The Skills and Enterprise Agenda in the United Kingdom and Ireland in 1999

Prepared for the Expert Panel on Skills
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September 1999

Canada

THE SKILLS

AND ENTERPRISE AGENDA

IN THE UNITED KINGDOM

AND IRELAND IN 1999

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INTRODUCTION

This report summarizes the findings of a study tour of the United Kingdom and Ireland which the authors carried out on behalf of the Expert Panel on Skills in the summer of 1999.

The Expert Panel decided to focus its examination of the international experience in skills and enterprise development on the UK and Ireland for three reasons. One is that Canadians still have much in common with the British and the Irish. Another is that economically, Canada's situation compared to the United States and the North American free trade zone is quite similar in many respects to the economic situation of Scotland, Wales, Northern Ireland and Ireland compared to England and to the European Union. Finally, we knew from a number of sources that in the UK and Ireland, creative approaches to skills and enterprise development had been adopted over the past few years which seemed to offer lessons and examples relevant to the Canadian context.

Over a short period of two weeks, therefore, we met with representatives of many British and Irish public and private organizations that have major responsibilities in the area of skills and enterprise development. We have also gathered a considerable amount of descriptive literature and research reports, which have been added to the Expert Panel's library.

The first section of the report contains a summary of the main findings organized by themes relevant to the Panel's mandate. The second section provides details on policy initiatives, programs, services and organizations which we found to be of particular interest from a Canadian standpoint. In appendix are a list of the people we have met and a bibliography – including useful website addresses.

We wish to thank Dr. Caroline Martin, the Manager of the Science & Technology Program at the Canadian High Commission in London, and her colleague Peter Berry, for their assistance and support.

SECTION 1 – MAIN FINDINGS

1.1   INDUSTRY SECTOR ORGANIZATIONS and OCCUPATIONAL STANDARDS

Sectoral organizations are a feature in the landscape of England, Northern Ireland, Scotland and Ireland; the experience with tertiary education and industry relations is that these have worked best when the sectoral group is strong; otherwise, employer liaison or special-purpose groups tend to wither and be ineffective over time.

A fundamental role of national training organizations (2.1.2.5)[a] is to develop occupational stan(rds, so that sector companies can benchmark their performance and adopt best practices.

- In Scotland, these occupational standards – developed by industry-led groups, in cooperation with the Scottish Qualifications Authority – include generic skills, such as oral and written communication, mathematics, personal development, and career guidance.

- UK's National Vocational Qualifications (NVQs) are under revision to include some of these same generic skills, in response to company needs (2.1.2.2).

- Ireland is just initiating its own VQ program, but anticipates inclusion of generic skills. All of these programs of qualifications are modularized or unitized to enhance flexibility.

1.2   SKILLS SUPPLY AND DEMAND

Northern Ireland and Scotland have workforce demographics similar to those of Canada.

- Northern Ireland's Strategy 2010 task force report (2.2.1.3) found that many 'skill shortages' are actually recruitment, training and retention issues within business and industry.

- Ireland is now experiencing some of its first skill shortages; seeing this ahead, they shifted in 1995 from seeing tertiary education as a social cost, to viewing it as an investment; they now spend more per capita on tertiary education than any other European country, and tuition has been free since 1995-96; they also have a major campaign, through Enterprise Ireland (2.6.1.1), to bring back Irish nationals in their thirties, with children, to create new businesses; new curriculum is providing 4- and 5-year-olds with information technology awareness, and focussing 7- to 12-year-olds on enterprise development.

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a   Additional information available in Section 2.

1.3   SKILLS DEVELOPMENT AND MANAGEMENT IN SMEs AND MICRO-ENTERPRISES

Canada has long sought means of assisting small enterprises to survive and enhance their growth and profitability. However, our strategies have largely been unsuccessful. It is useful to look at Ireland, Northern Ireland, Scotland and Wales – other peripheral regions to large multinational economies – and to see what they have 'done right'.

Their successes, independently generated, have been founded on similar assumptions about SME owner-operators:

- they do not have the time or resources to engage in the usual forms of formal learning;
- they are strongly independent and proprietary, and reluctant to share information with government or peers, and do not want to fill out long applications and submit to evaluation by civil servants who have never run their own companies;
- they do not have sophisticated human resource offices and systems, and worry that if they gave their staff further training, this will make them more attractive to larger or competitor firms; and
- unless they see a direct benefit to the 'bottom line' of their business, they are unlikely to be persuaded to engage in human resource development activities or collaborative pre-competitive R&D.

From these assumptions, these jurisdictions have built programs based on the following principles:

- Training must be delivered at the worksite or at home, in modularized or unitized form, at times and prices which are convenient and affordable by SMEs.

- Training in the workplace needs to be directed toward industry-led and industry-owned occupational standards.

