

EVALUATION OF TARGETING TECHNOLOGY LIMITED

for

Scottish Enterprise Glasgow



EKOS Limited

economic development & regeneration

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EXECUTIVE SUMMARY

Targeting Technology Ltd (TTL) is an integral part of Scottish Enterprise Glasgow's (SE Glasgow) technology support programme. It was established in 1993 following a study which indicated that, despite possessing an excellent research-base and a robust Higher Education Institute (HEI) sector, Glasgow's commercial exploitation of research and development activity had been poor. The strategic aims of the TTL were, therefore, to:

- accelerate the growth of high technology based companies;
- provide a focus for new technology-based inward investment and business start-up; and
- to enhance technology transfer between the HEI sector and SMEs, and between businesses.

STUDY OBJECTIVES

The objectives of this study were:

- to examine TTL progress over the recent three year funding period against targets;
- to examine client perceptions of the quality and method of delivery;
- review the expanding portfolio of activities undertaken by TTL;
- to examine the expanding portfolio of activities undertaken by TTL and to place in context the extent to which these activities complement each other and are synergistic; and
- to make recommendations for any desirable changes or improvements to the future delivery of the programme.

CURRENT ACTIVITY

TTL provides support to high technology sectors, primarily optoelectronics and advanced engineering. It also contributes support to the Proof of Concept Fund and Micro and Opto Electronics Cluster. In addition it delivers intellectual asset support and the EU Innovation Relay Centre project.

REORGANISATION

Until 2002, support to the City's high technology sector was being delivered through three separate groups:

- Targeting Technology Ltd (TTL);
- Services to Software (STS); and
- SE Glasgow Bioscience Team.

During 2002 it was decided that support would best be provided through integrating and aligning the three groups into one group to be renamed *Services to Technology and Software*.

CONCLUSIONS

TTL Progress Over Recent 3 Year Period

TTL has performed well over the years 2000/01 and 2001/02 either achieving or exceeding the targets set by SE Glasgow. Despite TTL's performance running behind target for the current year, performance above target in the two preceding years means that TTL is still on target for number of spinouts and number of high growth startups. Results from the company survey show that, allowing for projected increases over the next 18 months, TTL will easily exceed its sales increase target.

	Target for Period	Actual for Evaluation Period1	Variance
Number of spinouts	19	19	-
Number of high growth startups	22	22	-
Sales	10%	8-10%	-
Net additional jobs	425	262	-38%
TTL cost per net additional job	<£3,000	£1,850	-38%

Net additional employment has been estimated at approximately 262 jobs. Although this is well below target there are a number of reasons for this (as set out in the Chapter 5) and when performance is assessed against the indicator of cost per job TTL is performing very well.

Client Perceptions of Service Provision

Very positive feedback was received from both companies and partner organisations. They particularly value the technical knowledge and previous industry and professional experience of the individuals providing the support. Weaknesses relate more to a lack of resource to properly meet the needs of the companies. Indeed, suggested improvements argue for the expansion of TTL's resources and activity with the majority of companies either already having recommended or prepared to recommend TTL to others.

Expanding Portfolio and Synergy

Targets set by SE Glasgow relate in the main to mentoring activities and project management of various grant funding mechanisms.

In addition, TTL has expanded its portfolio of activities into the areas of Proof of Concept, IRC Scotland and Intellectual Assets.

The amalgamation of TTL, Services to Software and the Bioscience Team will remove the confusion over the different roles of these organisations. Other studies are currently underway including evaluations of Proof of Concept Fund and IRC Scotland, and an options appraisal of a proposed National Intellectual Assets Centre. The findings of these will therefore shed greater light on the future role of TTL in each of these key areas.

RECOMMENDATIONS

Companies who feel that the mentoring services are too thinly stretched adversely affecting the service provided by TTL. Therefore, this suggests the need for increased resource to support the core mentoring activities.

Given the particular value placed on technical knowledge and previous experience these should be borne in mind when providing such a resource.

Proof of Concept and national MOCT activities have also been funded by TTL's core budget. Therefore, SE Glasgow could increase the resources for mentoring activities either by employing new staff or redirecting existing resources from Proof of Concept and national MOCT activities.

In addition, TTL is viewed as a key national resource and recent developments have lead to uncertainty within partners regarding the future scope and availability of this resource. There is clearly a need for SE Glasgow to clarify the various roles of TTL as early as possible.

1. **INTRODUCTION**

Targeting Technology Ltd (TTL) is an integral part of Scottish Enterprise Glasgow's (SE Glasgow) technology support programme. It was established in 1993 following a study which indicated that, despite possessing an excellent research-base and a robust Higher Education Institute (HEI) sector, Glasgow's commercial exploitation of research and development activity had been poor. The strategic aims of the TTL were, therefore, to:

- accelerate the growth of high technology based companies;
- provide a focus for new technology-based inward investment and business start-up; and
- to enhance technology transfer between the HEI sector and SMEs, and between businesses.

TTL seeks to support the pursuit of '*Business Growth through Innovation*' by client companies. TTL has sought to achieve this, in the first instance through business mentoring, and managing the implementation of innovation support grants.

Since 1996 TTL has augmented this with its membership of the European Innovation Relay Centre (IRC) network, and recently TTL has expanded this role by becoming the IRC network co-ordinator for Scotland. This has resulted in a more cohesive approach to IRC activities across four partners in the SE and HIE network areas. In addition, the TTL co-ordinator's role has enabled closer integration of IRC Scotland with the enterprise networks. TTL's IRC client base extends beyond SE Glasgow.

In response to demonstrable need by companies, TTL has, over the past two years, focussed attention on the area of better management and exploitation of intellectual property (IP) and intellectual assets (IA) by companies. TTL has employed staff specifically qualified and experienced in these areas, and works with a whole range of businesses, including but not exclusively technology businesses. Again TTL's IA role has extended beyond SE Glasgow, and indeed TTL is presently leading the IA= initiative for Scotland in conjunction with Scottish Enterprise and the Scottish Executive.

Since its inception, TTL has been funded by SE Glasgow with support from ERDF. The previous GDA funding term (1997/1998 to 1999/2000) has expired and SE Glasgow is now in the process of applying for ERDF funding from Western Scotland Objective 2 Programme.

In parallel with ERDF funding, matched funding has been provided by SE Glasgow, on approval from Scottish Enterprise. The present approval ceases on 31 March 2003.

In the light of this it is therefore appropriate to review TTL's performance and operation over the period from the past approval to date.

1.1 STUDY OBJECTIVES

Given the evolution of business conditions since its inception, the results of this evaluation will be incorporated in a strategic review of TTL's role and structure. This will address improvements in the delivery of benefits to the Glasgow and Scottish economies, with particular emphasis on the areas where TTL has recognised expertise now and/or may develop such expertise in the future. However it is not the purpose of this evaluation to carry out such a redefinition, merely to inform it.

The objectives of this study were:

- to examine TTL progress over the recent three year funding period against targets;
- to examine client perceptions of the quality and method of delivery;
- review the expanding portfolio of activities undertaken by TTL;
- to examine the expanding portfolio of activities undertaken by TTL and to place in context the extent to which these activities complement each other and are synergistic; and
- to make recommendations for any desirable changes or improvements to the future delivery of the programme.

1.2 METHOD

The various components of research activity were as follows:

- desk research and analysis of:
 - previous TTL annual reviews, Board papers and other reporting documentation
 - previous evaluation reports
- analysis of monitoring data from the TTL core client database, producing a review of inputs and activities;
- survey of TTL clients;
- face-to-face consultation with TTL client companies and SE Network organisations to obtain other feedback; and
- formal consultations with TTL and SE Glasgow staff, and representatives of other stakeholders.

1.3 STRUCTURE OF REPORT

The rest of this report is structured as follows:

- **Chapter 2** provides details of TTL activity over the period April 2000-September 2002;
- **Chapter 4** details the results of the client telephone survey;
- **Chapter 5** discusses the key findings from client and network face-to-face interviews;
- **Chapter 6** summarises TTL performance against the targets set out by SE Glasgow; and
- **Chapter 7** presents preliminary conclusions and recommendations.

Appendix A provides a list of companies surveyed while **Appendix B** provides a breakdown of time spent on mentoring activities.

