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REGIONAL PROGRAMME FOR THE ESTABLISHMENT OF HIGH-TECH INCUBATION SYSTEMS AT THE ACADEMIES OF SCIENCES IN THE CZECH REPUBLIC, HUNGARY, POLAND AND SLOVAKIA

US/RER/95/145

Czech Republic, Hungary, Poland and Slovakia

Report of the Mid-Term Evaluation Mission
conducted in the period April 14 - June 7, 2000

This document has not been edited.

TABLE OF CONTENTS

EXPLANATORY NOTES

Abbreviations and acronyms

BIC	Business Innovation Centre
CEECs	Central and Eastern European countries
CZ	Czech Republic
EU	European Union
HU	Hungary
KBN	State Committee for Scientific Research
NADSME	National Agency for the Development of SME (Bratislava, Slovakia)
NL	The Netherlands
OPI	Information Processing Institute (Warsaw, Poland)
PL	Poland
RDI	Research, Development, Innovation
SK	Slovakia
TB	technology brokerage; technology broker
TC	Technology Centre
ToR	Terms of Reference
TBU	Technology brokerage unit

Monetary units

CZ	Czech crown (CZK)	1 USD ~ 38.1 CZK
HU	Hungarian forint (HUF)	1 USD ~ 278 HUF
PL	Polish zloty (PLN)	1 USD ~ 4.29 PLN
SK	Slovak crown (SKK)	1 USD ~ 45.3 SKK

SUMMARY

During April-June 2000, a mid-term evaluation was executed of the project US/RER/95/145 "Regional Programme for the Establishment of High-Tech Incubation Systems at the Academies of Sciences in the Czech Republic, Hungary, Poland and Slovakia" This evaluation was an activity stipulated in the Project Document.

The activities encompassed desk research, interviews with the counterparts, and discussions with UNIDO officials and presentations at UNIDO Headquarters. The present report is the final result of the evaluation mission.

The project was designed to stimulate commercialisation of research outcomes in the Academies of Sciences in the four countries, by introducing systems for transfer of technology and better contacts with the business world. Agreements were made with all four Academies concerning their role as official counterparts. In the course of the project however, in all countries but the Czech Republic the Academies withdrew from the project as active partcipants, leaving this role to other organisations.

Unido's counterparts are now the Technology Centre of the Czech Academy of Sciences, the Business and Innovation Centre "Innostart" in Hungary, the Information Processing Centre (reporting to the State Committee for Scientific Research) in Poland and the Business Innovation Centre in Bratislava.

Although conceived 5 to 6 years ago, the project appears to be still most relevant in terms of its purpose –to enhance the target countries' competitiveness in the field of high tech innovative production, and in terms of its development objective – to create high tech enterprises utilising know how generated at the national level.

The project was designed in 1994/1995, and its set-up was laid down in an extensive Project Document. Its general objective was stated as "the creation of high-tech enterprises in the four countries, utilising know-how generated at the national level, mostly at each Academy of Sciences". The project was divided into two separate phases, namely (a) the production of a country concept with all the necessary elements to establish a high tech business incubation system and (b) to develop at the Academies of Sciences in each country one high tech business incubation system, with potential of development into a Science Park.

A serious setback was experienced when the contractor for the first phase appeared not to be able to deliver the required concepts for the second phase. UNIDO's project officers then had to improvise, and design the activities for the second phase themselves. This resulted in the production of a set of "outputs", at first three, later extended to a total of seven. During this process, the planned completion date of the project kept moving forward, from mid 1999 through September 1999 to March 2000.

Although originally simple and straightforward, the project design became fragmented and difficult to oversee for the participating counterparts as well as UNIDO's project office itself. In addition to that, the internal logic of the project –certainly existing within the original project design- went lost by the beginning of the second phase: the main objective (creation of high tech enterprises) and the specific objectives (like creation of incubators) were mixed with definitions of outputs (like benchmarking or data base creation).

As usual for complex projects, the budget has gone through a number of adaptations, based on changing insights during the execution of the project. Originally, there was a sum of 400.000 USD foreseen for equipment, which was later transferred to other budget items. Another important change –which is evaluated as positive- has been the transfer of budgets from international experts to the local counterpart organisations. One point of criticism is that the information concerning available budgets has not always been sufficiently disseminated among the counterparts.

As for the actual execution of the project, there have been a number of periods of "silence". Partly this had to do with the problems encountered during phase one, partly also with the fact that UNIDO's backstopping office in our opinion was not allotted enough time for project management. A comprehensive work plan and timetable for the second phase was dearly lacking, causing sub optimal co-ordination of activities executed by the individual project partners and subcontractors. The inputs of foreign experts –especially those delivered by Zernike Groep- are rated positive and so are the activities performed by the counterparts themselves.

The project certainly did not deliver all the results that wee promised in the Project Document. There is still some time to go, but it is doubtful that some of the core outputs, like the set-up of high tech incubation systems in all four countries, will be realised.
Still, the four counterparts have now submitted proposals for the remaining project period, that look promising.

It is recommended that UNIDO devote more time to the co-ordination of the project, especially in the form of expert assistance to the counterpart. Furthermore, we recommend to eliminate from the project three of the still valid outputs, namely (1) the seed capital fund, (2) the investment promotion units and (3) science park development plans for all countries involved (possibly, such a plan will be realised in the Czech Republic).

Stronger emphasis is needed to marketing of the Technology Brokerage Units, to the strengthening of contacts with the business world, to the creation of a cross-border Technology Brokers Network and to sharing of outputs between countries.

1. INTRODUCTION

The UNIDO project covered by the present evaluation is a Regional Programme for the Establishment of High-Tech Incubation Systems at the Academy of Sciences, US/RER/95/145. This is a regional project focused on the Czech Republic, Hungary, Poland and Slovakia as recipient countries.

This report covers a Mid-Term Evaluation Mission conducted in the period of April 14 - June 7, 2000 within the entire project area covering NL, CZ, HU, PL, SK, and UNIDO HQs.

The joint evaluation was an activity stipulated in the project document. Timing of the evaluation and the Terms of reference (*cf.* Annex 1) were agreed upon between UNIDO and the donor.

The evaluation team was composed of Evaluation Consultants Hans Blankert of Planet Consultants, NL (team leader) nominated by Senter (NL), and Rudolf Stefec of R. S. TAIC, CZ nominated by UNIDO. These Evaluators were hired by UNIDO under the contracts E726616 and E631840, respectively.

The persons met and organisations visited in the course of the evaluation mission are listed in Annex 2. The timing and phases of the mission are shown in Annex 3. References to documentation are given in Annex 4.

In a concluding part of the evaluation mission the findings of the evaluation were presented to and discussed at length with

- UNIDO, focusing both on past performance and future activities within the project
- UNIDO and the representatives of the counterpart organisations in the four project countries, focusing on future activities.

The evaluation was funded from budget line 16-00 of the project being evaluated (US/RER/95/145).

2. PROJECT CONCEPT AND DESIGN

2.1 Socio-economic context

The original Project Document [1] dates back to 1995; its preparation [2] even started in 1993/94. Obviously, the document has taken into consideration the social and economic conditions prevailing in a period shortly after the start of the transition. Some of these conditions mentioned in the Project Document were:

- in the context of science, technology and industry, the fact of increasing globalisation and a realisation of the need to complement the fully industrialised status of the countries involved and their considerable assets at the science and technology levels by a 'knowledge cycle' wherein existing gaps must be bridged to boost the countries' competitiveness;
- in the context of the CEECs where with the demise of central planning and the reduction of public funding of R & D the knowledge-production cycle previously fed by the Academies of Sciences through their specialised institutes was broken, the need to establish and/or develop high-tech incubation systems in order to meet a demand for external services from the Academies which suffer from a lack of exposure to market forces and lack of experience to cope with commercialisation problems;
- in the context of prior or ongoing assistance, the applicability of the Czech model (arising from a previous UNIDO project [3]) giving the possibility of business spin-offs from the work of the Academies.

During the implementation of the project, substantial changes occurred concerning the broad context of economic and social transformation of the project countries. This process, largely successful in the early 1990s and exciting intoxicating expectations, experienced a number of setbacks and thwarted hopes in the late 1990s, producing a sobering effect and generating more realistic outlooks.

2.2 Institutional framework

This is a donor funded project, with the Netherlands as donor, represented by their Ministry of Economic Affairs and acting through its agency, Senter.

The project has been designed for the Academies of Science in the four countries as the main counterparts. The general idea was that there is a wealth of know-how and scientific research results available within the Academies, much of which could be applied commercially. Traditionally however, the Academies of Science have limited contacts with the business world, and have always focused on fundamental instead of applied research. The present project would help them to develop systems for transfer of technology and know how, and at the same time introduce support schemes for new technology based firms, in the form of incubators or incubating systems.

All four Academies have accepted their participation in the project; the inputs to be delivered by them are discussed in paragraph 3.3. Yet, in the course of the project, several changes took place pertaining to the roles of the Academies. Consequently, various other agencies became involved in the execution of the project, on top of and/or instead of the Academies themselves.

2.2.1 Czech Republic

The Technology Centre of the Academy of Science of the Czech Republic has been the official counterpart right from the start of the project. The TC is an "Association of Legal Persons" according to Czech Law, formed and owned by five Institutes of the Academy. It was set up in 1993 and has managed to gain general acknowledgement as a professional transfer organisation throughout the Academy organisation. At the moment, the TC has 20 staff, 4 of whom are working as Technology Brokers and Science Park Managers, functions that have been created within the framework of the project US/RER/95/145 and which are partly financed by the same project.

It has become clear that the present project has delivered a large contribution to the success of the TC, and to its present strong position in the field of technology transfer and business incubation. During the first project years, this was the only donor project within the Technology Centre. Apart from direct transfer of know-how from Dutch expert organisations to the TC, the project has helped TC to identify and become involved in various international networks. Eventually, this has led to TC being invited to execute a number of national and international (EU) projects, the most important of which is that the TC has been appointed National Contact Organisation for the Fifth Framework Programme of the EU. In the words of the Director of the Technology Centre, the UNIDO project has functioned as a catalyst for attracting other projects. Apart from the Fifth Framework Programme, such projects are:

- UNISPIN; a workshop programme for introducing the principles of academic spin-offs which is being executed under supervision of Twente University in the Netherlands;
- FEMIRC; TC is a Fellow Member to the Innovation Relay Centres for the Czech Republic, in the framework of the INCO Copernicus Programme (EU);
- FEMOPET-CZ; TC is a Fellow Member to Organisations of Promotion of Energy Technology (EU).

As far as we have been able to establish, none of these projects are conflicting with the UNIDO project; on the contrary, there appears to be a continuous cross-fertilisation between projects, project activities and project partners.

The Technology Centre of the Academy of Scienc es enjoys the status of a BIC (Business & Innovation Centre), which opens up special financial arrangements with the Ministry of Industry. Companies located in one of the TC incubators receive subsidies on lease prices amounting to 50% in the first year, through 40, 30 and 15% in the next three years.

In the Czech Republic there are 10-15 institutions operating business incubators; prominent among these are five BICs of which one is the Technology Centre of the Academy of Sciences of the Czech Republic. Many others claim to be involved in Technology Transfer but few actually are. On the whole, according to the staff of the Technology Centre there is no real competition in the field of innovation and technology transfer in the Czech Republic. Some Universities have appointed special transfer officers, large universities operate their own Industrial Liaison or Technology transfer offices. There appears to be a constant "fight" among the institutions for public money.

2.2.2 Hungary

Initially, the Hungarian Academy of Sciences was the designated counterpart for the project. They suggested to locate the project in Veszprem, where their Chemical Research Institute was located. A separate organisation was set up: the Veszprem Regional Innovation Centre, jointly owned by the Academy, Innostart and the City of Veszprem. However, the Chemical Research Institute was soon dissolved and the staff and facilities transferred to the Faculty of Chemical Engineering of Veszprem University, which thus became the new project partner.

Under the circumstances of continuous organisational changes, the Veszprem region was unable to assume the role of full-fledged counterpart. After contacts with EBN, Innostart was brought in to provide for the local management of the project. Innostart is a Business and Innovation Centre with Incubator facilities, located in Budapest.

In Hungary there are a number of players in the field of technology transfer, science parks and incubators. Apart from the Innostart incubator in Budapest, there is for example a brand-new Technology Incubator in Gyor, and an Innovation Centre linked to the Chamber of Commerce and Industry in Pecs.

The Academy of Sciences has a separate Institute of Regional Studies in Gyor, that concerns itself with innovation and technology development processes. There are in fact four such regional institutes in Hungary, owned jointly by the Academy of Sciences and local/regional governments.

During the evaluation study, it became clear that neither the Veszprem Regional Innovation Centre nor the University have a real involvement in the project. They have a passive attitude and leave all initiative to Innostart.