- Part of any management training must be offered in 'clusters' of SMEs to encourage business networking, collaboration and peer-champion counselling, while another part must rather be delivered 'one-on-one' to deal with issues of privacy and confidentiality;

- Particularly for managers or owner-operators, training must be tailored to their individual learning styles, as failure to do so introduces frustration and wasted time into the learning process; this has implications for the training and certification of trainers who deliver SME training (in Ireland, SME trainer. are accredited, competitive, and evaluated both by Enterprise Ireland and by the participating SME) and for their ofessional conduct with respect to client confidentiality.

- Governments must continue to offer financial subsidization to SMEs for training, on a sliding scale related to company size (i.e., number of employees; in Ireland, companies with fewer than 20 employees have training costs subsidized to the 80 % level).

- Continued development of good human resource practices requires targets, monitoring/evaluation and recognition, offered through a third party (i.e., not government, although the third party is usually subsidized heavily by government); in Scotland, Wales and Northern Ireland, this third-party system is called *Investors in People* (2.5.1), and in Ireland it is a nearly identical program known as *Excellence through People* – in which one of the targets is for companies to spend 5 % of payroll on training; these programs have also made major contributions to training in 'generic skills' in member companies, and company subsidies are available in all jurisdictions to help them meet targets.

1.4 INVESTMENT IN R&D

The research investments in the UK, Ireland and Europe generally are huge...billions of dollars are being made available for research infrastructure, university-industry research, challenge funds to spinoff companies, to include enterprise in science curricula and mentor science students who want to start their own businesses, to enlarge the 'teaching company' type programs which place highly-qualified graduates in SME's to help them grow to absorb innovation (2.1.1.2).

- In Ireland, there is a deliberate strategy to increase R&D dramatically, since most of their industrial base is multi-national companies (MNCs), and their research has indicated that MNCs are more likely to retain a branch plant during times of economic downturn if it has significant research activities in the same location; the second reason for the Irish push on R&D is that many of its indigenous firms, involved in the MNC supply chain, are moving from low-tech to medium- or high-tech status and experiencing management crises.

1.5 GROWING SMEs

- The Northern Ireland Office recently has acted on a recommendation by the Strategy 2010 task force to establish a £10 million[b] start-up venture fund for SMEs requiring capital in amounts roughly equivalent to $ 50 000 to $ 250 000.

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b In July 1999, the exchange rate for the English pound was $ 2.35, and $ 1.96 for the Irish pound.

- Shannon Development has had a similar fund in the last several years, making such investments in amounts of £100 000 to £ 1 million; they insist success is due to having a fast-track approach, which leaves decisions principally with one person, who does 'due diligence' after the decision to invest is made; Shannon Development takes up to 30 % equity, and gives some of it back to the owners if they meet performance targets (which are based on net profit before tax); Shannon Development also is willing to be 'first funder' and to help the firm find other funders; they claim spending a mere 5 % of their time evaluating the property but 95 % working with the company after the decision is made to fund them.

- The Irish experience with science and technology parks (2.6.2.1) is that the first requirement to attract firms is a quality physical environment for work (including attractive image of a CEOs' forum, and sport and social networking opportunities among companies, and high-quality broadband/telecommunications); other key components: a management company to actively manage development processes of the park, an incubation facility for new technology enterprises (in conjunction with The University of Limerick, in the Shannon case), linkages between universities and institutes of technology and companies, formal networking interaction among resident companies, and access to, and support from venture capital; at Shannon, they also take the hassle out of settling there – handling all the interactions required for approvals from local authorities, national agencies, and business/professional agencies.

- The Irish also provide integrated support for Irish new technology companies; at Shannon, that includes: incubation facilities, entrepreneurs' networking and training programs which focus on the management team (helping them to take the company to a different volume level of revenue and activity), a linkage with university enterprise programs, and seed capital.

1.6 INNOVATION AND R&D IN SMEs

Governments, in cooperation with universities and colleges, must assist SMEs to develop their capacity to engage in R&D and adopt innovation

- In Scotland, Wales and Northern Ireland, this highly successful program is known as TCS (Teaching Company Scheme) (2.1.1.2); there are similar programs in Ireland known as TechStart (for university graduates and post-graduates) and TechMan (for college-level technologists) (2.6.1.1); this allows placement of highly-educated young people in SMEs for one or two years, at market salaries shared by the employer and government, and with research/innovation programs jointly supervised by the company and the university/college; most often by the end of the period, the students have proven their utility and contribution to the bottom line; the companies having enhanced their capacity in this manner are able – and willing – to hire them (in Northern Ireland, 80 % are hired by the participating company, and 60 % of these are still with the same firm three years later).

- ► In Northern Ireland, the Industrial Research and Technology Unit (IRTU) (2.2.1.2) tends to run at least one promotional event a week, to encourage business to do R&D with universities and alone; they also provide support for Technical Development Program for centres of excellence in the two universities, for R&D infrastructure, for pre-competitive R&D on a sectoral basis, and for near-market R&D; in current year, this is a total of about £ 35 million.