2. THE ACTIVITIES OF TTL

This chapter provides details of the activities of TTL for the years 2000/01, 2001/02 and 2002/03 (up until September 2002) and covers: current activities, other studies and performance against priority targets and support measures. The figures were sourced from TTL monitoring records.

2.1 CURRENT ACTIVITY

TTL provides support to high technology sectors, primarily optoelectronics and advanced engineering. It also focuses on intellectual asset support and delivery of the EU Innovation Relay Centre project.

Business development support for specialist software developers was taken over by Services to Software from 1996 and support for bioscience companies was gradually taken in-house by SE Glasgow, with the process being completed in 2000. Conversely, TTL has managed the delivery of the SCIS programme for SE Ayrshire for a number of years.

TTL became involved in the Innovation Relay Centre for Scotland in 1996, taking on the national co-ordination role early in 2001. Also in 2001, TTL began development of a Scotland-wide Intellectual Assets initiative (IA=).

2.2 CORE MENTORING ACTIVITIES

This involves the provision of high quality mentoring service to nascent, new and existing SMEs in the Glasgow area. TTL advisors provide advice and assistance across the range of business functions, but especially in relation to enhancing management competencies through skills transferral in areas such as:

- strategic business planning;
- strategies for effecting market entry;
- new product and process development; including raising external private sector risk capital or public sector support for specific development projects;
- securing IPR/patenting; and
- developing appropriate relationships with other SMEs and researchers/institutions.

This service is linked closely with wider support through TTL's role in the administration and project-management of a number of programmes involving grant assistance to companies. Such grant assistance is awarded on the basis of business needs and opportunities, which are appraised through TTL advisory, mentoring and account management activities. These programmes include:

- Technology Development Programme (TDP);
- Prototype Development Funding (PDF);

- Commercialisation/Technology to market;
- Small Company Innovation Scheme; and
- EU Research and Development Assistance.

2.3 IRC SCOTLAND

The Innovation Relay Centre for Scotland (IRC Scotland) has been operating since 1995 and provides specialist advice and assistance services to Scottish organisations to grow their business and improve competitiveness through research and technology development (RTD), technology exploitation and innovation.

IRC Scotland provides the following services:

- information on EU RTD programmes, funding opportunities and calls for proposals;
- assistance with proposal preparation for EU RTD funding;
- company visits and technology assessments;
- IPR advice and novelty scans;
- sourcing technology solutions for Scottish organisations from across Europe;
- promoting technologies and products developed in Scotland to the rest of Europe;
- finding the right partners in Europe for Scottish organisations, for both EU RTD funding proposals (upstream) and technology transfer agreements (downstream);
- seminars and training workshops on areas related to EU RTD funding and technology transfer, information on new technologies and EU RTD results; and
- up to date information on new technologies and EU RTD results across Europe.

TTL has been the national co-ordinator for IRC Scotland for just over a year. Under the co-ordination of TTL, greater emphasis has been placed on:

- strengthening partnership working with the Enterprise Networks in Scotland;
- raising awareness and understanding of the services of IRC Scotland within the Scottish business community and intermediary network; and
- developing and enhancing the operating practices of IRC Scotland to add value to its services.

2.4 INTELLECTUAL ASSETS

Since early 2001 the IA= has been developed to manage the IA= initiative involving a move from being merely part of a business executive's role to a full time IA= team. Much of the activity to date has been focused on raising awareness of IA as a business issue and in encouraging better IA management practices through diagnostic interviews.

2.5 PROOF OF CONCEPT FUND

The Proof of Concept Fund seeks to address particular constraints to achieving commercialisation through providing pre-seed funding to enable research to be advanced to the stage where an appropriate commercialisation route might be pursued. Since its inception in 1999, a total of 330 applications have been made for support, with over 80 projects being approved.

TTL has been directly involved in this initiative since the outset. They have provided a range of support including marketing to academics, supporting preparation of applications, participating in assessment panels (in some cases leading them) and project managing implementation of projects and provision of specialist technical advice. This is a particular area that TTL may be able to contribute to further in the future.

2.6 CLUSTER ACTIVITY

TTL have also been involved in activity for the Micro and Optoelectronics Cluster Team (MOCT) through contributing to the Cluster Strategy and project management of individual projects.

2.7 RE-ORGANISATION OF TTL

It is also important to note here that during the course of this study SE Glasgow decided to reorganise its technology support operations. Support to the City's high technology sector was being delivered through three separate groups:

- Targeting Technology Ltd (TTL);
- Services to Software (STS); and
- SE Glasgow Bioscience Team.

A review of this support concluded that the driving forces behind the original creation of the three groups have now changed substantially, creating a need and an opportunity for fundamental restructuring to allow far more effective and efficient delivery of support to Glasgow's high tech sectors. This would involve closely integrating and aligning the three groups.

This involved the amalgamation of Services to Software, the SE Bioscience Team and Targeting Technology into one group to be renamed *Services to Technology and Software*. Targeting Technology would be relocated from the West of Scotland Science Park to Atrium Court with George Boag appointed Director and Chief Executive of Services to Technology and Software.

2.8 OTHER STUDIES/EVALUATIONS

In addition to the re-organisation described above there are also other studies being undertaken which will have a direct bearing on the future roles of TTL. These include

- evaluation of IRC Scotland;
- an option appraisal for the proposed National Intellectual Assets Centre; and
- interim review and evaluation of the Proof of Concept Fund.

These studies will assess previous activities and performance of these programmes/initiatives and the role of TTL.

Therefore, in order to avoid duplication of effort and resources it was agreed with the Client that this study should focus on the areas not covered by these other studies – the core mentoring activities.

2.9 PERFORMANCE AGAINST PRIORITY TARGETS AND SUPPORT MEASURES

Over the period 2000/01 to 2002/03 TTL has been set a number of priority targets and support measures in order to demonstrate its contribution to the SE Glasgow's objectives. The range and definition of these targets has changed somewhat over the three-year period, so we have reported performance against targets set on a yearly basis in **Tables 2.1 to 2.3** below.

Targets	Project	Target	Actual	Variance
Assists leading to the commercialisation of research	Commercialisation	7	9	2
To support high growth start ups, targeting key clusters	Targeting Technology	8	8	-
Research & Development Assists	EU R&D Assistance	8	7	-1
Research & Development Assists	Technology to market	9	10	1
Research & Development Assists	Prototype Development	16	16	-
Research & Development Assists	SCIS	18	25	7

Table 2.1 shows that TTL either achieved or exceeded its targets in 2000-01 with the exception of R&D assists under EU R&D Assistance. In the case of assists under SCIS, TTL was well above target.

Priority measures	Project	Target	Actual	Variance
No. of strategic Plans being Implemented	IFSO Development Plans (TTL)	4	4	-
High Growth Start Ups	Targeting Technology	9	11	2
Spin outs from education and research institutions	Commercialisation (MMcG)	4	4	-
Spin outs from education and research institutions	Targeting Technology	5	4	-1
No. of products launched and processes implemented	Targeting Technology	4	4	-
No. of products launched and processes implemented	Small Company Innovation Scheme	4	4	-
No. of products launched and processes implemented	Prototype Development	3	3	-
No. of products launched and processes implemented	Glasgow Technology Programme	4	4	-
Support measures				
No. of strategic plans created	IFSO Development Plans (TTL)	12	12	-
Assists to facilitate the commercialisation of research	Targeting Technology	4	4	-
Assists to facilitate the	Commercialisation (MMcG)	7	7	-

commercialisation of research				
No. of assists to increase R & D investment	Targeting Technology	60	60	-
No. of assists to increase R & D investment	Small Company Innovation Scheme	17	18	1
No. of assists to increase R & D investment	Prototype Development	12	14	2
No. of assists to increase R & D investment	EU R & D Assistance	5	5	-
No. of assists to increase R & D investment	Glasgow Technology Programme	22	19	-3
No. of assists to increase R & D investment	Technology to Market	8	5	-3
No. of assists to increase R & D investment	Expand Specialist Incubators	4	4	-

During 2001-02 TTL either achieved or exceeded its priority targets, with the exception of spinouts from education and research institutes, which was only one short of target. For high growth start-ups TTL achieved 11 against a target of 9.