Innostart on their turn are not certain about their position in the project: counterpart or local expert. They are engaged in a number of technology transfer initiatives, but cannot effectively manage the project for Veszprem without active involvement of the regional partners.

2.2.3 Poland

In Poland a special Agency located at the Centre for Science Advancement of the Polish Academy of Sciences was nominated by the president of the Academy as counterpart for the project. In November 1998, the Academy suggested to transfer several project activities to the Information Processing Centre (OPI), but to leave the Technology Brokerage Unit at the Centre for Science Advancement. The TBU however was later transferred as well and at present, OPI is the sole counterpart for the project.

OPI is the Polish state centre for scientific information. It is directly subordinated to the State Committee for Scientific Research (KBN), which is now in the process of becoming the new Ministry of Science (and Education). KBN is the main source of funding for scientific research and for high-tech business ventures. Since the beginning of 2000, KBN supervises the budgets for the Polish Academy of Sciences. The Ministry of Economy has – through its Agency of Technology - some budget (USD 250.000 per year) for granting loans to high tech and innovation projects.

OPI maintains regular working contacts with virtually all institutions of scientific research and education in Poland, since – with a few exceptions - they all use OPI as their database on scientific research & development. Through this, OPI has the position of "spider in the web" of Polish R & D.

In June, 1999 the Polish Council of Ministers approved a government document [4] setting out the tenets of medium-term development of the country and also addressing the issues of innovation. Another such document [5] sets out the government policy on SMEs.

OPI is involved in STI-related R & D, operates Polish science and technology data bases, and promotes Polish science [6]. For a period of time it was the contact point for the 5th Framework program of the EU. It is taking part in FEMIRC, EXPLOIT, ESIS-II, SCI-TECH and other international programs and projects. It published a Polish research directory [7].

In the field of technology transfer, innovation support and incubation facilities, there are several institutions active in Poland. In the first place, the Ministry of Economic Affairs is currently preparing a comprehensive policy for SME development, that will have an important element of innovation support. However, it is still uncertain whether a sufficient budget will be found for this policy, and the idea is to have the regions finance innovation support, together with the European Union (Structural Funds).

The Warsaw University of Technology runs a small Technology Incubator (500 sqm), but is gradually diminishing its involvement in the incubator. A major problem for the further development of this Incubator and others is the absence of adequate legislation for public-private partnerships, in which Universities would be able to participate.
There are plans for the establishment of a Technology Park on the premises of the Military University of Technology in Warsaw, in which five Warsaw

Universities and three other Universities in the Warsaw region could participate.

Fabrykat 2000 [8] is a two-year program sponsored by the US Agency of International Development (USAID) and implemented by Mendez England & Associates through September 2000. The program seeks to facilitate the development of SMEs in Poland and is focused on four Technology Transfer centres[1] (TTCs), one of which is located at the University of Warsaw. A private company "High Tech Ltd" has undertaken some technology transfer activities on a commercial basis, but is now retreating from this market. They have given their database to OPI.

Given the extremely limited scale of operations of all these initiatives, OPI does not consider them to be a real threat for the further development of their technology transfer activities.

OPI, as the sole counterpart to the UNIDO project, is and has been strongly involved in the project activities. Thanks to the UNIDO support, OPI has managed to gain a strong position in the Polish networks for technology transfer and innovation.

2.2.4 Slovakia

The Slovak Academy of Science was the official counterpart for the project US/RER/95/145 since January 1996. In that year, the Academy has asked BIC Bratislava to produce a "Country Background Document" for UNIDO. Gradually it became clear that the Academy's expectations concerning the project differed considerably from those of UNIDO. The Academy expected financial assistance for the purchase of scientific equipment, and was not very interested in a technical assistance project. After consultations between UNIDO backstopping officials and EBN representatives, it was then decided to transfer the project to BIC Bratislava. The Evaluators have not been able to establish the existence of any formal document whereby the project would pass from Academy to the BIC.

BIC Bratislava was established in 1992. Although very successful in the delivery of business support services, the company went through a series of existential problems due to changes in government policy. At present, BIC Group s.r.o. (100% private) functions as a Holding Company of 7 subsidiaries, one of which is BIC Bratislava, a public-private partnership between the Slovak Chamber of Economy and BIC Group s.r.o.

UNIDO's contract partner is BIC Group s.r.o. Throughout the execution of the project since 1997, BIC Group has closely co-operated with the Slovak Academy of Sciences to the effect that most of the project activities were executed for and/or with individual institutions of the Academy. In this sense, the change of contract partner can be assessed positively: it has brought about a more practical approach, while retaining the Academy link.

[1] in Warsaw, Lodz, Wroclaw, and Krakow

BIC Group has to operate in a harsh environment. After a few years of national and European financial support, new structures for SME support were established that practically took over all funding arrangements. In 1994, the National Agency for the Development of SME (NADSME) started its operations, assuming responsibility for SME development, including the promotion of innovations and technology transfer. From that day on, BIC Group did not receive any national or PHARE funding anymore; co-operation with NADSME appears to be very difficult, if not impossible[2]. BIC Group have found their own solutions to this problem, by diversifying activities into (profitable) property development and management. BIC also has secured an IRC (Innovation Relay Centre) project.

NADSME is a government agency and BIC is private. BIC will seek possibilities to continue the activities, NADSME will stop everything as soon as funding is over. Our assessment is that they did well to select BIC instead of NADSME.

Against this background, the UNIDO project has been and still is of great importance for BIC Group. It was found that BIC regards the project as a means to strengthen their position in the field of business incubation and technology transfer. For this reason, BIC Bratislava appears to have delivered much more time and money into the project than strictly required by the various ToRs and contracts.

2.2.5 Assessment

One of the factors influencing project sustainability is the extent to which the present counterparts are embedded in the decision making networks concerning technology development, innovation and SME development. From this perspective, we can make the following observations:

1. OPI is well connected to decision-making structures. It is part of the formal network of scientific institutions and directly answers to the Ministry of Science. OPI has strong chances for continuation of their work in the field of technology transfer after the completion of the project;
2. The Technology Centre in the Czech Republic is part of the Academy of Sciences structures. However, it is less well connected to ministerial agencies and to non-academy scientific institutions. Still, given their specific mission there is every reason to expect that the activities started during the present project will be continued by the TC, in the same or in an adapted form;
3. BIC Bratislava is basically a private company. They have been very successful in positioning themselves as one of the specialised innovation and technology transfer agencies in Slovakia. Yet, the real decisions on national innovation and technology policy are being made elsewhere. Given BIC's strong networking capabilities and their pro-active way of operating, it may be expected that the project outputs will be utilised by them to the maximum. Still, there is a real risk that

[2] NADSME intend to set up their own Incubator facility and also are launching technology audits.

the activities initiated by the project may stop after depletion of the budget;

4. The Veszprem Regional Innovation Centre has no support at all, neither from their own University nor from national agencies. Innostart is involved in the project as a sub-contractor, and will have to retreat as soon as there is no funding left for their activities. The chances for project sustainability in Hungary are therefore grim.

In the Czech Republic, Poland and Slovakia, we found maximum ownership of the project; the counterpart institutions clearly benefit from the project and feel responsible for its success. This too is an important factor for project sustainability.

UNIDO as well as the counterparts have shown to be able to flexibly adapt to changes in external environment, which is a necessary prerequisite as these external changes often are beyond the control of project stakeholders and cannot be avoided.

2.3 Relevance

Generally speaking, there is no doubt that the original broad purpose of the project hinted at in the "Context" chapter of the project document [1], namely to enhance the target countries' competitiveness by introducing adequate systems for commercialisation of the results of their high-tech research, is still valid, despite the considerable delays in project execution. In all four countries, it is observed that governments and know-how institutions pay mainly lip service to the concept of technology transfer, innovation promotion and incubation schemes. In reality, they have not set aside any substantial budgets for the process, and until now they heavily rely on foreign donor programmes for any active promotion. One could say that little has changed on the scene since 1995, which makes projects like these still highly relevant.

Equally relevant is the development objective of the project spelled out as "creation of high-tech enterprises in the four countries ... utilising know-how generated at national level, mostly at each Academy of Sciences".

Looking however at the needs of clients and counterparts, the situation is different. With the exception of the Czech Republic, the Academies of Sciences – which should also benefit even though they are designated as "clients" in the project document (*cf.* below) - have actually disappeared as (primary) project counterparts, and as clients, too, as the project progressed. In our opinion, there are two main reasons for this:

1. The very *raison d'être* for the Academies has been and still is the execution of fundamental scientific research. This makes them by definition difficult counterparts for a project that aims at commercial application of research outputs. In other words, the selection of the Academies as project counterparts has on hindsight not been the most logical decision;

2. The interviews have made clear that during the project preparation period, expectations have been raised by UNIDO representatives that could not be upheld. This especially concerned the availability of "free" funds (USD 400.000) for either equipment purchase, or direct financial support to new high-tech ventures. Some of the Academies have decided to participate in the project on the basis of these expectations.

In Hungary, Poland and Slovakia, new counterparts were proposed and accepted and their status gradually evolved into that of main clients of the project. In Hungary, a situation has emerged where the role of project counterpart is being played by an agency (Innostart) that should actually just deliver sub-contracted services to the designated counterpart.

Although justifiable from a pragmatic point of view, these changes of counterparts show the intrinsic weakness of the initial project set-up. In Hungary and Slovakia, the Academies did not have the necessary apparatus for project execution at all, in Poland it had to be set up especially for the project, and only in the Czech Republic there was already an Academy organisation (the Technology Centre) that could be expected to be able to execute the desired activities.

It now appears certain that in Hungary, the Academy of Sciences will not benefit from the project, whilst the benefits for the Academies in Poland and Slovakia will be indirect if any.

The project document [1] made it clear (right on its p. 1) that the project was aimed at "supporting the establishment of high-tech incubation systems". This is relevant, but implementation so far does not reflect this relevance - the question of how much support the establishment of incubation systems actually received in those countries where no incubators were established by the project is dealt with in subsequent chapters. The project document also stressed "four national components with a strong orientation to exchange of experiences". Again, there is no doubt of the relevance of this, and again the fact that this relevance is not matched by the presence of any experience-sharing component in the actual project set-up is discussed elsewhere in this report.

Section 3, p. 7 of the project document [1] states that "Direct clients will be the Academies ... and later the business incubation systems, once these have been established. Ultimate beneficiaries are the high-tech enterprises established in the incubators".

Based on our findings it would be difficult to demonstrate any direct benefit for the Academies (also *cf*. above), except perhaps in the Czech Republic. And as for the benefits received by the high-tech enterprises, the relevance of the project is affected by the circumstances that (i) in two of the four countries the project so far has had no connection to any specific business incubator and that (ii) no high-tech enterprises have been "established" in the incubators (as called for by the project document).

We could not help observing that the project set-up (and even more, implementation) of this originally USD 1.578 mln. project, aimed at helping high-tech enterprises as ultimate beneficiaries, was so construed that the ultimate beneficiaries were only at the end of a chain along which the benefits were supposed to be passed on to them by various intermediaries. Presumably, it was the high-tech companies (or was it the Academies? – the project document is not quite explicit on this point) which originally were to receive USD 400.000 worth of equipment (converting to 22 % of originally intended donor assistance to this project). Also, there was the possibility, until discounted as unrealistic, of using some of the project funds to set up the nucleus of a seed capital fund, again directly for the high-tech firms. However, all this has changed and the ultimate relevance of the project will have to be judged by how much the intermediaries[3] and, especially, the boosted capacity of the national mediators (whose direct allocation for capacity building under this project appears in fact to be unusually high) can be passed on to emergent high-tech companies. The intermediaries within this chain (UNIDO, as project managers and as mediators of incubation and technology transfer know-how, and other international as well as national mediators of incubation and technology transfer know-how etc.) now stand to receive over 80 % of the total project funding.

Within the framework of the project, neither UNIDO nor the other international mediators (*i.e.*, international consulting firms and experts) had any direct working contact with high-tech companies as such – their partners were the national mediators (such as TC Prague, BIC Bratislava, OPI Warsaw, or Innostart Budapest). Whatever was produced by UNIDO or the international mediators could only be passed on to the national mediators. Thus, the above breakdown casts serious doubts upon the relevance of project design and implementation for the stated development objective – unless the national mediators, who will have received the most substantial funding, are able to convert it, without much loss, into values which they then will pass on to the high-tech companies.

To sum it up, the project objectives and activities are all of them relevant – the countries need them. But until now, the project as such has not proven to be very effective in realising these objectives.