  Achievements may be summed up as follows: R&D up by 31 % betwe ·   ' ̃93 and 1996; nearly 500 companies doing new product development; nearly 50 c·   'oing longer-term research (up from 2 in 1993); and 24 centres of excellence at Th   ̃ University of Belfast and The University of Ulster.

- ► Northern Ireland also subsidizes ongoing training programs through its Companies Development Program (2.2.1.1), this year with £12 million; pays 1/3 of all training costs for hotels, manufacturing firms, and tradeable services...and is structured toward management training to management sectoral standards, delivery of National Vocational Qualifications training, and Investors in People targets.

- ► Another effective strategy in management training for SMEs in Northern Ireland has been the SME Mobile Information Unit, an Internet-equipped office van which travels to company sites, overcoming SME reluctance to attend workshops or share proprietary information; IRTU, the operating unit for this service, finds they can average 12 sites a day with unitized material that meets an immediate need.

- ► IRTU in Northern Ireland also offers regionalized laboratory and testing services to SMEs in areas where the market is not large enough to support nearby private-sector facilities; IRTU offers occupational hygiene, environmental, metallurgical and chemical testing on this basis; these are accredited labs which 'measure and advise'.

- ► Enterprise Ireland (2.6.1.1) also has a program called Innovation Relay, which will assist SMEs to access European R&D funds.

- ► A recent study of 43 sector clusters by Scottish Enterprise (2.3.1.1) indicated a need to assist small Scottish engineering companies, of which a great many had nine or fewer employees; Scottish Enterprise helped organize a consortium/sector council, and enlisted the help of larger firms who had these smaller firms in their supply chain; one focus was on core skills that were needed in communication, teamwork, etc.

1.7   COLLABORATING TO COMPETE

Canada's companies – from the very small to the more reasonably sized – must realize that they have to collaborate nationally in order to compete effectively at the international level; most of our exporting firms are too small to gain a foothold on the world stage alone; without collaborators, they lack the range and strength of services, marketing expertise and financial stability required to sustain their present market position or enable it to grow.

- In Ireland, Scotland, Northern Ireland, government policy – whether through departments or executive agencies – has been to increasingly force collaborative behaviour among SMEs on human resource and pre-competitive research strategy because that is seen to be their only route to enterprise growth and international competitiveness; this strategy in those areas has been successful to an amazing extent within relatively short time frames (5-15 years).

1.8   COMMITMENT TO SUCCESS

- In Northern Ireland, the Strategy 2010 task force report (2.2.1.3) suggestions for government to address culture issue include: celebrating success, facilitating business networking among SMEs in Northern Ireland and in Europe, working to raise the social status of business (vs. professions such as medicine or law), addressing r… averse behaviour (including encouraging private equity finance through fiscal policy).

1.9   CULTURE OF LEARNING

The culture of learning in any industry sector will have several key facets: it may be a generational difference between older and younger learners, or it may be an issue of self-confidence to undertake new learning in those who have been away from formal learning for a long time or who had poor experiences with previous formal learning; all of these factors need to be taken into account in the development of effective and appropriate workplace learning.

If we are to look ahead to the training of today's young people, it is critical that they have good skills in reading, writing, mathematics, languages and the creative arts in order to have an appropriate knowledge base for additional lifelong learning; the earlier these skills are embedded into a curriculum that creates flexible and independent learners, the better.

- The first question the British Aerospace Virtual University asks students in its learning resource centres (one is located at each company site) is, "Do you understand your own learning style?"

▸ Similarly, the SME training programs offered by Enterprise Ireland (2.6.1.1) begin with individual assessments of owner-operator learning styles, so that the training may be delivered in a format which best suits the individual's way of learning – as well as offering learning in modules at the worksite or home, in clusters with other SME owner-operators and, in part, one-on-one to meet needs of privacy and confidentiality.

▸ Almost any kind of learning will induce a desire for further learning; Ford UK's Employee Development Advancement Program supports training at the shop floor level even if it is not specifically related to work; it found that those individuals who resisted or were not comfortable with the idea of work-related training and advancement had their attitudes changed simply by taking hobby and personal interest courses; the company feels its investment has been more than repaid by subsequent interest at the shop floor level in work-related training.

▸ The UK has just created an Institute for Learning and Teaching for tertiary education, which will be a staff membership body which will accredit teaching staff and professional development programs in colleges and universities (2.1.2.3).

▸ In Ireland, Scotland, Wales, Northern Ireland and England, there is a shared focus on prior learning assessment and recognition programs, and their integration into tertiary level institutions, so that access to universities and institutes of technology can be improved and a more 'seamless' lifelong learning system achieved.

▸ Scotland has devised a 'single lifelong certificate' of learning which it is currently modelling and refining.