TABLE 2.3: PERFORMANCE AGAINST KMIS TARGETS 2002-03				
Priority measures	Project	Target	Actual	Variance
No of new products / services launched and new processes implemented	SCIS	4	2	-2
No of new products / services launched and new processes implemented	PDF	5	1	-4
No of new products / services launched and new processes implemented	TDP	5	2	-3
No of new products / services launched and new processes implemented	Targeting Technology	5	3	-2
No of high growth start ups	Targeting Technology	10	3	-7
No of spin outs (company & academic)	Targeting Technology	6	2	-4
% of businesses showing demonstrable improvement against the Networks agreed 14 growing business characteristics	Targeting Technology	6	2	-4
Support Measures				
No of High Technology companies supported by the Network	Targeting Technology	25	12	-13
No of licenses granted to businesses in Scotland	Targeting Technology	3	5	2
No of successful business applications to SCIS/Smart/Spur & EU framework programmes	Targeting Technology	12	4	-8
No of collaborative ventures & Partnerships involving universities & businesses	Targeting Technology	20	3	-17
No of businesses assisted	Commercialisation	7	2	-5
No of businesses assisted	EU R&D Assistance	6	0	-6
No of businesses assisted	Tech to Mkt	4	2	-2
No of projects	Expand Spec.Incub.	1	1	0

Table 2.3 shows TTL's performance against targets for the current financial year. However, as we are only part way through the year this does not give a true reflection of performance so far. Rather we have pro-rated the annual target and compared TTL's performance against these in **Table 2.4**.

TABLE 2.4: PERFORMANCE AGAINST KMIS TARGETS 2002-03 (PRO-RATED UNTIL SEPT)				
Performance against KMIS targets 2002-03				
Priority measures	Project	Target	Actual	Variance
No of new products / services launched and new processes implemented	SCIS	2	2	-
No of new products / services launched and new processes implemented	PDF	3	1	-2
No of new products / services launched and new processes implemented	TDP	3	2	-1
No of new products / services launched and new processes implemented	Targeting Technology	3	3	-
No of high growth start ups	Targeting Technology	5	3	-2
No of spin outs (company & academic)	Targeting Technology	3	2	-1
% of businesses showing demonstrable improvement against the Networks agreed 14 growing business characteristics	Targeting Technology	3	2	-1
Support Measures				
No of High Technology companies supported by the Network	Targeting Technology	13	12	-1
No of licenses granted to businesses in Scotland	Targeting Technology	2	5	3
No of successful business applications to SCIS/Smart/Spur & EU framework programmes	Targeting Technology	6	4	-2
No of collaborative ventures & Partnerships involving universities & businesses	Targeting Technology	10	3	-7
No of businesses assisted	Commercialisation	4	2	-2
No of businesses assisted	EU R&D Assistance	3	0	-3
No of businesses assisted	Tech to Mkt	2	2	-
No of projects	Expand Spec.Incub.	1	1	-

TTL's performance this year is running a little behind target. However, this is not surprising given the uncertainty over the last few months regarding the departure of the Chief Executive and the relocation of the organisation.

It is important to note here, that the targets identified above do not include TTL activity within the Proof of Concept Fund and national projects for the MOCT¹. Despite TTL's core budget contributing to these activities SE Glasgow has no targets against which TTL report activity in these areas. This should be addressed so that all of TTLs activity related to its core budget is reflected in its targets from SE Glasgow.

2.10 SUMMARY

TTL has performed well over the years 2000/01 and 2001/02 either achieving or exceeded the targets set by SE Glasgow. In the current year, performance is running behind target for a number of the indicators. However, this is not surprising given the departure of the Chief Executive and uncertainty over the future role and location of the organisation.

¹ Where activity involves business development with Glasgow companies this is captured in SE Glasgow's targets.

3. **COMPANY SURVEY**

This Chapter reports the findings of a survey of companies assisted by TTL. The sample was drawn from a population of those businesses assisted by TTL since 2000 that were still trading in or around Glasgow. Where possible, companies in receipt of multiple assists were targeted but it was not always possible to interview each one. Interviews were primarily by telephone but were supplemented by three face-to-face meetings with companies on which the Case Studies in Chapter 4 are based. In all, 23 companies were contacted.

3.1 **BACKGROUND TO SUPPORT**

Companies were first asked how long they had been working with TTL. **Table 3.1** reports.

Duration	Number Reporting	%
Up to 1 year	5	22
1-2 years	6	26
2-3 years	5	22
3-4 years	2	9
5 years or more	5	22

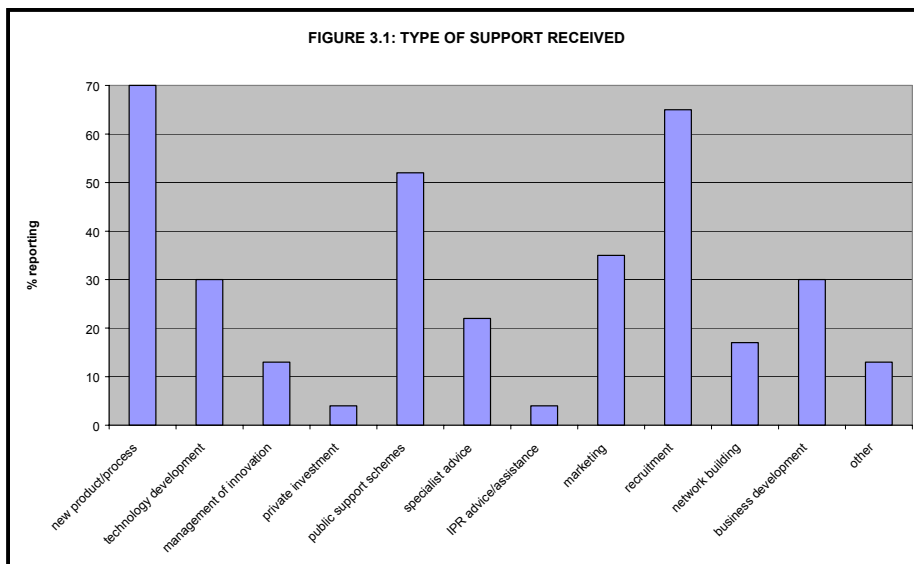
The Table shows a fairly even spread, with the exception of the 3-4 years bracket, and suggests that relationships between TTL and its client companies are well maintained. However, this is not necessarily the case. Several interviewees pointed out that, while their initial contact with TTL may date from the late 1990s, their main conduit for support was another SE Glasgow sub-agency, Services to Software. The nature of the relationship between the two public bodies was confusing to some participants.

Participants were then asked the status of their company when contact with TTL was first made:

- 57% were already trading;
- 26% were spinning out from a university; and
- 17% were other pre-start businesses.

3.2 **TYPE OF SUPPORT RECEIVED**

Subjects were asked to describe the type of support they had received from TTL, not by Programme but by the purpose or nature of the assistance accessed. **Figure 3.1** gives the responses.



Over half the sample reported assistance in three areas:

- developing new products or processes;
- recruitment; and
- access to public support schemes.

Much of the support accessed or received was overlapping and complimentary. For example, public funding (or private investment) may have been used to recruit additional staff to research new products, or to take over administrative aspects of the business allowing others to work on development. The main focus of TTL’s support is clearly in the development of new products and, to a lesser extent, new technologies on which these products will be based. The means by which this is achieved vary, but prominent among them are recruitment support/subsidy and access to other public sector grant. The channelling of, or introduction, to private sector capital appears to be a very minor role. An important secondary function of the support seems to lie in the business development sphere. Around 30% of respondents reported assistance in this and marketing, both areas that can be a significant constraint on developing companies. The importance of this “administrative” support is further enhanced if the management of innovation is considered alongside it.

“Other” support was mainly the use of TTL personnel as informal “sounding boards”, a third party with some knowledge of the company and its product to bounce ideas off in an informal atmosphere.