2.4 Project Design

2.4.1 Summary Description

The assessment of the "Design" of the project has placed the Evaluators before considerable problems. The reason for this is that on hindsight, there actually is not one unique project design, but an evolution of ideas based on problems encountered and feedback received from the counterparts. As such, this is a legitimate process since a project like this should take into account changes in environment and constraints experienced in the field.

[3] The intermediaries within this chain (UNIDO, as project managers and as mediators of incubation and technology transfer know-how, and other international as well as national mediators of incubation and technology transfer know-how etc.) now stand to receive over 80 % of the total project funding.

However, the documents available do not present a clear picture of the evolution of the project and what is more serious, we often lack any proof of justification and authorisation of changes. Perhaps the relevant documents do exist, but one of our points of severe criticism is that the system of project documentation is unclear and rather chaotic. Several documents are not in the right place at all whereas other documents can be found in many different places. Although all documentation was effectively made available, it has been difficult for the evaluators to quickly find the relevant information.

Our evaluation of the project design is based on the Project Document, UNIDO Progress Reports, the verbal Justifications of budget changes, the various job descriptions (ToRs) for sub-contractors and counterparts, and information retrieved during interviews with the counterparts.

The project can be divided into two main parts that differ from each other considerably in terms of content, activities and organisation. UNIDO reports refer to these parts as Phase 1 and Phase 2, which is in line with the concepts of the original Project Document. However, there is little evidence that – as one would expect - Phase 2 is a logical continuation of the activities performed during Phase 1, since the outcomes of the first phase have hardly been used for defining Phase 2 activities.

The contents of the original Project Document [1] can be summarised as follows:

- *General objective*: creation of high-tech enterprises in the four countries, utilising know-how generated at national level, mostly at each Academy of Sciences
- *Specific immediate objectives* (for each project country):
  1. Phase 1: A country concept with all the necessary elements to establish a high-tech business incubation system
  2. Phase 2: At the countries' Academy of Sciences, one high-tech incubation system, with potential of development into a Science Park
- *Assumptions*: the Academies' nomination of the national counterpart institutions and their agreement to provide the national inputs to the project
- *Expected outputs* (for each of the four project countries):
  Phase 1:
  1. an interim country report comprising a country survey and a detailed proposal for the establishment of a Steering Group
  2. high-tech incubation awareness building, study tours for two high-level officials, study tour reports
  3. a country report on the country's incubation system incorporating (1) a detailed business plan and a comprehensive work plan, and (2) detailed draft specification of Steering Committee, management, and Advisory Group

  Phase 2:
  1. one business incubation facility set up in each Academy of Sciences with five functioning enterprises in each incubator (20 in the CR);
  2. one R & D product development pilot system set-up, with a revolving fund and an information system;

3. a plan for extension into a Science Park
- *Output indicators:* no pre-set performance/quality criteria.

For the second part of the project, there is no unique document available that would show an over-all design of the implementation phase. This concerns the stated outputs as well as the time schedule, the executing parties (contractors, sub-contractors) and the definition of activities. Based on the internal UNIDO progress reports, the project has undergone the following evolution:

Progress Report September 1997 [9]
Stated Outputs: *One or more Technology Brokerage Units in each country;*
A Seed and Start-Up Fund in each country;
Creation of High-Tech Enterprises.
Predicted Duration: Start November 1997; Completion mid-1999

Progress Reports July/August 1998 [10,11]
Stated Outputs: One or more TBUs in each country
A Seed and Start-Up Fund in each country
Creation of High-Tech Enterprises
Establishment of Investment Promotion Units within Technology Centres
Creation of Uniform Computerised Database
Predicted Duration: Completion September 1999
Progress Report 12 April 1999 [12]
Stated Outputs: One or more TBUs in each country
A Seed and Start-Up Fund in each country
Creation of High-Tech Enterprises
Establishment of IPUs in Technology Centres
Creation of Uniform Computerised Database
Benchmarking
Predicted Duration: Completion March 2000

More recent Progress Reports are not available c.q. could not be retrieved.

2.4.2 Assessment

The over-all project design seems simple and straightforward: an initial phase of study and preparations should result in a more detailed set of activities, differentiated for the four countries, to be performed in the second phase.

Still, some comments can be made concerning the design:

- The general objective is the creation of high-tech enterprises. Given the originally planned project period (2 years) this was hardly realistic. Building up high-tech incubation systems in countries where such systems were non-existent, is a time consuming matter and the process of business creation in itself (especially where high-tech, capital intensive ventures are involved) takes at least 1-2 years.
- The project is primarily a capacity building project. Creation of new companies should result not from direct project support to such companies

but from (physical, advisory etc.) services provided by capacities developed by the project (incubators, TBUs...). However, the project document states without hesitation that the project "aims at the creation of high-tech enterprises in the four countries" (cf. Section C of the PD [1]), even though it does not contain any direct instruments which could force this development to happen (being a project acting through indirect support).

- Then, if this general objective was to be maintained, the project document should at least have given some measurable output indicators, like for instance the number of firms created, the amount of investments realised, the number of licence or royalty agreements concluded. It is acknowledged that the project document states as an objective to have four business incubators with 5 (and in the Czech Republic: 20) companies located there, but this is not the same as the objective of creation of high tech enterprises. It might be argued that the number of firms created should not be an indicator of output but of effectiveness. This would not be entirely true. If you create two new companies rather than one you have twice the effectiveness but in any case the two companies are your outputs. Unfortunately, in the case of this project so far, we have neither. Indeed, we have not found any evidence of any new high-tech company being created as consequence to, or in relation to, the project.
- The Project Document implicitly and explicitly assumed the full co-operation of the Academies of Sciences in the four countries. As stated before, the very character and mission of the Academies makes this assumption rather unrealistic. The Project Document should at least have mentioned this risk and made provisions for a contingency plan.
- The immediate objectives for Phase 1 and the expected outputs were, in our opinion, very realistic. They allowed for an in-depth preparation of the actual implementation of the project, and provided enough flexibility to produce country-specific solutions.
- We realise that it is easy to criticise in retrospective; still, given the importance of the first phase, it would have been appropriate to divide it into a number of smaller sub-stages, each ending up in a go/no go decision for the next sub-stage. Within the present concept, the possibilities for UNIDO's backstopping office to intervene during the stage 1 activities were too limited.
- There is no unique document designing phase 2 of the project. New sub-objectives and desired outputs were conceived incrementally, in the course of the project. We have found no analyses of necessary inputs to realise the new outputs, and therefore it is difficult to assess in what way the various budget changes correspond with the newly stated outputs.
- There is no evidence of consolidated project review meetings held for redesigning or re-focusing the project.
- The internal logic of the project – certainly existing within the original project design - went lost by the beginning of the second phase: the main objective (creation of high-tech enterprises) and the specific objectives (like creation of incubators) were mixed with definitions of outputs (like benchmarking, or database creation).
- Certainly, the new sub-objectives and outputs also fit well the over-all project objective and the specific objective for phase 2; however, it is doubtful whether they will be sufficient to actually realise these objectives.

Will they guarantee that any new high-tech enterprises will have been created by the end of the project? And will all countries have the desired high-tech incubation system?

- The expected outputs for phase 2 of the project, as described in the Project Document, have never been formally abandoned. Therefore, they must still be considered valid. However, the present ”design” of phase 2 will certainly not lead to:
  - An incubator in each of the four countries;
  - R & D product development pilot systems in the four countries, and
  - Plans for extension into a Science park in the four countries.

3. IMPLEMENTATION

3.1 Budget and expenditures

Budgets and expenditures are reviewed below from the points of view of
- UNIDO
- international experts/consultants hired by UNIDO
- the recipient countries.

3.1.1 UNIDO

A budget and spending breakdown is shown in the Table 3.1 with all its major changes which took place over the ca. five years of project execution.

The budget as per the project document of 1995 [1] has been through seven revisions [13-22] during the 1996-2000 period:

0. The project was approved by UNIDO in December, 1995 [1] with an original budget of USD 1,578,610 (including programme support costs) which resulted in the issue of an original PAD [13] to the amount of USD 1,397 thousand (excluding 13% psc)
1. The first revision [13], due to the fact that NL only approved the project in 1996, reflected the decision to have the tasks of the short-term international consultants undertaken by a sub-contracted firm. Thus, USD 456 thousand was transferred from budget line 11-50 to budget line 21-00.
2. The second revision of June, 1996 was a minor revision whereby some funds were transferred from budget line 11-01 to budget lines 15-00 and 16-00 to cover travel and other personnel costs.
3. The third revision of December, 1997 [14], accompanied by an extensive explanation consisting in an exposé by UNIDO [9] indicating a shift in project thrust and outlining a justification of project modification; a letter by Senter (NL) to UNIDO informing of funds transfer; project ToR dated 2 July 1996; UNIDO interoffice memos dated 13 August 1997 and 5 September 1997; a letter by UNIDO to Univ. of Twente (NL) dated 15 September 1997 terminating their contract no. 96/149/AV; a flowchart of Actors taking part in the incubation process; and ToR for the Establishment of technology brokerage unit by UNIDO [ref. *spina/tor145z*], resulted in the movement of some funds from various budget lines (11-00, 15-00, 42-00, and 51-00) to budget line 21-00 as the majority of the planned activities would be implemented by issuing sub-contracts. The funds rephased to budget line 21-00 were earmarked for technology brokerage trainees. The establishment of seed capital, to the tune of USD 400 thousand, was the central idea here. More funding was allocated for meetings of counterparts.
4. The fourth revision of March, 1998 [15,16], justified by the exchange rate change between the time of project approval and actual receipt of funds, resulted in a reduction by USD 261,361 of the total project allocation, under buli 21-00.

5. The fifth revision of February, 1999 [17] reshuffled the funding within budget line 11-99 to initiate seed fund management training, recruit a Dutch expert on incubation and networking, launch OPI (PL) data base, and hold a COMFAR III workshop in Prague in March/April 1999; USD 20 thousand was moved to budget line 45-00 towards the purchase of COMFAR III. A total of USD ~73 thousand was committed between March, 1999 [18] and December, 1999 [19]
6. The sixth revision of December, 1999 [20] produced no changes in budgetary allocations in the light of the forthcoming mid-term evaluation and was a mere rephrasing exercise.
7. The seventh revision of April, 2000 [21] provided funding for project evaluation, at the expense of budget line 11-02; all other allocations remained unchanged.

3.1.2 International experts and consultants

Table 3.1 – Survey of UNIDO contracting (international experts & consultancies)

#	*Partner*	*start date*	*USD*	*scope of services*	*ref.*
1	Twente Univ.	Sep 1996	9,600*	business incubation assistance	[23]
2	Zernike Group	Nov 1997	149,925	technology transfer and TB expertise until April 1999	[24]
3	Mr. Boot	Nov 1997	15,500	seed funding expertise until Feb 1998	[25]
4	Junior consultants		50,000		
	Total		***225,025***		

*) The contract worth USD 96,000 was terminated and only USD 9,600 was paid.

The table indicates that the shares of institutional and individual expertise were ca. 70 % and 30 %, respectively.

3.1.3 Czech Republic

Table 3.2 – Survey of UNIDO sub-contracting (CZ)

#	*Partner*	*start date*	*USD*	*scope of services*	*ref.*
1	TC Prague	Dec 1997	32,000	TBU training and salaries	[26,54]
2	TC Prague	Feb 2000	40,280	TBU until July 2000	[27,84]
	Total		***72,280***		

3.1.4 Hungary

Table 3.3 – Survey of UNIDO sub-contracting (HU)					
#	*Partner*	*start date*	*USD*	*scope of services*	*ref.*
1	Veszprem Reg. Innov. Center	Dec 1997	32,000	TB training and salaries	[28]
2	Innostart Budapest	Dec 1997	20,000	incubation and TB services until April 1998	[29]
	Total		***52,000***		

In 1999 Hungary submitted a proposal [30] for yet another sub-contract.

3.1.5 Poland

Table 3.4 – Survey of UNIDO sub-contracting (PL)					
#	*Partner*	*start date*	*USD*	*scope of services*	*ref.*
1	AS Center for Sci.Advancement	Dec 1997	32,000	TBU training and salaries	[31]
2	OPI Warsaw	Jan 2000	40,000	TBU until Jun 2000	[32,33,62]
	Total		***72,000***		

3.1.6 Slovakia

Table 3.5 – Survey of UNIDO sub-contracting (SK)					
#	*Partner*	*start date*	*USD*	*scope of services*	*ref.*
1	BIC Bratislava	Dec 1997	32,000	high-tech incubation during 1998	[34]
2	BIC Bratislava	Jul 1999	29,900	Benchmarking until Aug 1999	[35]
3	BIC Bratislava	Oct 1999	40,000	TBU until Oct 2000	[36]
	Total		***101,900***		

3.1.7 Assessment

Recapitulation of direct UNIDO contracting indicates that the counterparts of the four beneficiary countries received uneven amounts of direct assistance in terms of funding (even if it can be assumed that the ”international” component totalling USD 225,025 was spread out evenly).

