



**Review of the IDA's Research and Development
Capability Grants Scheme**

Final Report

9 May 2003





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Particular thanks are due to Ray Bowe (Planning Division, IDA) for his patience in responding to our many requests for information, as well as for his full and frank comments on the design and operation of the Scheme during our discussions, and to Michael Fitzgibbon and his colleagues in the Evaluation and Indicators Department of Forfás for their overall guidance on the conduct of the review.

1 Summary

The IDA R&D Capability Grants Scheme provides grants to companies towards the cost of establishing a major R&D operation in Ireland or of substantially expanding an existing R&D function. By this means it aims to enhance the long-term competitiveness of the companies and the strategic importance of their Irish operations. It is only available to firms already operating in Ireland.

The key findings from this early-stage review of the Scheme are:

- The Scheme is a major plank of the national strategy to raise substantially the level of business investment in R&D.
- Since its introduction in 2000, initially via a pilot programme, 31 companies have received funding for research projects. A total of €147.7m has been committed to these projects, €109.5m (74%) by the firms themselves and €38.2m (26%) in the form of grants.
- The projects supported by the Scheme have been both technically challenging and strategic in nature, taking the local company into new areas of technology and expertise.
- All of the 13 companies interviewed during the review emphasised the importance of the Scheme, in their interaction with company headquarters, in persuading senior management that Ireland is becoming a serious location for undertaking research and that the Irish Government is committed to a policy of raising national R&D levels. They stressed the key role of these factors in achieving corporate decisions in favour of locating the R&D projects in Ireland in the face of competition from other company sites.
- The full impact of these projects on the development of the companies involved, and therefore the Scheme's benefits to the national economy, will only emerge after a minimum of four to five years from the time of project approval. The early evidence from this review, however, suggests that the projects supported to date will, in due course, yield substantial positive impacts and benefits. The Scheme is therefore on course to meet its objectives.
- Nevertheless, based on indications to date, the Scheme is considered to be excellent use of State money. For example, participating companies are contributing 74% of the R&D costs themselves, from which additional tax revenues will accrue. In addition, the companies are increasing their R&D staffing levels, resulting in more jobs and/or higher added value employment.

The key recommendation is that the Scheme should be continued and promoted aggressively with the aim of expanding considerably the number of firms involved, while maintaining rigorous technical assessments to ensure that project quality remains high.

The Scheme has two core objectives namely:

- Moving Irish subsidiaries of multinational companies up the value chain.
- Increasing the embeddedness of these companies.

These objectives are appropriate but long-term. They should be supplemented with an intermediate one, reflecting the mechanism for achieving the core objectives:

- Developing a substantial, and sustained, enhancement of the R&D activities in Irish subsidiaries of multinational companies.

This review covers the period from mid-2000 to end December 2002. It was commissioned by the Science and Technology Evaluation Unit in Forfás at the request of the Department of Enterprise, Trade and Employment.

By the end of 2002, 35 proposals had been submitted for approval. Of these, 31 were successful, 3 were deferred pending the provision of additional information and one was rejected.

The main elements of the review methodology were:

- Analysing the computer-based data on the Scheme maintained by the IDA;
- Examining all available documentation on the Scheme including the 35 proposals so far submitted for approval; and
- Carrying out 37 interviews with a wide range of people involved with the Scheme, including 13 companies.

The review makes a number of detailed operational recommendations for adjustments to various aspects of the Scheme's procedures. These aim to enhance its efficiency and effectiveness, and thereby its eventual impacts.

2 Introduction

In response to a request from the Department of Enterprise, Trade and Employment (DETE), Forfás commissioned a review of the R&D Capability Grants Scheme operated by IDA Ireland.

This Scheme provides grant aid to the Irish subsidiaries of overseas-based companies for the establishment of major new facilities for research and development, or for the substantial expansion of existing facilities¹. The overall aims of the Scheme are to move such firms up the value chain and to increase the extent of their embeddedness in Ireland.

The Scheme has been in operation for nearly three years (with the initial year being on a pilot basis) and, to date, grants have been approved for approximately 35 projects. The maximum grant rates are 35% of total project costs for companies in the 'Objective 1' region, i.e. the Border, Midlands and West (BMW) areas, and 30% elsewhere.

The full Terms of Reference for the review are presented in Annex A. In summary, however, its key objectives are:

- To establish the suitability of the Scheme's objectives and the extent to which they are being met.
- To examine the Scheme's operating methods, particularly for the selection of projects and their subsequent monitoring, as to their appropriateness for ensuring good value for money.
- To develop a set of indicators that can be used to monitor the Scheme's performance, its outcomes and impacts.

This document presents our Final Report of the review. It is laid out in a number of Chapters, as follows:

- **Chapter 3** presents the methodology employed to carry out the review.
- **Chapter 4** describes the Scheme – how it came into being and how it is operated by IDA.
- **Chapter 5** provides our analysis of data on the Scheme.
- **Chapter 6** reports the results of our documentation review, encompassing both the Scheme in general and the proposal files.

¹ The R&D Capability Grants Scheme is also operated by Enterprise Ireland (EI) for indigenous companies, with a strong (but not exclusive) focus on new, high technology companies. EI's operation of the Scheme is outside the remit of this review.

- **Chapter 7** presents the findings from our interviews with companies, Project Executives, Technical Assessors and other relevant individuals.
- **Chapter 8** discusses the findings arising from the data analysis and interviews.
- **Chapter 9** presents our conclusions.
- **Chapter 10** lists our recommendations, including proposed indicators.

3 Review Methodology

The Terms of Reference specify a methodology for the review. It has the following three core elements:

- (a) reviewing all available documentation and data on the Scheme in general and on the proposals and projects;
- (b) interviewing a selection of those involved in the Scheme's operation;
- (c) interviewing a sample of the participant companies.

Our methodology followed this approach, with the various broad areas split down into a series of more specific tasks, listed below, aimed at identifying and analysing the key issues, and thereby producing a report that addresses fully the Terms of Reference.

- Reviewing existing information & data on the Scheme in general.
- Reading and assessing all 35 project files.
- Interviewing eleven Project Executives.
- Interviewing the Technical Assessment Co-ordinator and three Technical Assessors.
- Interviewing four members of the Scheme's approval bodies (one current member of the IDA Board and one from the recent past, plus two members of the Agency's Management Investment Committee).
- Interviewing thirteen companies (twelve with projects approved under the Scheme and one whose proposal was deferred).
- Interviewing five other key informants involved with the Scheme in various ways.
- Analysing all information obtained to identify the conclusions and form tentative recommendations.
- Holding a half-day workshop (in March 2003) with key individuals involved in the Scheme to discuss the practicality of our tentative recommendations.
- Preparing our final report.

The outcomes of these tasks are described in the Chapters which follow.

4 Scheme Description

In this Chapter we provide an overview of the Scheme. We start by giving a brief description of how the Scheme came into being as part of the current National Development Plan. We then go on to describe in detail the way in which it is being implemented by IDA Ireland.

4.1 What is the R&D Capability Grants Scheme?

The origins of this Scheme date back to Ireland's Industrial Development Act of 1986. This Act provides the current legal basis for the provision of publicly funded grants to companies in support of their research and development costs. Since then there has been a succession of initiatives for grant aiding industrial R&D, namely the Product and Process Development Grants Scheme, 'Measure 6', 'Measure 1' and the Research, Technology and Innovation (RTI) programme. The current manifestation of this series is the Research, Technological Development and Innovation (RTDI)¹ initiative.

All of these initiatives were/are geared towards providing grant support towards the cost of individual R&D projects, for either new or existing R&D performers, in indigenous or foreign-owned companies. They were not specifically aimed at the development of new or substantially expanded R&D facilities, although this might be a desirable side benefit in some cases (particularly for companies not previously involved in R&D).

In contrast to RTDI and its predecessors, the R&D Capability Grants Scheme is very much targeted at developing new or enhanced facilities for R&D. To this end it can grant aid substantial capital costs for buildings and equipment, unlike the initiatives mentioned above which primarily grant aid the marginal costs involved in undertaking one or more specific R&D projects. Under current legislation, however, the overall R&D facility development project must include at least one specific R&D project.

There are two other legal requirements that are relevant to the Scheme². Firstly, there must be an expectation that any products developed with grant aid from the Scheme will be manufactured in Ireland. Secondly, all grants over €508k must be approved by Government. This contrasts with other grants provided by IDA, e.g. for capital and employment, where the IDA Board has delegated powers to approve grants up to €1.9m.

The R&D Capability Grants Scheme was introduced in 2000 under the current National Development Plan (NDP) as, indeed, was the RTDI initiative mentioned

¹ This scheme is still widely referred to as 'RTI', particularly within IDA Ireland.

² These also apply to RTDI, since it operates under the same legislation.

above. The section of the NDP that deals with foreign direct investment¹ includes two objectives that are relevant to the Scheme:

- *“Increase job quality.”*
- *“Increase foreign-owned companies’ embeddedness in the economy.”*

It also lists several actions that will be taken for such companies. The Scheme is a key component of one of these, namely:

- *“Focus on getting existing clients to move up the value chain to produce more sophisticated products, to acquire more strategic importance to the multinational corporation, or to add skill-intensive functions to their existing operations.”*

Elsewhere² the NDP describes the Scheme as follows:

- *“The Scheme will be used to assist existing companies to add higher order functions to their operations in terms of their capability and strategic importance, and will therefore form a central and important role in delivering on the embedding and sectoral programmes, as a horizontal aid.”*

The Scheme is financed entirely from the national exchequer, unlike RTDI which is part-funded by the European Union. Nevertheless it is constrained by EU rules on so-called ‘horizontal’ State Aids. These impose limits on the percentage of the total project costs that can be grant aided, which are further restricted by internal IDA policy to the following:

- 35% maximum for companies in the Border, Midlands and West (BMW) region³.
- 30% maximum for companies in the South and East (S&E) region⁴.

The R&D Capability Grants Scheme is implemented by both IDA and Enterprise Ireland (EI) for their respective clients. In this report we are concerned only with IDA’s implementation but occasionally, where relevant, we make comparisons with EI’s implementation.

4.2 IDA’s implementation of the Scheme

The IDA launched the Scheme in Summer 2000, initially as a twelve month pilot with the maximum grant set at £1m (€1.27m). Following an in-house review of the pilot a

¹ “Ireland – National Development Plan 2000-2006 – Productive Sector Operational Programme”, section 2.1.2, pages 35-37.

² Ibid, section 3.1.2, page 68.

³ The BMW region is that part of the country that currently retains ‘Objective 1’ status for EU Structural Funding purposes. It consists of 16 counties: Donegal, Leitrim, Sligo, Cavan, Monaghan, Louth, Laois, Offaly, Westmeath, Longford, Galway, Roscommon and Mayo.

⁴ The S&E region encompasses the remainder of the country. It is classed for EU Structural Funding purposes as ‘Objective 1 in Transition’.

year later, the IDA Board authorised the continuation and expansion of the Scheme, with removal of the grant maximum. Minor adjustments to the Scheme were also made at this time, based on the experience gained during the pilot phase, and revised Guidelines for Project Executives was produced, see Annex B. Also developed was a Client Guide to the Scheme. It is only in recent months, however, that it has become normal practice to provide this to potential participants. This Client Guide has been refined and updated periodically. The current version is shown in Annex C.

The Scheme was further refined in Summer 2002 by the development of a framework for determining the appropriate level of grant aid, depending on the characteristics of the proposed project, see Annex D.

The objectives of the Scheme are essentially those expressed in the National Development Plan, referred to above. They can be summarised as:

- To move Irish subsidiaries of multinational companies up the value chain.
- To increase the embeddedness in Ireland of these subsidiaries.

The Scheme is available only to subsidiaries of multinationals already operating in Ireland, not to new inward investment companies¹. It is open to both large and small companies, whether or not they are existing R&D performers. In the case of companies already involved in R&D, the project must involve a substantial enhancement of their current R&D functions.

Currently there are about 900 multinational subsidiaries in Ireland (excluding those in the International Financial Services Centre, for which the Scheme has little relevance). Each IDA Project Executive (PE) involved with the development of existing subsidiaries has a portfolio of a dozen or so of these companies, typically a mix of those considered to have higher and lower development potential.

These PEs visit each company in their portfolio at least once per year, and commonly more often, to discuss their current operations and future plans. In this way they identify individual companies for which the Scheme might be appropriate, and tell them about it. In cases where the Scheme seems to be potentially relevant the company is provided with a copy of the Client Guide to the Scheme and invited to submit a relatively short (5 pages) Company Application Form. A copy of this Form is presented in Annex E.

¹ This is because the Scheme is being operated as a 'Horizontal Aid' and, under the EU's guidelines, cannot be used to attract new mobile investments. Such investments would be subject to EU 'Regional Aid' guidelines, which impose greater restrictions on the allowable grant rate in non 'Objective 1' regions.

The reason IDA gives for adopting this one-to-one approach, as opposed to the more widespread promotion employed by Enterprise Ireland¹, is to avoid an influx of applications for projects that are inappropriate for the Scheme, which would waste time for both the companies and the Agency. Furthermore, the rejection of such an application might damage its relationship with the company.

Following submission of the Company Application Form, further discussions are held between the Project Executive and the company to refine the proposal. During this process further information is sought from the company. This covers aspects such as the fit of the proposed activity with their overall development strategy, the particulars of the specific R&D project(s) including their costs, and more detailed breakdowns of the general financial information provided in the Company Application Form.

During the discussions with the company, either before or after submission of the Company Application Form, it may become evident that the RTDI programme is more appropriate to the planned activity, in which case the company is re-directed to that scheme. Alternatively it may emerge that the company's plans are not appropriate to either scheme at present, in which case the proposal is not pursued.

As part of the proposal development process, the company will obtain corporate approval of their plan and its funding. This contrasts with Enterprise Ireland's implementation of the Scheme, where no such need exists. Also during the proposal development process, 'milestones' on the planned overall activity and on the specific R&D projects are established and agreed. If the proposal is approved, these will be used later to approve drawdowns of the grant. The information collected by the Project Executive during these discussions is assembled into a proposal document for submission to the relevant approving body (see below).

Following completion of the proposal, IDA requests Enterprise Ireland to arrange for a technical assessment². They appoint a Technical Assessor (TA) with expertise in the technology of the proposed activity³. This TA then pays one or more visits to the company to discuss the proposal, with the main focus being on the specific R&D project(s). This involves further breakdowns by the company of financial information, particularly regarding details of all planned expenditures, including staffing costs, on the specific R&D project(s). After visiting the company, the TA compiles a technical assessment report, following a standard format, see Annex F.

¹ In addition to promoting the Scheme directly to relevant companies through its Development Advisors, Enterprise Ireland has a brochure that it distributes to client companies describing the Scheme and other initiatives for supporting industrial innovation. It also provides information on the Scheme on its web site. IDA does neither of these.

² This request is handled by Enterprise Ireland's Technical Assessment Unit. This Unit also deals with all technical assessments under EI's implementation of the Scheme, and of RTDI proposals arising from any of the industrial development agencies.

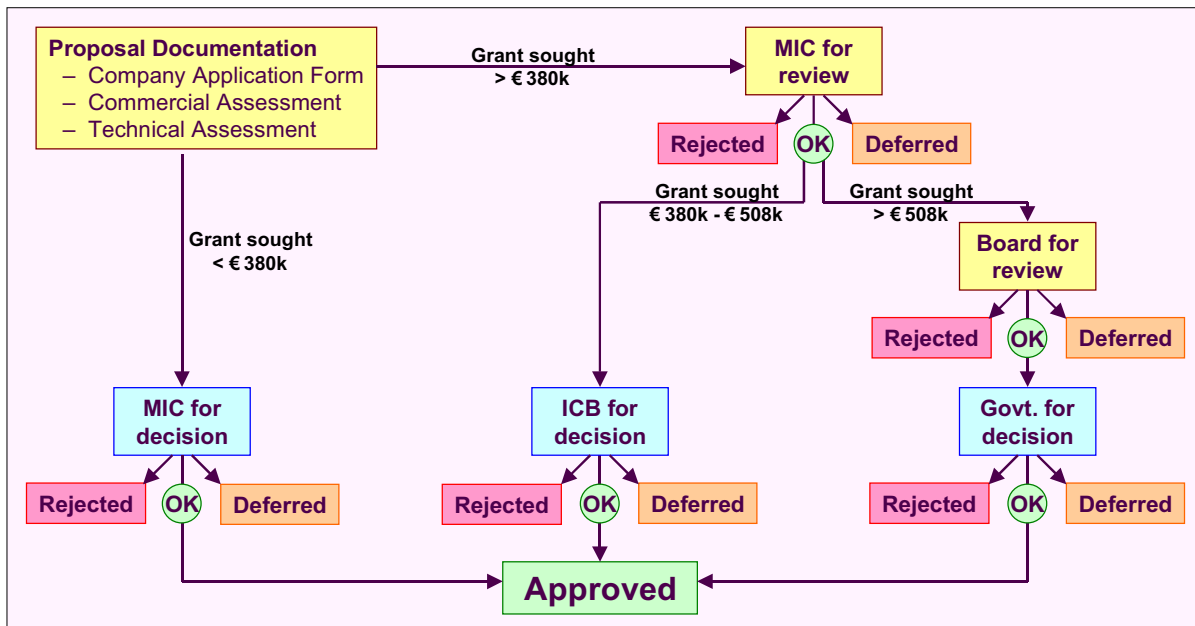
³ Most TAs are EI staff, but a few are from organisations outside the development agencies, e.g. universities.