1.10   INTEGRATED APPROACH TO SKILLS AND ENTERPRISE DEVELOPMENT

The experience in Ireland, Northern Ireland and Scotland of having an integrated enterprise development approach – encompassing skills, infrastructure investment, innovation adoption, cultural change – is exemplary and shows that such programs work not only in cities but in historically disadvantaged and geographically remote sub-regions; Northern Irish unemployment is now better than that in the UK generally; parts of Scotland's Highlands & Islands, which have a 6-7 % unemployment rate overall (in a population of about 350 000), now have unemployment rates as low as 3.2 %. Canada's record is dismal, by comparison.

▸ Scottish Enterprise (2.3.1.1) has a 'rural network' to share best practices.

▸ Through Enterprise Ireland (2.6.1.1), the Irish use the LEADER European funds for rural development.

▶ One key development in Scotland appears to be the staffed community learning centres associated with the University of the Highlands & Islands Project (UHI) (2.3.1.2), which has also facilitated broadband width being distributed to all parts of the Highlands & Islands, with site tariff based on size, not location; at the same time, Highlands & Islands Enterprise (HIE) has worked to get local call rates for data for everyone in the Highlands and Islands area (seen as a key piece of infrastructure to encourage 'lifestyle' moves to the region by highly educated professionals and entrepreneurs); each one of its member enterprise companies now has an IT advisor on staff; about 1 600 people in call centres work in the HIE area, but fully geographically distributed at HIE insistence.

▶ The mission of Highlands & Islands Enterprise (2.3.1.2) is: "Developing skills, Strengthening communities, Growing ousiness against a background of culture and environment".

1.11 EXEMPLARY PRACTICES

▶ Ireland's Shannon Development Agency does not measure its success by jobs created, by balance sheet, and by physical assets, but rather by profitable sales, export and employment, in that order; Ireland itself, having seen that it could no longer compete on cost, has focussed its efforts on developing 'niche' advantages, and 30-40 percent of their presentations to potential company locators/investors are on lifestyles issues.

▶ The British Aerospace Virtual University generally, but especially its program with Cranfield Business School – a one-year Master's in Aircraft Design and Manufacturing, now entering its third year; the class works as a group on a year-long project (this year's was to redesign a four-seater plane to a two-seater plane which must be certified to fly, and then flown) to build both knowledge base and skills in team work, etc.; this year's class is now designing an even more challenging project for next year's class...

▶ QUESTOR at The Queen's University of Belfast (2.2.3.1), an interdisciplinary science laboratory (chemistry, chemical engineering, agriculture, computer science, biology, psychology) which has worked with nearly 60 SMEs in the past year; it has 20 industrial members, who pay £ 20 000 a year (£12 500 if an SME), and is the only National Science Foundation certified laboratory outside the US; since 1993, more than 260 papers published on industry-sponsored research, and support has grown from £ 69 000 12 years ago to a total of £ 13.87 million today; graduates come from all over the world to study and work with them, and QUESTOR has no trouble getting employment certificates for foreign graduates to stay and work with Northern Irish companies.

- The Teaching Company Scheme (2.1.1.2) at The Queen's University of Belfast has approximately 60 of the 700 total students in this program in the UK; the scheme places graduates in 24-month contracts with the university, although they spend 90 % of their time working in a company; the contract begins through a proposal that sets out a company's specific business and R&D needs, and those of the young graduate/research associate, along with the faculty expectations of the student; after 24 months, the program is evaluated by two people, a senior executive from another company, and a senior academic from another discipline or institution; in recent years, as many as 80 % of the University's participants in the scheme have been hired by the participating SMEs after the contract period, and some 60 % are still with the same company three years later; the University sees this as an excellent way for students and faculty to acquire commercialization and business management skills; during the 24-month term, student participants must attend four one-week modules with all other UK participants, modules which focus on business and technology transfer skills, as well as networking for the participants.

- The Campus Company Venture Fund (2.6.2.1) is a national fund in Ireland available only to recent university graduates establishing a company out of knowledge gained in university research; the graduate and the university share the intellectual property 50-50, but 25 % of the university's share goes back to the home department; at The University of Limerick, Shannon Development matches funds from the Campus Company Venture, with the result that the University is now achieving about one patent a month and a growing number of spinoff companies; this is also enhanced by the existence of The University of Limerick / Shannon Development joint Innovation Board, about 15-20 senior people from both entities who meet monthly and set formal objectives around campus enterprise development.

- In the UK, while there are rigid immigration regulations for many occupations, academia finds it fairly easy to recruit foreign academics.