Not surprisingly, given the predominately young age of the concerned, there were three predictable principal reasons why this support was necessary:

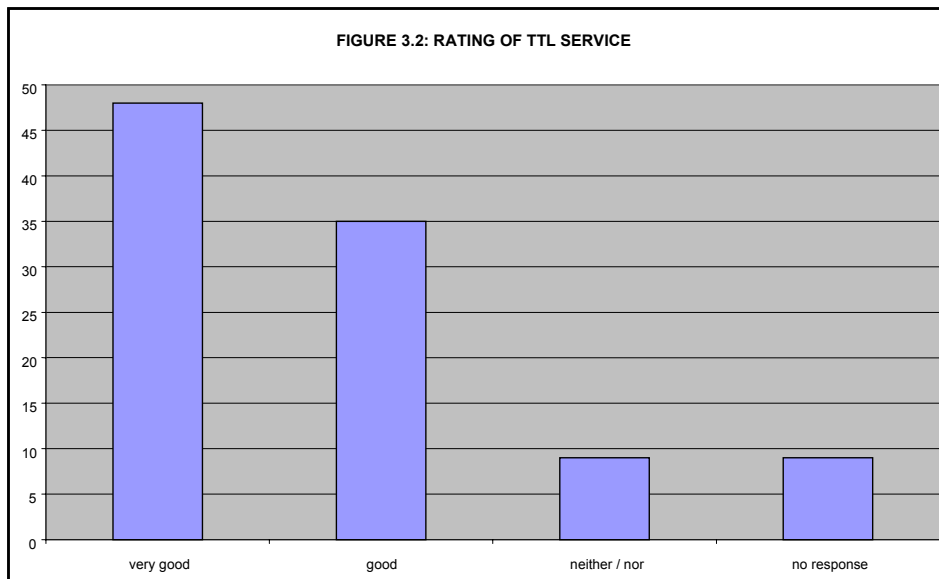
- limited financial resources;
- limited human resources; and

- as an additional source of knowledge and know-how.

The most common reason given was limited financial resources followed by limited human resources. The two were often interlinked in that, for example, there could be a financial impediment to the recruitment or attraction of suitably qualified staff necessary to develop the company or its product. TTL also served as a source of, or conduit to, additional sources of knowledge. This could be either technical/scientific in nature, but could also concern business skills such as financial systems or marketing. The importance of these non-technical specialisms should not be underestimated as it allows TTL to more accurately assess the support needs of the company.

3.3 RATING OF TTL SERVICE

Respondents to rate and comment upon the service provided by TTL, where possible comparing this service to that received from other public agencies. The “arms length” nature of the relationship experienced by those companies whose main contact was with another SE Glasgow agency made this difficult for some as, in some instances, they had not even had direct contact with TTL. Nonetheless, the results are still very satisfactory. **Figure 3.2** charts the overall rating of the service provided by TTL and **Table 3.2** reports more specific aspects of TTL’s understanding of the client businesses.



No respondent described the overall service as in any way poor and under 10% were indifferent or unable to comment. This is a particularly encouraging finding.

Rating	Understanding of technology aspects		Understanding of commercial aspects		Responsiveness to business needs	
	Number	%	Number	%	Number	%
Very good	10	43	9	39	11	48
Good	6	26	6	26	11	48
Neither nor	3	13	3	13	0	0
Poor	0	0	2	9	0	0
No response	4	17	3	13	1	4

Again, despite the caveat noted above, these results are positive. A poor understanding was reported only for some commercial aspects of their business by two participants. Two-thirds of the sample felt TTL's grasp of this and the technological aspects of their project to be good or very good. Such a rating was almost universal in terms of the organisation's responsiveness and is boosted by the inclusion of those who dealt with TTL through an intermediary agency. The bulk of the "no responses" are from these companies, who generally felt that TTL dealt efficiently with their funding application and were, therefore, responsive to their business needs.

The following Strengths and Weaknesses were identified by the sample. Not all clients felt able to comment on this question because of the detached nature, or short duration, of some relationships. In all, 16 companies identified strengths and 13 weaknesses, and these are presented in descending order.

Strengths	Weaknesses
<ul style="list-style-type: none"> • Technical background • Knowledge of support • Responsive/accessible • Contacts 	<ul style="list-style-type: none"> • Lack of promotion • Relationship with other agencies • Lack of staff cover • Lack of follow-up

The key strength identified was undoubtedly the technical background and knowledge of the TTL executive. It was reassuring for individuals, predominately technical people themselves, to talk to another individual capable of understanding the technology involved, problems and potential applications. Frequently associated with this was the knowledge of the support mechanisms and infrastructure held by TTL staff and, to a lesser extent, the contacts they had formed in the public and private sector. The better understanding of the technologies involved undoubtedly enabled TTL staff to better direct and advise their clients. This is no doubt also a factor in the responsiveness and accessibility of TTL, which was described as both easy and quick, as reflected also in **Table 3.2**.

The most frequently cited weakness in TTL was the lack of self-promotion by, and awareness of, TTL. A number commented that they were unaware of what TTL could provide in terms of particular assistance or support until asked about it during the interview. One also confided that they had come across TTL only by accident. Allied to this is a certain confusion over the relationship and role of TTL *vis a vis* other agencies in SE Glasgow and the wider Network. Companies dealing primarily through bodies like Services to Software or the Biotech Group were not alone in raising this. Equally as common was the perception that that TTL was understaffed and funded. This manifested itself in a lack of cover when staff were on leave or sick, and in an inability to follow-up on assistance or develop a relationship. TTL was felt to be a more reactive than proactive organisation as a result.

A number of participants had been assisted by other agencies. **Table 3.4** reports how they compared this to the support and service received from TTL.

	Better		Same		Worse		Cannot compare	
	No.	%	No.	%	No.	%	No.	%
SE Glasgow	5	22	2	9	0	0	7	30
GCC	2	9	0	0	1	4	5	22
SBG	0	0	0	0	0	0	1	4
SE National	2	9	0	0	0	0	2	9
Scottish Executive	3	13	3	13	1	4	4	17
Enterprise Trust	2	4	0	0	0	0	3	13
UILO	0	0	1	4	0	0	1	4

In most cases companies felt it unfair to make comparisons between TTL and other agencies, mainly because of the differing nature and circumstances of the support accessed. Only two felt the service provided by TTL was in any way inferior to that provided by a different body, and again this was largely due to the nature of the support and the subsidiary role played by TTL in the overall package. A significant number did, however, report that the service provided by TTL was better than that delivered by comparable organisation. This will also reflect the differing – and in this case probably more important or significant - nature of the assistance rendered by TTL. It will also reflect the importance attached to dealing with an executive from a technical background, with a better grasp of what the company is trying to achieve and how best to assist it.

3.4 IMPROVEMENTS IN PERFORMANCE

Participants were asked to identify, and where possible quantify, in what ways the support from TTL had improved company performance, or would improve it by 2004. **Table 3.5** reports the areas where this has or is expected to occur.

TABLE 3.5: IMPROVEMENTS TO COMPANY PERFORMANCE				
Improvement	To Date		By 2004	
	No.	%	No.	%
Increased R&D	19	83	3	13
Gained public sector grants	16	70	0	0
New product	11	48	3	13
New process	2	9	0	0
Patent/IPR registrations	1	4	0	0
Attract private investment	2	9	1	4
Increased sales	11	48	10	43
Increased exports	4	17	5	22
Increased profit	6	26	3	13
Increased employment	15	65	5	22
Other	5	22	1	4

The main impacts of TTL support have been or are expected to be:

- increasing R&D investment by nearly £1m to date, with a further £120k to follow by 2004;
- accessing public sector grant aid such as SMART / SPUR awards; and
- increasing employment.

By 2004 the main impacts will be:

- increased sales of £7.3m, on top of the £1.1m already generated;
- increased exports of £3.1m, in addition to the £325k already achieved; and
- increased employment, by a further 16 FTE posts.

The R&D figure consists not only of grant assistance arranged through TTL but also additional funds levered in or freed up by assistance elsewhere. The improvements are not evenly distributed.

One company alone accounts for more than half the research spend to date, another for £100k with the rest ranging from between £25-50k. However, for some companies this was sufficient to ensure projects proceeded.

The increase in employment and the accessing of grant aid was often linked to the increase in R&D spending. The Technology Development Programme, for example, could be used to subsidise the salary of a technician or engineer used to develop a product during a period of little or no income generation. Non SEGL awards, such as SMART, could also be used to further development work or contract additional staff. These jobs were often quite highly skilled, as might be expected in the R&D phase.

Sales figures are impressive with a potential £8.5m, split between 14 companies, by 2004. Most of it is still to be realised, however, this is not surprising given the time lag that would be expected between investment in R&D and subsequent sales income. Again these rewards are not evenly distributed. Three companies predict sales of £1m to accrue by 2004 and one expects this figure to reach £3m. The remaining estimates typically lie between £50-200k. Export sales are estimated at around £3.5m, 40% of new sales, with about £3.1m still to be achieved. Two of the companies predicting sales of £1m by 2004 expect these to be wholly to export markets. Most companies able to comment did not expect the TTL assistance to increase their profit margins but the increase in turnover would, of course, increase the absolute amount of profit. Five businesses estimated an additional £800k profit by 2004.