The proposal document prepared by the Project Executive, accompanied by the Technical Assessor’s report, is submitted for approval to the relevant body, which depends on the amount of the grant being sought. The arrangements are as follows:

- For grants up to €380k, the approving body is the IDA’s Management Investment Committee (MIC).
- Where the grant sought is between €380k and €508k, the relevant approving body is the Investment Committee of the Board (ICB), a sub-committee of the IDA Board.
- For grants above €508k, approval by Government is required.
- All proposals going to Government are first examined by Board, and could get deferred or rejected at this stage.
- All proposals going to ICB for approval, or to Board for examination, are first reviewed by MIC, and again could be deferred or rejected at this stage.

These procedures are illustrated in Exhibit 1.

EXHIBIT 1 The Approval Process



During the approval process, certain conditions may be added, either by the final approval body or by way of a recommendation from the MIC or Board. These might cover, for example, retrospection, i.e. the allowability for grant purposes of costs incurred on the project for a specified period prior to the date of approval. (Retrospection is quite commonly allowed for a period four months prior to the date of the first approval (i.e. by the IDA’s Management Investment Committee), particularly on proposals which have had to go to Government.)

When a proposal has been approved by the relevant body, the company is informed and the documentation is passed the IDA's Legal Department to draw up a contract with the company.

Once a company reaches one of the milestones specified in the project plan and contract, it can submit a claim for payment of a corresponding part of the grant. This claim must be accompanied by an independent auditor's statement confirming the costs being claimed. Following receipt of a claim for payment, the company is visited by a staff member from IDA's Grant Payments Section to check that everything is in order. If it is, the payment is made.

When the cumulative claims on a project reach 80% of the approved grant, a technical person from Enterprise Ireland will also visit the company as part of the process for approving the drawdown¹. (None of the projects approved under the IDA's implementation of the Scheme has yet reached this stage.)

¹ EI's R&D Grant Inspection Unit is also involved in all drawdown approvals under EI's implementation of the Scheme, and on RTDI projects arising from any of the industrial development agencies.

5 Analysis of Data on the Scheme

This Chapter describes the available sources of data on the Scheme and our analysis of the information that they contain.

5.1 Sources of Data on the Scheme

Computer-based data on the Scheme is held in two places within IDA. Firstly, an Executive in the Planning Division maintains an 'Excel' database containing data on each of the proposals that are submitted to any of the approval bodies for decision. The information recorded in this database consists of:

- A brief project title.
- Company name.
- Company location.
- Home country of parent company.
- IDA Department handling the proposal.
- Names of Project Executive and Department manager involved.
- Date of decision by the relevant approving body.
- Nature of the decision (i.e. approved, rejected or deferred).
- Total cost of project.
- Amount of grant approved.
- Grant percentage of total cost.
- Proposed duration of the project.
- Average salary of the project team (for most projects, but not all).

The database does not contain any information about the proposal prior to its submission for approval (e.g. date of application), or on the progress of projects after approval (e.g. milestones achieved, claims or drawdowns). Neither does it include any information on applications that did not proceed to the relevant approval body (e.g. because they were re-directed to the RTDI scheme).

In addition to this database, the Planning Division Executive maintains a paper file of the documentation submitted to the approving body for each proposal (discussed in section 6.2).

The other relevant database is held by the Grant Payments Section. For R&D Capability projects this lists each individual payment made to companies participating in the Scheme, consisting of:

- Company name.
- Date of payment.
- Amount of payment.

These two databases are the main sources for the analyses presented below. Additional data relating to the extra R&D staff that the participant companies planned to take on in the course of their projects was extracted by us from the proposal documentation file.

5.2 Results of the Data Analysis

Since the Scheme's commencement, thirty-five proposals have been put forward for grant approval under the Scheme. Exhibit 2 gives an overview of the decisions made on these proposals.

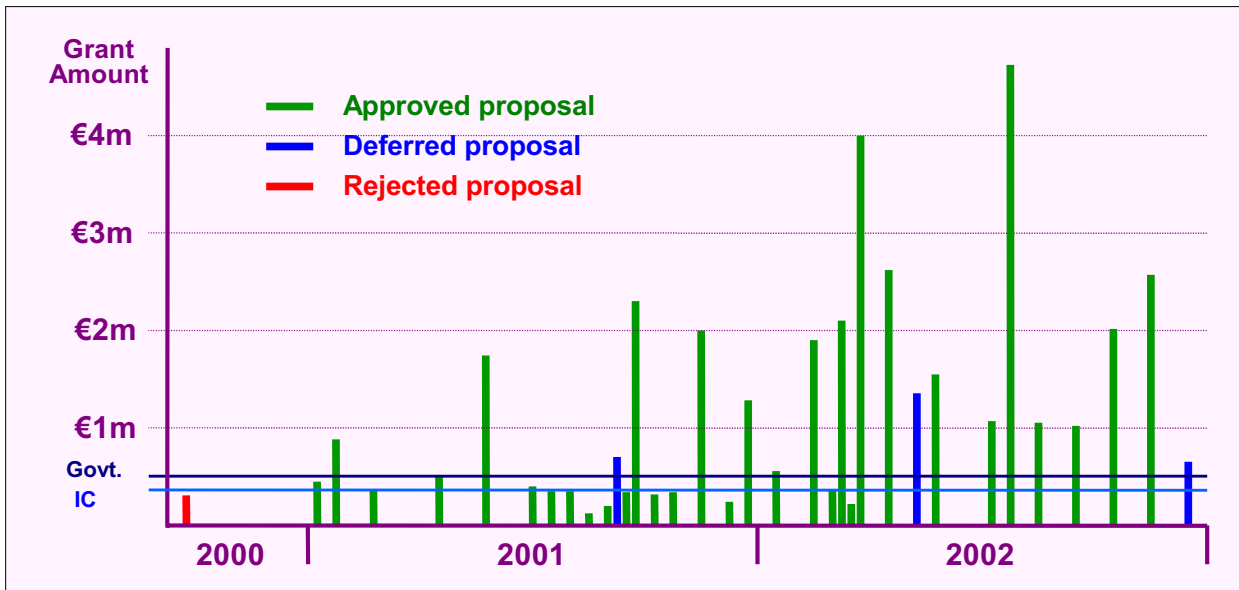
EXHIBIT 2 Summary of Decisions on Proposals

	Approved	Deferred	Rejected	Total
Number of proposals	31	3	1	35
Total cost of projects	€ 147.7 m	€ 5.88 m	€ 1.07m	€ 154.7 m
Total of grants sought	€ 38.2 m	€ 1.77 m	€ 0.32 m	€ 40.3 m
Average cost of projects	€ 4.76 m	€ 1.96	€ 1.07m	€ 4.42 m
Average grant sought	€ 1.23 m	€ 0.59 m	€ 0.32 m	€ 1.15 m
Av. grant percentage sought	25.9%	30.1%	30.0%	26.0%

(SOURCE: IDA, Scheme database)

The above overall figures mask wide variations in total project costs and the associated grants. These range from a low of €368k total project cost (with a grant approved of €110k, i.e. 30%) to a high of €24.9m (grant approved of €4.73m or 19%). This wide variation is evident in Exhibit 3, which illustrates the amount of each grant approved, deferred or rejected, and the dates of the decisions. Also shown in the Exhibit are the relatively low grant levels above which approvals must be made by the Investment Committee of the Board (ICB) or by the Government, namely €380k and €508k respectively. For grants below €380k, approval authority is delegated to IDA's Management Investment Committee (MIC).

EXHIBIT 3 Distribution over time of Grant Decisions

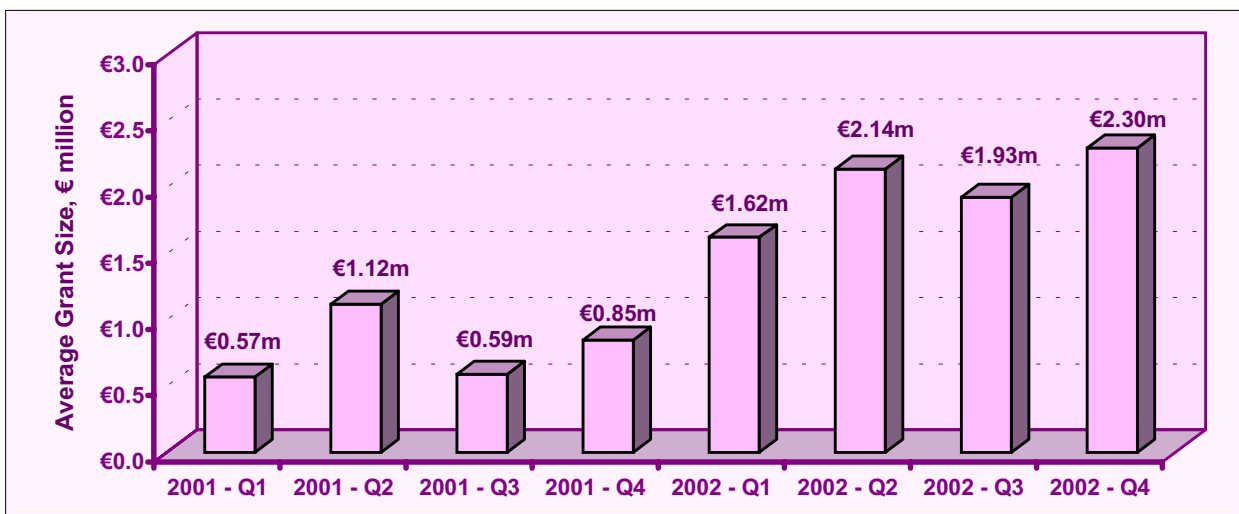


(SOURCE: IDA, Scheme database)

Exhibit 3 also illustrates how the frequency of proposals being submitted began to increase significantly after the initial twelve month pilot phase of the Scheme, namely in the second half of 2001. The large variations in grant amounts, mentioned above, can also be clearly seen in the Exhibit.

A further feature evident in Exhibit 3 is a trend towards larger projects. This trend is illustrated in Exhibit 4 which shows the average size of grants approved in each three month period from the start of 2001 to the end of 2002.

EXHIBIT 4 Trend over time in the average size of grants (€ millions)



(SOURCE: IDA, Scheme database)

A significant effect of this increase in project sizes and grant amounts is shown in Exhibit 5. Over the past 9 months all proposals have been above the grant level requiring Government approval.

EXHIBIT 5 Trends in the need for Government approval

	First 18 months	Last 9 months
Number of proposals put forward for approval	25	10
Number of proposals requiring Government approval	10	10

(SOURCE: IDA, Scheme database)

Also over the past 9 months, the proportion of new R&D performers¹ has dropped dramatically, see Exhibit 6.

EXHIBIT 6 Trends in proposals from new R&D performers

	First 18 months	Last 9 months
Number of proposals put forward for approval	25	10
Number of proposals from companies with no formal R&D unit	12	1

(SOURCE: IDA, Scheme database)

Given that regional development is a core aim of the current National Development Plan, the data on proposals was examined to determine the regional distribution of proposals and their associated grants. Exhibit 7 shows this analysis, comparing the implementation of the Scheme between the 'Objective 1' region of the Border Midlands and Western (BMW) and the 'Objective 1 in Transition' South and East (S&E) region.

EXHIBIT 7 Regional distribution of proposals

		Approved	Deferred	Rejected	Total
BMW region	Number of proposals	12	2	0	14
	Total of grants sought	€ 18.4 m	€ 1.12 m	---	€ 19.5 m
	Average amount of grant sought	€ 1.53 m	€ 0.56 m	---	€ 1.39 m
S&E region	Number of proposals	19	1	1	21
	Total of grants sought	€ 19.8 m	€ 0.65 m	€ 0.32 m	€ 20.8 m
	Average amount of grant sought	€ 1.04 m	€ 0.65 m	€ 0.32 m	€ 0.99 m

(SOURCE: IDA, Scheme database)

Two significant points emerge from the analysis:

¹ i.e. companies with no formal R&D unit. These were identified from an examination of the documentation for each of the proposals put forward for approval.

- Given the difference in population between the two regions, the BMW region has done remarkably well under the Scheme, in terms of proposals submitted and approved, and the total amount of grants sanctioned. Evidently the Scheme has the potential to make a very positive contribution to regional development objectives.
- The average size of grants approved for companies in the BMW region is substantially higher than for those in the S&E region. In part this reflects the higher grant percentage allowed for 'Objective 1' regions under EU rules governing State Aids (see section 4.1).

The Scheme database provides information on the planned duration for most projects. The majority (22 out of 31 approvals) are scheduled to run for two to three years. For just three it is shorter, namely 1 or 1½ years, and for the remaining six it is unclear.

Although the database does not include any data on anticipated additional R&D staff as a result of the project, this information is present in the proposal documentation for all but one of the approved projects. According to this information, the thirty projects concerned plan to employ a total of 461 additional R&D staff¹ over the duration of their grant-supported projects.

For each proposal in the database, the associated IDA Project Executive is identified. Examination of this information reveals that fourteen different PEs were associated with the thirty-five proposals that were submitted. More surprisingly, just four PEs accounted for nineteen of these (i.e. 54%).

Examination of the data on drawdowns reveals that ten of the thirty-one companies with approved projects had received payments of part of their grants by the end of 2002. These payments totaled €2.4m, i.e. 6.3% of the €38.2m so far approved. This relatively low drawdown rate appears to be due to a combination of reasons:

- The claim process involves considerable work for company financial departments, including an auditor's certificate of project-related costs, and they sometimes treat the claim with relatively low priority.
- Some companies leave submission of grant claims (under this Scheme and others) to the year end. We understand from the IDA's Grant Payments Department that a number of claims were received in December 2002 and were being dealt with at the time of our review.
- In some cases there is a significant period between the submission of a claim and a payment being made, due to errors in the claim (e.g. the inclusion of non-allowable costs) or to the need to clarify some aspects of the claim.

¹ Researchers and technicians. Excludes management and support staff.

NOTE: The data analysis presented in this Chapter draws on three sources, as described in section 5.1, namely:

- The database of proposals maintained by IDA's Planning Division.
- The hard copy proposal files held by the same Division.
- Information on drawdowns from the Grant Payments Unit.

As this review was nearing completion, however, we heard by chance of two other companies that had made applications that had progressed to the stage of having technical assessments carried out but which were not recorded in the above sources. Presumably there had been a last minute decision not to submit these for approval. Limited further investigation revealed that a similar situation has arisen in at least ten applications. We were surprised by this finding. We had understood that applications that were not suitable for the Scheme were identified during discussions prior to the technical assessment and either dropped by mutual agreement or re-directed to the RTDI scheme if appropriate.

The most obvious reason for these situations arising would be that the Technical Assessor's report was very negative. We followed up briefly on this possibility but it appears that this is generally not the case.

Due to time constraints we were unable to investigate further the reasons why these applications (and perhaps others) did not go forward for approval, or to interview any of the companies involved. Their existence may represent some inherent problem with the Scheme's operation that we have not come across in our review of approved and deferred proposals. Alternatively the reasons for these proposals being dropped may be specific to each individual company, rather than being related to any aspect of the Scheme itself. We have no specific evidence one way or the other. We therefore suggest that they be systematically examined by IDA in case there are useful lessons to be learned.

6 Review of Documentation

In this Chapter we discuss the 'hard copy' documentation that is available on the Scheme. This falls into two distinct categories. Firstly, there are a number of documents that provide general information on the Scheme – its overall design and operating methods, including guidelines for companies and for Project Executives. Secondly, there is a set of files containing the documents that were submitted to the relevant approval body for each of the thirty-five proposals.

6.1 General Documentation on the Scheme

As noted in section 4.2, there are no IDA promotional brochures on the Scheme. The documentation that does exist on the Scheme in general consists of material prepared by the IDA's Planning Division, presumably in consultation with Agency colleagues such as Project Executives involved in its operation.

Three of these documents are directly concerned with the day-to-day operation of the Scheme:

- A two page set of guidelines for companies outlining the Scheme and its aims, indicating the types of projects that will and will not be supported and providing an overview of the types of project costs that are eligible for grant aid, see Annex C.
- Operating guidelines for Project Executives on implementing the Scheme, plus the Company Application Form, in both the original version (two pages) and a subsequent revised and enlarged version (seven pages) produced following the pilot phase review. The revised version, which is still currently in use, is presented in Annex B.
- Refinements introduced in Summer 2002 to the criteria for deciding on the appropriate grant level for projects, particularly software ones, see Annex D.