The following findings relate to the over-all project set-up as regards budgeting and finance:

- The project budget shrank ca. 15% due to exchange rate fluctuations.
- This still appeared adequate for most of the activities envisaged by the project, even though this may be just an appearance which is impossible to check, due to the fact that no quantitative goals (such as the number of new companies expected to be formed thanks to the project, etc.) were set out either in the project document or later as part of the conclusion of the first stage of implementation. Had

such goals been defined they might have to be scaled down, together with the reductions of budget.[4]

- Implementation and, thus, spending has been delayed considerably: ca. five years into this originally two-year project the total spending has reached ca. 59%; ca. 41% remains to be spent (USD 468,232).
- On the spending side, at variance with the original plan the international experts' expenditures were split between three different expert groups, and the activities to be executed by counterparts in the recipient countries were broken down into small sub-contracts awarded at different times. This was a cautious approach which however made the spending rather fragmented and more difficult to manage. Until this time there were 3 sub-contracts for SK and 2 sub-contracts for HU, PL and CZ each.
- More contracts are to follow – four sub-contracts are envisaged, one for each of the recipient countries; *i.e.*, if these were to be spread uniformly over the four countries they would be to the tune of ca. USD 115,000 each.
- There is an adequate financial reserve, due to de-obligation of non-paid contract with Twente.

In terms of timing of project spending (and corresponding project implementation), the table below indicates that

- in 1995-1997 the project budget shrank largely without the project being implemented;
- in 1998 where according to original estimate the project ought to have ended its spending was just over 20%;
- the essentials of the last budget and spending detail report [22] are that nearly five years into this originally 28-month project, the balance as yet uncommitted was ca. 41% of the total allotment
- if project implementation were to continue at the same pace it might ultimately run for a period as long as eight years.

Table 3.6 - Timing of expenditures

Date	*% spent and/or committed*)*
Jun 1996	0
Mar 1998	>18.7
Apr 1998	52.9
Mar 1999	53.2
Dec 1999	58.4
Apr 2000	66.7

*) Remainder to 100 % represents the % of uncommitted balance.

[4] However the counterparts pointed out that this originally USD 1.6 mln project shrunk to 1.1 mln; in the context of this 31% shrinkage it may indeed appear to be too ambitious as the project objectives remained the same in spite of the reduced funding.

3.2 Delivery of UNIDO inputs

The expected inputs by UNIDO into the project have been described in the original project document. They will not be repeated here in detail. Basically, UNIDO was expected to deliver:

- A UNIDO Co-ordinator/Technical Adviser for 26 man-months;
- International experts for 44 man-months;
- National experts for 12 man-months;
- Various training courses and study tours;
- Equipment for the incubators to an amount of USD 400 thousand.

As stated before, the project has gone through a number of changes, which have naturally affected the inputs to be delivered. The most important changes in inputs were, that (a) the number of man-months for international experts declined substantially, (b) national experts (including technology brokers and other staff) have been given a more prominent role in the project, in terms of budget and man-months and (c) the budget for equipment was lowered to about USD 20 thousand.

Given these changes, the Evaluators have looked mainly at the quality of the inputs provided by and through UNIDO. Important issues in this respect are:

1. Project management and project co-ordination
2. Quality of inputs by international experts (Twente, Zernike, Boot)
3. Quantity and quality of the training courses and study tours.

The prime UNIDO input is project management. UNIDO was supposed to manage the project – not just to internally, within UNIDO HQ in accordance with UNIDO regulations, but above all,

- to co-ordinate the inputs and activities in the various countries;
- to ensure that the countries moved forward at more or less the same pace and in the same direction;
- to manage budgets and expenditures;
- to manage quality – of inputs, activities, and outputs;
- to manage project related information, mainly in the sense of informing the counterparts about changes, delays, other countries, new possibilities, etc.;
- to provide UNIDO literature and advice on any of the above.

One example of possible management of quality would be to arrange for streamlining of the partners' progress reports to make them comparable: sufficient feedback could be provided here just by circulating the reports submitted by each of the partners among the other partners – this would also give each of them new ideas, would teach them not to forget key chapters and statements from their reports, and would make them think why perhaps they had not achieved the same results as others; would in fact be conducive to informal but possibly quite effective benchmarking. Another example of quality management would of course be for UNIDO to take the reports of the four partners and use them to arrive at whatever conclusions, and as launching

pad for managing the subsequent stages of the project. Also, the questionnaires collected should not have been collected just for being collected, but again to formulate conclusions (the table contained in our report is our table, UNIDO did not evaluate the questionnaires at all). An attempt should have been made to take the products being developed and marketed by the companies in the incubators, and to compare them with standard products on the market – this can of course be done just by trying to sell them, but also by comparing their parameters – i.e., quality - with those of existing similar products.

Section 3.5 contains our assessment of the quality of UNIDO's project management activities. As to the quality of inputs delivered by international experts, the following observations are in order:
The inputs of Twente University have been discussed at length. They did not meet the required standards and UNIDO's backstopping officials have done well to terminate the contract. In fact, it is to be considered an important achievement that the financial damage has been limited to "only" 9.600 USD.
Zernike has done well, in every respect. Their training course is considered by all participants to have been very effective, and they still manage to maintain fruitful relationships with the technology brokers of all countries except Hungary. Zernike's involvement in the project will certainly contribute to its sustainability, since the technology brokerage operations will most likely continue after project completion.
It is not easy to assess the quality of the inputs of Mr. Boot, in the field of the Seed Capital output. A survey has indeed been done, but the reports which the evaluators have at their disposal do not really give any workable guidelines for further actions. Partly this is caused by external factors – legislation and attitude of potential funding parties- but it is also felt that UNIDO backstopping themselves have not given the required follow-up to the studies.
Summarising, the majority of inputs delivered to the project through UNIDO have not reached the appropriate level of quality.

3.3 Delivery of Counterparts' Inputs

3.3.1 Description

According to information received from the Czech counterpart, the TC has co-financed the project by basically matching the UNIDO cash inputs, i.e., by contributing the same value in kind, mainly by providing infrastructure and supporting personnel. This they indeed were providing but the Evaluators were of course unable to check whether this was exactly a 50/50 contribution.

Also, in 1999 project execution continued without any UNIDO financial inputs, on TC's funding alone.

This situation was more or less replicated in the other countries. In HU where Innostart management has changed it was difficult to arrive at any definitive information. In Slovakia, benchmarking activity initiated under the 2nd UNIDO sub-contract continued after 1998 without any further financial assistance from UNIDO. Poland also has been investing into the continuation

of TB activity, especially during the lulls of project implementation, just to keep the activity going.

3.3.2 Assessment

As a rule the counterparts do not strictly distinguish and separate their project inputs from their general operations, and except for direct cash inputs (such as paying for travel to a project-organised event) these inputs in kind are then hidden in their overheads. More will be said on the subject when assessing the general impact of the project upon these counterpart organisations.

On the other hand, combinations with other projects (even though not always distinguishable) result in synergies regarded as an asset and stressed as positive by all the counterparts.

3.4 Activities

3.4.1. Project History

For an evaluation of the quality of activities and inputs, it has been necessary to first make a reconstruction of the history of the project, from its actual start in September 1996 until the present date. In doing that, the Evaluators have tried to assess whether there was a logical order and sequence of activities.

As mentioned before, we distinguish between Part I and Part II of the project, both of which can be broken down into a number of separate phases.

Part I, Phase I.1. (September 1996-July 1997)
As far as we can see, Part I of the project (aiming at making country assessments and proposals for country specific activities) was terminated in June or July 1997, not by completion of the tasks envisaged in the Terms of Reference dated July 2, 1996, but by cancelling the contract with the LiaisonGroup of Twente University. The results of the work of the contractor have not been (and could not be) used for further activity planning, neither by UNIDO nor by the counterparts in the four countries. The implications of this situation were that

- by July 1997, the project actually had to be re-started from scratch;
- the funds spent for the first project part (USD 9.600 plus management costs) were actually lost for the project;
- in relation to the original time schedule, a delay in project activities occurred of at least 8 months (from January – August, 1997).

Part I, Phase 1.2. (July 1997-September 1997)
Faced with this situation, the Backstopping Unit at UNIDO took over and produced their own set of activity proposals for Part II. This ended up in a document (ref. *aspina/nl4524.9*) dated 30 September 1997 [9], containing proposals for three action lines: (1) Technology Brokerage, (2) Seed and start-

up fund and (3) Creation of high-tech enterprises. We have not found clear evidence of consultations with the counterparts or of a formal project review meeting, justifying these proposals.

It was the contention of UNIDO [53] that there was no need for a re-formulation of the original project document since the main, long-term objectives remained unchanged.

The Evaluators do not share that point of view. There should at least have been an analysis justifying the choice for these detailed outputs and actions, as conducive to and sufficient for achieving the primary objectives.

Part II, Phase II.1. (September 1997-December 1998)

The actual start of the Part II activities was marked by a contract dated November 1997 [24] signed between UNIDO and Zernike Group B.V. concerning the provision of training and support services in relation with the Technology Brokerage component. The ToR under this contract envisaged a time schedule starting November 1997 and ending April 1999, a time schedule that was indeed realised. In order to provide for optimal local involvement in this part of the project, contracts were issued to the Technology Centre (CR), BIC (SK), Innostart (HU), Veszprem Regional Innovation Centre (HU) and OPI (PL) for the execution of specific activities and coverage of salaries, travel and subsistence costs of Technology Brokers. These contracts covered a period of 12 months, starting January 1st, 1998.

Another contract [25] was issued in November 1997 to Mr. Gijs Boot of Czech Venture Partners, for the execution of a study to identify the possibilities for setting up Seed and Start-Up Funds in the four countries. It has resulted in a final report dated March 1998 and a Discussion paper [37] on the seed capital issue.

The activities concerning Phase II.1. were finalised in December 1998.

Part II, Phase II.2. (January-December 1999)

During 1999, the project has shown only little activity. Only in Slovakia, new contracts were issued to BIC, covering the creation of benchmarking techniques (May-August) and the extension of the Technology Brokerage Units to several regions (October 1999-October 2000). The three other countries found themselves in a vacuum and had to continue – where possible – the project activities from their own budgets.

Part II, Phase II.3. (January 2000 to date)

The Polish and Czech counterparts received in the beginning of 2000 new contracts for the continuation of on-going activities. As mentioned before, BIC Bratislava already had such an assignment since October 1999. The activities were largely the same for all partners, namely,

- continuing assistance to entrepreneurs
- visit(s) to Zernike group for training and technology marketing
- organisation of training seminars on technology promotion and marketing
- attending a COMFAR training
- expanding the technology brokerage activities to other institutes.

A specific additional activity for Poland was to prepare the database OFFER for presentation and demonstration to the partners in the other three countries. The Czech Technology Centre was assigned to make a Site Development Plan for a Science Park.

The Veszprém Regional Innovation Centre in Hungary was not awarded any contract in this period.

3.4.2 Assessment

We will not repeat here the contents of the reports, submitted to UNIDO by the project counterparts, contractors and sub-contractors. Rather, some general and specific observations are in order.

In the first place, no work plan or detailed timetable has been prepared at the beginning of the implementation phase. Of course, the individual Terms of Reference for each partial contract contained a description of activities and outputs, and a deadline for their delivery. But it has not been possible for individual parties in the project to bring their activities in line with any over-all project planning. Apart from some joint "consultation meetings" in Vienna in August and September 1999, the partners from the four countries only met during joint training sessions in the Netherlands, and this was hardly the platform for co-ordination of activities.

With the exception of course of running contracts, the main activities as stated above have largely been completed. The inputs during the first part of the project delivered by the University of Twente were not used for defining the contents of the rest of the project. There seems to be enough evidence now that this was a right decision by UNIDO's Backstopping Unit.

Eight persons were supposed to attend the training courses at Zernike, and on-the-job training at their home base. With the newly acquired know-how, they would then have to set up and manage at least one TBU in their countries. The information about the quality of the training courses is positive. One of the Hungarian trainees did not participate in December 1997 but caught up with the programme in January/February 1998.

What is worse, however, is that from the original 8 trainees now only 4 are still working with the counterparts (2 in CR, 1 in SK and 1 in PL). The persons who left, altogether left the "system" for technology transfer and brokerage. Reasons: lack of funds for salaries after initial payments by project (HU), change of involvement of the Academy of Sciences (SK) and personal reasons (PL).

As far as we have been able to establish, there has always been an excellent co-operation between Zernike and the individual country counterparts. In fact, this co-operation still continues in the form of joint development of high-tech business projects. UNIDO further supports this co-operation by financing visits by the Technology Brokers to the Netherlands, which can be judged positively against the background of the wider project objective.

