting team from Ramböll Management

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Pernilla Lundin, senior consultant

Sara Munkhammar, consultant

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April 2009

See www.VINNOVA.se for more information

VINNOVA Analysis VA 2009:

- 01 Svenska tekniker 1620 - 1920
- 02 Effekter av statligt stöd till fordonsforskning - Betydelsen av forskning och förnyelse för den svenska fordonsindustrins konkurrenskraft. *For brief version in Swedish and English see VA 2009:11 and VA 2009:12*
- 03 Evaluation of SIBED. Sweden - Israeli test bed program for IT applications. *Only available as PDF*
- 04 Swedish possibilities within Tissue Engineering and Regenerative Medicine
- 05 Sverige och FP7 - Rapportering av det svenska deltagandet i EUs sjunde ramprogram för forskning och teknisk utveckling. *Only available as PDF*
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- 07 Var ligger horisonten? - Stor potential men stora utmaningar för vägkraften
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- 09 Mer raffinerade produkter - Vedbaserade bioraffinaderier höjer kilovärdet på trädet
- 10 Förnybara energikällor - Hela elmarknaden i förändring
- 11 Sammanfattning - Effekter av statligt stöd till fordonsforskning. *Brief version of VA 2009:02, for brief version in English see VA 2009:12*
- 12 Summary - Impact of Government Support to Automotive Research. *Brief version in English of VA 2009:02, for brief version in Swedish see VA 2009:11*
- 13 Singapore - Aiming to create the Biopolis of Asia

VA 2008:

- 01 VINNOVAs Focus on Impact - A Joint Approach for Impact Logic Assessment, Monitoring, Evaluation and Impact Analysis
- 02 Svenskt deltagande i EU:s sjätte ramprogram för forskning och teknisk utveckling. *Only available as PDF*
- 03 Nanotechnology in Sweden - an Innovation System Approach to an Emerging Area. *For Swedish version see VA 2007:01*
- 04 The GSM Story - Effects of Research on Swedish Mobile Telephone

- 05 Effektanalys av "offentlig sädffinansiering" 1994 - 2004
- 06 Summary - The GSM Story - Effects of Research on Swedish Mobile Telephone Developments. *Brief version of VA 2008:04, for brief version in Swedish see VA 2008:07.*
- 07 Sammanfattning - Historien om GSM - Effekter av forskning i svensk mobiltelefonutveckling. *Brief version of VA 2008:04, for brief version in English see VA 2008:06*
- 08 Statlig och offentlig FoU-finansiering i Norden
- 09 Why is Danish life science thriving? A case study of the life science industry in Denmark
- 10 National and regional cluster profiles - Companies in biotechnology, pharmaceuticals and medical technology in Denmark in comparison with Sweden
- 11 Impacts of the Framework Programme in Sweden
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- 02 Forskning om chefskap. Presentation av projekten inom utlysningen Chefskap; förutsättningar, former och resultat. *For English version see VI 2009:03*
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- 04 Högskolan utmaningar som motor för innovation och tillväxt - 24-25 september 2008

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- 06 Årsredovisning 2008

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- 02 Forskningsprogrammet Framtidens personresor - Projektbeskrivningar
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- 10 Swedish Competence Research Centres - within the Transport Sector and funded by VINNOVA
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- 12 VINN Excellence Center - Investing in competitive research milieus
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- 14 Arbetslivsutveckling för global konkurrenskraft
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- 17 Nya möjligheter för små och medelstora företag - Rapport från VINNOVAs seminarium för småföretag 3 september 2008
- 18 "No wrong door" alla ingångar leder dig rätt! - Erbjudande från nationella aktörer till små och medelstora företag
- 19 Forskning om kvinnors företagande - Presentation av projekten. *For English version see VI 2008:23*
- 20 MERA-programmet - Projektkatalog 2008
- 21 The MERA-program - Project Catalogue 2008
- 22 VINNVÄXT - A programme to get Sweden moving! Regional growth through dynamic innovation systems

- 23 Research on Women's Entrepreneurship - A presentation of the ten projects funded by the programme. *For Swedish version see VI 2008:19*
- 24 Mobilitet, mobil kommunikation och bredband - Branschforskningsprogram för IT & telekom
- 25 The Future in clean Transport - Stockholm 2009

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VINNOVA's mission is to promote sustainable growth
by funding needs-driven research
and developing effective innovation systems

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