The remaining general Scheme documentation consists of submissions to the IDA's Management Committee and/or Board. It includes:

- Proposals prepared in Autumn 1999 and Spring 2000 for the introduction of the Scheme on a pilot basis, with an outline of how it would operate.
- A report of an in-house review of the pilot in Autumn 2001 with suggestions for some minor adjustments.

We found the documentation described above very useful in providing us with background information on the Scheme and on the way it has developed over time. We consider, however, that the guideline documents, particularly the one for companies, could usefully be expanded to give more detailed information on the Scheme. This aspect is taken up in our recommendations (Chapter 10).

6.2 The Proposal / Project Files

All IDA files on the approved, deferred and rejected projects were examined and reviewed. The overall conclusion is that the quality of all files is very high. They include extensive and relevant information – financial, commercial and technical. The quality of this information, provided by the IDA Project Executives and by the Technical Assessors appointed by Enterprise Ireland, is excellent.

Overall the information provided in the files is well presented and appropriate to the needs of the relevant approval body. This fact is also substantiated from the interviews with members of the IDA's Board and Management Investment Committee.

The background of the client company and its history in Ireland including staff changes and previous grant involvement is very well presented.

In all cases of approved projects there is either the initiation of a new R&D activity within the company or a major step up in technology by those companies already engaged in R&D. No proposal suggested undertaking fundamental research. This should not, however, be taken as an indication that no new technology would be generated by the proposals. In fact many of the proposals were aimed at developing forefront technology, in some cases building on basic technology which had been either acquired, or developed in other company laboratories. The quality of the projects presented is very high and they clearly fit with overall company strategy. It is also clear that these projects are supported by the client's corporate entity.

It is also clear from the files that, as the Scheme has progressed from its initial pilot phase, there has been a perceptible improvement in the general quality of proposals.

The commercial and technical assessments are clear and show a very professional approach. These observations are also supported by all the company interviews (see section 7.1), including the interview with the source of the currently deferred application. However, more emphasis on the capability and experience of staff, especially the management of new R&D functions, would be helpful in the technical assessment section, thereby identifying cases where some relevant training might be beneficial¹.

In the great majority of cases the projects are very well defined, with clear milestones. In some cases the milestones are less clear, particularly among the earliest few projects in the Scheme's pilot phase.

¹ Enterprise Ireland operates an R&D Management Training Scheme, which is also used by IDA for its clients, where appropriate.

7 Interview Findings

This Chapter presents the key points that emerged during the interviews. They are grouped under four headings: Companies, Project Executives, Technical Assessors and Other Informants.

All interviews were commenced with a brief introduction in which we outlined the background to the review, its aims and methodology. In addition all interviewees were given assurances regarding the confidentiality of their responses and comments.

7.1 Companies

Interviews were held with twelve companies that have projects currently running under the Scheme. These were selected to encompass a range of technology sectors, large and small companies, early and recent participants, companies new to R&D and others already heavily involved.

The interviews encompassed the following topics:

- Scheme promotion and publicity.
- The application and approval process.
- Drawdown and payment procedures.
- Overview of the R&D project(s).
- Fit with development strategy (local company and corporate).
- Current project status.
- Ideas for improving the Scheme.

The most significant findings from these interviews were as follows:

- All of the companies interviewed were confident that the results of the R&D supported by the Scheme would, if successful, be commercialised by the Irish company, at least initially. Furthermore, they considered that the projects were highly important for the future success of the Irish entity, particularly because continuation of some of their current operations was under threat from lower cost countries.
- All interviewees stressed the high level of intra-company competition for new projects. They all considered that the likely availability of an R&D Capability Grant was a significant factor, but by no means the only one, in the corporate decision to proceed with the activity in Ireland, rather than at their main R&D facility or at a subsidiary elsewhere. In particular, the Scheme provided a 'prop' for local management to approach headquarters with their R&D ideas and

helped to persuade corporate management that the Irish Government has made a serious commitment to supporting R&D activities here.

- The brevity of the Company Application Form was appreciated by all twelve interviewees. But all of them expressed one or more areas of dissatisfaction with other aspects of the application and approval process. The issues involved are described below.
- Despite these difficulties, the companies expressed appreciation of the help provided by the Project Executives and the flexibility of the IDA in dealing with problems. There was very high praise from all the interviewed companies for the technical assessment process, particularly the professional approach and technical competence of the Assessors, even from companies who had some costs or entire R&D projects disallowed at this stage.
- None of the companies expressed any difficulties regarding the inclusion of one or more specific R&D projects in the proposal. These are needed anyway when seeking corporate approval for the proposal and associated funding. The linking of 'milestones', and therefore drawdowns, to R&D project outcomes was, however, considered unrealistic by all companies. They commented that project success is uncertain and that R&D priorities can change unexpectedly.
- Ten of the twelve companies stated that the implementation of their projects was either on, or ahead of, their planned schedule. The other two – both recent approvals – were a little behind but anticipated catching up within the next six months.

In addition to the above key findings, a wide range of more detailed points emerged during the course of our interviews:

- With nine of the companies, the project involved a substantial enhancement of existing R&D activities in Ireland, focussed on products, services or technologies that were new to the company.
- For the other three it involved the establishment of an R&D facility where none had existed before.
- In all cases the concept of the new or enhanced R&D activity existed, either in the local entity or the parent, before the company became aware of the Scheme, but no corporate decisions had been taken as to whether to proceed and, if so, in which country the activity should be located.
- For a few companies the existence of the Scheme gave them a basis to pursue their R&D ideas by providing a 'lead in' for them to approach corporate management with their ideas and proposals for the R&D activity.
- Nine of the companies first heard about the Scheme from the Project Executive. The other three found out about it by other means.

- Three companies claimed that if they had known about the Scheme earlier it would have allowed them to advance their ideas sooner and therefore led to the faster creation of the new or enhanced R&D capability.
- Several interviewees were surprised when, having completed the commendably short Company Application Form, they were subsequently asked for much more detailed information. In particular they were unhappy about the need to provide financial information in varying formats at various stages of the application and claims processes, particularly because their own financial reporting is different.
- Several companies experienced difficulties and delays in the application process due to uncertainties as to what costs could be included for grant purposes and what could not. Two companies had further difficulties in this regard after submitting claims for payment.
- It appeared to a few interviewees that the Project Executives were unclear on aspects of the Scheme, such as allowable costs and the breakdowns needed on company financial information. This resulted in multiple visits being needed to progress the application.
- For three companies the costs of equipment that will be used for developing prototypes and pilot scale production were disallowed on the grounds that it is likely to be used for commercial production within 5 years. They considered this to be unreasonable since in some sectors, such as pharmaceuticals and medical devices, pilot scale production is part of the development process (e.g. to seek FDA approval). Approvals are invalidated if the production processes or equipment are changed.
- The requirement for intellectual property to be retained in Ireland was a major problem for three companies¹. Furthermore, it only becomes evident at the contract stage. In one case the final contract for the project has still not been signed, over a year after approval, due to this problem.
- There were strong feelings expressed by the great majority of companies that clear and comprehensive written guidelines are needed, both for companies and for Project Executives.
- Some suggested that the information and guidelines provided to companies should encompass other supports relevant to company R&D, such as RTDI and the initiatives recently introduced by Science Foundation Ireland.
- Most companies commented that it took much too long to get through the application process (fifteen months in one case). This fails to recognise the 'real world', where companies have to proceed quickly with the plan and projects

¹ All three companies had passed through the application process before the introduction, in June 2002, of the 'Framework for Determining the Appropriate Level of Grant Aid' (see section 4.2 and Annex D), which indicated that retention of IP in Ireland, although preferable, is not an essential requirement.

after the corporate decision has been made, but before grant approval materialises.

- Delays in the application process have, in turn, given rise to difficulties with retrospection, particularly where the project involves significant capital expenditure early on.
- Three companies expressed a perception that they were dealing with a series of separate Agency individuals, with little or no inter-communication, at different stages of the application, approval, contract and drawdown processes.
- While in general the IDA is seen as very flexible in allowing for project changes, companies find that this involves a lot of paperwork, discussion and delays.
- Two companies thought that the size of the Capability Grant was very small compared with the investment being made by the company.
- Four companies were concerned about the longer-term government support for R&D in the country. The feeling was expressed that, having started down the road of R&D with Capability Grant support, they might become vulnerable because of manpower costs and the R&D disincentive of the low corporate tax regime.

One company whose proposal was deferred by the IDA's Management Investment Committee was also interviewed, with the following points emerging:

- Initial discussions on the proposal were fine. The company was informed that grant approval was very likely, but not certain. On this basis the company approached corporate management for a decision to proceed and funding approval. These were given.
- The company considers that, at this stage, the potential grant was of major help towards obtaining corporate support and enhanced the overall credibility of Ireland as a place to do further development.
- Thereafter progress was slow, mainly due to several successive requests for differing breakdowns of financial information. Eight months after commencing the application process the company was informed that the proposal was being put forward for approval.
- After a further five months they received a letter seeking more information on their financial situation, which they supplied. Since then they have had no further feedback from IDA¹. In the meantime the company has proceeded with a very limited implementation of one of their intended R&D projects, considered vital to their future.

¹ We have since heard that the IDA Project Executive has been in contact with the company. A meeting has been arranged with a view to re-submitting the proposal, possibly with some minor revisions.

- As a result of these problems the Irish company management has lost much credibility with corporate management and they are concerned that future R&D activities may not be located here.

7.2 Project Executives

Ten Project Executives and one Department Manager were interviewed in order to find out about their experiences with the Scheme, their views on its significance in the development of the participating companies and their comments on its implementation.

As far as possible the Project Executives interviewed were those involved in preparing the proposals for the companies that we had already selected for interview (see section 7.1). In some cases, however, the relevant PE was not available (e.g. had changed job, moved overseas, etc.) so we interviewed the PE currently dealing with the company concerned. The main findings from this interview process were:

- There are differing views regarding promotion of the Scheme. Five considered the current arrangements to be the most appropriate, in order to minimise unsuitable applications. The other six favoured wider promotion of the Scheme via brochures and the Agency's web site. Three of these added that any promotional material should emphasise the need for interested companies to start by contacting their PE.
- One interviewee suggested the word 'scheme' has somewhat negative connotations with many Americans (i.e. suggesting something a bit underhand) and should therefore be changed.
- There was reasonable satisfaction with the current version of the operating guidelines for Project Executives. Five interviewees did, however, say that they would appreciate more detail on issues that tend to arise during development of proposals, such as allowable costs and the treatment of staff transferring from existing functions in the company, and a clear definition of the required financial breakdowns.
- Two PEs had each dealt with an application, initially submitted under this Scheme, that had turned out during discussions with the company to be more suited to RTDI, and had been re-directed accordingly (receiving RTDI grant approval in both cases). None had been involved in any proposals that had been re-directed from RTDI to the R&D Capability Scheme.
- Most of the PEs regard the Scheme as being a little more difficult to operate than RTDI and considerably more so than other grant schemes, such as those for capital and employment. Reasons given for this view were: (a) their individual lack of experience with the Scheme; (b) an impression that the

approval criteria and the information required in proposals were not firmly established and appeared to be somewhat variable; (c) the requirement to involve an 'outside party', i.e. a Technical Assessor.

- Concerns reverberate around the Project Executive community on the rare occasions when a project does not get approved. These events reinforce their impressions of uncertainty as to the main issues that the Management Investment Committee or Board are likely to focus on.
- Project Executives consider that there is a degree of personal 'kudos' from having a proposal approved, under this Scheme or any other, which does no harm to their career development prospects. Proposals that fail to get approved are perceived as having a corresponding negative effect.
- Three interviewees considered that there were significant variations in the degree of enthusiasm for the Scheme among their colleagues.
- None of those interviewed has experienced any problems with the technical assessment process. There were no undue delays in carrying out the assessment or providing the report and the quality of the individuals involved, and of their reports, was considered to be very good.
- There are differing views on extent to which Technical Assessors should be involved:
 - Four PEs have sought the early involvement of a Technical Assessor as they consider that the TA can make a useful contribution to refining the technical aspects of the proposal. It also gives the TA a better feel for the potential role of the project in the company's strategic development. One of the four likes to be present as an observer during the technical assessment as this improves substantially their overall understanding of the project.
 - The other seven interviewees considered that early TA involvement was a good idea, for the same reasons, and will probably seek this in future.
 - Two interviewees expressed a strong preference for the Technical Assessor to be present at MIC and Board meetings – the TA has a much better understanding of the technology involved in a project and could therefore answer more effectively any questions on this aspect.
 - Six PEs considered that there would be no benefits to TA attendance at MIC or Board – the technical assessment reports and recommendations were never questioned.
 - The remaining three suggested that there should be an option for the TA to attend MIC or Board meetings if requested by the PE in cases where he/she has some concerns regarding technical aspects of the proposal.

- Five of the Project Executives interviewed would like to see the requirement for inclusion of a specific R&D project dropped. This would simplify and speed the application process. The others had no particular views on the matter.
- Three PEs had experienced major problems regarding the requirement for intellectual property (IP) to be retained in Ireland. It conflicted with corporate policies for IP to be held by the parent company¹.
- One PE who had been involved in a number of proposals commented that getting approval for the first one or two projects in a particular industry sector greatly assists 'selling' of the Scheme to other companies in that sector.
- The grant level above which Government approval is needed (€508k) is low. This causes delays – a source of frustration for some clients. All interviewees would welcome a substantial raising of the level.

7.3 Technical Assessors

Three Technical Assessors (two from Enterprise Ireland, the other from an independent organisation) plus the Enterprise Ireland executive responsible for the Technical Assessment Unit, were interviewed to seek their perspectives on the Scheme. The main findings can be summarised as follows:

- The focus of assessments is primarily on the specific R&D project(s), not the overall facility.
- It would be helpful to have more information on the proposed R&D project(s) in the initial Company Application Form. This would facilitate identification of the most relevant Technical Assessor.
- The assessment process often involves substantial discussions with companies on revising their proposals, to drop non-allowable costs and/or add in other allowable ones.
- Technical Assessors would like earlier, and fuller, involvement, including attendance at MIC or Board, as happens for all RTDI proposals and Enterprise Ireland 'Capability' ones. But one expressed some concern about operating in dual roles, i.e. advisor and assessor.
- All four interviewees consider that the requirement for inclusion of specific R&D projects should be retained. Without this there could be difficulties in setting credible milestones.

¹ IDA considers that it is more beneficial to have the IP retained in Ireland since this has the potential to provide an additional income stream for the Irish operation. The retention of IP here is not, however, regarded as an absolute requirement. Indeed section 3(b) of the 'Framework for Determining the Appropriate Level of Grant Aid' (see Annex D) suggests that is one of the factors to be considered when determining the grant percentage. None of the three PEs who had experienced IP-related problems appeared to be aware of this flexibility, perhaps because the projects concerned had been negotiated prior to the introduction of this 'Framework'.

- Technical Assessors consider that there are no particular difficulties associated with assessing software proposals, i.e. in recognising whether or not they represent a substantial departure from existing operations and will bring the company into a new area of enhanced and relevant technology.
- No Technical Assessors have been involved in the verification of any drawdown claims under the Scheme. They consider that this should be part of the standard procedure (as it is for Enterprise Ireland 'Capability' projects and all RTDI projects from either agency), particularly where the associated milestone has a substantial technical progress element.
- There is a degree of pressure from some Project Executives to be over-positive in their reports. This is resisted.

7.4 Other Key Informants

This section describes the main points to emerge from our interviews with other key informants, namely members of the IDA's Board, Management Investment Committee (MIC), Legal Department and Grant Payments Section.

- All informants considered that the Scheme is excellent and very worthwhile. There is also agreement that the administration of the Scheme by executives is good. There is some perception that larger companies may find it easier to access the Scheme, due to the greater experience and resources they can bring into play for developing high quality R&D projects.
- There is a perceived need for training to be built into the project contract more frequently than at present, as this is seen as a weak area, especially for companies who are just getting into the business of R&D for the first time.
- It is also suggested that the Scheme should be marketed in a manner more integrated with the full range of supports offered by IDA and other agencies. The point was made that corporate decisions in favour of Ireland are getting harder due to the current global climate and cost issues.
- The IDA Board is happy with the documentation that goes to them. It does not try to 'second guess' the commercial or technical assessments and sees no need for Technical Assessor attendance at Board meetings. The Board focuses mainly on the ability of the company to support the project financially, the strategic fit and the ability of management to see it through.
- The Agencies (IDA & EI) want intellectual property generated in Ireland to reside here. If the company wants to sell or licence it, then the income would come to Ireland.
- The IDA Legal Department confirms the comments from some Project Executives and companies that intellectual property issues are a significant problem in finalising some contracts.