The activities carried out by the local counterpart go far beyond the requirements of the individual ToRs. In fact, all partners – perhaps with the exception of Veszprém – have done and still do considerably more than the project alone requires. Due to lack of adequate and continuing funding, the splitting-up of the project into small "portions" and the total absence of co-ordination of activities across country borders, we have the impression that the effectiveness of their activities in terms of (a) Creation of High-Tech enterprises and (b) establishment of full-fledged incubation systems, is considerably less than it could have been.

3.5. Project Management

With reference to paragraph 3.2 of this report, the following comments can be made on UNIDO project management:

- This is a large, complex project and as such it requires considerable management resources. The time allocation for the backstopping officer was officially 20% (one day a week on average) which seems too limited. Given the need for continuous co-ordination between activities in the four countries, it is our opinion that the backstopping officer should have had at his disposal a full-time field manager, appointed by UNIDO for the project. In fact, according to the original project document [1] (also *cf*. Section 3.2), a UNIDO CTA (Co-ordinator-Technical Advisor, to be appointed for 26 m/m) was to "co-ordinate and closely follow up the project implementation in the four countries, in order to ensure an unbiased assistance and a constant exchange of experiences among the counterpart institutions". This was later abandoned even though the sharing idea was not, and no other vehicle for sharing the experience (and results!) was introduced.
- There was hesitation about project allocation within UNIDO. This was reflected in UNIDO's handling of the project and especially in discontinuity of contacts with and feed-back to counterparts.
- There were several changes of project personnel at UNIDO's Headquarters, resulting in delayed and jerky implementation;
- The counterpart's expectations were not always fully in line with those of UNIDO; this was due to scant communication.
- Not all of the project counterparts have ever received a copy of the project document. Even those who have were as a rule receiving management information relating to their country alone (except for several project meetings) and were losing track of the over-all scope of the project.

As regards the (not necessarily comprehensive) management activities listed above, the Evaluators' assessment is that

1. the inputs in the various countries could have been co-ordinated more closely had the exchange of information been more systematic; it could also have involved information on best practices etc. However the most serious flaw is that the numerous changes relating to the refocusing of the project after Phase One were never summarised in a new ToR or similar

document, so as to allow for a synoptic overview of the current status of Activities and Outputs. The project design, once it adopted the line that each country should do what they are best at and then share it with others, totally lacks the sharing component – there is no such activity listed, and no funding envisaged for this;

2. the objective of ensuring that the countries moved forward at more or less the same pace and in the same direction was generally not met; after all only two out of the four countries had an incubator facility more or less fitting the project objectives; in addition to that, their activities soon started diverging; their funding was different, etc.;
3. comments on financial management can be found in the section 3.1.7 above; the project was broken down into no less than 14 sub-contracts so far (with more to follow); this piecemeal approach directs the partners' attention away from the general objective and the numerous contracts are difficult to manage;
4. the Evaluators have not found any evidence of serious quality management;
5. management of project related information was insufficient; project files kept at the UNIDO office are chaotic and thus difficult to access; the beneficiaries were not receiving any systematic or full information about changes, delays, other countries, or new possibilities;
6. while some UNIDO literature and advice was provided, the project and its counterparts would have benefited from more extensive UNIDO guidance, especially given the vast experience and expertise available at UNIDO.

4. Results

The project outputs are reviewed and assessed with a view to their effectiveness, impact, and sustainability.

4.1. Production of Outputs

Planned results included

- the creation of new high-tech companies (mentioned in UNIDO progress reports as outputs; in reality a higher level objective, to be regarded as an Impact of the project)
- setting-up an incubation system in each country
- creation of technology brokerage units and capacity in each country
- development of benchmarking as a tool for technology assessment and development within businesses;
- creation of a seed and start-up fund in each country;
- development of concrete plans for extension of the incubator facilities into a science park, in each country;
- creation of a data base (system and contents) of R & D;
- creation of Investment Promotion Units within Technology Centres.

The degree of success achieved in actually producing these results is commented on below.

4.1.1 General

The over-all direct involvement of international consulting agencies and consultants was worth USD 225,025 (*cf.* Chapter 3.1). Their involvement focused on the counterpart organisations in the four target countries.

Country background information regarding high-tech incubation, the pivotal idea of the project, is reflected by questionnaires collected in 1999 covering the four countries, i.e., CZ [38], HU [39], PL [40], and SK [41]. The information contained therein is summarised below:

Table 4.1 – Questionnaire data

Country	***CZ***	***HU***	***PL***	***SK***
Counterpart agency	TC of Acad. Sci. Prague	Innostart BIC Budapest & RIC Veszprem	OPI of Acad. Sci. Warsaw	BIC Group Bratislava
Counterpart since	1995	1997	1995	1997
Relation of Agency to Acad. Sci.	TC is within Acad. Sci.	RIC Veszprem was part of Acad. Sci.; relation of BIC not explained	Appointed by Acad. Sci. to operate incubator	Co-operation agreement [55]
Country	***CZ***	***HU***	***PL***	***SK***
Agency's own	Yes	yes	No	No

incubator Relationship with incubator located elsewhere	n/a	n/a	n/a	Assistance to incubation process
Incubator characteristics	~1,200 sq.m., consulting, networking etc.	6,000 sq.m. Budapest, ~3,000 sq.m. Veszprem; SME support & management	n/a	n/a
Project benefit for incubator	assistance to expansion into Sci. Park	incubator upgrade	training of managers & technology brokers	n/a
Other project-related benefits	development of technology brokerage	helps EU accession effort	incubation process insight	Background for BIOCENTRE and Sci. Park development
No. of companies in incubator	17	14*	n/a but there are ~10 spin-offs at various Acad. Sci. Institutes	n/a
No. of matured companies	7	5	n/a	n/a
No. of failed companies	2	1	n/a	n/a
Sectors	agriculture; electronics	various sectors	n/a	n/a
Future plans for Incubator	incubator to be incorporated in future Sci. Park	expansion and upgrade	plan for OPI's own incubator	Replication Of present incubator model

*) 46 companies are tenants of Innostart in Budapest but these cannot be regarded as incubator companies; no connection to Innostart other than tenancy has been demonstrated.

As can be seen from the table, two of the four counterparts (CZ, HU) actually have an incubator facility. The questionnaire design was confusing - it made little sense to ask detailed questions about incubators where there were no incubators. For counterparts who operated no incubators this questionnaire asking a lot of questions about their incubators must have been bewildering – the fact that they did not have incubators of their own could be ascertained simply by asking, and UNIDO in any case already possessed this information. Yet the information could be distilled out of these misshapen questionnaires that the wider connotations of the innovation process are quite important, with expectations ranging from TB assistance and model solutions of RDI commercialisation to science park development and support to the EU pre-accession process.

The following substantial reports relating to the project were scanned by the Evaluators:

Table 4.2 - Reports

Author	*no. of reports*	*References*
UNIDO	6	[10-12,42-44]
Zernike	4	[45-48]
TC Prague	2	[49,50]
INNOSTART Budapest	1	[51]
OPI Warsaw	1	[52]
BIC Bratislava	4	[58-61]

It is useful for a synoptical view to repeat here very briefly the scope of international consultancies

The ToR for the Twente University [23] called for the execution of 13 items of which two field missions were very prominent. They also included briefing of counterparts; setting up of Steering Committees; guidance of national consultants. Country background information was to be collected and country assessment reports, an interim report, four comprehensive country reports, and a final report were to be produced.

Phase 1 business plans (also called for by above ToR) were probably never produced. The country assessments produced were inadequate and too general. Steering Committees were set up in only some of the countries and did not survive. The work of the Liaison Group up to March, 1997 was unsatisfactory [42] yielding only rather general observations. National counterparts indicated that they did not understand their individual roles in the project, and all of them complained of lack of communication. The work appears to have been underestimated by the contractor, and UNIDO had to resort to the unusual step of terminating the contract.

Subsequently, Zernike Group [24] was to undertake field missions and to set up a training program, screen candidates for the position of Technology Broker, and propose a financial scheme to ensure the sustainability of TBUs within two years from start-up. Zernike also was to identify and assign four country support experts to conduct 6-week training for two trainees per country; prepare practical assignments; assist the trainees in drafting their plans of assignments and in finalising business plans and setting up their respective TBUs. A final report was to be produced.

Most of these activities were carried out to satisfaction of both UNIDO and the counterparts. The training of technology brokers carried out by Zernike was effective but a successful formula for the ”financial scheme to ensure the sustainability of TBUs” is yet to be found. In fact, most of the counterparts continued to support the TB activity from their own resources once project support dried out (on expiry of sub-contracts valid for 1998).

Based on the experience gained during implementation, Zernike point out [47] that there is a need for more personal contact (involving e.g., the TB trainees and their training organisation) for bridging quite a large gap which persists in the counterpart organisations in the areas of copyright awareness and know-how (patent protection, licensing). These items are recommended for further attention within the framework of future efforts at commercialisation of Eastern European RDI products.

Another Dutch consultant (G. Boot) was hired [25] to execute a field study concerning then set-up of a Seed and Start-Up fund. Some of the results are summarised in Table 4.1 above (compiled from the questionnaires by Evaluators). Mr. Boot also produced a discussion paper on seed capital [37] but failed to identify parties capable of providing seed capital assistance. Thus he could not assist the counterparts (as was called for by his ToR) in securing financial commitments from such parties. Although the work was executed in a professional way, the assignment ended up in confirming what was already known: ”it is not easy to establish a seed capital facility in Eastern European countries”.

Two manuals were produced under the project by the SK counterpart:

- *Due Diligence Methodology*, 34 pp. + annexes [63]
- *Benchmarking methodology*, 19 pp. [64].

Both manuals seem very useful and suitable to work with. However, it is not possible to assess their real value yet, since much depends on the outcomes of the information retrieval in EU countries.

4.1.2 Czech Republic

Direct involvement of the Prague Technology Centre had the form of two sub-contracts worth USD 72,280. It was marked by two surges of activity, in 1998 and 2000, both of which were focused on technology brokerage.

The Czech participants were very positive about their training in the Netherlands. They saw Technology Analysis as the major strong point of the training scheme. Based on the contacts between the Technology Centre and Zernike, 8 company projects were eventually recommended for brokerage. The criterion of success was for the technology to have "a chance to succeed abroad" (not just in the Netherlands). These included e.g., biosensor, vibratory compaction, and sludge incineration projects; waste glass recycling to decorative tiles, digital imaging, anti-graffiti coating, security lock, radar measurement, batteries, pipe joining technologies, etc. [49].

Two workshops were held by the TC in the spring of 2000 to bring together the Academy and the business and industry community; the topics were writing proposals/offers; contracting; copyright; etc.

A directory of institutions active in the area of information technology [65] and a technology offers/requests data base [66], with ca. 150 records, are TC outputs which can be regarded as by-products of the present project.

The location of companies in the Incubator buildings of the Prague Technology Centre appears to be an autonomous process, *i.e.*, not induced by the present project. Originally, the Academy and the Ministry of Industry and Trade have 'authorised' the TC to set up an incubator; the Ministry became involved due to the fact that the TC has the BIC status. Eventually, 19 companies were accepted in the incubator, other 13 were refused. The Campus Board, a body of the research institutes within the Prague 4 campus complex, has accorded the TC 'advance credit' for setting up an incubator and developing the Science Park idea.

Incubator upgrade to a Science Park is the core idea of what the Czech counterpart proposes for the remainder of the present project. We refer to the separate document " Plans for the Future" for a description of this idea.

As a corollary, in is worth pointing out that the attitude of the scientific community is changing, and this can in part be also ascribed to the positive influence of the present project: the TC recently obtained a small Academy grant to support technology transfer (something unheard of several years ago). Also, the response by the Academy Institutes has lately been more positive indicating the Academy Institutes now are better disposed toward technology transfer.

Czech universities used to regard the TC as Academy-biased; today the TC has gained more of a cross-sectoral, countrywide recognition also by the universities.

Finally, it may be worth noting that co-operation of the Prague TC with the University of Twente continues (on other projects, especially, UNISPIN CR), in spite of the problems encountered (termination of contract by UNIDO) during the present UNIDO project.

4.1.3 Hungary

Direct involvement of the Hungarian counterparts had the form of two sub-contracts totalling USD 52,000. It was marked by dissipating the effort due to two organisations being involved: the Veszprem Regional Innovation Centre, and Innostart in Budapest.

The ToR for Innostart [28] called for the provision of consulting services to the Veszprem Regional Innovation Centre. In particular this encompassed the production of a strategy and business plan for the centre, a management training for their staff; and assistance with the establishment of a Technology Brokerage Unit in the Veszprem incubator.