- Learning Direct is a UK program now entering its second year (likely will be taken on by the new University for Industry) (2.1.2.6), which is a free phone enquiry service regarding education and training programs; callers are advised by staff working toward Level 3 NVQs in Guidance (with some more simple calls being handled by those with Level 1 and 2 Guidance qualifications); largely an intelligent referral service to education and training providers; in its first year, Learning Direct took 600 000 calls and evaluations showed that 91 % thought the service was "good or very good", 25 % of callers went on to follow up queries and to take a course, and 50 % of callers took some other action (e.g., made a call to the university, college or private trainer suggested, for more information); the advisers had the capacity to refer callers also to an NVQ work assessor to help them determine their current levels of learning and skill.

▸ The new Individual Learning Accounts proposal by the UK government (2.1.2.7) is recognizing the need for incentives as its development continues to evolve; initially, was only a virtual grant of £150, provided the individual contributed £ 25 to a designated and separate account; a recent move has been to add that any employer who contributes to all their employees' accounts will receive an equivalent tax benefit; they are also looking at working with trade unions to promote these accounts, as they see an increasing interest by trade unions to serve as brokers of learning and to encourage traditional non-learners to participate in learning.

SECTION 2 – EXEMPLARY POLICIES, PROGRAMS AND ORGANIZATIONS

2.1 ENGLAND

2.1.1 DEPARTMENT OF TRADE AND INDUSTRY (DTI)

2.1.1.1 COMPETITIVENESS WHITE PAPER

- ► Presented to Parliament in December 1998, the White Paper (*Our Competitive Future: Building the Knowledge Driven Economy*) sets out a policy framework and wide-ranging programme, to help British business close the performance gap between the UK and other major trading nations. The Paper calls for a renewed focus on knowledge as the means of providing competitive advantage – knowledge in the broadest sense, including the skills, creativity and expertise of all those involved.

- ► The White Paper sets out the roles that business and the State each need to play:

BUSINESS	GOVERNMENT
- Businesses need to identify, capture and market the knowledge base that drives all products and services	- Open and modernise markets in order to promote competition, flexibility and innovation in businesses
- Businesses have to turn into commercial success the scientific and technological knowledge in universities and research organizations	- Invest in national capabilities when companies alone cannot, i.e., in education, in science and in the creation of a culture of enterprise
- Would-be entrepreneurs need to acquire and adopt a greater understanding of risk and management skills	- Promote and catalyse partnerships among businesses and with employees, to help companies collaborate to win competitive advantage
- Companies need to form collaborative partnerships with suppliers, customers, schools and universities, in order to build networks and clusters of excellence	- Promote a long term vision in a world of short term pressures.

- Business must encourage and support all
  their employees continually to develop
  their skills and qualifications

▶ The White Paper includes over 90 specific commitments. An Implementation Plan was
  published in March 1999, which sets out in detail the way those responsible for implementing
  each of the commitments intend to go about delivering them. Among the many initiatives in
  support of skills and training, the following are worth noting:

  – Making the UK "the best place in the world to trade electronically"; amongst the specific
    initiatives under this heading are : tripling the number of small businesses which are wired
    up to the digital market place (to one million by 2002); making sure most school leavers
    will be able to use digital technologies; creating the National Grid for Learning (similar to
    the Canada's SchoolNet[a]); wiring up all public libraries as information hubs for their local
    communities.

  – Development of a national strategy to meet the skill needs of the information and
    communication technologies sector (2.1.1.4).

  – Increase Science and Engineering spending by an extra £1.4 billion[b] over three years.

  – Promote the commercialization of university research, by creating a new reach-out fund to
    increase university interaction with business; to reward universities for strategies and
    activities which enhance interaction with business to promote technology and knowledge
    transfer, strengthen higher skills development, and improve student employability;
    £ 20 million per year in England and £ 34 million over the next three years in Scotland.

  – Create up to eight centres of excellence in the teaching of entrepreneurship and
    commercialization of research, at top UK universities; to help equip scientists and
    engineers with entrepreneurship and business skills; £ 25m .

  – Double the contribution of the Department of Trade and Industry to TCS – Teaching
    Company Scheme (i.e., 200 extra projects backed per year), by 2003 (2.1.1.2).

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a http://www.schoolnet.ca/

b In July 1999, the exchange rate for the English pound was $ 2.35.

- Launch a new round of 'Visioning the Future' under the Foresight Programme (2.1.1.3); in the next round of consultations, all Foresight Panels will be asked to consider two underpinning themes: "sustainable development" and "education, skills and training".

- Encouraging sectoral organizations (2.1.2.5) to adopt a practice initiated by the Engineering Industry to compile and publish an "Annual Skills Scoreboard"; the Scoreboard allows individual firms to compare their investment in training to that of others with respect to a number of indicators; designed by business for business, it is meant to provide credible benchmarking for SMEs grappling with the issue of how much to invest in people development and apprenticeship.

- Encouraging large businesses to work with suppliers and customers to improve the capabilities of their workforces; e.g., British Aerospace makes its own expertise in training and development available to a set of its suppliers, to help them provide training to new employees; a best practice model is being developed by a business group.