- It is clear that there are currently proposed changes in legislation which, if passed, will improve the operation of the scheme and help client companies. These concern the low cut-off for Government approval, the inclusion of an R&D project and the requirement for manufacture in Ireland.
- It was recognised by IDA that, while the short Company Application Form is good and welcomed by companies, there are sometimes problems when the company is subsequently asked for much more detailed financial information. One option suggested was to indicate clearly on the top of the short form that more detailed information would be required later.
- Drawdowns to date have been authorised solely on audits of the claimed costs incurred. It is planned that Technical Assessors will be involved in the authorisation procedure when drawdown reach 80% of the approved grant amount. No projects have reached this point so far.
- Backdating for costs incurred prior to the project approval is sometimes an issue. The IDA tries to be flexible. It would be helpful if there was more clarity on this issue in the guidelines, particularly those provided to companies.
- There is a recognised risk of double funding jobs, i.e. through existing commitments under employment grants and through R&D staff covered by the Capability Grants. Where such situations arise, appropriate clauses in the legal contract preclude any such double funding.
- There have been many changes in IDA staff in the past two years (160 out of 300) due to promotions / reassignments and people leaving. This has caused problems with client communications and continuity of application processing. It is recognised that such difficulties need to be addressed more effectively.
- Prior to the introduction of the R&D Capability Scheme, RTI was the only in-company R&D support mechanism. It was not very suitable for some IDA clients due to its competitive nature and because it supported individual R&D projects, not the development of new or substantially enhanced facilities.
- The Industry Research and Development Group (IRDG) gives presentations around the country on R&D and available supports. These are attended by both indigenous and foreign-owned firms. IRDG finds that most attendees have not previously heard of Capability Grants.

8 Discussion of Results

In this Chapter we discuss in detail our findings and their implications. It is broken down into several sections as follows:

- Rationale for the Scheme
- Objectives of the Scheme
- Nature of the R&D supported
- Deadweight
- Value for Money
- Market Penetration
- Implementation Methodology

8.1 Rationale for the Scheme

Industries are changing rapidly, and companies have to change in order to remain relevant. This is particularly true for subsidiaries since they face the added challenge of intra-company competition for new activities. To remain in business, let alone grow, subsidiaries must constantly update their activities and seek new mandates and responsibilities, in order to meet the critical, but ever-changing, needs of their parent. Simply doing more of the same, even if doing it better, is unlikely to ensure long term survival. This is especially true for subsidiaries whose main activities centre on the manufacture of established product lines. Such operations in Ireland are more vulnerable due to increasing costs and the recent worldwide downturn in economic growth.

Such operations are at considerable risk from:

- Transfer to a 'greenfield' site in a low labour cost country (e.g. in Eastern Europe, Asia or South America).
- Consolidation with similar operations at a 'sister' site, either within Europe or elsewhere.
- Outsourcing of the operations to a contractor.

In order to maintain, and ideally to grow, their presence in Ireland such companies need to take on new functions and responsibilities. For some this could mean gaining responsibility for activities such as marketing and sales, customer support, provision of corporate services, etc. But such activities, although worthwhile in their own right, do little to sustain or expand current manufacturing functions or enhance their competitiveness. To achieve this, companies need to gain responsibility for the manufacture of brand new products, of higher value, and to do so on a regular basis.

The most natural place to initiate manufacture of a new product is where the final development of that product took place. A key survival and growth route for a subsidiary is, therefore, to have corporate responsibility for the development of a significant new product or, ideally, a product range. Such development responsibility cannot be achieved unless the subsidiary has appropriate R&D capabilities.

For subsidiaries that already have a corporate R&D responsibility for a particular product range, their future security will be threatened if they simply 'rest on their laurels'. They need to extend their development remit, and therefore their R&D capabilities, into high potential new product lines. Since these products will typically involve technological advances and, unlike established products, will not be subject to the same level of competition in the market – at least initially – they will generally be of higher value than existing products and their manufacture should prove to be more profitable.

Therefore a support mechanism, such as the IDA's R&D Capability Grants Scheme, which assists subsidiaries to develop an R&D capability where none was present before, or to expand existing competencies into new areas, is contributing directly to their continued existence and future prosperity, i.e. it is increasing their embeddedness in Ireland.

Given the constraints of EU rules on the main financial support mechanisms used in the past, such as capital and employment grants, there is now a role of increasing importance for other support initiatives such as training grants, RTDI and R&D Capability Grants, as tools for supporting company development.

We therefore conclude that **the rationale for introducing the Scheme, some three years ago, was sound.** Indeed, we consider that **the Scheme is even more important now**, in view of the current economic climate and Ireland's commitment to the EU target of raising R&D expenditure to 3% of GDP by 2010¹.

We consider, however, that delivering on this commitment will require further initiatives to be introduced. For example, the introduction of tax credits for company R&D expenditure would be very likely to prompt more companies – both indigenous and foreign owned – to consider undertaking R&D in Ireland (with or without support from the Capability Scheme). Also worthy of consideration is an initiative aimed specifically at attracting new R&D-intensive activities to Ireland, from major high-technology companies or institutions².

1 European Council meeting in Barcelona, March 2002. (In 1999 – the most recent year for which data is available – Ireland's R&D expenditure was 1.42% of GNP, compared to an EU average of 1.86%.)

2 The R&D Capability Scheme, as presently constituted, is not suitable for this purpose since it operates within the EU's 'Horizontal Aid' guidelines (see section 4.2). A new initiative would therefore be required, possibly as a joint activity between IDA and Science Foundation Ireland.

Our view of the Scheme's relevance and importance was fully endorsed by the companies that we met during this review. Without exception they saw their future as being strongly dependent on moving into new product, process or service areas, in turn based on gaining corporate responsibility for their development. These considerations were highlighted in all discussions with client companies, even where the grant approvals were deferred.

It was very clear from our company interviews that, when Irish management is trying to locate R&D in Ireland, they are, in most cases, in competition with other locations for the facility. The corporate entity where the final decisions are made will take into account many factors both positive and negative in coming to their decision. The Irish management uses all positive aspects of the Irish environment to convince the corporate entity. No one aspect of this environment will dominate completely but the potential availability of the R&D Capability Grant is a substantial positive factor.

In addition to its financial support implications, the very existence of the Scheme allows the Irish management to show tangible Government commitment to growing R&D activity in this country. Some companies also mentioned other recent initiatives, particularly Science Foundation Ireland, as reinforcing evidence of the State's commitment to R&D. This picture provides a high level of credibility for the Irish management in support of their arguments for siting the new R&D capability in their facility. In all cases the Irish management referred to the importance of this credibility issue, viewing it as a very positive factor in their dealings with their corporate entity. A few companies, however, expressed concerns that this credibility could be severely damaged if the Scheme were to be suddenly cut back or subject to the "stop-go-stop-go" situations that arose a few years ago under 'Measure 1'.

Most headquarters of foreign multinationals not already involved in R&D here would not regard Ireland as having a high world image for R&D. Most would also see the low corporate tax system as not conducive to carrying out R&D here relative to other locations where they are paying higher taxes, since R&D costs can be offset against profits before tax¹. In fact the Capability Grant is seen in some cases as a balance to this negative tax factor on the pure financial side. The positive aspect of the Government towards R&D as demonstrated by the availability of this Scheme is therefore seen as a really beneficial parameter.

Another indirect benefit of the Scheme, for companies with aspirations and outline plans for initiating an R&D activity in a potential new product and technology area, is that it provides a good introductory 'prop' on which to broach their ideas with corporate management.

¹ Such comments from companies supports our suggestion (previous page) that serious consideration should be given to the introduction of an R&D tax credits arrangement for companies. In addition to mitigating this negative situation, and prompting more companies to consider Ireland as an R&D location (with or without support from the Capability Scheme), such a move would reinforce the perceived commitment of the Government to R&D activities.

While these 'soft' benefits are not the main objectives of the Scheme, it is very clear that their existence is of great value to companies. They should not be overlooked when considering the validity of the Scheme's rationale.

8.2 Objectives of the Scheme

The full impacts of this Scheme, and therefore its underlying objectives, are longer term than for the Research and Technological Development Initiative (RTDI). The latter is geared towards supporting one or more specific product developments, closely related to the company's existing product range and technology. If the developments are successful, their impact in terms of sales, profitability, employment, etc. should be materialising after about three years.

R&D Capability Grants, on the other hand, are aimed at building R&D competence in technology areas that are new to the company and, from that platform, developing products which differ substantially from their current range. Consequently the impact in terms of sales, etc., will take somewhat longer – at least four to five years, but up to ten years in some cases (e.g. pharmaceuticals). Only at that stage will it be possible to assess the extent to which one of the Scheme's core objectives are being met, namely moving the company up the value chain.

While the 'value chain' objective is valid and reasonable, the other core objective, namely increasing the embeddedness of companies in Ireland, is fundamentally more important. It will, however, take longer to materialise to an extent sufficient for making a realistic determination of the degree to which it has been met.

In summary, therefore, we consider that the Scheme's two principal objectives should remain as:

- Moving Irish subsidiaries of multinational companies up the value chain.
- Increasing the embeddedness in Ireland of these subsidiaries.

We note, however, that currently there are no specific indicators in place that can be used in due course to assess the extent to which the Scheme achieves these objectives. We address this matter later in the report (section 10.17), where we recommend some appropriate indicators for future use. In the meantime we would comment that the current evidence, though limited, is encouraging. From our review of proposal documents we consider that the overall quality of the projects approved is high. Furthermore, it is evident from our company interviews that these projects are generally progressing well so far, and are of high strategic importance to the firms involved.

In view of the long term nature of the two core objectives, we consider that there is merit in adding a third, shorter term, objective reflecting the mechanism for achieving these core objectives. This third objective is:

- Developing a substantial, and sustained, enhancement of the R&D activities in Irish subsidiaries of multinational companies.

Again we suggest some associated indicators for this secondary objective later in section 10.17 of the report.

8.3 Nature of the R&D supported

From our examination of the proposal files and our interviews with companies it is evident that the projects being supported by the Scheme were essentially high quality industrial research, mostly very challenging and strategic in nature, and taking the local company into new areas of technology and expertise. They involved little or no fundamental research. There was no evidence of grants being given as a form of funding support to aid the survival of companies experiencing financial difficulties, rather than to support good quality R&D, as occurred occasionally back in the 1980s under an early predecessor of the current Scheme. It is clear that the Guidelines for Project Executives, which have been progressively refined since the Scheme's introduction, together with the rigour of the technical assessments and the scrutiny of the approving bodies, are ensuring the quality of supported projects.

We were expecting to see several cases where the project involved the local company being given corporate development responsibility for a product range that they were already manufacturing. In practice this was not so, particularly for those participants that already had a significant R&D facility. Such companies had already reached this level of development responsibility and the project was taking them into product areas that were new to the overall company, with high probabilities of initial manufacture being in Ireland. For companies with little or no pre-existing R&D activities the project was also mostly aimed at the development of new products, although generally related to those that they were already manufacturing, rather than to the incremental development of existing products.

8.4 Deadweight

A key question in any review of a publicly funded initiative, in this case the R&D Capability Grants Scheme, concerns the extent to which activities supported under the initiative would have happened anyway without such support, i.e. deadweight. To address this issue it is first necessary to consider the role that the Scheme has played in generating or facilitating the activities that have taken place.

Although the initial concepts for projects supported by the Scheme generally comes from local management, the decisions are made at company headquarters. Our company interviews were with local management, but it was clear that they were well 'in tune' with corporate thinking. In all cases the parent company's decision on where

to locate the 'new' R&D was based on a range of factors in addition to financial incentives, such as:

- Past performance of the subsidiary in development work (if any).
- Labour costs.
- Quality of existing expertise in the local company.
- The 'drive' of the local management to get the project and undertake it efficiently and successfully.
- The extent of fit with existing local operations and its strategic development direction.
- Local availability of quality staff.
- Availability of relevant expertise in local colleges or research institutes.
- Potential of local entity to manufacture if development is successful.
- Past experiences with industrial development supports in the country.
- Regulatory conditions.

In none of the companies visited was the Capability Grant the sole factor in deciding to go ahead with the project in Ireland. But in all cases it had a role. Usually the concept was already developed, at least in outline, by local management (or initiated at corporate level in some cases), before local management became aware of the Capability Grant possibility. In some cases the existence of a potential grant provided the necessary impetus for them to approach corporate management with their proposals. In others it had already been discussed with corporate management, but no decision had been taken on whether to go ahead and, if so, where. Furthermore, the perceived strong commitment to R&D by the Irish Government, as evidenced by the introduction of this Scheme and other recent R&D support initiatives, was itself a significant factor in some of the decision to locate facilities here.

In view of the variety of roles that the Scheme has played in the decision making processes, and the various uncertainties regarding its specific contribution in any individual case, it is not possible to arrive at an objective measure of deadweight. Subjectively, however, based on our company interviews, we consider that deadweight is at an acceptably low level. We judge that, in the absence of Capability Grants, many, but not all, of the projects would probable have gone ahead in some more limited form – as indeed was the case with the 'deferred' proposal – possibly with RTDI grant assistance.

We therefore consider that **the level of deadweight is quite low, and is more than counterbalanced by the amount of R&D activity generated as a result of the grants.**

8.5 Value for Money

The extent to which the Scheme is providing good value for money centres on three key questions:

- Are the supported projects likely to lead to direct economic benefits (increased sales, exports, profits, employment, etc.) for the company, and therefore for the Irish economy?
- Are the supported projects moving the companies concerned higher up the value chain?
- Will the projects result in greater embeddedness in Ireland of the participating companies?

From our review of the projects we consider that most will yield new, high technology products or services, and that there is a high probability that these will be manufactured in, or provided from, Ireland. Perhaps more significantly, corporate headquarters are providing or approving over 75% of funding on average and would not do so without satisfying themselves that the project made sound business sense. Assuming the project is successful, and the results implemented in Ireland (which we believe will happen in most cases), Ireland gains economic benefits directly from this business decision.

We also believe that, having decided to initiate or substantially expand key development activities in Ireland, companies will be more likely to select Ireland as the site for future developments (both R&D and manufacturing, and possibly other support services) than to pull out of the country with the associated loss of much of the expertise developed through the project. We therefore consider that **the Scheme is very likely to meet one of its key objectives, namely increasing the embeddedness here of foreign-owned companies.** It will, however, take several years for clear evidence to emerge for reliably testing this view.

It is also evident from our interviews with companies that their existing production activities are under increasing commercial pressures from subsidiaries in lower-waged countries. Some of these product lines are well established, tending towards 'commodity' status, and will inevitably be lost over time. (Indeed, in many cases, this is a key driving force behind local management's push to become centrally involved in the development of new products.) The R&D teams being supported by the Capability Grants are working on completely new products, processes or services and generally of higher technology, with the probability that these will be produced in Ireland. Consequently **the Scheme is judged likely to meet its other main objective, namely moving the companies involved up the value chain.**

A further aspect to consider in relation to value for money is the total R&D spend that the Scheme is helping to generate and the significance of this in the context of existing R&D expenditure by foreign owned companies in Ireland. As noted in section 5.2, the public money so far committed to the Scheme by way of grant approvals, namely €38.2m, is leveraging an R&D spend totalling €147.7m, over two years. This is a very substantial amount, as the total expenditure on R&D performed by multi-national companies in Ireland in 2001 was €598m. It should also be borne in mind that the companies themselves are funding some three-quarters of the project implementation costs, thereby providing substantial tax revenues.

When assessing value for money, the indirect benefits described in section 8.1 should also be taken fully into account, particularly the Scheme's role in demonstrating a strong commitment by the Government to expanding industrial R&D here. It is clear from our company interviews that this has a substantial positive influence on corporate decision-makers to give more serious consideration to Ireland as an R&D location than they did in the past.

Overall, therefore, we conclude from the current evidence that **the Scheme is on course to provide excellent value for money**, but that the benefits will only fully over emerge after several years.

8.6 Market Penetration

Of the 900 or so foreign-owned companies in Ireland¹ a significant proportion are unlikely to pursue R&D activities here, at least in the short term. There are a variety of reasons for this, such as:

- Their small size.
- The industry sector in which they operate.
- A corporate policy of centralising all R&D at or near company headquarters.
- An attitude by local management that focuses only on carrying out their assigned functions as effectively as possible, rather than also actively seeking to widen their remit within the corporate entity.

¹ This number excludes IFSC companies, for the vast majority of which the R&D Capability Grants Scheme is not relevant

Clearly such companies cannot be classed as candidates for the Scheme at present. This classification should, however, be reviewed periodically since changes may occur in the underlying factors that currently rule them out as candidates.

The other foreign-owned companies are candidates and therefore constitute the potential market for the Scheme, particularly if tax credits for R&D are introduced (see section 8.1). It appears to us, however, that there is currently no overall view within IDA of the size of this potential market or of the companies involved. We consider that there is a need to firstly identify the size of this market and, on this basis, to set annual targets for new R&D Capability projects.

Whilst the comments on identification of potential market refer specifically to the R&D Capability Scheme, they may also be relevant to the full range of developmental supports provided by IDA. Indeed we understand that this has been recognised and addressed through the recent development of the Strategic Competitiveness Programme (SCP). A key element of the SCP initiative is to classify the full range of IDA client companies according to their perceived development potential and, on this basis, to establish different arrangements for interacting with them.