Two Hungarian trainees took part in the 1997/1998 Technology Brokers training [51] but after a period of work at Veszprem they left the system without visibly passing on their know-how to any other employees of either the Veszprem University or the Veszprem Regional Innovation Centre.

A number of training seminars were conducted by Innostart [51]. The topics covered included Innovation theory and practice; the research-prototype-capital-production-sales chain; BIC management; and Incubation.

Consequently, the involvement of Veszprem University was weak and almost no working relationship was maintained within the triangle of University – Innovation Centre – Innostart.

4.1.4 Poland

Direct involvement of the Polish counterparts had the form of two sub-contracts totalling USD 72,000.

The UNIDO - Poland contract [32] of January, 2000 (with "revised" ToR [67] dated 9 December 1999) to the value of USD 40,000 provided for 12 m/m of service by two brokers in the period January-June, 2000; an interim report by March, 2000 and a final report by June, 2000.

According to the ToR [67] the technology brokers were to

- assist entrepreneurs,
- travel to Zernike for a TB skills upgrade,
- assess the TB potential of the Academy of Science institutes,
- hold a minimum of 3 training seminars, and
- attend a COMFAR training in Warsaw.

In addition, a demo version of the OFFER data base was to be prepared for presentation to partner countries.

A number of various TB activities [52] took place. The visit to Zernike was undertaken in October, 1999 (before even the contract [32] was signed). Yet another broker was contracted by OPI for a period of 6 months by a separate agreement [68]; and the TBU at OPI became fully operational. A preliminary description of the OFFER data base was attached with the interim report [52], in a 6-page annex.

The so-called Sub-contract extension proposal, proposing COMFAR training of 2 brokers in Groningen and London and the creation of the "OFFER" data base worth a total of USD 40,000, is a confusing document [69] dated both December, 1998 and December, 1999 and also marked as "final report". It has been impossible to find out what has happened with this proposal.

4.1.5 Slovakia

Direct involvement of BIC Bratislava had the form of three sub-contracts totalling USD 101,900. It is worth noting that the level of involvement of the Slovak counterpart, higher than that of the counterparts in CZ, HU, and PL, correlates with the fact that BIC Bratislava has demonstrated its interest and vigilance throughout the entire project implementation period by submitting many more proposals than any of the other countries (cf. the next Section).

The activities executed under those three sub-contracts focused on Technology Brokerage and benchmarking.

One of the original two TB trainees is still active and involved in various negotiations with Dutch parties. BIC Bratislava is actively working on the establishment of a number of TBUs in the country.

Verification of the Benchmarking methodology was undertaken in a number (~ 20) Slovak enterprises. The sectors covered so far by benchmarking include metalworking (especially, tool making) where some of BIC staff themselves are experts, and woodworking where BIC is using outside experts. Woodworking with its ~700 companies in the country is very important for the Slovak economy.

Access to Western companies for benchmarking purposes may pose a problem, especially because they will wish to see some benefits in return for giving the required information.

Within the Benchmarking activity, BIC maintains a data base of companies. It is well understood that technology benchmarking is not universal and always requires an expert in the specific disciplines under consideration at any given enterprise.

4.1.6 Proposals

Recapitulating, the following proposals were made by the project partners and/or stakeholders in the course of project implementation:

Table 4.3. – Proposals made

Author	*ref.*	*year*	*subject*
UNIDO	[72]	1999	Revised proposal for activities ... in the Czech Republic for the second phase of the project
Zernike	[47]	1999	Recommendations
TC Prague	[73,74]	2000	Proposal for activities (incl. Development of technology transfer services; Initiation of preparatory phase for incubator expansion into Science Park)
INNOSTART Budapest	[30]	1999	Continuation of program
INNOSTART Budapest	[75,83]	1999	High-tech incubator & TB and countrywide dissemination of model; so-called Max. and Min. proposals
OPI Warsaw	[70]	1999?	Technology incubator at OPI
OPI Warsaw	[69,76]	1999	Sub-contract extension proposal (for COMFAR training and "OFFER" data base
BIC Bratislava	[77]	1999	International benchmarking of industrial SMEs
BIC Bratislava	[78,79]	1999	Establishment of Science and Technology Park in the conditions of Slovak Republic, so-called Alternative A

BIC Bratislava	[79,81]	1999	Establishment of technology based incubators, so-called Alternative B
BIC Bratislava	[79,82]	2000	Publication of manuals for "Due diligence" and "Benchmarking"
BIC Bratislava	[79,80]	2000	Dissemination of new diagnostic methods of industrial SMEs in the conditions of Slovak Republic
BIC Bratislava	[71]	2000	Establishment of high-tech incubator

4.1.7. Assessment

The situation found by the Evaluators was as follows:

- all project outputs were relevant for the development objective
- however, it is impossible to attribute the creation of any high-tech company to the present project. As mentioned before, this objective was a difficult one to realise;
- five years into the project, two of the four counterparts (CR and HU) actually do have a physical incubator facility, but neither of them can be directly attributed to the project. Still, the project has made it possible for all four counterparts to develop an advanced understanding of incubation systems. Consequently, thanks to the project, those who have incubators can upgrade them and those who have not have the chance to set one up before the project ends, making use of the accumulated experience;
- the technology brokerage training was successful; this has resulted in numerous attempts in the four target countries at the sale abroad of various high-tech and lower-tech R & D results; however no breakthrough has been reported yet;
- benchmarking was successful in generating the required know-how which now can be put to use by ascertaining actual top-of-the-field technology parameters (benchmarks) in selected industries. Large efforts will be required to actually disseminate the system throughout those industries;
- All efforts at setting-up a seed capital and/or start-up fund have been unsuccessful. This can hardly be called a weakness of the project itself; the political and economic environment is simply not conducive. On the other hand, project management should have realised this much earlier and should have refrained from investing project funds into this component;
- plans for science park development are slowly taking shape in the Czech Republic and it would be desirable to support them during the concluding stage of the project;
- the R & D data base in Poland has reached an advanced stage and can serve, also in the other three countries, the manifold needs of linking the R & D community with the market.

Additional comments:

- The project has greatly contributed to networking. What is lacking is the network of the four counterparts in the four target countries – with

some exceptions (like CR and SK) they have not been helped by the project to institutionalise meaningful connections among themselves.

- The four principal counterparts (for Hungary: Innostart) represent good partners to UNIDO for the remainder of the project. They all have specialised management, know-how, technology, and infrastructure available.
- On the other hand, these counterparts are looking to UNIDO for guidance and over-all management which they are not always getting.
- Initially, UNIDO was aiming at setting up Steering Committees for the project in each of the four countries. They may have been set up, but there is no evidence that they have been seriously involved in decision-making. It is strongly advised that for the remainder of the project, local Steering or Supervisory Committees be installed, who will take "ownership" of the project. This will certainly enhance the chances for project sustainability. It is a pity that UNIDO never defined any suggested duties/terms of reference for these steering committees (while taking care to avoid any bureaucracy), and even allowed those steering committees once formed to decay. The idea of Steering Committees was strongly present in the project from the beginning so there is no doubt these committees would have enough to do and would be useful. One meaningful activity for these committees would be that originally undertaken by the Polish steering committee – selection of candidates for incubators. Another activity is establishing links from R&D to business, e.g., by liaison with Business Chambers. Yet another is simply to supervise the progress of work of the respective national counterpart institutions. Yet another is to seek links with other projects which might generate synergies.
- Young people are involved in all the counterpart organisations. Their enthusiasm can be put to good use during the last year of project implementation. They should also be given an opportunity to meet each other.

As regards the assessment of the rate of progress of project implementation, the PPR of July, 1998 [10] admits the four countries are moving ahead at a different pace but gives an over-all assessment describing the implementation to-date as "highly satisfactory, more than planned". The Evaluators do not share this opinion at all. For most of the time, implementation lagged behind schedule, and only few of the planned outputs were ever produced (cf. above).

Another problem is that the counterparts often are not fully aware of the multiplicative potential of their respective outputs. For instance, they are not enthusiastic about the need for synergy and standardisation of their respective data bases, to ensure their compatibility. For instance, the Czechs are happy with their own data base on research (structured according to an UK model). Neither do they feel the need to adopt benchmarking as produced by SK. They even have not had much opportunity of sharing their experience in technology brokerage which is their common activity albeit conducted under country-specific circumstances.

4.2. Effectiveness and Impact

Even if the quality of inputs and outputs would have been impeccable, there is still the question to what extent they have actually been used to further the wider and the specific objectives of the project. In other words: what did the recipient institutions in the four countries actually bring about with the new know-how and instruments acquired thanks to the project?

Enough has been said about the changes in project objectives and outputs. We have assessed the effectiveness and impact of the project until now against the background of the redefined objectives/outputs during its second phase.

In terms of effectiveness,

- the creation of new high-tech companies again has to be discounted;
- the existing incubation systems appear to have been moderately effective, with a number of companies "graduating" from the incubators in the sense of not having failed during a (mostly) three-year incubation period;
- technology brokerage while most promising was less effective mainly because out of the eight TB trainees who received assistance from the project, four left the system for good and are not known to have transmitted their experience, and even those who continue within the TBUs would definitely benefit from more training and additional exposure to successful systems or cases of technology brokerage before they can be regarded as accomplished technology brokers to whom researchers of repute would gladly entrust the handling of their most valuable inventions and findings;
- benchmarking is yet to be proven;
- seed fund is out as far as this project is concerned, except that should the final proposals of the four counterparts regarding the completion of the project be found incongruent and of little potential impact by UNIDO, one option would be for each of the four counterparts to do another round of screening of emergent RDI and to produce say 2-4 promising high-tech SMEs who could receive seed capital assistance of say USD 10-30 thousand apiece; this would turn the scale in the sense that the moderately successful results of the project would receive no further assistance to make them more successful but the totally failed result – seed capital – would be made entirely successful;
- data base of R & D is yet to be proven.

In terms of impact, all the project outputs ought to translate into what is yet to be achieved: the creation in the target countries of new high-tech companies linked to the activities of the counterpart organisations. In this context,

- incubation systems are a recognised means toward this end but not even the five years of project implementation is a period long enough to allow for unequivocal statements about impact
- technology brokerage is an activity of which the impact is ultimately measured by the number and scope of deals made and technologies successfully brokered; however the commercialisation of projects and

technology transfer will always be time consuming and risky; the relatively successful TB cases included Krystalik tiles and vibrational technology from CZ, fine chemicals and boats from Poland, and Alkimia from Hungary [47] but no clear-cut success stories have been demonstrated; most of what has been said referred to the future

- benchmarking is yet to produce an impact (*cf*. the next Section)
- seed fund is out due to a variety of negative circumstances, not the same in all the four countries; this is a pity because money of course is what the emergent high-tech companies need most
- data base of R & D is a tool which so far appears to have had more response in the R & D circles while entrepreneurial interest was lacking; yet both are needed if the purpose of the data base is to connect the two.

In terms of the structure "services provided - staffing -methodologies in place - equipment -software/databases - premises - users", our assessment of the quality of capacities developed by the project is as follows:

- the range of services now being provided by the counterpart organisations especially for the R & D community has been greatly expanded thanks to the project and the services probably are of higher quality;
- in terms of staffing the project has been less successful because many of those who received training under the project have left the system;
- as to methodologies, the counterparts now are better able to formulate project proposals (and assist others in doing this) and have become better technology brokers thanks to their UNIDO experience; as a project spin-off, in case of Slovakia, a new benchmarking methodology is in place;
- the project has brought no equipment and hardly any software or new databases (the Polish database development even though assisted by the project is one of the core activities of the Polish counterpart anyway, even without the project)
- no new premises were established and, indeed, those partners who did not operate any incubators before the project are not operating any now;
- making the project outputs attractive to users is of critical importance for turning the project from an UNIDO-driven to a demand-driven one.

It transpires from interviews with some of the clients of the counterpart organisations that even though no new high-tech companies sprung up as a direct result of the project, incubation certainly appears to have made things easier for the spin-off companies struggling to make a success out of their innovative work.

One impact albeit difficult to measure is the enhanced status the counterpart organisations enjoy thanks to their participation in the project. This has translated into their increased involvement in other projects and in making them more known in their own R & D and entrepreneurial communities.

4.3. Sustainability

In terms of sustainability,

- the creation of new high-tech companies cannot be assessed as it did not materialise
- incubation systems and, especially, "physical" business incubators will always need support
- technology brokerage will survive; it is seen as so important by all counterparts that they will continue funding this activity (and continue finding new sources of support) and eventually may even develop into a profitable segment
- benchmarking at the moment is supply driven; if the planned activities (especially, collection of hard benchmarking data) proceed smoothly enough and clients can be persuaded that benchmarking is what they need to penetrate the EU market, the activity will become demand driven and quite successful
- seed fund is a category where sustainability does not enter
- science parks are very much like incubators unless dominated by successful high-tech but routine operations
- data base of R & D is like benchmarking in that it has yet to produce its clients, not speaking of the generally negative attitude of researchers and entrepreneurs alike toward paying for science information; consequently, its sustainability is doubtful at best.