- Publication of *Creating a Great Place to Work*, which will set out the benefits to businesses and individuals of modern approaches to skills development and good management; will also provide a guide to government initiatives and programmes.

OBSERVATIONS

✓ Knowledge, skills and creativity are considered the country's most valuable assets; ultimate success in the knowledge economy depends on how well they are exploited.

✓ The White Paper is meant to reflect a new approach to industrial policy, one where there is neither old-fashion state interventions nor naive reliance on markets. It was developed with a major input from business and seems to enjoy strong support from the business establishment.

✓ The general objectives of the strategy have been translated into some 90 specific targets; this is not an approach unique to this particular White Paper; the London Times recently reported that overall, the new Labour government had set a total of 600 targets, many of which quantified very precisely.

✓ The Department of Trade and Industry has the lead in implementing the competitiveness strategy, but is working very closely with the Department for Education and Employment and with the different research funding councils.

2.1   ENGLAND

2.1.1   <u>DEPARTMENT OF TRADE AND INDUSTRY</u> (DTI)

2.1.1.2 **TCS** (formerly know as the Teaching Company Scheme)

- Started in 1975 and sponsored by eleven UK government bodies, TCS operates on the premiss that "the most effective way to transfer skills and knowledge is to transfer people".

- TCS supports partnerships between companies and universities for technology transfer and training; its objectives are:
  - to enable companies to make strategic business advances through projects which would otherwise be beyond their resources of knowledge and skilled personnel;
  - to assist the development of able graduates into future industrial leaders by providing high profile training in industry with academic support; and
  - to enable universities to develop their faculty and staff and improve the quality and relevance of research and teaching by applying their knowledge to exacting industrial projects.

- Typical aims for the companies within TCS partnerships - known as Programmes - include: introducing new or improved products, services and processes; introducing or improving systems; and entering new markets or improving penetration of existing ones.

- Each TCS Programme involves one or more high quality graduates (TCS Associates) working in a company for two years on a project which is central to the company's needs; TCS Programmes are jointly supervised by representatives of both of the knowledge bases, e.g., a university and the industrial partner.

- In addition to practical learning, Associates receive formal training aimed at developing both technical and managerial skills.

- Part-funded by means of a government grant to the knowledge base partners, the company also contributes to the direct costs of the TCS Programme; although the amount depends on the detail of the specific Programme, a small or medium-sized enterprise will generally contribute about 40 % of direct costs (£ 14 000 per Associate per year) and a larger company will normally contribute at least 60 % (£ 21 000 per Associate per year)[a]; in addition to contributing to the costs incurred by their knowledge base partner, companies also have to bear their own direct and indirect costs of participation.

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a Pay scales for Postgraduate Associates are based on salaries actually paid in the market.

▶ Currently there are nearly 700 TCS Programmes involving about 1 000 graduates, almost every UK university, and 600 companies; 90 % of these involve small or medium-sized enterprises – 55 % with companies employing less than 50 and 35 % with companies employing between 50 and 250.

▶ Twenty TCS Centres for SMEs have been established at universities throughout the UK; each centre has staff responsible for discussing TCS with interested companies.

▶ Two other programmes are also available: College Business Partnerships (CBP) and Postgraduate Training Partnerships (PTP).

     – CBPs support projects undertaken in SMEs in partnerships with Further Education Colleges; the project work is done by people recently qualified at NVQ level 4[b], known as CBP Associates.

     – PTPs involve eight selected Research and Technology Organisations (RTOs – commercially oriented R&D establishments), each in partnership with a university; individual companies can also be involved, although only RTOs can apply.

     Several hundred high caliber postgraduate students (typically in a 3-year PhD program) are involved at any one time (PTP Associates); there is an annual recruitment into each partnership of up to ten students; PTP Associates undertake industrially relevant research projects in an RTO under the joint supervision of academics and RTO staff; they also receive formal training in the core competencies for an industrial career.

     Participation in the PTP programme provides university staff with information about the needs of industry and with a well defined context for research and teaching; one benefit to RTOs is the updating of their S&T base through the work of a large number of bright graduates participating in the scheme; RTOs also benefit from increased contacts with both universities and companies.

     No direct government support is available for PTPs, except grants to cover part of a RTO's costs.

▶ The Department of Trade and Industry is the 'lead sponsor' of TCS, but it is managed under contract by the Teaching Company Directorate (TCD); founded initially to manage TCS, TCD now carries out additional activities including innovation programme

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b   The broad equivalent of Level 4 in the English National Vocational Qualifications system (NVQ) is technician or junior manager

management, organization of conferences, seminars and workshops, promotion of best practices, and consultancy; TCD is a Centre within NPL Management Ltd., a subsidiary of Serco Group.