8.7 Implementation Methodology

In order to maximise the benefits accruing from any initiative it is important that it is implemented as efficiently and effectively as possible. On the basis of the findings from our review we consider that **the current implementation methodology is generally satisfactory**. Our examination of the Scheme in general and the findings from our interviews – particularly those with companies – have, however, identified several areas where we consider that **there is scope for adjustments**, many quite minor, that would assist in enhancing its effectiveness. These encompass many aspects of the Scheme's operations, ranging from its promotional methods, through its application and approval processes, to its drawdown procedures, together with the monitoring and reporting arrangements.

Rather than discussing each of these aspects here, we consider them in Chapter 10. This permits a clearer linkage to be established between the relevant findings on each aspect and the associated recommendations.

9 Conclusions

In this short Chapter we present the key conclusions from the review, drawn together from the findings reported and discussed in the preceding Chapters. These are:

- The rationale for introducing the Scheme in 2000 was valid. Given the tightening of EU rules on the main financial support mechanisms used in the past, such as capital and employment grants, an increasingly important role has emerged for other support initiatives such as training grants, RTDI and R&D Capability Grants, as tools for supporting company development. We consider that the Scheme is even more vital now in view of the current economic climate and Ireland's commitment to the EU target of raising R&D expenditure to 3% of GDP by 2010.
- The Scheme has two core objectives¹, namely:
 - *Moving Irish subsidiaries of multinational companies up the value chain.*
 - *Increasing the embeddedness in Ireland of these subsidiaries.*

These objectives are appropriate, but long term. They should be supplemented by an intermediate one, reflecting the mechanism for achieving the core objectives:

- *Developing a substantial, and sustained, enhancement of the R&D activities in Irish subsidiaries of multinational companies.*
- The objectives require an associated set of indicators that can be used in the future for measuring the extent to which they have been achieved.
- Projects approved to date are of high quality, fully consistent with the Scheme's objectives, and are generally on schedule.
- The full impact of these projects on the development of the companies involved, and therefore the Scheme's benefits to the national economy, will only emerge after a minimum of four to five years from the time of project approval. The early evidence from this review, however, suggests that these impacts and benefits will be very positive.
- Although regional development is not a core objective of the Scheme, it is on track to make a significant contribution in this regard.
- The extent of deadweight in the Scheme cannot be accurately judged, due to the wide range of factors influencing corporate decisions to establish or expand R&D facilities in Ireland, and the varying importance of these factors in each individual case. In our estimation the deadweight is at a low and acceptable level.
- Based on the indications to date, the Scheme is considered to be excellent use of State money.
- Operational procedures are satisfactory, but with scope for some improvement in several areas.

¹ IDA Board Paper, November 2001.

10 Recommendations

It is clear from our findings that the Scheme's rationale is valid, that it is supporting high quality industrial research, on course to meet its objectives and providing very good value for money. Our central recommendation is therefore:

The Scheme should be continued and promoted aggressively with the aim of expanding considerably the number of firms involved, while maintaining rigorous technical assessments to ensure that project quality remains high.

As noted in Chapter 9, however, we consider that the Scheme's efficiency and effectiveness, and therefore its eventual impacts, can be improved by making some adjustments in its operational procedures. In this Chapter we make a series of recommendations to this effect. For convenience these recommendations are classified into a series of sections, each dealing with a particular operational area. Each section starts with a brief summary, in bullet point form, drawing together the particular findings from earlier Chapters relating to that topic. This is followed by our recommendations or, in cases where we have none, by a brief commentary on the findings.

10.1 Co-ordination of the Scheme

Findings:

- Nobody in IDA has a comprehensive overview of the Scheme or how it is operating. One executive in the Planning Division has a partial picture, based on proposals going to Management Investment Committee or Board, discussions with some Project Executives, occasional in-house reviews, etc.
- Most companies are unhappy about the time taken from submission of proposal to receipt of approval.
- To some companies it appeared that they were dealing with a series of separate Agency individuals with minimal inter-communication.
- The follow-up on deferred projects is unsatisfactory.
- At least ten applications proceeded as far as having a technical assessment carried out but were then not put forward for approval, for reasons that are not clear. Information on these is not held centrally but is presumably distributed among the files of individual Project Executives.
- Despite the various improvements that have been made to the Guidelines, both companies and Project Executives consider that they need to be further developed and more comprehensive.

- The Board considers the Scheme to be very important and would like to receive regular status reports.
- The absence of a person with a full overview of the Scheme reduces its efficiency, to the detriment of companies.

Recommendations:

Appoint a Scheme co-ordinator, reporting to the Executive Director for Operations, with functions and responsibilities as outlined below.

Proposed Functions and responsibilities of the Scheme Co-ordinator:

- Preparing printed and web-based promotional material (see section 10.2).
- Preparing comprehensive written guidelines, for both companies and Project Executives, with updates as new problems emerge (section 10.3).
- Identifying the potential market for the Scheme and proposing annual targets for new R&D Capability projects (section 8.6).
- Undertaking a review of all projects that were not submitted for approval after their technical assessments to see if there are useful lessons to be learned regarding the Scheme's operations.
- Arranging workshops involving Project Executives and managers, Technical Assessors, MIC and Board members, Legal and Grant Payments staff.
- Being 'on call' when any difficulties arise to advise Project Executives, and visit companies if appropriate.
- Maintaining a comprehensive database on the Scheme, recording (with dates) all proposals under discussion and projects in progress (including drawdowns).
- Intervening in the application, approval, contract or drawdown processes whenever significant delays become evident.
- Periodically calculating process and impact indicators (see section 10.17), with associated collection of the necessary data from companies.
- Providing the Board and Department with regular progress reports.
- Conducting (or arranging for) periodic reviews of the Scheme, using a similar methodology to that employed in this review, but on a more limited scale.

Comments:

We consider the appointment of a co-ordinator for the Scheme to be a fundamental requirement for driving the Scheme more dynamically, thereby improving its efficiency and effectiveness, and it should therefore receive the highest priority.

While consideration of other IDA programmes lies outside the remit of this review, we suggest the co-ordinator might usefully be assigned similar functions in relation to the RTDI, and perhaps the Training Programme.

10.2 Promotion of the Scheme

Findings:

- Some companies found out about the Scheme directly, rather than through a Project Executive.
- Several companies would have benefited from knowing about the Scheme earlier.
- Just 4 Project Executives dealt with 54% of the proposals.
- In the past nine months there has been a marked reduction in the proportion of proposals arising from new R&D performers¹.
- The existence of the Scheme, and the recent introduction of other R&D-related initiatives, have developed a positive perception among some companies of Ireland's commitment to supporting R&D.
- In USA, the word 'scheme' can have negative connotations.

Recommendations:

Produce a brochure on the Scheme and distribute this to all existing and potential IDA companies. Include in this brochure information on other relevant R&D support initiatives (e.g. RTDI and Science Foundation Ireland). Also provide this information on the IDA web site. Ensure that the brochure and the web information are kept up to date.

Maintain a balance between large projects from major multinationals and smaller projects for new R&D performers.

Consider changing 'Scheme' to 'Programme' or 'Initiative'.

10.3 Guidelines

Findings:

- There is a strong feeling among companies that clearer, written guidelines are needed, particularly regarding what costs can / cannot be included and the rules on retrospection (particularly when there is a significant time interval between application and approval).
- Some Project Executives would welcome clearer guidelines.

¹ Large projects from major multinationals will have the biggest impact in terms of meeting Ireland's commitment to the EU target of raising R&D expenditure to 3% of GDP by 2010. A significant focus on such companies and projects is therefore appropriate. However, the projects we examined for smaller, new-to-R&D companies were all of high quality and likely to lead to significant growth, as well as moving them substantially up the value chain and enhancing their embeddedness – the core objectives of the Scheme. Furthermore, such projects generally involve much lower grant amounts and therefore have the potential to provide excellent value for money.

Recommendation:

Produce comprehensive written guidelines on all aspects of the Scheme, for both companies and Project Executives.

These guidelines should be updated regularly to include advice on new problem areas that are likely to arise from time to time.

10.4 Company Application Form**Findings:**

- Both companies and Project Executives appreciate the short Company Application Form, but the subsequent need for more detailed financial and technical information is not always flagged and can therefore cause difficulties and delays.
- The Technical Assessment Unit has experienced difficulties with some applications in selecting the most appropriate Assessor due to the very limited information provided on the Company Application Form regarding the technical content of the project.

Recommendations:

Maintain a short Company Application Form, as a basis for discussion of the proposal (effectively an ‘expression of interest’), but include a statement that more detailed information will subsequently be required.

Written guidelines (see above) should also make this clear, and outline the range of information that will be sought.

Adjust the Company Application Form, in consultation with Enterprise Ireland’s Technical Assessment Unit, to include a fuller overview of the technology involved in the proposed project.

Consider reducing the amount of financial information required on the form to the minimum necessary to provide a basis for further discussion.

10.5 Communications with firms**Findings:**

- Companies perceive that they are dealing with a series of individuals, rather than a co-ordinated team, at various stages during the application, assessment, approval, contract and drawdown processes.
- Several different breakdowns of financial information are sought.
- Feedback on non-approvals appears to be inadequate.

- At least twelve proposals that had proceeded beyond the technical assessment stage (apparently satisfactorily) did not go forward for approval. The reasons for this are unclear.

Recommendations:

Develop greater co-ordination between the individuals dealing with each proposal/project (Project Executives, Technical Assessors, Contracts, Grant Payments). In particular, involve the Technical Assessor in all substantive discussions with clients during the application process.

Devise a unified requirement for financial information and specify this in the written guidelines provided to applicants.

Ensure companies are quickly informed of all decisions, or of any delays in the process (including the reasons for these).

Review all projects that were not submitted for approval after their technical assessments to see if there are useful lessons to be learned regarding liaison with companies or other operational aspects of the Scheme.

10.6 Inclusion of a specific project

Findings:

- Current legislation requires inclusion of a specific R&D project, which IDA considers appropriate in most, but not all, cases. IDA is therefore currently seeking the removal of this requirement in order to provide greater flexibility.
- Milestones (and therefore drawdowns) are often linked closely to progress on this included project.
- R&D priorities can change rapidly, and R&D progress is uncertain, but the procedures for approving changes are cumbersome.
- None of the companies had any problems with the requirement to include R&D projects *per se*, only on their subsequent very tight linkage to drawdowns.

Recommendations:

Regardless of any changes in legislative requirements, proposals should continue to require the inclusion of plans for one or more specific R&D projects.

Discuss with the Technical Assessment Unit the potential for reducing the amount of detail required in these R&D project plans. The information sought should be no more than is needed for the purposes of assessing the quality and relevance of the overall project, determining the allowability of any subsequent changes and for assessing the technical progress for drawdown purposes (see section 7.3).

Introduce a quicker method for approving changes in running projects, e.g. based on a re-assessment visit and report from a Technical Assessor combined with greater delegation of authority to approve changes based on their size.

10.7 Commercial assessment

Finding:

- There are generally no problems with this process, from the perspectives of either companies or Project Executives.
- The occasional deferrals by the Management Investment Committee do, however, raise significant concerns among the Project Executive community. Their concerns arise primarily from a limited understanding of the factors that receive particular attention from the Committee or, indeed, from the Board.

Recommendation:

Include in the proposed comprehensive guidelines for Project Executives (see section 10.3) a commentary on the aspects of proposals that the Management Investment Committee, and the Board, tend to focus upon.

10.8 Technical Assessment

Findings:

- All companies were very satisfied with the process, even where projects or costs were disallowed.
- Members of the Board and of the Management Investment Committee consider that Technical Assessment reports fully meet their needs in making approval decisions.
- Most Technical Assessor reports do not comment on the quality of the proposed R&D staff.

Recommendation:

A staffing plan should be required in all proposals. In the case of companies new to R&D the Technical Assessors should assess the capability, experience and potential training needs of the proposed staff, particularly the R&D manager, in the context of the planned activities.

10.9 Overall Role of Technical Assessors

Findings:

- Technical Assessors consider that they should have a greater role in the Scheme, e.g. earlier involvement at the proposal stage, attendance at relevant meetings of the Management Investment Committee and Board, and involvement in assessing progress for drawdowns.
- Some Project Executives involve Technical Assessors in advance of the formal assessment, and a few would prefer them to participate at Board.
- Members of the Board and of the Management Investment Committee consider that Technical Assessor attendance at approval meetings is unnecessary.

Recommendations:

Involve Technical Assessors as soon as it is clear that a proposal is likely to be forthcoming, i.e. once the company has submitted the initial Company Application Form.

Technical Assessors should only participate in Board (or MIC) if requested by the Project Executive, but should be informed of the outcome.

Comment:

The role of Technical Assessors in the drawdown process is considered in section 10.16.

10.10 Software Projects

Findings:

- There are some concerns at Board level and in DETE that the Scheme risks supporting software development projects that should be the normal business of the companies.
- Technical Assessors are satisfied that they can distinguish clearly those proposals that substantially enhance capabilities.
- All the software proposals and projects that we reviewed involved considerable upgrading of capabilities.

Comment:

No changes are needed in the handling of software proposals. The current arrangements, including the recently issued 'Framework for Determining the Appropriate Level of Grant Aid' (see Annex D), can fully cope with this concern, particularly if Technical Assessors are involved early on.

10.11 Government approval

Finding:

- Most companies consider that it takes too long to get through the approval process.
- Some 55% of projects to date have exceeded the €508k grant level, thereby requiring Government approval. Assuming that present trends continue, the numbers are likely to increase significantly as the Scheme develops. The procedure takes up valuable Government time and causes delays that adversely affect companies.
- A proposal is being put to Government by IDA to raise substantially the limit above which this procedure is required.

Comment:

We fully support this proposal. It will, inter alia, shorten the time to approval for many proposals.

10.12 Intellectual property

Findings:

- Until recently IDA required that intellectual property (IP) generated in an R&D Capability project should remain in Ireland. The purpose is to ensure that any income generated from the IP will accrue in Ireland. However, the IDA's 'Framework for Determining the Appropriate Level of Grant Aid' (see Annex D), introduced in Summer 2002, recognises that it cannot be readily achieved in all cases by recommending a lower grant rate in such circumstances.
- This requirement posed a major problem for some companies. Their corporate policy is to hold IP centrally, with freedom to licence it to any of their divisions or to other companies, or arrange cross-licencing agreements.
- Some supported projects build on IP generated and held outside Ireland. This would cause complications in any licencing opportunities that might arise.

Recommendation:

Continue to seek retention in Ireland of intellectual property developed under the Scheme. But, where this causes significant problems for the company concerned, maintain the recently introduced flexibility and lower grant rate arrangement.

10.13 Commercialisation of the research results

Findings:

- Current Irish legislation requires that products developed with grant support from the Scheme must be manufactured in Ireland.
- IDA is currently seeking the removal of this requirement from the legislation.

Comment:

With the increasing level of globalisation, and many IDA clients having manufacturing operations in several countries, this requirement is no longer realistic. We therefore support the proposed change.

10.14 Allowability of equipment costs

Findings:

- The costs of equipment that will be used for developing prototypes and pilot scale production is disallowed if it is likely to be used for commercial production within 5 years.
- In some sectors such as pharmaceuticals and medical devices, pilot scale production is part of the development process (e.g. to seek FDA approval). Approvals are invalidated if the production processes or equipment are changed.

Recommendation:

Allow depreciation cost of such equipment for the period up to its use in commercial production, provided that adequate justification is contained in the Application that this equipment is necessary because of the nature of the sector and the R&D that will be undertaken.

10.15 Retrospection

Finding:

- This is a major issue with several companies and was also raised by Project Executives. It arises due to the long gestation period of some proposals before final approval (over a year in one case). Corporate commitment, and funding allocation, is obtained at the outset, accompanied by pressure to commence implementation, which usually involves 'up front' capital expenditure.
- An agreement between IDA and the Department of Enterprise, Trade and Employment allows for retrospection for a maximum period of four months prior to the date of first approval by the IDA's Management Investment Committee.

Recommendations:

Establish tighter checks on the progress of proposals, with intervention by senior management when delays become evident.

Seek approval from the Department to allow retrospection (subject to contract) to a date one month after submission of a completed Company Application Form.

Comment:

The provision of full written guidelines to applicants (see section 10.3), and the proposed elimination of the Government approval stage in some cases (section 10.11), will help to shorten the time to approval, thereby also reducing the occurrence of retrospection issues.

10.16 Drawdown process

Findings:

- Some companies have experienced delays of several months between submission of a claim and its payment. The main cause is reaching agreement on allowable costs, often due to unapproved changes made by the company, e.g. leasing of equipment that was listed for purchase in the proposal.
- Drawdowns are linked to milestones, some of which are quite technical. Technical Assessors, however, are not involved until a project nears completion (a situation which has not yet arisen).

Recommendations:

Include comprehensive advice on allowable costs, and the rules governing cost changes during a project, in the guidelines for companies proposed in section 10.3.