A final point on the impact of TTL support on company performance can be drawn from the “other” responses. Some companies commented on the importance of TTL assistance in developing a proper commercial structure or basis for the company. This could be through advising on general business or financial systems to be adopted, or by being part of a wider support package which either attracted the enterprise to Glasgow in the first place or convinced major customers to sign a contract. These more settled and established structures also play a role in recruiting staff and, sometimes, in securing finance.

Table 3.6 looks at this question in another way, by reporting what companies would have done in the absence of TTL support.

TABLE 3.6: ACTIONS IF TTL SUPPORT HAD NOT BEEN AVAILABLE		
	Number Reporting	% Reporting
Gone ahead at same time	3	13
Gone ahead later	12	52
Different projects	3	13
Smaller projects	2	9
Not gone ahead	6	26
Moved elsewhere	3	13

TTL support has therefore brought forward or enabled the project development of three quarters of the sample. This figure rises still further if companies whose economic potential would have been lost to Glasgow are included. Only three companies indicated that they would still have proceeded at the same time and scale without TTL support. This was due to the size of the TTL contribution compared to the overall scale of the investment.

3.5 CHANGES TO SERVICE PROVISION

Respondents were first asked what they perceived to be the main gaps in support provision to companies like themselves. **Table 3.7** reports the main replies.

	Number Reporting	% Reporting
Funding	11	48
Bureaucracy	3	13
Over-concentration on research	3	13
Infrastructure	2	9

Funding is clearly – and unsurprisingly – the biggest issue or gap encountered by the sample. Primarily, the problem seems to be a funding gap in the six-figure range, with the sums available from the public sector largely inadequate to fund long term research programmes or carry forward development work to a point that the business world sees as ready for market. This is failing of both the public and private sector. To an extent this contradicts another complaint that funding support is too concentrated on cutting-edge research at the expense of promoting sales of existing applications and mainstream development of technology companies. Problems and obstacles encountered may well reflect the stage of the business cycle the company finds itself at.

The issue of bureaucracy is related to that of funding too, through the various caps, exclusions and qualifying criteria that small companies have to go through to access support.

Infrastructural barriers come in many forms but property provision was mentioned by two respondents. Other studies have pointed to the reluctance of private sector developers to speculate in this market due to the often highly bespoke requirements. The expense of such property could be a serious constraint on a new company's development.

To fill these perceived gaps interviewees were then asked what change they would make to the operation of TTL or the support it delivers. Answers fell into two main camps:

- become more proactive with better promotion of their service; and
- take greater control of distributing more funds.

Greater promotion and a more proactive approach implies a greater budget and higher staff levels. This would address the perception held by some companies that TTL was understaffed and overworked, enabling them to spend more time with client companies planning future growth and alerting them to fresh opportunities as the support regime changes over time. This approach would also help clarify the role of TTL and reduce the confusion and duplication of effort reported by some respondents.

Having a greater say in the distribution of funds would also have the effect of increasing the profile of TTL among its client group. The main intention would be to reduce the bureaucracy permeating the current structures and place the distribution of funds more in the hands of engineers or technicians with a practical understanding of the companies.

However, the suggested improvements are not criticism of TTL's current service provision but rather argue in favour of their expansion. This is further supported by the fact that:

- 35% (8) had already recommended TTL to another company; and
- a further 39% (9) would be do so if someone approached them for advice.

3.6 **SUMMARY**

The companies surveyed have been very happy with the service provided by TTL. They particularly value the technical knowledge and previous industry experience of the individuals providing the support. Weaknesses relate more to a lack of resource to properly meet the needs of the companies. Indeed, suggested improvements argue for the expansion of TTL's resources with the majority of companies either already having recommended, or would be prepared to recommend, TTL to others.

4. CASE STUDIES

Three of the companies contributing to the company survey discussed at Chapter 3 were interviewed face-to-face. This allowed a more detailed investigation of the companies' backgrounds and the importance or role of TTL in their development. In particular the companies were asked to expand on the support received from TTL and the timing of outputs and outcomes expected to flow from it. The firms concerned were:

- The Crystal Consortium;
- Alba Ultrasound; and
- Dynamic Knowledge Corporation.

They are discussed in detail below.

4.1 THE CRYSTAL CONSORTIUM

The Crystal Consortium (TCC) was established in early 2001 as a Joint Venture between Quinetiq (formerly DERA) and the opto-electronics department of Strathclyde University. It's relationship with TTL dates from the time it was preparing for this spin-out. The company, currently still located within the University Campus, is a development house providing a range of services to its clients:

- assessment of supply/production requirements and analysis of results
- development from academic proof of principle research to commercially viable applications
- prototyping for small scale market testing; and
- technology transfer to enable full scale production to commence.

The company has expanded from its original specialisms in optical laser applications to cutting edge developments in piezoelectric and scintillator crystals, with a variety of applications in medical imaging, security, NDT and geological survey fields.

TCC has been assisted in a number of ways by or through TTL. The principal direct financial assistance has been a £30,000 PDF award for the development of novel scintillator arrays, but TTL also advised on the successful application for a £45,000 SMART Award from the Scottish Executive, presented in June 2002. TTL has also been of considerable assistance in market research for the new company, funding an initial market survey and then putting TCC in touch with a Glasgow-based specialist marketing consultancy. TTL was also helpful in network building on TCC's behalf and in the provision of general business development advice. This included advice on areas such as accountancy procedures and systems and putting the company in touch with architects capable of advising on the suitability or adaptation of new premises.

Limited financial resources was an important reason why TCC needed support from TTL with the PDF funding bringing forward the development of new crystals. Another reason stressed by the company was the local knowledge held by TTL and its staff. This was particularly important as TCC's principals, drawn from academic backgrounds or from positions outside the country, had had little previous exposure to the Scottish economic development environment. The "one stop shop" nature of TTL support was therefore a useful advantage in this regard, it was able to direct the company to other, more suitable agencies if they were unable to help them directly. This saved TCC a great deal of time and trouble that would otherwise have resulted from making these discoveries themselves through trial and error.

A further boon to TCC was the technical knowledge and practical, commercial experience in the opto-electronics field of the executive assigned to them. This resulted in a much better understanding of the technology and its applications, as well as the potential problems the new company might encounter and their solutions. TCC has also benefited through access to new contacts in the industry which have brought new networking opportunities and, indirectly, assisted in the recruitment of senior staff. The mentoring aspect of the relationship was highly praised by TCC and, thanks to this close working relationship with the TTL executive, the company feels the service delivered by TTL is better than that received from other agencies, although this does not imply any particular criticism of the other agencies concerned.

Consequently, TCC rated the overall service delivered by TTL as very good, based on a thorough understanding of the technological and commercial aspects of the business and a very responsive attitude. The only weakness identified was a confusion over the roles and responsibilities of the various development organisations the company encountered, a feeling shared by other participants in the survey.

With the exceptions of the business development advice in financial systems and marketing, much of the assistance given to TCC has still to bear fruit. However, when it does so the rewards will be significant. **Table 4.1** reports the ways in which TTL support has (or will) impacted on company performance.

TABLE 4.1: IMPROVEMENTS TO COMPANY PERFORMANCE			
	2001/2	2002/3	2003/4
Increased R&D	£30,000		
SMART Award	£45,000		
New product		1	
Increased sales	£50,000	£500,000	£500,000
Increased exports		£500,000	£500,000
Increased employment			3

For a very modest investment of £30,000 and mentoring support TTL is expected to be largely responsible for generating £1,000,000 in export sales and three jobs by 2004. The absence of such support would not have greatly delayed the launch of TCC but the company could have been lost to Lothian or Fife.

4.2 DYNAMIC KNOWLEDGE CORPORATION

Dynamic Knowledge Corporation (DKC) was founded in 1999 when it spun-out from Strathclyde University. The origins of the company and its technology go back much further however, to a 1992 project by the French company EDF. This was to develop an Artificial Intelligence system for disaster management scenarios and KADS (Knowledge Acquisition Design Structure), a European project involving several universities led by Strathclyde. The spinout company was formed to develop a commercial application from this research and the iKue product suite was the result.