2.1   ENGLAND

2.1.1   DEPARTMENT OF TRADE AND INDUSTRY (DTI)

2.1.1.3 FORESIGHT UK

▸ The Foresight UK programme was launched in 1994 following a major review of
Government science, engineering and technology policy[a]; it is managed by the Office of
Science and Technology in the Department of Trade and Industry.

▸ The purpose of Foresight is to:
  - develop visions of the future – looking at possible future needs, opportunities and threats
    and deciding what should be done now to make sure that these challenges can be met;
  - build bridges between business, science and government, and across all areas and
    activities; and
  - bring together the knowledge and expertise of many people, working in partnership to
    increase national wealth and well-being.

▸ The programme operates mainly through a series of panels; there are sixteen panels in the
most recent round (1994-99), each representing an important sector of the UK economy;
the panels comprise representatives from business, the science base, the voluntary sector,
government, research councils and other bodies; they consider the future for their sector
and make recommendations for action; each panel is supported by a number of task forces
which look in more detail at specific areas.

▸ In the next round of Foresight, the panels will be representative of wider sectors of industry
or areas of economic activity; thematic panels will also be created on Ageing Population,
Crime Prevention, and Manufacturing 2020; all panels will be asked to consider two
"underpinning themes": Sustainable development, and Education, skills and training

▸ The priorities established under Foresight underpin a wide range of activities, including:

  – Support for collaborative work under the LINK scheme; LINK is the UK government's
    principal mechanism for promoting partnership in pre-competitive research between
    industry and the research base; since 1995, all new programmes under LINK address
    priorities identified under Foresight (£ 200 million over the next few years, to be

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a See 2.6.1.4 for a description of a similar initiative in Ireland (Technology Foresight Study).

matched 50-50 by industry); the total value of the 1 100 LINK projects underway or completed is approximately £ 500 million.

– Support for partnerships between business and the science base in Foresight priority areas, through the Foresight Challenge (£ 90 million).

► It is intended that the results of Foresight, and the Foresight process itself:

- are being used by companies, large and small, to re-shape their business strategies and build sustained competitive advantage;
- break down barriers to collaboration across business sectors and academic disciplines, and between business and the science base;
- help focus business and the science base on key issues for quality of life in the 21st century; and
- inform policy and spending decisions across Government.

2.1   ENGLAND

2.1.1   <u>DEPARTMENT OF TRADE AND INDUSTRY</u> (DTI)

2.1.1.4 INFORMATION TECHNOLOGY, COMMUNICATIONS AND ELECTRONICS SKILLS STRATEGY GROUP

<u>BACKGROUND</u>

▸ The Skills Strategy Group was set up jointly (in early 1999) by the Secretary of State for Education & Employment and the Secretary of State for Trade and Industry, to advise on the development of a skills strategy for the Information Technology, Communications, and Electronics sector (ITCE). The Group also reports to the National Skills Task Force (2.1.2.8) and to the Information Age Partnership.

▸ The final report should be released in September or October, 1999. The Group has published two preliminary reports. The first one includes a description of the sector, an overview of existing data on the supply and demand of skills and a review of key issues and potential solutions. The second report offers a snapshot of the Group's work programme and identifies areas that it is addressing as a priority. Interested organizations have been given an opportunity to provide feedback, which will be taken into account in preparing the final report.

<u>CONCLUSIONS</u>

▸ The main observations of the first preliminary report are focussed on the electronics industry:
  − there is some evidence of skill shortages and skill gaps applying across the range of occupations in electronics, currently and in the foreseeable future;
  − the situation is particularly difficult with respect to professionals and technicians, where those with the required formal training are also attractive to employers in a wide range of other sectors (particularly computer services and financial services);
  − the number of young people taking degree and sub-degree level courses in electronics-related subject has fallen over recent years, despite the general expansion in higher education as a whole (this trend may be influenced by perception of higher pay in alternative sectors, e.g., computing and IT, and/or by a limited supply of students with top level skills in maths and physics);
  − another important factor is the apparent inability of the electronics sector to attract women; and

- Employers in the electronics sector are not doing as much as they could to train and up skill their existing employees.

▸ Some of the initial ideas for addressing these problems are: improving the image of the electronics sector, providing financial incentives to follow appropriate courses, and improving the supply of secondary school graduates with the background required to take on study courses at higher levels.

▸ In the second preliminary report, the Group identifies five main themes which will be needed to underpin any national strategy:
  - a better understanding – than currently available – of the skills needed in ITCE jobs, now and in the future, to help education and training providers as well as individuals make better decisions;
  - the development of an agreed and consistent framework for describing the skill needs and key competences of the ITCE sector;
  - adopting measures to increase the proportion of graduates in IT-related subjects who actually go into IT practitioners jobs (e.g., greater involvement of employers in curriculum development, simplifying the qualification system below degree level);
  - rationalizing and/or better co-ordinating the activities of the many different professional and sector bodies active in the ITCE sector; and
  - improving the image of the ITCE sector as a career choice (e.g., better career information and better systems to disseminate that information).