At the end of the project, what will remain within the counterpart organisations will be incubation and TB expertise; improved networking; and possibly benchmarking and data base know-how. To a varying degree they can still use the potential of the TB trainees. All of them have benefited by having learned much about international bidding, projects and proposals, and the over-all situation on the international consultancy market.

The organisations as a rule can closely estimate what it would cost to continue the project by themselves. They can hope for other sources of support thanks to involvement mainly in their respective government programs and in EU programs but none of the organisations has yet been able to specifically pinpoint and confirm these sources.

Whether or not the counterpart organisations will be able to continue the project activities after completion of the project will largely depend on getting their message across to their clients. As concerns potentially profitable services such as TB brokerage, their success will depend on finding at least some clients who can afford to pay for the services. This in turn would be greatly helped by the organisations being able to demonstrate real TB success stories.

In short, what is of paramount importance for sustainability is to turn this largely supply driven project into attractive packages of professional, demand driven activities.

5. Plans for the Future

The counterparts in the four countries have presented to UNIDO their proposals for activities during the remainder of the project. Although not strictly belonging to their assignment, the evaluators have on UNIDO's request studied the proposals in order to assess to which extent they may lead to realisation of the project objectives. The main features of each proposal are summarised and commented on below.

Regarding the latest country proposals it is desirable in this context that they all should acknowledge a common development objective and quote at least one of the common immediate objectives. Then the aggregated work plan to be prepared by UNIDO could incorporate

- one common formulation of the development and immediate objectives
- interrelated country-specific indicators and outputs
- major activities for every output.

The common work plan should constitute the backbone of all the four potential sub-contracts. There should be a provision in at least one of the four country proposals (and subsequent sub-contracts) for a dissemination/sharing of outputs (and of general project related experience) among all the four counterparts. There should be a concluding workshop at the crest of this output sharing activity, with UNIDO participation.

5.1. Czech Republic

The Technology Centre of the Czech Academy of Sciences has presented a "Proposal for Activities Executed under the Project US/RER/95/145-etc. in the Czech Republic in the Final Phase of the Project". It comprises three sets of activities namely (1) Final Development of the TBU, (2) Expansion of the High Tech Incubator and Preparation of a Science Park and (3) Initiation of a Seed Capital Fund. The details of these activities are summarised below.

A. Technology Brokerage Unit

- further identification and assessment of technology transfer opportunities in SMEs and Academy Institutes
- production of a strategy for on-going co-operation with Zernike
- assessing the possibilities for expansion of TB activities in Academy of Sciences
- organisation of a seminar on technology transfer and technology marketing for SMEs and research organisations
- organisation of a four country technology brokerage event for a selected sector
- creation of an Internet site for promotion of technology transfer
- development of four country co-operation projects on technology development

B. Incubator Expansion and Science Park Development

- execution of a feasibility study
- staff training in Science Park operation and mnagement

- purchase of equipment for the Incubator

C. Seed Capital Fund

- training of new staff in project assessment and equity financing techniques
- market analysis concerning start-ups suitable for equity financing
- identification and selection of 3 pilot start-ups
- investment into 3 pilot projects, including monitoring

Clearly, the proposal addresses a number of issues that are highly relevant for the present project and if successful, it will deliver a substantial contribution to the realisation of the original project objectives. However, it is also rather ambitious in its stated outputs and at the same time lacks operational details that would clarify how the activities will be executed and who will deliver the expertise. The following critical remarks can be made:

1. The proposal promises a mix of quantitative and qualitative outputs (end products). Only few of them are stated in such a way that their realisation can be effectively measured. Examples: how to measure "better efficiency of technology brokerage", or "establishment of a system for TT in the Academy", or the results of staff training in Science Park operation and Equity Financing Techniques?
2. After a long period without any progress or result, the Seed Capital activity is now being re-introduced. The reason for this seems to be, that the Czech Government finally decided to support some form of start-up financing facility. The TC asks UNIDO to cover the costs of new staff, whilst at the same time the Czech Government is planning to co-finance such a team. The present proposal does not clarify in what way the UNIDO project and the Czech Government project will be connected. It seems to us, that without a clear and formal connection the UNIDO part will have difficulties to succeed.
3. The proposal suggests training courses in the field of Science Park Management and Equity Financing. Both are very specialised activities, for which it will be hard to find qualified trainers in the Czech Republic. More information is needed before any decisions can be made.
4. It is unclear whether the TC intends to use project funds for direct investments into the planned pilot start-ups. In our opinion, the available budgets are too small to engage in such activities.
5. The planned activity for the electronic technology market on Internet seems very similar to the database developments in Poland. Yet, the proposal does not make any reference to the Polish database, which may imply that the TC is not planning to use the know-how already developed under the project.

Our recommendations for dealing with this project proposal are the following:

- There is a possibility that the combination of project proposals from the four countries will exceed the available budget. If that is the case, we recommend to give the lowest priority to the Seed Capital Facility, given the outcomes in the past.
- Diminish the number of individual activities listed under the

Technology Brokerage Unit by combining some of them and deleting those that cannot be quantified in terms of outputs. This would mean: (a) more substantial contacts with Zernike, on specific projects, (b) combination of the joint TB event and exchange of (fifth framework) project opportunities, with final result one or two concrete proposals, (c) no activities to expand TB activities in the Academy unless clear output results can be predicted.

- Make a detailed description of the training activity for the Science Park Managers, including the persons to be trained, the relation with the present science park staff of the TC (already previously financed by UNIDO), the contents and duration of the training, and the experts providing the inputs.
- Delete the (very costly) Seed Fund activities unless there is a formal statement from the Czech Government concerning the role of TC and the combination of government funding and UNIDO funding for staff, investments and management.
- If the Seed Fund activity is to be maintained, make sure that there is a detailed description of the training course (see remarks for Science Park training).

5.2. Hungary

The latest Hungarian proposal [30] aims at (1) Setting up a TBU in Budapest and (2) Creating a new High Tech Business Incubator in Budapest. The detail activities are described below.

A. Technology Brokerage Unit in Budapest
   - formal establishment of the TBU
   - training of staff in TB skills
   - external advice to Innostart TT staff on commercialisation procedures
   - identification of SME needs for new technology
   - collecting documentation on TT and TB projects
   - TT information days for at least 50 SMEs
   - development of database of technology offers and requests
   - atching offers and requests
   - networking with SK, PL, CR

B. High Tech Incubator in Innostart Building
   - business plan for new incubator (5 firms, 20 staff)
   - result sharing seminar with SK, PL, CR, UNIDO

Basically, the Hungarian proposal aims at rescuing the project for their country. It reiterates the set-up of a TBU, and furthermore envisages the establishment of a high tech incubator under the roof of the present Innovation Park that is operated by Innostart. If this works out, some of the basic objectives of the original project will actually be realised.
Innostart is well equipped to perform the tasks of the project. The proposal presented shows that they know what they are talking about. Still, there are some critical remarks:

1. There is no explicit provision for co-operation with the Academy of

Sciences, or with other scientific institutions. Given the original and still prevailing objectives of the UNIDO project, such provisions should be made.

2. The proposal requires (again) separate contracts to be made with foreign experts, for the provision of TBU, training of TBU personnel and assistance with introducing commercialisation procedures. Although we acknowledge that this expertise is needed, we fear that contracting procedures may lead to additional delays. Perhaps it is an idea to involve the skilled technology brokers from the other counterpart countries as experts?
3. Obviously, a person from Gyor will participate in the TBU training. However, the proposal does not give any clues as to what will be done with the training in the Gyor environment. In other words: why should UNIDO funding be used for the Gyor region, where no TBU activity seems to be planned?
4. There should be a more explicit statement concerning the differences that will occur thanks to the intended change from Innovation Park to High Tech Incubator. Will this only concern the type of client firms, or also the level and contents of the services to be provided by Innostart. Will the High Tech Incubator be a separate legal person, or part of the Innostart organisation? Etc.

Our recommendations for dealing with this proposal are the following:
Basically, the proposal is acceptable in its present format. It may be wise to go over the intended outputs once again, and define them more strictly. One of these outputs concerns the Technology Brokerage Unit itself. It may be all right that it will exist by the end of the project, but in what form, and what provisions will have to be made to make it sustainable in the long run? The same applies to the incubator: is the intended final result a business plan, or the actual facility?

5.3. Poland

OPI has launched a new proposal [70] in June, 2000, under the title "Establishment of a Technology Transfer System in Poland". It envisages two main lines of activity (see A. and B. below), with a series of sub-activities.

A. Set-up of a Technology Transfer Unit at OPI

- use and further development of the existing database "OFFER"
- installation of a promotion and marketing system
- installation of a database on financing possibilities for high-tech ventures
- set-up of a referral service to experts (consultants, lawyers etc)
- set-up of a monitoring system for high-tech ventures
-

B. Technology Transfer Development Forecast

- analysis of the world's best solutions for technology incubators
- analysis of failed attempts in Poland
- analysis of present and future state of science and technology
- forecast of technology transfer development in the Warsaw region
- analysis of financial sources for high tech ventures

- definition of organisational and legal framework for technology park

As a whole, the proposal well answers the requirements of the UNIDO project and at the same time, the needs of the Polish "technology market". A special strong element in it is its business orientation, in the sense that several products will be developed that may optimally suit the needs of (small and medium-sized) businesses, and that provisions are made to actively market these products.
On the other hand, there are some issues in the proposal that need clarification or down-right change, before it can be accepted for financing by UNIDO. These issues are given below.

1. Looking at the projected activities, the proposal seems much too ambitious. Many of the separate tasks mentioned in the tasks list are extremely time consuming and it must be feared that OPI will not be able to complete them all within the available time frame;
2. There is some confusion under the heading "Technology Transfer Development Forecast". In the first place this concerns the title as such: the activities focus on the development of a Science Park or a High-Tech Incubator, and forecasting of technological developments are only a small (and in our opinion irrelevant) part of that. Secondly, it is unclear whether OPI aims at setting up a Science and Technology Park or a High Tech Incubator. Both terms are being used alternatively, and at random.
3. The proposal lacks any reference to final outputs. It is unclear whether by the end of the project, there will be an incubator or technology park in Warsaw. Also, there should be an indication of numbers of firms assisted, numbers of technology transfer projects supported, etc. Furthermore, the proposal should give information on the final status of the Technology Transfer Unit (and the TBU) after project completion: how big will it be, will it be sustainable, which position will it have acquired in the Polish market environment, etc.
4. The presentation of the costs of the project is rather concise. There should be an indication of how costs will be divided over staff, external experts, investments, running costs, materials for promotion etc etc. It must be possible for UNIDO to measure and monitor the actual (financial) inputs promised by OPI.

Our recommendations for dealing with this proposal are the following:

- Maintain the activities listed under the heading "Technology Transfer Unit", with the exception of the Monitoring System (we doubt that there is any active demand for this service)
- Change the second heading in "Feasibility Study for a High Tech Incubator Operated by OPI" and delete Tasks 22 and 23.
- Introduce, together with OPI, a list of clear, quantifiable output indicators for the activities to perform
- Give special emphasis to the system of marketing, particularly aiming at successful introduction of the new unit (and the incubator?) to the business world.
- Assist OPI in making a more detailed breakdown of costs and own (financial) inputs, in order to facilitate financial monitoring

5.4. Slovakia

The latest Slovak proposal [71] titled "Establishment of a High-Tech Incubator" was received on June 20, 200. It also incorporates the added objective of encouraging the implementation by companies, within and outside the incubator, of the diagnostic modules developed by SK under the project.
The main objectives and activities of the project are stated below.

A. Implementation of a High Tech Incubator

- making a service package for the incubator, related to incubator consulting
- preparation of incubator premises (a.o. reconstruction)
- selection of start-ups a clients for the incubator (including making 10 business plans)
- international workshop on incubation, for the UNIDO project participants

B. Encouragement and dissemination of the new diagnostic methods to industrial SMEs

- data collection in tool making companies Netherlands
- data collection in wood processing companies (Austria, Italy, Finland)
- definition of international benchmarks and adjustment of methodology
- preparation of electronic version of benchmarking methodology
- training and dissemination

The Slovak proposal looks well-balanced and fits the objectives of the UNIDO project. Given the capacity available within BIC Bratislava, it seems no problem to realise all the objectives within the available time period. Our only remark concerns activity B: despite its title there are no tasks described that would include any other of the new methodologies than the benchmarking technique (e.g. Due Diligence).