DKC deals in knowledge management, defined as the identification, acquisition, validation and exploitation of high value expertise, judgement and experience, in essence the tacit knowledge of individuals. The service it offers takes the client company from start to finish of the process through the:

- identification of risk and dependency on the knowledge of key individuals;
- structured capture and modelling of this knowledge;
- implementation and dissemination of this knowledge through their web based Mentoring and Decision Support engines; and
- training of local staff in the data capture methodology and maintenance of the product.

The company initially spun out on the strength of a consultancy contract, which helped fund the continued development of the iKue software. This management consultancy service is still available but the main product is now the software modelling system.

DKC has also been assisted in several ways by TTL and its executives. As well as PDF funding for the software development, TTL helped subsidise the salary of a software development engineer. TTL was also supportive in the company's SPUR and SMART applications. Other assistance encompassed advice on IPR, marketing, network building and general business development advice. This advice resulted in a degree of financial stability for the company, a feature often missing from other start-up enterprises.

DKC cited a lack of financial and human resources in the form of seed capital and software engineering skills as evidence of the need for support but also stated that it was very helpful to have an additional source of knowledge and know-how available. Access to TTL staff with a good appreciation of the technology, commercial experience and a thorough grounding in the economic development infrastructure resulted in much better targeting of advice than might otherwise have been the case.

Although unwilling to comment on or compare the service delivered by TTL with other SE Glasgow subsidiaries, DKC did express some concerns about a lack of staff cover and continuity at TTL. This had not proven a serious problem to date but was viewed as a potential weakness. In the wider economic development context there was both a lack of similarly qualified or experienced business advisors to deliver practical advice to start-ups and adequate funding to support the government's entrepreneurial ambitions. The contact also felt there was still a fear of failure pervading the public and private sector.

The overall service delivered by TTL was rated very highly, with the executive displaying a good understanding of the technological/commercial aspects of the business and being very responsive to its needs.

Table 4.2 reports the ways in which TTL support has helped improve DKC's performance. Again for a relatively modest input significant financial rewards in terms of export sales and profits are predicted for the new and groundbreaking product. The absence of TTL support could have delayed the project by up to 5 years.

TABLE 4.2: IMPROVEMENTS TO COMPANY PERFORMANCE				
	2000/1	2001/2	2002/3	2003/4
Increased R&D	£15,000	£15,000		
New product		1		
IPR registration		1		
Increased sales			£500,000	£500,000
Increased exports			£500,000	£500,000
Increased profit			£200,000	£200,000
Increased employment		1	3	

4.3 ALBA ULTRASOUND

Alba Ultrasound spun out from Strathclyde University in the Spring of 2002 but its contacts with TTL go back to 1998. The company develops and manufactures ultrasonic transducers for underwater applications. The original idea grew from an association with an Aberdeen-based sub-sea exploration company, although the proposed Joint Venture fell through when the company was bought over. Academic research into new materials continued under Professor Haywood and by the time Alba spun out, all the product development and IPR issues had been resolved. Although the company has now moved away from the campus, close links with the University remain.

Although the company is still relatively new, with only four employees, it is already involved in a contract with Thales Underwater Systems to develop transducer arrays for the next generation of Mine Counter Measures Vessels for the Royal Navy. Success in this could lead to further opportunities and sales in the Defence sector as well as in developing applications for the oil and gas industry.

Alba Ultrasound has also received a range of support from TTL despite the fact that the technology itself was developed before the company spun out. TTL helped:

- apply for a SMART Award and access the Invest for Growth Scheme;
- provide marketing advice;
- recruit a workshop supervisor; and
- develop a business plan.

Much of the input from TTL came early on in the company's life and helped counteract a lack of financial and human resources. Financing a business plan was very useful as it addressed the lack of business or commercial experience within Alba. The need for a dedicated individual to oversee the financial and business systems was identified and quickly satisfied.

This business stability was as important a factor as technical know-how and capacity in convincing Thales to sub-contract the sonar array to such a new company with no established track record. TTL was also involved in the delivery of a marketing workshop with specialist consultants to help determine the strategy Alba should follow. Practical assistance was also available to support its move to new premises through subsidised access to an architect.

Overall, Alba felt the service received from TTL was very good, with staff displaying a thorough understanding of the technology and commercial aspects of the business, coupled to a very responsive attitude to its business needs. A particular strength identified was this mix of commercial and technical understanding. This supports and informs its knowledge of the economic development environment, enabling the delivery of properly targeted advice or sign-posting to more appropriate agencies. Taking the wider view of business development provision, Alba identified a gap in six-figure funding support and felt that the public sector was still quite risk averse

Table 4.3 reports how TTL support has contributed to Alba Ultrasound's performance.

TABLE 4.3: IMPROVEMENTS TO COMPANY PERFORMANCE			
	2001/2	2002/3	2003/4
Increased sales	£500,000	£500,000	£500,000
Increased exports	£500,000	£500,000	£500,000
Increased employment	1		

While TTL, on this occasion, has not been directly involved in supporting any R&D element the financial rewards to the company are again significant - £1,500,000 over three years. The principal public outlay on this was a TDP award of up to £25,000 with £2-3,000 more in a variety of consultancy support. The company has testified as to the importance of this support in convincing Thales to sub-contract such a significant piece of work to an untried company. Without TTL the contract would not have been won. Alba's launch would have been delayed by less than a year but the project may well have been lost to Glasgow. A focus on smaller oil and gas related projects, and a base in Lanarkshire or Grampian would have been more likely.

4.4 PARTNER ORGANISATIONS

4.4.1 Introduction

Face to face interviews were conducted with the following partner organisations – Strathclyde University, Glasgow University SE Competitive Business, SE High Growth Team, SE Ayrshire and SE Tayside. Interviews focused on the following key areas:

- current working relationship;
- fit with objectives of their organisation;
- strengths and weaknesses;
- fit with other support mechanisms within their organisation;
- fit with other public sector support;
- current and future developments with implications for TTLs;
- suggested improvements; and

- other comments.

4.4.2 Current Working Relationship

UNIVERSITIES

Both of the universities are represented on the Board of TTL. Both have their own internal teams that deal with various aspects of business development, commercialisation and spinouts. The universities use TTL as an additional professional resource to provide specialist support in the form of enhancing business plans, providing access to grants, aiding applications for SMART/SPUR grants and providing more sector specific advice.

Once companies have been formed they can go on to establish ongoing working relationships with TTL to access further support that is not available from the university.

SCOTTISH ENTERPRISE

TTL has a number of direct working relationships with SE through the IRC Scotland, Intellectual Assets, Proof of Concept and the MOCT. TTL is viewed as being the place to go within the network for IA issues while TTL has been instrumental in providing expertise to the Proof of Concept Fund. TTL has also to the work of the MOCT and with the inception of the Network High Growth Unit, TTL will have further direct interaction with SE as part of its pool of advisers.

SE AYRSHIRE AND SE TAYSIDE

TTL's involvement in Ayrshire extends to both the appraisal of SCIS grants and management of the subsequent awards and intellectual asset events, while its involvement with Tayside has been limited to the later. Although TTL is still managing some SCIS grants, with a change in policy, this will no longer be the case in the future.

4.4.3 Fit with Objectives of their Organisation

The activities of TTL fit well with the objectives of the universities in relation to commercialisation and spinouts. Since the outset the universities and TTL have been conscious that their work and skillsets should complement each other.

Similarly TTL offers technical expertise to SE in the areas of high technology start-ups, spinouts, commercialisation and development of the Micro and Optoelectronics cluster. It also provides support in the area of Intellectual Assets and has been directly involved in delivering seminars in other parts of the network.

4.4.4 Strengths and Weaknesses

Interviewees were asked for what they considered to be the key strengths and weaknesses of TTL. The key strengths were identified as:

- focus on technology companies;
- employ people with considerable experience and good technical backgrounds;

- individual staff competencies and commitment;
- previous industry experience and knowledge of markets;
- access to much needed grants and leveraging in external sources of finance;
- good reputation, respected both within the public and private sector;
- willingness of other LECs to access more of the resource and skillsets of TTL's staff;
- external source of advice when universities are advising academics; and
- aware of the pitfalls and can help avoid them.