Involve a Technical Assessor from the R&D Grant Payments Unit at Enterprise Ireland in all claims that require achievement of significant technical progress. Ensure that these are identified in the proposal documentation. (Note that the resource implications of the extra workload for the Unit will need to be considered when implementing this recommendation.)

10.17 Evaluation and Indicators

Comments:

In view of the importance of this Scheme, and the amount of public funding involved, it warrants a full evaluation at regular intervals to ensure it is functioning at the highest level of efficiency and effectiveness. It would also be desirable to undertake a smaller-scale review in six months time to assess the extent of implementation of the recommendations in this report.

Recommendations:

Arrange for full, independent evaluations of the Scheme every three years. These evaluations should include the collection from companies of all data needed to calculate the 'Project-level Impact Indicators' discussed below.

Conduct a limited review of the Scheme's operations at the end of 2003 to determine the extent to which the recommendations in this report have been implemented.

Comments:

Indicators consist of a range of quantitative measures of the performance of a particular system, in this case the R&D Capability Scheme operated by IDA Ireland. They can be classified into three main categories:

- **Process Indicators** are used to monitor the day-to-day operation of the Scheme, to ensure that all aspects are functioning smoothly.
- **Project-level Impact Indicators** measure the outcomes arising from the specific activities directly supported by the Scheme, i.e. the individual R&D projects.
- **Scheme-level Impact Indicators**, on the other hand, measure the overall effects of the Scheme's operations on the outside world, particularly its target audience (in this case Irish-based foreign-owned industry).

Below we propose a range of indicators for the Scheme in the three categories. We have endeavoured, as far as possible, to suggest indicators which:

- Are genuinely useful to those responsible for the Scheme's day-to-day operation, its overall design and/or its funding.
- Do not require the commitment of significant resources for collection of additional data that serve no other useful purpose. In the case of the three Project-level Impact Indicators proposed below, however, the need to collect specific data from participant companies cannot be avoided.

It is, however, a fundamental requirement that various data relating to the Scheme that already exists within IDA, but which resides in the files of various divisions, departments and individuals, be brought together by the proposed Scheme co-ordinator in a single database.

Suggested Process Indicators

- Number of applications in progress, approved, deferred or rejected #.
- Sectoral and BMW/non-BMW breakdowns of applications in progress and approved #.
- Anticipated duration of each proposed project.
- Number of additional R&D staff proposed in approved projects #.
- Total of all grants committed #, drawn down #, outstanding.

- Total value of approved projects and average grant percentage #.
- Breakdown of total project value by use (buildings, eqpt., salaries, etc. #.
- Average time from initial application to decision *.
- Average time from request for Technical Assessment to receipt of report *.
- Average time from approval to signature of contract *.
- Average time from claim to payment *.
- Number of projects completed (i.e. grant fully paid) #.

NOTES: # = Cumulative total and over the past 6 months.

* = Over the past 6 months

Suggested Project-level Impact Indicators

- Total number of patents granted as a result of funded projects.
- Sales and exports of products, or value of services or processes, developed under the Scheme.
- Percentage of current turnover due to Scheme-developed products.

Suggested Scheme-level Impact Indicators

- The percentage of the potential market (see section 8.6) that has participated in the Scheme.
- Percentage changes in R&D staff numbers and in R&D expenditure (total and amount spent with Irish institutions) for approved companies compared to all IDA companies (totals and breakdown by sector) five years after the approval date. (Data source: Forfás surveys of R&D in the Business sector.)
- The number of participant companies that have moved up (or down) the 'R&D staircase' at the end of their project and two years later, compared to their position prior to its commencement¹.
- The number of participant companies that have moved up (or down) the scale of 'Stages of Development of a Subsidiary'² at the end of their project and two years later, compared to their position prior to its commencement³.
- The survival rate of companies that have participated in the Scheme compared to all IDA companies (total and breakdown by sector) five years after the approval date. (Data source: Forfás Business Information System.)

¹ The form used for determining the 'R&D staircase' position of each applicant during the technical assessment – see Annex F, Appendix 2 – can be used for this purpose. The required comparison data will be available from the original technical assessment.

² This is a scale devised by Molloy and Delany, see Annex G.

³ The position on the scale should be assessed by the relevant Project Executive at all three stages. We envisage that the initial position of each applicant will be determined by the Project Executive during the application process, as part of the implementation of IDA's new Strategic Competitiveness Programme.

ANNEX A – Terms of Reference

1. Undertake a review of the IDA's R&D Capability Scheme, particularly its operating procedures, in order to:
 - (a) assess the suitability of the scheme's objectives and the extent to which they are being met;
 - (b) determine the extent to which the processes for selecting and approving projects used to date, and those recently introduced, ensure that grant aid is only provided for projects which meet the scheme's objectives and are likely to yield good value for money;
 - (c) establish whether appropriate mechanisms are in place for monitoring the progress of supported projects and taking remedial action where necessary;
 - (d) develop a robust set of performance indicators for use in the coming years to monitor the Scheme's progress, measure its outcomes and impacts, and assess the value for money achieved.
2. Carry out this review by:
 - (a) examining the Scheme's guidelines and other documentation on its operations to date, including the files on all proposals and projects to date;
 - (b) interviewing a representative sample of those involved in the operation of the Scheme;
 - (c) interviewing a sample of the companies involved to assess whether the supported projects are likely to result in an achievement of the scheme's objectives, what are the factors that determine project quality in practice and to establish that any recommendations being made for the Scheme's operations and indicators are likely to be effective and workable in practice;
 - (d) carrying out any other investigations relevant to the purposes of the evaluation.
3. Provide a report of the findings from the review and making recommendations on:
 - (a) the appropriateness of the Scheme's rationale, current objectives, targets and funding arrangements;
 - (b) any changes needed in the Scheme's selection procedures or operational methods in order to maximise its impacts and value for money;
 - (c) suitable indicators for on-going monitoring of the Scheme's performance.

ANNEX B – Guidelines for Project Executives

The R&D Capability Grant Scheme

Background

The R&D Capability grant scheme is essentially a reactivation of the R&D grant scheme that existed prior to the establishment of the Measure 6 programme in 1993. It is not in any legal sense a new scheme and will continue to operate under the 1986 Industrial Development Act and subsequent amendments.

However, the scheme has a radically different focus to the old R&D grant programme to bring it into line with the new IDA Ireland policy agenda as set out in the 2000+ initiative, as well as the requirements of EU guidelines on the treatment of R&D incentives.

The scheme is a key element in IDA Ireland's strategy of moving clients up the value chain, thus securing their competitiveness and strategic importance within the overall corporation. It forms an important tool in the new Strategic Competitiveness Programme.

What can it be used for?

- The R&D Capability grants scheme operates as what is called a Horizontal State Aid. It is not a Regional Aid and therefore is not significantly affected by the new grant aid limits introduced for Regional Aids in January. The grant programmes covered under Regional Aid are Capital, and Employment grants, as well as Equity.
- Horizontal aid, (R&D and Training grants), are intended for use in the development of the competitive capabilities of companies already located in a member state, without distorting inter EU trade patterns. Regional Aids, on the other hand, can be used to attract new foreign investment either Greenfield or Expansions. The R&D Capability scheme can only be used to facilitate the development of R&D facilities and activities in companies already located in Ireland, where that development is not part of a significant overall expansion of their operations in Ireland, (i.e. new FDI).

What kind of R&D?

In order to comply with Irish and EU legislation, the scheme applies to R&D projects which have as their primary objects the promotion or development of new or improved industrial processes, methods or products including the creation of an initial prototype which could not be used commercially. This may also include initial demonstration projects or pilot projects, provided that such projects cannot be converted or used for industrial applications or commercial exploitation.

In order to satisfy Irish legislation it is necessary that where a company is proposing to set up or expand an R&D unit, the proposed R&D programme needs to incorporate an actual R&D research project. Even a relatively small one will suffice.

What costs are eligible?

- Horizontal aid is not cumulated with Regional aid. Therefore companies can be given R&D grants without it affecting the level of support that can be given as Regional Aid, provided it is not used to grant aid new Greenfield or Expansion projects.
- Eligible costs as set out in the EU R&D guidelines are as follows:
 1. Personnel costs, (researchers, technicians, and other supporting staff employed solely on the research activity).
 2. Costs of instruments, equipment and land and premises used solely and on a continual basis (except where transferred commercially), for the research activity.
 3. Cost of consultancy and equipment services used exclusively for the research activity, including the research, technical knowledge and patents, etc, bought from outside sources. Note that the eligible cost of patents relates to the costs of licensing or acquiring technology from outside. It does not cover the costs of patenting the results of the R&D projects carried out by the client
 4. Additional overheads incurred directly as a result of the research activity.
 5. Other operating expenses (e.g. costs of materials, supplies and similar products incurred directly as a result of the research activity).

These costs are compatible with those allowed under Irish legislation.

- Feasibility studies and Technology Acquisition costs are also allowed under the EU R&D guidelines.

Selection Criteria and Interaction with other R&D related schemes.

- The overall aim of the proposed new scheme is to encourage companies to build up their R&D function by offering incentives for programmes of R&D development that give clients some additional attribute or element beyond their current level of R&D activity and capability, if any.
- To qualify for the R&D Capability Grant Scheme companies have to put forward R&D programmes that represent a clear and substantial “step-up” in the development of their R&D function in Ireland, compared to the current situation.
- For R&D programmes to qualify for the R&D Capability grants scheme they will have to:
 - a. Establish a permanent R&D unit, or substantially expand an existing one. The expansion of an existing R&D unit would have to incorporate significantly increased expenditure on at least one of the following; capital equipment, research personnel, or annual current expenditure. Companies will be deemed to be first time R&D participants if they have received less than £250k in R&D grants under any R&D scheme since the beginning of 1994.
 - b. Include at least one R&D project.

- c. In addition proposals which have either or both of the following characteristics will be viewed more favourably.
- (i) Acquire formal responsibility for some clearly defined element of overall Corporate Level R&D activity.
 - (ii) Carry out an R&D project/projects that substantially upgrade the technological capability and competitiveness of the Irish operation, thus bringing the products/services produced by the Irish operation more into line with Ireland's current competitive advantages.
- While proposals need to incorporate at least one R&D project for legal reasons, a substantial proportion of the costs should relate to the building up of the R&D function.
 - Any R&D programme not judged to be a “step up” under the criteria set out above would be directed to the RTI scheme, provided it is eligible under Irish legislation and relevant EU State Aid Rules.
 - Feasibility and Technology Acquisition costs are also allowed under the EU guidelines.

Relationship with the RTI scheme

- The key distinction between the R&D Capability Grants scheme and the RTI scheme, is that the R&D Capability Grants Scheme is focused on building up the R&D function within companies in terms of its capability and strategic importance. The RTI scheme is focused on the commercial and technical merits of individual R&D projects.

The relationship between the R&D Capability grant scheme and the RTI scheme should be seen as complementary. They are designed to interlink in a manner that provides a comprehensive support system for all companies and at various stages of development with regard to their R&D function. They are both aimed ultimately at the same primary objective, namely the development of the level of R&D being carried out in Ireland, and in doing so increasing both value-added and competitiveness. But they address two separate stages on the road toward that common objective.

The R&D Capability grants scheme is focused on helping companies build up their R&D functional capability. Therefore grants under this scheme will be primarily focused on the costs associated with developing an R&D function/facility.

How is it administered?

- The project executive responsible for the company undertakes the commercial appraisal and arranges for a technical evaluation by the Enterprise Ireland unit responsible for the technical evaluation of RTI projects. However, the technical evaluation is much more narrowly focused and simple than that carried out under the RTI scheme. (See attached note outlining the issues the technical evaluation covers).

- The IDA project executive exercises control of the proposal. The role of the EI technical assessment is restricted to simply providing input into the IDA project executive's proposal.
- All proposals must incorporate a clearly defined set of milestones which are good indicators of the progress of the proposal and are unambiguous and easy to verify.
- Because of the nature of R&D projects it is not feasible to use the economic model to assess their economic impact.
- The scheme is operated under standard delegated powers and approvals are made by the MIC, ICB, Board, and Government, as appropriate. There is no special committee.
- The report consists of the standard cover sheet with a summary and recommendation, along with a copy of the application form, the EI technical evaluation report, and a commercial evaluation by the project executive.
- Under current Irish legislation R&D projects can get grants up to € 507,900, after which approval from Government must be sought.

Projects, which have, either a total expenditure of over €25 million, or where grant aid exceeds €5 million, will have to be individually approved by the Commission, after Government approval.

Operating Guidelines for R&D Capability Grant Scheme

The guidelines set out in this document reflect the changes agreed by the Executive and Board in November 2001.

- Clients must be adding to their EU wide R&D function, i.e. no project that is simply a transfer of an R&D operation out of another EU member state will be accepted.
- To comply with the EU guidelines for R&D and as discussed at the Board the number of additional jobs in the programme will only be examined from the viewpoint of its consistency with the nature of the programme, and as a legitimate part of overall costs.
- Clients must contract to maintain the operation of a new R&D unit (or expansion of an existing function), at projected expenditure and/or staffing levels for 5 years, to avoid grant claw backs.
- Claw back liability would operate for 5 years after the date of the last grant claim of the client.
- The penalty would be triggered if the company fails to maintain the grant aided facility for this 5 year period, and the amount would be the value of all grants tied to fixed assets.
- The costs specific to any R&D project done as part of the overall R&D programme would not be subject to claw back, regardless of the outcome.

- Proposals where the grant exceeds € 1,000,000 require a Parent Company Guarantee.
- Technical evaluations are carried out by the EI unit responsible for this function under the RTI scheme. The contact is Pat Branigan, Manager, R&D Technical Evaluation Section, Innovation Initiatives Department, Enterprise Ireland, Glasnevin Dublin 9.
- The validation of grant claims will be carried out with assistance from EI technical evaluation staff
- Clients will be charged €2.359 to cover the costs in carrying out the initial technical evaluation, as well as the technical evaluation element in validating grants claims when the R&D programme is completed. This sum will be deducted from the grant payment.
- The assessment of R&D programmes will put more emphasis on building the R&D function and capability rather than the nature of the research project that is submitted as part of the overall R&D programme.
- Companies that already have large and active R&D functions and have received significant funding under other R&D schemes in the past will be eligible under the scheme, provided the proposed R&D programme represents a clear and significant addition to their current R&D facility/activities, and it can be demonstrated that it has not in effect already been grant aided under another scheme.
- Clients must undertake to carry out the programme within a specified time period, with an allowance of a one-year overrun, at the discretion of Grants Administration Division.
- The Executive Committee want the scheme to be disseminated to clients in a low-key fashion. Divisional managers should agree with their staff a limited list of clients who should be approached about the scheme, that is those likely to be interested in pursuing the major R&D initiatives envisaged by the scheme.

Technical Evaluation Report (to be prepared by EI)

Does the proposed project constitute fundamental, industrial, or pre-competitive research, as set out in the EU Guidelines for R&D?

Has the company the technical competence to carry out the proposed R&D programme?

Is the project technically feasible?

Does the project represent a significant technical challenge for the company relative to its current technology?

Are the proposed expenditures (capital and current), necessary, appropriate, and reasonable for the R&D programme?

Does the proposed expenditure represent a significant enhancement of the R&D function in terms of either its scale or capability?

ANNEX C – Client Guide

Client Guide to the new R&D Capability Grant Scheme

Background

The R&D Capability Grant Scheme is the product of a shift in emphasis for IDA Ireland

IDA Ireland's current policy emphasises the need to help existing clients to move up the value chain. The objective is to ensure client companies are focused on activities for which Ireland is a cost-effective location, and thus help secure their competitiveness and strategic importance within the overall corporation.

To do this IDA Ireland has introduced new incentive schemes, which focus specifically on helping existing clients to:

- Put in place higher order functions (e.g. an R&D unit).
- Convert to producing more advanced and higher value-added products or services.
- Significantly increase the skill base of their operation.

One of these new incentive schemes is the R&D Capability Grant scheme.

The R&D Capability Grant scheme

The key aim of the R&D scheme is to encourage companies to build up their R&D function in Ireland.

To qualify for the R&D Capability Grant Scheme companies have to put forward R&D programmes that represent a clear and substantial step change in the development of their R&D function in Ireland, compared to the current situation. They will have to fit with one of the following criteria:

- Establish a permanent R&D unit, or substantially expand an existing one. The expansion of an existing R&D unit would have to incorporate significantly increased expenditure on at least one of the following: capital equipment, research personnel, or annual current expenditure.
- Acquire formal responsibility for some clearly defined element of overall Corporate Level R&D activity.
- Carry out an R&D project/projects that substantially upgrade the technological capability and competitiveness of the Irish operation, thus bringing the products/services produced by the Irish operation more into line with Ireland's current competitive advantages.
- Applications that meet only this criterion must meet it clearly – marginal cases are unlikely to be supported.