Our recommendation for dealing with this proposal is, to transform it without substantial changes into Terms of Reference for BIC Bratislava.

6. Conclusions

In the preceding Chapters, detailed assessments have been given of each of the relevant aspects of the project. They will not be repeated here, but instead the most important conclusions to be drawn from the evaluation exercise will be highlighted.

The originally envisaged time schedule has by far not been maintained. On hindsight, this time schedule was somewhat optimistic for a vast and complex project like the present one. As such, there is no reason to negatively evaluate the longer duration, especially where the implementation phase is concerned.

Furthermore, there have been a number of external factors causing delays, that were beyond UNIDO's influence. Still, our assessment of project timing is not positive. Especially after the failure and delay of phase one, there was a need for speeding up the project, which was indeed done by issuing contracts to the four counterparts , to Zernike and to Boot. However, although there was ample time during 1998 for conceiving follow-up activities, practically nothing happened in 1999. This was particularly bad for the continuity of activities within the counterpart organisations and it was only thanks to their own initiatives that they –with the exception of Hungary- managed to uphold the project.

The original project design is generally assessed positively. It answered the general problem of re-positioning scientific research in the new political and economic reality. It also gave plenty of flexibility to make country-specific solutions.

The original objectives of the project are still very valid. They seek to realise involvement of science institutions in commercial application of research, which was and still is an underdeveloped issue in all four countries. Still, there are some flaws in the project design. It was too ambitious, did not take enough into account the traditional thinking at the Academies, and did not give enough measurable criteria for success.

We assess the involvement of local partners and their co-operation with foreign experts, as very positive. With the exception of Veszprem Regional Innovation Centre, they all have done much more than strictly required according to their contracts with UNIDO.

It is the impression of the evaluators that UNIDO's backstopping office did not have sufficient time to really concentrate on the management of the project. Much time and quality went unduly lost because of that.

Everything considered, the quality of inputs by Netherlands experts has been below acceptable levels. An exception is Zernike Group of Groningen, who have received positive evaluations of all parties concerned.

For most of the individual project components, the results are acceptable to very positive. Exceptions are the Seed Fund facility, and the Set-up of Investment Promotion Units within the Technology Centres. Both components

have not shown any results.

As for project management (executed by UNIDO's backstopping office), our assessment is that the co-ordination and leadership has been much below the level one would expect from a professional organisation as UNIDO. The partitioning of budgets, tasks, directions, time schedules and outputs has not contributed to the quality of the project.

7. Recommendations

Following the conclusions above, it may be clear that we recommend UNIDO to devote much more time to the management of the project. This especially concerns the need for frequent contacts with the counterparts in order to co-ordinate their activities, receive regular feed-back and ensure timely completion of the project. For possible other projects of this type, we recommend the appointment of a full-time field manager, with responsibility for day-to-day management of activities.

Formal proposals for project continuation were received from all four counterparts. It is recommended to extend the project duration in such a way that the counterparts will have 12 months available for the execution of the proposed activities.

Regardless of the contents of the proposals presented, there are several components in the project that appear to be difficult to realise. It is recommended to eliminate from the project the following outputs:

- Seed Capital
- Investment Promotion Units
- Science Park Development Plans for all four countries.

The other components should be maintained and it is recommended to add the following aspects to them:

- Marketing of the TBU's
- Strengthen the contacts with the business world (in order to introduce demand pull technology transfer)
- Creation of a cross-border Technology Brokers Network
- Sharing of experiences and outputs between countries.

It is furthermore recommended to have one contract for each of the counterparts, that will cover the entire period until project completion. Issuing small partial contracts has proven to delay progress and negatively influence performance.

Based on the experience gained during implementation, there appears to be a need for more personal contact (involving e.g., the TB trainees and their training organisation) for bridging quite a large gap which persists in the counterpart organisations in the areas of copyright awareness and know-how (patent protection, licensing). These items are recommended for further attention within the framework of future efforts at commercialisation of Eastern European RDI products.

UNIDO should arrange for strong assistance to the counterparts during the process of proposal preparation. A standard format is desirable, helping the counterparts to present all needed information and helping UNIDO to speed up the decision making and contracting process.

We strongly recommend to discontinue the co-operation with Veszprem Regional Innovation Centre, and promote the role of Innostart to that of counterpart.

Annex 1

Mid-term in-depth evaluation

Regional Programme for the Establishment of High-tech Incubation Systems at the Academies of Sciences in the Czech Republic, Hungary, Poland and Slovakia

US/RER/95/145

TERMS OF REFERENCE

1. THE PROJECT

Historical background

The project was designed as a follow up to project SI/CZE/92/803 through which a high-tech incubator was established in the Czech Republic at the Institute of Chemical Process Fundamentals of the Academy of Sciences. In order to make use of the experience, to develop it further and apply it in other countries the current regional programme was prepared and approved in 1995. Although regional, the project is in fact composed of four national components with strong orientation to exchange of experiences.

The project intended to support transformation of Academies of Science in four countries. These highly esteemed and sheltered centers of pure science undergo restructuring, build links for commercialization of research and take steps towards development of applied research facilities.

Original **Development Objective**:

Creation of high-tech enterprises utilizing know-how generated at research institutions at national level.

Original **Immediate Objectives** (purpose) and **Outputs**::

Phase 1:

To develop country concepts with all the necessary elements to establish high-tech business incubation systems at the Academies of Sciences

Output 1: An interim report (for each country)
Output 2: Two high-level officials (per country) apprised of experiences in other countries
Output 3: Detailed implementation proposals

Phase 2:

To establish one high-tech incubation system at each of the Academies of Sciences

Output 1: One business incubation facility with five functioning enterprises at each Academy (in the Czech Republic a multi-site facility with 20 enterprises)
Output 2:One pilot system (in each country) for product development from R&D activities (including creation of a revolving fund and information system)
Output 3:A plan (in each country) for extension into Science Park

Original **counterparts**: Institutes, organizations or departments of Academies of Sciences:

The Czech Republic: The Technology Centre linked to the Institute of Chemical Process Fundamentals
Hungary: Research Institute of Chemical Engineering
Poland: an agency at the Centre for Science Advancement
Slovakia: a department of the Academy of Sciences

Budget (excluding support costs): USD 1,135,639 (Original budget: USD 1,397,000)
Expenditures (as of 31.11.1999): USD 518,344
Planned duration: 10 months Phase 1; 18 months Phase 2
Estimated completion: December 2000

Current status:

Implementation started in July 199, with some tasks subcontracted to the Twente University and later to the Zernike Group in the Netherlands. Phase 1 was completed in 1997. In the course of implementation some counterparts changed and some outputs for Phase 2 were amended.

Change of counterparts:

Hungary: INNOSTART National Business and Innovation Centre and Veszprem Regional Innovation Centre
Poland: Information Processing Centre, supervised by the State Committee for Scientific Research
Slovakia: BIC Group

Outputs of the Phase 2 as amended in 1997:

- Establishment of one or more Technology Brokerage Units (TBU) in each country
- Establishment of a seed and start up fund
- Creation of high-tech enterprises

In 1998, in close collaboration with the counterparts (to reflect development in individual countries), the above outputs were augmented as follows:

- Creation of uniform computerized database on research institutes, research being conducted and researchers involved (Poland)
- Benchmarking (Slovakia)
- Establishment of Investment Promotion Units within Technology Centres (Czech republic, Poland, Slovakia) with linkages to existing UNIDO Investment and Technology Promotion Services where applicable (Poland).

A meeting of the counterparts in August 1999 took stock of the current status in each country (information available at UNIDO). Proposals for the remaining part of the project as suggested by each counterpart are under consideration.

2. THE IN-DEPTH EVALUATION

2.1 Purpose, scope and method

2.1.1 Purpose

The purpose of this joint in-depth evaluation is to enable UNIDO, the donor and other project stakeholders, in particular the clients supported by the project, to take decisions on the orientation of the project in the remaining period and to learn lessons from experience for designing similar projects in the future.

The evaluation is conducted in compliance with UNIDO policy of mandatory evaluation of large technical cooperation projects and is foreseen in the project document.

2.1.2 Scope

In-depth evaluation is an activity in the project cycle which attempts to determine as systematically and objectively as possible the relevance, efficiency, effectiveness, impact and sustainability of the project. The evaluation will assess the achievements of the project against its objectives, including a re-examination of the relevance of the objectives and of the project design. It will also assess to what degree the assumptions/risks as identified in the project document held true/occurred and identify other factors that have facilitated or impeded the achievement of the objectives.

In particular the evaluation will address the following issues:

Relevance

- To what degree are the objectives and outputs specified in the project document still relevant?
- Were changes of counterparts justified and rational?
- Are the modifications of objectives and outputs and different strategies applied by the partner countries well justified?
- Is any of the strategies applied by the partners more relevant than the other ones?
- Has the project played a catalytic role?

Efficiency

- Were UNIDO inputs delivered in the desirable structure, quality and on time? For example, were the study tours, training, subcontracts and expert advice useful and of good professional standard?
- Have the inputs been used by the clients (=counterparts) in an efficient and cost-effective way? For example, are the people trained under the project still with the partner organizations supported by the project?
- Has the project been properly managed and monitored? Have Advisory Committees or other steering bodies been established at national level and functioning?

Effectiveness

- Which outputs have been produced/to what degree?
- To what degree/how much have the outputs/developed capabilities been used by the target beneficiaries (research institutes, research workers, SMEs...)
- How many high-tech enterprises have been created?
- How many contracts on transfer of technology have been concluded?

Impact

- What has been the economic impact of the high-tech enterprises created by the programme?
- Have other target beneficiaries (for example companies using TBUs) achieved any tangible results (new/increased production, sales, employment, reduced pollution, etc.)?

Sustainability

- Can the organizational units strengthened by the project sustain their activities on their own? (Are the staff sufficiently qualified? Are the methodologies, procedures and working practices well established and documented? Do they have a critical mass of clients/market? Are the units recognized enough to tap Governments and other (e.g.EU) funds?
- Are the host organizations supportive of the units strengthened by the project?

The evaluation will cover all four countries in which the project was implemented (the Czech Republic, Hungary, Poland, Slovakia).

2.1.3 Method

- Studying documentation provided in advance by the Project Manager
- briefing by the UNIDO Project Manager and Office of Internal Oversight (ODG/OIO) - reviewing files at UNIDO Hqs
- interviews of UNIDO staff associated with the project
- visit to project sites and interviews of project staff in the counterpart organizations
- interviews of supervisors in the counterpart/host organization
- interviews of target beneficiaries (sample of users of the developed services)
- interviews of organizations cooperating/networking with the counterpart organization
- drafting the report
- soliciting comments by stakeholders
- finalizing the report

The programme of visits in each country will be prepared by the counterpart organization.

Although the mission should feel free to discuss with the authorities concerned all matters relevant to its assignment, it is not authorized to make any commitment on behalf of UNIDO or a donor.

2.2 Composition of the evaluation team

The evaluation team will be composed of the following:

One nominee of the donor (a consultant with background in transfer of technology/business incubators)
One nominee of UNIDO (a consultant with background in R&D)

These members of the evaluation team should not have been directly involved in the designing or implementation of the programme/project.

2.3 Timetable and report

The evaluation is to be conducted as soon as possible; end of February or early March seem realistic but actual dates will have to be agreed upon with consideration of the availability of the consultants.

The evaluation team will spend two full days at UNIDO (briefing and reading of reports), two weeks visiting projects in the four countries and two days for debriefing and presentation of findings at UNIDO. Prior to coming to Vienna the consultant nominated by the donor will visit the Zernike Group, Groningen (the key subcontractor). The sequence of visits in the four countries will be elaborated in consultation with the evaluation team.

The evaluation report should follow a standard structure. In order to ensure that the report considers the views of the parties concerned and is properly understood and followed up by them it is required that the main findings, conclusions and recommendations are presented to and discussed with the Project Manager, other staff concerned with the programme or project and the representative of donor at the above mentioned presentation to be organized at UNIDO Headquarters after the mission.

As the report is the product of an independent team acting in their personal capacities, it is up to that team to make use of the comments made by the parties involved and to reflect them in the final report. However, the evaluation team is responsible for reflecting any factual corrections brought to their attention prior to the finalization of the report.

The final report is to be submitted in two hard copies and the full text on a diskette (in WordPerfect or Word)) to UNIDO two weeks after the completion of the field mission at the latest.

Annex 2. Organisations visited and persons met

Organisations visited

Akademia vied Slovenskej republiky (Slovak Academy of Sciences), Stefanikova 49, SK-81438 Bratislava, Slovak Republic, phone +421-7-495634, fax +421-7-396849, Dr DuSan Kovac [Scientific Secretary]

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Persons met

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