The key weaknesses were considered to be:

- only have limited resource;
- departure of Chief Executive has led to speculation over the future remit of TTL (but only likely to be a temporary issue);
- because of the strong reputation of each of the individuals losing one can have a considerable impact;
- element of confusion between remit of TTL, Services to Software and Bioscience Team (reorganisation likely to remove this); and
- resources issues about access to TTL from areas beyond Glasgow;

Speculation over the future remit of TTL was also considered to have had an adverse effect on TTL over the last few months. However, it was recognised, as with the loss of the Chief Executive, that this was a temporary issue that would be resolved in the near future.

4.4.5 Fit with other Support Mechanisms within Organisation

All of the organisations felt that TTL's activities fit well and are complementary to those of their own organisation. TTL was usually brought in to provide more technical expertise and knowledge in specific sectors.

TTL has also developed into other key areas such as IRC, IA, Proof of Concept Fund and support to the MOCT and has made a significant contribution to the development of these.

4.4.6 Fit with Other Public Sector Support

TTL has also helped companies to access other public sector funds such as SMART and SPUR. TTL was considered to be very successful in the support provided to companies as part of the application process for accessing these funds.

Indeed TTL's knowledge of the various funds available, and being able to help access them, was considered a key strength of the organisation. As a result of, mentoring companies, TTL is in a position to identify the most appropriate funding route.

4.4.7 Current and Future Developments with Implications for TTL

There were three key areas that it was felt would have a very direct impact on the future role of TTL:

- evaluations of Proof of Concept Fund applications and IRC Scotland, and proposals for a National Intellectual Assets Centre;
- reorganisation of TTL, Services to Software and Bioscience Team; and
- perception of TTL within rest of network as a result of reorganisation.

TTL is already involved in Proof of Concept Fund, IRC Scotland and Intellectual Assets. Therefore, the outcomes from these three studies will be key to helping define the future role of TTL.

It was generally felt that the reorganisation of TTL, Services to Software and Bioscience Team into one would remove some confusion within the market place regarding their respective roles. The only real issue raised was whether this reorganisation would have any impact on TTL's service portfolio outwith Glasgow.

4.4.8 Suggested Improvements

Responses to this question focused less on suggested improvements and related more to clarification of the role of TTL both within Glasgow and elsewhere in the Network. In particular a clearer understanding of the resources and services that are available to other parts of the Network though activities such as IA.

However, some suggested improvements were made, such as, greater focus on the area of private sector finance in the form of ongoing working relationships with key venture capitalists.

4.4.9 Additional Comments and Issues

Organisations with a Glasgow remit are keen to ensure that TTL's broadening geographical remit does not dilute the focus on Glasgow companies, while SE is keen to allow greater access to TTL services across the Network. What is clear, however, is that all see the need for greater clarification of TTL's various roles.

4.5 **SUMMARY**

The case studies provided greater insight into the role that TTL plays in the development of individual companies. It is clear that this extends well beyond the provision of much needed grant assistance. Companies also value the other support provided in the form of mentoring and TTL's ability to help ease their path through the public support network.

In addition, partners of TTL are also happy with the service it provides and feel that it fits well with the activities of their own organisation. They feel that much of TTL's strengths lies in the technical and previous industry experience of the individuals employed, and this has been substantiated by the companies. One issue that does come out of partner consultations is the need for greater clarification of TTL's roles. However, there is an appreciation that this will be dependent on the findings of other studies that are currently underway.

5. **OUTPUTS AND IMPACTS**

5.1 **INTRODUCTION**

This section reports on the outputs and impacts generated by TTL's activities as reported in TTL's annual company questionnaire and assessed through the telephone survey. It covers:

- gross employment;
- deadweight;
- displacement;
- linkage and multiplier effects; and
- net additional employment.

The values for employment were sourced from the company survey. Impact values were estimated for 92 core clients only and does not include impacts of assistance to non-core clients, due to data availability. Estimated outputs and impacts are also only detailed for the first two years of the evaluation period 2000/01 and 2001/02 and the first five months of 2002/03, due to limits on the available data. The extent to which these growth values can be attributed to TTL's assistance was estimated on the basis of the telephone survey.

5.2 **GROSS EMPLOYMENT**

Table 5.1 shows the reported increase in gross direct FTE employment for the sample over the period.

TABLE 5.1: GROSS DIRECT EMPLOYMENT INCREASE	
Reported Increase in Employment (FTE)	91.5
Number Reporting	20
Average per Company (FTE)	4.6

The survey shows that the increase in gross employment was 4.6 FTEs per company.

5.3 **DEADWEIGHT**

Deadweight was taken as the proportion of gross direct employment impacts that would have occurred in any case, even if the businesses had not been supported by TTL. It was assessed by asking a number of questions in the telephone questionnaire regarding the influence of the assistance from TTL on:

- the employment of the business;
- what action would the companies have taken in the absence of support from TTL;

- timing of any reported changes in company performance in the absence of TTL support;
- quality and scale additionality; and
- any other impacts upon reported business performance.

Businesses were assessed according to a hierarchy of additionality factors. Absolute additionality, where all gross direct employment impacts are additional, was taken to apply where none of the employment outputs would have occurred in the absence of support from TTL.

If there was no evidence of absolute additionality we made allowance for:

- **time additionality**: where support through the Programmes enabled the reported changes to happen sooner, we allocated 10% additionality for every year for which the reported changes were brought forward; and
- **scale additionality**: where support through the Programmes had a positive influence on the level of gross direct employment.

Based on the responses received, it was found that for TTL assistance:

- 10 cases were fully additional;
- 3 cases showed both time and scale additionality;
- 7 cases showed time additionality; and
- 2 cases of zero additionality.

Overall, the additionality generated by TTL activities was approximately 55%. The converse is that the deadweight factor for the sample was 45%.

5.4 DISPLACEMENT

The investigation of displacement considered those factors that would dilute the gross impact of any increases in business activity. Displacement was assessed using responses that companies made to telephone survey questions on:

- location of major competitors;
- level of exports; and
- current market conditions.

Of all companies making sales in the latest financial year, companies supplied a significant proportion of their outputs to customers outside of Scotland, and only a few companies claimed to compete with Scottish based companies.. The overall displacement factors for the sample were therefore marginal, and were assessed at 5% at the Glasgow level and 10% at the Scottish level.

5.5 LINKAGES AND MULTIPLIER EFFECTS

The review did not consider any detailed information that would specifically advise on the potential for indirect or induced linkage benefits. Standard coefficients have therefore been used that are consistent with recommended SE best practice.

The factors applied are:

- 1.1 for supplier linkages and 1.1 for income multiplier effects at the Glasgow level; and
- 1.2 for supplier linkages and 1.2 for income multiplier effects at the Scottish level.

5.6 NET ADDITIONAL EMPLOYMENT

Applying these additionality, displacement, linkage and multiplier factors to gross employment gives the estimates of net additional employment shown in **Table 5.2**.

	Glasgow	Scotland
Gross Direct Jobs	423.2	423.2
Less Deadweight	190.4	220.8
Gross Additional Direct Jobs	232.8	202.4
Less Displacement	11.6	20.2
Net Additional Direct Jobs	221.1	182.2
Plus Supplier Linkage Jobs	22.1	36.4
Plus Multiplier Jobs	24.3	43.7
Net Additional Employment	267.6	262.3
Average per Company	2.9	2.9

The net increase in FTE at the Glasgow level is therefore 2.9 FTE per company. These compare to a gross employment increase of 4.6 and reflects the fact that TTL activities are both additional and low displacing.

5.7 COST PER JOB

Detailed information was available on both the operating costs of TTL and the levels of grant assistance made to client companies.

	30-Sep-02	31-Mar-02	31-Mar-01	Total
Core costs	153,541	295,626	252,980	702,147
Less non-mentoring	65,203	91,020	60,740	216,963
Mentoring Costs	88,338	204,606	192,240	485,184
Grants	144,115	481,460	605,581	1,231,156
Total Mentoring plus Grants	232,453	686,066	797,821	1,716,340

The core costs reflect funding provided towards the core operational costs of TTL. From this time spent on non-mentoring activities such as proof of concept, clusters and intellectual assets has been deducted to give operational costs relating to mentoring activities (see Appendix B). In addition to this grant assistance has also been provided to companies supported through mentoring activities.