The emphasis is therefore on helping existing clients to start up an R&D function or significantly expand an existing one, rather than on the nature of any specific R&D project that would be carried out by the R&D function. IDA is prepared to contribute to the capital costs of establishing an R&D unit (e.g. buildings, equipment etc), as well as the current costs of running the unit, and carrying out R&D work for a limited period. Any proposal must include an R&D project.

Where R&D is the primary function of a company (e.g. a semiconductor design house or a software development group) the growth of the company may be supported by capital/employment grants in the same way that growth of the primary function of any other entity (manufacturing or traded services) may be supported. R&D grants will be considered only on an exceptional basis where required to bring about a step change in the operation's responsibilities and the complexity of its work and in situations where substantial new investment is required for this purpose.

It should also be noted that the primary objective of the scheme is not to increase total employment in the client company. However the number of new jobs in the proposed R&D programme will be examined from the viewpoint of its consistency with the nature of the programme, and as a legitimate part of overall costs.

Eligible Costs

Eligible costs are as follows:

- Personnel costs, (researchers, technicians, and other supporting staff employed on the research activity).
- Costs of instruments, equipment and land and premises used solely and on a continual basis for the research activity.
- Costs of consultancy and equipment services used exclusively for the research activity, including the research, technical knowledge and patents, etc, bought from outside sources.
- Additional overheads incurred directly as a result of the research activity.
- Other operating expenses (e.g. costs of materials, supplies and similar products incurred directly as a result of the research activity).
- Feasibility studies and technology acquisition costs are also allowed.

Restrictions

The scheme cannot be used for the following types of projects: -

- to attract new mobile manufacturing investment or significant expansions of manufacturing operations.
- proposals which consist solely of an R&D project, that is, which do not also entail some permanent expansion of the R&D function, in terms of either size or the technological level of the R&D it is capable of carrying out.

- R&D projects which are only routine product development.
- any project that is simply a transfer of an R&D operation out of another EU member state.
- R&D projects explicitly aimed at developing products for production abroad.

Administration

A key focus of the scheme is to ensure that it deals with client proposals in a fast and efficient manner. To this end IDA has introduced a number of features to how the scheme is run to achieve this. These include:

- A simple application form based system for submitting proposals.
- The scheme is complementary to the RTI grant scheme. It is not competition based, and does not have a fixed fund. All projects will be assessed purely on their fit with the criteria set out above.

How to Proceed

If you are interested in submitting a proposal you should first contact your IDA Ireland project executive to discuss the eligibility of what you have in mind. He or she will provide you with the application form, and any other information and advice you require.

Research & Development

R&D Schemes are directed at existing overseas companies in Ireland. Any grant assistance is subject to a maximum of 35% of eligible costs in the Objective 1 Area and 30% of eligible costs in the Objective 1 in Transition Area.

R&D Capability grant assistance is provided to support the establishment of a new R&D function or the substantial up-grading of an existing R&D unit. Assistance is available towards capital expenditure and personnel costs. All eligible costs must comply with criteria laid down by Irish legislation and EU State Aid Guidelines.

Research Technological & Innovation (RTI) grant assistance is particularly directed at established companies which are planning to undertake their first R&D projects and those which are significantly developing their existing R&D activity. The maximum amount of grant for any application cannot exceed €444,400. The RTI Scheme is competition based.

Feasibility Studies

Expenditure on feasibility studies can be included as eligible costs under R&D.

Technology Acquisition

Expenditure on technology acquisition can be included as eligible costs under R&D.

ANNEX D – Framework for Determining the Appropriate Level of Grant Aid

Framework for Determining the Appropriate Level of Grant Aid for R&D Capability Scheme Proposals

1. Background

Since the launch of the R&D Capability scheme, and particularly since the end of the pilot period, a number of important issues have arisen. These include:

1. How to clearly distinguish between projects that meet the strategic objectives of the scheme and those that do not.
2. Once a proposal meets the strategic objectives of the scheme, how to decide what level of grant assistance is appropriate.
3. How to assess projects in sectors such as software where in a sense R&D is their main activity.

The purpose of this document sets out how to deal with these three issues in the case of R&D Capability Grants

2. Meeting strategic objectives and determining the appropriate level of Grant Aid

A key characteristic of the R&D Capability scheme is the intention to use it to initialise or accelerate the acquisition of control over, and building competence in, a significant element of our client companies' technology/product development function.

Therefore to qualify for the R&D Capability Grant Scheme companies have to put forward R&D programmes that represent a clear and substantial "step-up" in the development of their R&D function in Ireland.

The ultimate aim is to:

- Upgrade the technological capability and competitiveness of the Irish operation, and bring the products/services produced by the Irish operation more into line with Ireland's current competitive advantages.
- Achieving a mix of high-grade manufacturing *allied* to strategically important functions such as R&D.
- Increase their embeddedness in Ireland, their span of control, and strategic importance within the overall corporation.

While the “step-up” has to be to some degree relative to the current stage of development of the client, only those proposals that clearly demonstrate that they are substantially capable of achieving these objectives should be approved.

The R&D Capability Grant Scheme currently operates on the basis of a 30-35% grant *maximum*, depending on location, as dictated by EU guidelines. However, while the grant level appropriate to a specific project, (including whether it should be grant aided at all), will always be dependent on a wide range of issues, there are certain characteristics that are good general indicators of the value of the proposed R&D programme.

These include:

a) First time R&D.

Distinguishing between clients who currently have no R&D function, and those that do but wish to substantially upgrade it.

A key priority of the R&D Capability scheme is to get clients to set up an R&D function. Support should therefore on average be higher for those starting up a function than for expanding an existing one.

b) Intellectual Property.

The issue of where any intellectual property (IP) that may arise from a project will reside is an important issue in terms of the potential “wealth” impact of the proposed R&D programme. If the IP is to be resident in Ireland it means an additional income stream to the Irish operation as well as a higher degree of control and ownership.

c) Made in Ireland.

The function of R&D is a valid target to pursue in its own right, even where the research is into products which are not likely to be produced in Ireland for a variety of reasons (e.g. costs, target markets, logistics etc). However, where the nature of the products/services being researched carries a strong likelihood of being produced in Ireland, this is in general an advantage and makes the proposal more valuable.

d) Technological challenge.

One of the questions the Technical Assessor is asked to answer is whether, “the proposed R&D projects associated with the programme, represent a significant technical challenge for the company, relative to its current capability”. The point is to indicate that a technological step change is a characteristic of the proposal and that it has the potential to substantially increase the clients’ “capability” to carry out high quality R&D in the future.

e) Span of control.

The R&D activity and the R&D function itself in a company are typically embedded in a larger *technology* management function. This could include:

- Formulating the overall “technology” strategy of the company.
- Deciding “what” to do research in, based on industry trends, changing demand, emerging primary technologies etc.
- “Managing” the R&D function for a range of products that are all reliant on similar technologies, and overseeing their development right up to market launch.

The acquisition of control over some part of this *wider* function would be advantageous, as it would help embed the client more effectively in Ireland and increase its strategic importance to the Corporation.

Therefore, while the precise structure will vary by company, it is appropriate that proposals seeking a high level of support should clearly have this characteristic, and preferably formal control.

f) Self-reliance and sustainability.

The objective of the R&D Capability scheme is, as its name implies, to develop a sustainable and self-reliant “capability”. In this context the development of the technological capability of a client can be characterised as going through several stages.

- Stage one, where all technology is transferred by the parent and no substantive R&D is carried out in the Irish operation.
- Stage two, the Irish operation does development, but the basic technology is still transferred in from the parent.
- Stage three, the Irish operation is capable of the full R&D process with little or no technological transfer from the parent.

Projects seeking a high grant rate should clearly demonstrate that they are stepping up from one to two, or from two to three.

g) Sectoral and Strategic Impact

Some proposals may have strong potential benefits at a sectoral level and not just within the individual company undertaking the proposal. For instance, where a client company in an industry cluster of particular importance to IDA Ireland is the first to set up an R&D unit, this may induce others to follow, and would help generate a pool of R&D expertise specific to the technologies used by that cluster.

In addition, where the implementation of the proposal leads to the development of R&D or technological expertise in relevant educational institutions, (by for instance sub-contracting some of the R&D work to a third level institution), this should be viewed as a positive characteristic.

Instances such as this, where they can be substantiated, represent benefits beyond the individual client undertaking the R&D Capability proposal and warrant a higher level of grant aid than would otherwise be the case.

This list of factors should be used as a “check list” to help Project Executives to decide the appropriate grant rate for specific R&D Capability Proposals they should seek. They should be included in all R&D Capability submissions as a simple one-page attachment, (see appendix 1 below).

These list of factors of course have to be viewed in tandem with all the other relevant aspects of the proposal, (including the level of grants required to make the project happen), before deciding on the appropriate grant rate. However, only projects that satisfy most or all the criteria set out above should warrant support at or near the maximum.

In addition if proposals do poorly on all or most, the question needs to be asked as to whether the project should be assisted at all? This is particularly the case with respect to *a)*, *d)*, *e)*, and *f)* above.

3. Software projects

Software projects present a particular problem. The basic activity of most software companies is R&D, so the issue is how to distinguish between proposals that consist merely of initiatives the company would undertake as part of its routine development anyway, and those that represent a real step up in their R&D capability.

The following are a set of factors that are particularly relevant to the software sector and are indicative of a new initiative that is outside normal ongoing development work. A positive answer on most of these would in general be required before any grant assistance is given.

They are:

- Will it develop a totally “new” product, with a new licensing and pricing structure?
- Will new personnel with expertise not currently in-house be hired?
- Does the proposal require use of a new programming language, which the client currently has little or no expertise in?
- Will new specialised and dedicated hardware be required?
- Will it require significant formalised up-skilling of existing staff to accomplish?

In addition, because of the knowledge intensive/dependent nature of the sector, two additional factors are relevant:

- Will the proposal impact positively on overall skill levels in the Irish operation?
- Can the technologies being developed be leveraged into other products, either existing or new?

Software proposals should have most, if not all, of these characteristics before they would merit any assistance.

In addition, the indicators outlined in section 3 would also be relevant to deciding whether or not assistance is justified at all in software projects, particularly with respect to a), d), e) and f), and if so at what level.

The software related factors above should then form an “extra filter”, to be used for Software Proposals only, as well as assessing them under the criteria set out in section 2 above.

The assessment of the software related factors should be provided by an EI technical assessor who has the required technical expertise to do so.

4. Conclusions

Appendix 1 provides an example of two sample R&D Capability Proposals to show how they should appear in an R&D Capability proposal.

Appendix 1

	<u>Non-software Project</u>	<u>Software Project (BMW Region)</u>
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General R&D Proposal Characteristics, (for all projects).

First Time R&D	yes	no
Intellectual Property	no	no
Made in Ireland	yes	no
Technological Challenge	yes	yes
Span of control	yes	yes
Self-reliance/sustainability	yes	yes
Sectoral and Strategic Impact	yes	no
Grant Rate	19%	27.5%
Maximum Grant Rate	30%	35%

Software Projects Only

New product, license, and pricing structure	n/a	yes
New personnel with expertise not in-house	n/a	yes
New programming language	n/a	yes
New specialised and dedicated hardware	n/a	yes
Formal up skilling	n/a	no
Impact on overall skill levels	n/a	yes
Leverage new products	n/a	yes

ANNEX E – IDA's Company Application Form



R&D capability grant scheme company application form

Section one background information

Company name
Company address

Year established in Ireland

Current Irish employment

Turnover (for the last three years)	
Year	€

Main business/businesses

Name and address of parent company

Section two current R&D activities

Do you have a formal R&D unit at present in Ireland? yes no

If yes, please briefly describe its activities

Current value of fixed assets dedicated to R&D function (State year)	
	€
Buildings/Land	
Equipment	

Current annual R&D spend (State year)	
	€
Personnel costs:	
– researchers/technicians	
– support staff (incl mgmt)	
Consultancy	
Materials	
Patents/royalties	
Overheads	
Other services, please specify	

•Please enclose three years audited accounts for your parent company and the Irish operation.

Please state planned time span for the R&D programme

[Green response area]

Please outline the level of experience and/or qualifications of the R&D management team

[Green response area]

Please outline three or four clearly defined and easily verifiable milestones backed up by a GANTT chart or similar, showing how the overall programme is planned to progress

[Green response area]

Please outline briefly how the proposed R&D programme will be financed

[Green response area]



Financial details of proposed R&D programme
(only include expenditures additional to your current
R&D operation)

Capital expenditure

Buildings and land

Year	€

Equipment

Year	€

Current expenditure

Personnel costs – fulltime researchers/technicians

Year	€

Personnel costs – fulltime support staff
(including management)

Year	€

Consultancy

Year	€

Materials

Year	€

Patents/royalties (bought-in technology only, exclude
the costs of patenting the outcome of the proposed
R&D programme)

Year	€

Overheads

Year	€

Other services, please specify

Year	€

Staffing

Number of **fulltime** staff – researchers/technicians

(only include those additional to your current R&D staffing

(if any)

Year	number

Number of **fulltime** staff – support staff (*incl mgmt*)

(only include those additional to your current R&D staffing

(if any)

Year	number

Outline the likely benefits of the R&D programme for your Irish operation, in terms of:

1 Its overall competitiveness and R&D capability

2 Sophistication/value added of products/services

Signature

3 The future level of R&D activity

4 Its strategic importance to the overall corporation

Will the proposed R&D programme be sub-contracting any element of the research? yes

If yes, give details

Will the proposed R&D programme have any negative impact on your corporation's R&D activities in any other EU member state? yes

If yes, give details

Date

ANNEX F – Form used by Technical Assessors

Research and Development Capability Initiative Technical Assessment Report		
COMPANY DETAILS:		
Name:		
Address:		
Phone:	Fax:	e-mail:
Contact:	Position:	
TECHNICAL ASSESSOR:		
Name:		
Organisation / Company:		
Telephone:	Fax:	e-mail:
DEVELOPMENT ADVISOR:		
Name:		
Agency:		
Telephone:	Fax:	e-mail:
The Technical assessor will address the following issues: <i>(delete the prompts under each question when complete)</i>		
1.	Does the proposed project constitute fundamental, industrial, or pre-competitive research, as set out in the EU Guideline for R&D? Yes/No	
Explain briefly under the following: <ul style="list-style-type: none"> - Project type^[1] - Technical objectives Note: include project description if appropriate		
2.	Has the company the technical competence to carry out the proposed R&D programme? Yes/No	
Explain briefly under the following: <ul style="list-style-type: none"> - core skills of the project team - project management - plans for R&D skills appraisal and Human Resource Development - other resources identified to support the R&D process - R&D capability rating^[2] <div style="text-align: right; border: 1px solid black; padding: 2px;">[score 1 to 5]</div>		
3.	Are the projects technically feasible? Yes/No	
Explain briefly under the following: <ul style="list-style-type: none"> - results of previous research or feasibility studies - adequacy of the project planning^[3] and timescale - level of technical risk^[4] 		
4.	Does the proposed R&D programme represent a significant technical challenge for the company, relative to its current capability? Yes/No	
Explain briefly under the following: <ul style="list-style-type: none"> - level of technical innovation^[5] - Advancing the technological capability of the company 		

5.	Are the proposed expenditures (capital and current) necessary, appropriate and reasonable for the proposed R&D programme? Yes/No
Explain briefly under the following: <ul style="list-style-type: none"> - validity of costs - value for money - is the investment adequate to achieve the company’s proposed R&D projections Note: Complete costs estimates in Appendix 1 - Proposed R&D Expenditure	
6.	Does the proposed expenditure represent a significant enhancement of the R&D function in terms of it’s scale or capability? Yes/No
Explain briefly under the following: <ul style="list-style-type: none"> - is it a significant step up in their current R&D function - is it a <u>sustainable and substantial increase</u> in “R&D spend as a % of sales” under R&D Capability compared to any previous projections made by the company (for instance in their latest RTI application) - will the proposed investment lead to continuous R&D programmes 	
7.	Recommendation: Yes/No
Overall comments. The technical assessor is requested to give his/her overall opinion on the application.	

Appendix 1 – Proposed R&D Expenditure

Complete a separate table if there is more than one R&D project

Project Cost Estimate ^[6] :							
Project 1	Materials	Salaries	Travel & Subsistence	Overheads	Consultancy	Capital	Total
Company							
Assessor							
Comment on project costs							

Capital Related Investment (Facilities & Equipment)					
Estimate	Travel & Subsistence	Consultancy	R&D Capital	Facilities	Total
Company					
Assessor					
Comment on the Capital Related Investment costs:					

Commercial Exploitation ^[7] :
Comment on the company’s ability to commercial the results

Environmental Clearance Cert^[8]	Yes	No	(tick ✓)
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Signed:	Agency:	Date Completed
Type Name		

Tick one box in each category.