A breakdown of cost per job per levels of operational (mentoring only) and grant assistance is given in **Table 5.3**. Costs per job figures were calculated for TTL operational costs only and for TTL operational costs plus TTL and SE Glasgow grants.

Level of Assistance	Cost Per Job £
CALCULATED ON BASIS OF TTL OPERATIONAL COSTS	
Total TTL operational spend for period	485,184
Net Cost per Job for TTL operational spend	1,850
CALCULATED ON THE BASIS OF TTL OPERATIONAL COSTS, AND TTL AND GDA GRANT AWARDS	
Total TTL and GDA public expenditure (incl. grant assistance)	1,716,340
Net Cost per Job total TTL and SEGL expenditure	6,543

What the figures suggest is that TTL is achieving reasonable value for money in terms of cost-per-job at all levels of funding. The cost per job figures are very reasonable considering the typically high costs of assistance and job creation in similar forms of high-technology related assistance to SMEs.

5.8 PROGRESS TOWARDS TARGETS

An objective of this study was to evaluate TTL's progress towards meeting its performance targets agreed under its funding by SE Glasgow. **Table 5.4** shows performance against those targets not already covered in Section 2.7.

	Target for Period	Actual for Evaluation Period ¹	Variance
Number of spinouts	19	19	-
Number of high growth startups	22	22	-
Sales	10%	8-10%	-
Net additional jobs	425	262	-38%
TTL cost per net additional job	<£3,000	£1,850	-38%

¹ Targets for 2002/03 have been pro-rated for first six months

To reflect the impact of intensity of support, we have only counted core companies and those that have received more intensive support from TTL. However, this infers that the calculated impacts are conservative estimates, and the actual impacts are likely to be higher. In the main, the changes to company performance reported by the companies reflects the direct impact of TTL.

Despite TTL's performance running behind target for the current year, performance above target in the two preceding years means that TTL is still on target for number of spinouts and number of high growth startups. Results from the company survey show an average increase in sales of between 8-10%². However, even if we take the more conservative estimate of 8% this is expected to change dramatically over the next 18 months based on forecast sales and at that time TTL would easily exceed its target.

Net additional employment is well below target at the present time. However, there are a number of reasons for this:

- the target is for the full three year period which ends in March 2003, while the evaluation was undertaken during September 2002;
- TTL's mentoring capabilities and capacity have been reduced significantly over the period through illness and changing emphasis in individual roles with this culminating in the departure of the Chief Executive; and
- TTL is currently running behind target and considerably less grant funding has been drawn down by companies this year compared with targets. This is not surprising given the loss of the Chief Executive and speculation over the future location and role of TTL.

Indeed a more appropriate measure at this time would be the cost per job – a measure of the value for money for those jobs created. The current cost per job is approximately £1,850 well below the target of £3,000. Even when the value of the grants awarded are included, TTL is, still performing well at approximately £6,550 per net job.

5.9 SUMMARY

TTL is performing well in relation to the targets set by SE Glasgow especially when viewed within the context of recent events within TTL. Although the level of net additional jobs is below target, this has been affected by recent events within TTL and more importantly it is still maintaining an acceptable level of cost per job.

² (depending on whether one company who did identify a sales impact but was unable to estimate what proportion should be attributed to TTL is included)

6. CONCLUSIONS AND RECOMMENDATIONS

6.1 INTRODUCTION

This Chapter summaries the key findings of the evaluation based around the key objectives of the study, and concludes with a number of suggestions and recommendations for the future.

6.1.1 TTL Progress Over Recent 3 Year Period

TTL has performed well over the years 2000/01 and 2001/02 either achieving or exceeding the targets set by SE Glasgow. In particular, it has performed well against key priority targets such as *spinouts, high growth start-ups and products and processes*. Although performance in the current year is running behind target for a number of the indicators, this is not surprising given the departure of the Chief Executive and uncertainty over the future role and location of the organisation.

Despite TTL's performance running behind target for the current year, performance above target in the two preceding years means that TTL is still on target for number of spinouts and number of high growth startups. Results from the company survey show that, allowing for projected increases over the next 18 months, TTL will easily exceed its sales increase target.

Net additional employment has been estimated at approximately 262 jobs. Although this is well below target there are a number of reasons for this (as set out in the preceding Chapter) and when performance is assessed against the indicator of cost per job TTL is performing very well.

6.1.2 Client Perceptions of Service Provision

The surveyed companies provided very positive feedback, and have very happy with the service provided by TTL. They particularly value the technical knowledge and previous industry and professional experience of the individuals providing the support. Weaknesses relate more to a lack of resource to properly meet the needs of the companies. Indeed, suggested improvements argue for the expansion of TTL's resources and activity with the majority of companies either already having recommended or prepared to recommend TTL to others.

Partners of TTL are very positive about the service provided and feel that it fits well with the activities of their own organisations. As reinforced by the company survey they feel that much of TTL's strengths lies in the technical and previous industry and professional experience of the individuals employed.

This technical knowledge and previous experience means that the advice and support that is being recommended to companies is appropriate to their activities and the sectors they operate within. It is clear that TTL has a very strong and credible reputation and networks within both the public and private sectors.

One issue that does come out of partner consultations is the need for greater clarification of TTL's roles. However, there is an appreciation that this will be dependent on the findings of other studies that are currently underway.

6.1.3 Expanding Portfolio and Synergy

Targets set by SE Glasgow relate in the main to mentoring activities and project management of various grant funding mechanisms such as:

- Technology Development Programme (TDP);
- Prototype Development Funding (PDF);
- Commercialisation/Technology to market;
- Small Company Innovation Scheme; and
- EU Research and Development Assistance.

In addition, TTL has expanded its portfolio of activities into the areas of Proof of Concept, IRC Scotland and Intellectual Assets.

SE Glasgow has previously highlighted customer confusion over the roles of Services to Software, the Bioscience Team and TTL. This has also been raised as an issue in the company survey undertaken as part of this study. This together with the advantages of closer communication and collaboration with other teams within SE Glasgow has formed part of the reasoning for amalgamating the three services into one group.

In the same way TTL has already benefited from access to information and individuals within the key area of Intellectual Assets. In addition, TTL's role in Proof of Concept Fund is seen as valuable and should continue in the future. Other studies are currently underway including evaluations of Proof of Concept Fund and IRC Scotland, and an options appraisal of a proposed National Intellectual Assets Centre. The findings of these will therefore shed greater light on the future role of TTL in each of these key areas.

6.2 **RECOMMENDATIONS**

TTL's core mentoring and grant funding support provided on behalf of SE Glasgow has performed well over the period, achieving nearly all of the targets set by SE Glasgow. However, its recent performance has been affected by a number of factors not least the departure of the Chief Executive which diverted further resource from mentoring activities. This has also been raised as an issue by companies who feel that the mentoring services are too thinly stretched and are adversely affecting the service provided by TTL. Therefore, this suggests the need for increased resource to support the core mentoring activities.

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Given the particular value placed on technical knowledge and previous experience these should be borne in mind when providing such a resource.

Proof of Concept and national MOCT activities have also been funded by TTL's core budget. Therefore, SE Glasgow could increase the resources for mentoring activities either by employing new staff or redirecting existing resources from Proof of Concept and national MOCT activities.

In addition, TTL is viewed as a key national resource and recent developments have lead to uncertainty within partners regarding the future scope and availability of this resource. There is clearly a need for SE Glasgow to clarify the various roles of TTL as early as possible.

Appendix A – Companies Interviewed

Osprey	Gavin Watson
Alba Ultrasound	Safety at Sea
The Crystal Consortium	EQSN
Glengary Systems	Ddirectional Data Systems
Appraisure	Tepnel Life Sciences
Dynamic Knowledge Corporation	Waverly Bakery
QCMD	Yoshitomi
Crystal Canopies	Pal Technologies
Propharma	Steel Monkeys
Hollowtec	Cruachem
Slysar	Crusade
Resource Data Management	

Appendix B: Time Spent on Mentoring Activities

TIME SPENT ON MENTORING			
Employee	6 months to Sep-02	Year Ended 31-Mar-02	Year Ended 31-Mar-01
David Hughes	34%	27%	48%
Arthur Slight	70%	70%	70%
Ewan Macpherson	90%	90%	90%
Caroline Sincock	5%	20%	60%
(plus admin time for Linda and Ruth related to mentoring activities)			