Appendix 2 - R&D Staircase

✓ Staff	✓ R&D Management Systems												
<ul style="list-style-type: none"> More than eight full time R&D staff under R&D manager Participation in R&D training programmes, secondments, visits, interchanges etc, with training budget Qualifications - degree level, some Masters and PhD's Use of cross-functional teams <p style="text-align: right;">20</p>	<ul style="list-style-type: none"> Formal documented procedure for NPD Use of such tools as quality function deployment (QFD), Stage Gates, SWOT, STEP, etc. R&D Quality system in place (i.e. ISO9001) Systems installed and being followed for <ul style="list-style-type: none"> - Portfolio Management - Resource Management - Project Management - Benchmarking - IP Management - Concurrent Engineering - Financial Appraisal <p style="text-align: right;">12.5</p>												
<ul style="list-style-type: none"> Between three and eight full time R&D staff under R&D manager Occasional training programmes related to the R&D process Qualifications - some at degree level <p style="text-align: right;">16</p>	<ul style="list-style-type: none"> Formal documented procedure for NPD Evidence of systems installed and operating for <ul style="list-style-type: none"> - Portfolio Management - Project Management - Project specifications - Resource Management - R&D Costing System <p style="text-align: right;">10.0</p>												
<ul style="list-style-type: none"> Minimum two full time R&D staff with a management function Training less than once per year Qualifications - mix of experience and qualifications below degree level <p style="text-align: right;">12</p>	<ul style="list-style-type: none"> Effective but maybe informal project management process in place Written project specifications with ref. to relevant standards Some R&D tools in use (i.e. WHIF, DMA etc. Informal review process by management <p style="text-align: right;">7.5</p>												
<ul style="list-style-type: none"> No full time but some part time R&D staff No ongoing training activity R&D activity based on technical experience <p style="text-align: right;">8</p>	<ul style="list-style-type: none"> No formal project planning process in place Basic specifications for projects <p style="text-align: right;">5.0</p>												
<ul style="list-style-type: none"> Emerging interest in R&D <p style="text-align: right;">4</p>	<ul style="list-style-type: none"> Emerging interest in R&D <p style="text-align: right;">2.5</p>												
✓ Finance	✓ Corporate Strategy												
<ul style="list-style-type: none"> R&D budget above 5% of sales (average over three years) Regular participation in publicly funded R&D schemes - national and international <p style="text-align: right;">5</p>	<ul style="list-style-type: none"> Leader in World-Class technical development Technical Director at Board Level Autonomous R&D division within corporate structure Formal interaction between R&D and other divisions with review process R&D regarded as a key source of competitive advantage and features as such in the business plan Process for ensuring participation in the innovation process <p style="text-align: right;">15</p>												
<ul style="list-style-type: none"> R&D budget between 2% and 5% of sales (average over three years) Participation in publicly funded R&D schemes - national and possibly international <p style="text-align: right;">12</p>	<ul style="list-style-type: none"> R&D plan featuring in business plan Aspiring to World-Class technical development R&D as sub-division of other function Formal interaction between R&D and other functions <p style="text-align: right;">12</p>												
<ul style="list-style-type: none"> R&D budget below 2% of sales (average over three years) Participation in national funded R&D schemes - RTI /ARP <p style="text-align: right;">9</p>	<ul style="list-style-type: none"> R&D plan, but not integrated into business plan (bottom up) R&D as sub-division of other function Occasional interaction with other functions <p style="text-align: right;">9</p>												
<ul style="list-style-type: none"> R&D spending but no formal budget allocation Considering participation in R&D scheme Funding on project - by - project basis <p style="text-align: right;">6</p>	<ul style="list-style-type: none"> Reactive R&D R&D projects undertaken on an intermittent basis, mostly process Loose association of dual role people for duration of project Little or no interactions with other functions <p style="text-align: right;">6</p>												
<ul style="list-style-type: none"> Emerging interest in R&D <p style="text-align: right;">3</p>	<ul style="list-style-type: none"> Emerging interest in R&D <p style="text-align: right;">3</p>												
✓ Facilities	✓ External Links												
<ul style="list-style-type: none"> Dedicated R&D facility Laboratory Well equipped with state-of-the-art equipment (i.e. CAD/CAM/CAE) Full 3D modelling capability Supplemented by use of external facilities, i.e. university <p style="text-align: right;">15</p>	<ul style="list-style-type: none"> Project leader in national or international R&D programmes Customers / suppliers / universities collaboration Third level linkages Participation in networks Membership of international committees <p style="text-align: right;">10</p>												
<ul style="list-style-type: none"> R&D facility Sufficient equipment to conduct R&D work within the facility Supplemented by use of external facilities, i.e. university <p style="text-align: right;">12</p>	<ul style="list-style-type: none"> Participation in international R&D programmes Customer and / or supplier collaboration Third level linkages Some management of linkage process <p style="text-align: right;">8</p>												
<ul style="list-style-type: none"> Mix of dedicated and shared facilities Some dedicated equipment and some shared <p style="text-align: right;">9</p>	<ul style="list-style-type: none"> Low level participation in FP5 including CRAFT Third level linkage occasionally Customer / Supplier Collaboration <p style="text-align: right;">6</p>												
<ul style="list-style-type: none"> Sharing of facilities with another function Arrangements for sharing of equipment <p style="text-align: right;">6</p>	<ul style="list-style-type: none"> Any form of external contracting relating to R&D, nationally including Enterprise Ireland or other third supplier <p style="text-align: right;">4</p>												
<ul style="list-style-type: none"> Emerging interest in R&D <p style="text-align: right;">3</p>	<ul style="list-style-type: none"> Emerging interest in R&D <p style="text-align: right;">2</p>												
✓ Innovation Level	Combined Score & Staircase Position												
<ul style="list-style-type: none"> Continuous successful innovation Continuous breakthrough and platform product/ process, based on original research. Record of patents / licences granted <p style="text-align: right;">12.5</p>	<p>Tick the appropriate box in each of the seven categories. Add up the corresponding score as indicated in the right hand corner of each box.. Give company an overall R&D Capability rating as shown below.</p> <table style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th>Score</th> <th>R&D Rating</th> </tr> </thead> <tbody> <tr> <td>00-20</td> <td>1</td> </tr> <tr> <td>21-40</td> <td>2</td> </tr> <tr> <td>41-60</td> <td>3</td> </tr> <tr> <td>61-80</td> <td>4</td> </tr> <tr> <td>81-100</td> <td>5</td> </tr> </tbody> </table> <p>Insert rating in the "R&D Capability Rating" section of the report.</p>	Score	R&D Rating	00-20	1	21-40	2	41-60	3	61-80	4	81-100	5
Score		R&D Rating											
00-20		1											
21-40		2											
41-60		3											
61-80	4												
81-100	5												
<ul style="list-style-type: none"> Record of successful innovation Some breakthrough products / Processes Some patents / licences granted <p style="text-align: right;">10.0</p>													
<ul style="list-style-type: none"> Product / process differentiation through innovation Small number of platforms with product families <p style="text-align: right;">7.5</p>													
<ul style="list-style-type: none"> Reactive development Incremental product development in response to customer demand <p style="text-align: right;">5.0</p>													
<ul style="list-style-type: none"> Minor process development <p style="text-align: right;">2.5</p>													

Endnotes: Use endnotes as a guideline for completing Technical Assessment Reports. Delete endnotes when the Assessment Report is complete.

^[1] **Project Type:**

- Platform Product = A platform product is one which will likely generate a family of new products
- New Product = Substantially new product/process based on original research.
- Major Upgrade = Significantly enhanced existing product/process.
- Defensive Redesign = A redesign of product/process for compliance with specific (inter) national standards, or in response to competitors.
- Routine Upgrade = An upgrade based on technology changes within the sector.

^[2] **R&D Capability Rating:**

Position the company on the R&D Staircase in terms of R&D Capability. Use the analysis sheet attached to the report template to arrive at a score as shown. The analysis should be done in conjunction with the company and ideally during the company visit. It is important to note that it is the assessor's view of the company capability in R&D that is required in the report. The final score is ticked off in the report. Specific areas of weakness identified in the analysis should be signalled in the form of recommendations with particular emphasis on their Innovation and R&D management systems such as;

- Management of Change (Culture & Cross Functional Teamwork)
- Creativity & Portfolio Management
- Stage-gate Management or Concurrent Engineering Methodology
- Interface Management (Linkages & Networks)
- Management of Risk and Uncertainty
- Product Cost Control Management
- Intellectual Property Management

^[3] **Project Planning:**

Rate the level of project planning and explain your rating as follows ;

- Very Strong = Well defined project, clear milestones and staging, resources well defined, clear costing.
- Strong = Well defined project, some milestones, staffing and costing reasonably clear.
- Satisfactory = Reasonable project definition. Staff may share the R&D role with their normal job. Reasonable attempt at costing.
- Weak = Project not well defined. Costing and staffing unclear.
- Poor = Poorly defined in terms of objectives, milestones and cost. Staffing unsatisfactory

^[4] **Technical Risk:**

Outline steps take to address intellectual property issues (patent research for prior art, infringement, novelty etc.). Rate level of risk and explain your rating as follows:

- Medium Risk / Radical Dev. = Good prospects for success, e.g. radical upgrade involving new functions
- Medium Risk = Good prospects for success, e.g. upgrade involving new functions
- High Risk = Development work in areas where the company has little experience, or where major advances are proposed.
- Low Risk = Risks are low, reasonable developments (e.g. new features) to existing products/processes.

[5] Technical Innovation:

How does the proposed level of technology compare with current activity within the company?

What are the technical uncertainties? Has the technology been developed elsewhere?

Rate the level of innovation in relation to the **current company** position and explain your rating.

Score as follows:

- Very High = Highly inventive, patentable.
- High = Significant level of inventiveness, function oriented possibly patentable.
- Medium = Modest level of inventiveness, possibly patentable.
- Low = Routine redesign, feature orientated. “Me too”, copy. Check for patent infringements

[6] Project Cost Estimates:

The technical assessor is expected to redefine the project costs where appropriate and give the revised estimates in the space provided. Comments on the costs should be included to affirm their accuracy or otherwise.

Note: Eligible costs for R&D projects are identical for those outlined in the RTI Guidelines for Development Advisors and Technical Assessors. Please refer to these guidelines on the Intranet – Document Number

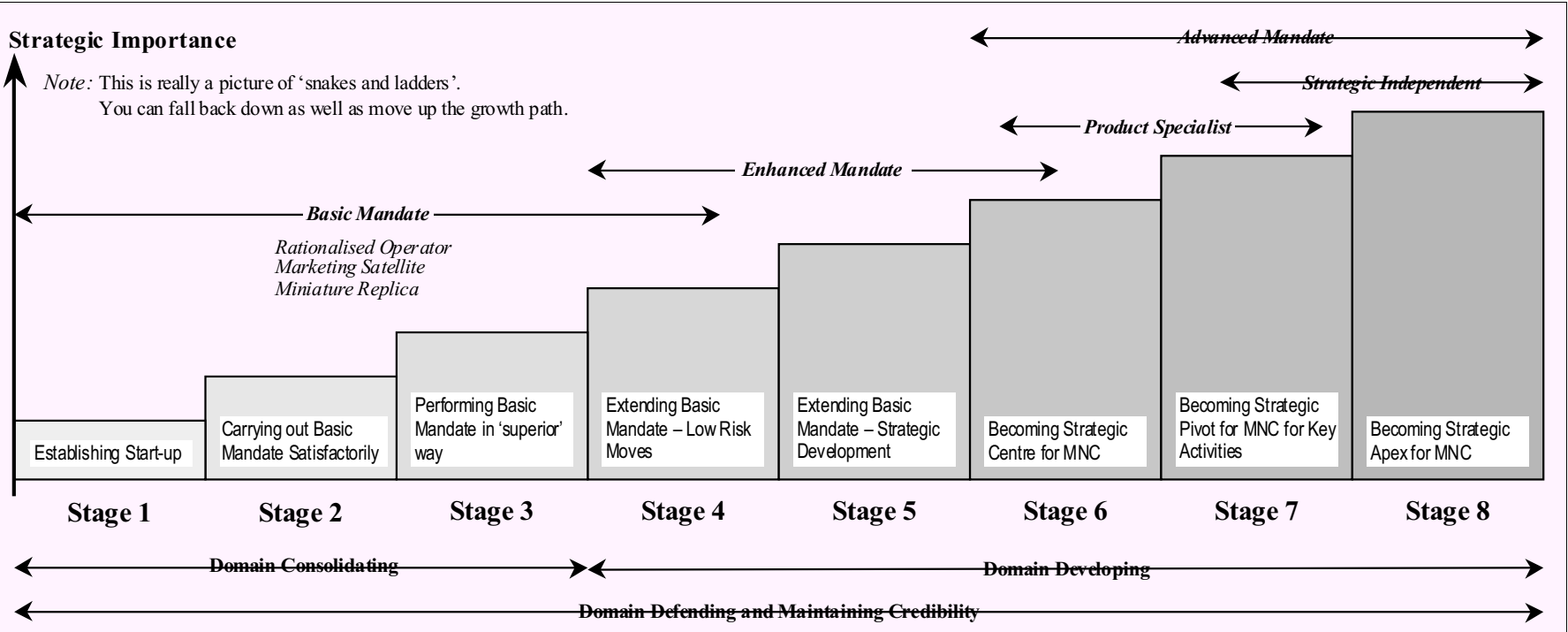
[7] Commercial Exploitation:

- Does the company have clear plans as to how the project is going to be commercialised, in terms of production facilities, finance?
- Comment on the company's estimates of the capital investment required to set up the commercial manufacture of the product or process.

[8] Environmental Clearance Certificate:

If there is a possibility that the project could have a negative impact on the environment, indicate if the company should be required to submit an Environmental Clearance Certificate with their claim.

ANNEX G – Stages of Development of a Subsidiary
 (From "Strategic Leadership of Multinational Subsidiaries" by EdmondMolloy & Edward Delany)



Stages	Characteristics	Stages	Characteristics
1 ESTABLISHING START-UP.	<ul style="list-style-type: none"> – technology transfer. – expatriate managers. – spoonfeeding. – copy exactly. 	5 EXTENDING BASIC MANDATE – STRATEGIC DEVELOPMENT	<ul style="list-style-type: none"> – mandate extended to other value chain activities, openly with parent agreement and budget. – activities now of some strategic importance.
2 CARRYING OUT BASIC MANDATE SATISFACTORILY.	<ul style="list-style-type: none"> – up and running according to plan. – parent quite pleased. 	6 BECOMING STRATEGIC CENTRE FOR M.N.C.	<ul style="list-style-type: none"> – world or regional mandate for some activity (e.g. product, major channel, technology). – responsibility for key functions within the corporation.
3 PERFORMING BASIC MANDATE IN 'SUPERIOR' WAY.	<ul style="list-style-type: none"> – stretch targets set by subsidiary. And achieved. – verifiably superior to 'sister sites' or other benchmarks. 	7 BECOMING STRATEGIC PIVOT FOR M.N.C. FOR KEY ACTIVITIES	<ul style="list-style-type: none"> – high level of autonomy and standalone strategy-making unit. – full-line business with significant multi-country linkages and control.
4 EXTENDING BASIC MANDATE – LOW RISK MOVES (typically within Existing budget).	<ul style="list-style-type: none"> – involved in active, low key pursuits of initiatives. – seeking opportunities in 'corridors of indifference'. – taking on corporate projects. – 'toe in the water' of development or services/field activity. 	8 BECOMING STRATEGIC APEX FOR M.N.C.	<ul style="list-style-type: none"> – effectively, the corporate centre for all activities.

ANNEX H – Abbreviations

BMW	Border, Midlands and Western region (The area of Ireland that currently qualifies as an 'Objective 1' region for the purposes of EU Structural Funding support).
CSET	Centres for Science, Engineering and Technology. (A programme operated by Science Foundation Ireland that provides grant support for research partnerships between colleges and industry.)
DA	Development Advisor (Enterprise Ireland).
DETE	Department of Enterprise, Trade and Employment.
EI	Enterprise Ireland (Responsible for the development of indigenous industry in Ireland).
EU	European Union.
FDI	Foreign Direct Investment.
GDP	Gross Domestic Product.
GNP	Gross National Product.
ICB	Investment Committee of the Board (a subcommittee of the IDA Board).
IDA	Industrial Development Agency (Responsible for the development of foreign-owned industry in Ireland).
IFSC	International Financial Services Centre.
IP	Intellectual Property.
IPR	Intellectual Property Rights.
IRDG	Industry Research and Development Group.
MIC	Management Investment Committee (of IDA).
PE	Project Executive (IDA).
R&D	Research and Development.
RTD	Research and Technological Development.
RTDI	Research, Technological Development and Innovation. (The current State support scheme for Industry R&D based on specific technical projects.)
RTI	Research, Technology and Innovation. (The predecessor to RTDI.)
S&E	South and East region. (The area of Ireland that currently qualifies as an 'Objective 1 in Transition' region for the purposes of EU Structural Funding support.)
S&T	Science and Technology.
SCP	Strategic Competitiveness Programme.
SFI	Science Foundation Ireland.
SIMS	Strategic Initiative for Multinational Subsidiaries.
STI	Science, Technology and Innovation.
TA	Technical Assessor.

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