LESSONS LEARNED and WORDS OF WISDOM

✓ Special reports are obviously useful to understand issues and options for action, but implementation requires a permanent IT strategy and an on-going machinery.

✓ It is in good part because they share a sense of urgency vis-a-vis ITCE that the Departments of Education & Employment and Industry & Trade have been quite successful at working together.

✓ The data currently available on ITCE is woefully inadequate for the tasks at hand.

✓ The graduation rates in ITCE-related study programs is extremely low at most institutions (except the very best).

✓ The low level of training among ITCE firms is due in good part to the fact that the sector is new and has no tradition in this respect.

✓ ITCE firms often have unrealistic expectations of new graduates.

2.1   ENGLAND

2.1.2   DEPARTMENT FOR EDUCATION AND EMPLOYMENT (DfEE)

2.1.2.1 THE EDUCATION AND TRAINING DEVELOPMENT AGENDA

► Education was a centre piece of the new government's electoral platform ; the Prime Minister is often quoted saying that "education is the best economic policy we have"; an overview of the several on-going policy initiatives – published by DfEE in May 1998 – provides a progress report on the ambitious programme of reforms and new initiatives established since May 1997; it also sets out the initiatives to be taken over the next two years.

► Several White and Green Papers have been published, including a White Paper on "Excellence in Schools" and a Green Paper on "The Learning Age. A Renaissance for a New Britain".

► DfEE's mandate statement is: "to give everyone the chance, through education, training and work, to realise their full potential, and thus build an inclusive and fair society and a competitive economy".

► Education, training and lifelong learning are seen as vital to international competitiveness; UK's international success depends on highly qualified and motivated people, which can only happen if the national education and training systems are effective, to the highest standard, and responsive to market needs.

► The Department recognizes that, while the private sector has a key role, initial public investment, partnership agreements and support at the margin, may also be necessary; often this will involve the development and testing of new ideas of potential national application to ensure that taxpayers' money would be effectively spent.

► The strategy and specific objectives adopted by DfEE all relate to National Targets for Education and Training, which are adopted by Government (2.1.2.2).

► Worth noting among the many on-going initiatives are:

   – Higher Education and Employability: to help the higher education sector better prepare graduates for the labour market (2.1.2.3).

- Key Skills: to make sure that Key Skills Qualifications – in Communications, Application of Number and Information Technologies – are developed and become a normal part of all postsecondary education and workplace training (2.1.2.4).

- National Training Organisations (NTOs): to establish some 70 NTOs by mid-1999, covering 90 % of the labour force, and make sure they become a 'one-stop shop' for national information on skill needs as well as education and training solutions for their sectors and/or occupational groups (2.1.2.5).

- University for Industry (UfI): to establish a public-private partnership to improve access to relevant learning and stimulate demand for lifelong learning among individuals and businesses (2.1.2.6).

- Individual Learning Accounts: to support and promote investment by individuals into their own learning (2.1.2.7).

- The National Skills Task Force: to advise Government on developing a National Skills Agenda (2.1.2.8).

OBSERVATIONS

✓ The reform of education and training, at all levels, is at the centre of the government's agenda and directly involves the Prime Minister and some of the most influential members of Cabinet; the number of green and white papers[a], consultation exercises, program change announcements and new initiatives is overwhelming – by Canadian standards.

✓ The Department for Education and Employment is responsible for policy on education and training in England[b]; it was created in 1995 by the merger of the former Employment Department and Department for Education; DfEE is the responsibility of the Secretary of State for Education and Employment, assisted by six junior ministers, each charged with specific areas of responsibility.

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a Including a paper on Post-16 Learning described by observers as being "white with green edges"

b Before the recent devolution of powers from Westminster, the Secretaries of State for Wales and for Northern Ireland exercised broadly similar responsibilities in their respective 'province', in Scotland – which has a distinct education system – responsibility for education and training comes under the Scottish Education and Industry Department; it is too early to be able to describe the new situation in some detail, as the new Parliaments in Wales, Scotland and Northern Ireland have yet to approve new mandates, programmes and administrative structures.

✓ In the past year of so, DfEE and the Department of Trade and Industry have been working
closely on a number of initiatives; such collaboration – which is new between two of the
largest departments – appears to reflect the principle adopted by the current government
that "education is the best economic policy that the UK has".

✓ Britain prides itself of being a world leader in the field of developing education-business
partnerships; it is reported that over 90 % of secondary schools and nearly 60 % of
primary schools now have links with business, while nearly all students in their last year of
compulsory schooling undertake work experience placements; since 1989, over 250 000
teachers have also had the benefit of placements in business.

✓ Also remarkable is the fact that in England, Wales and Northern Ireland, schools, colleges
and universities are required by law to provide career information and guidance for
students, to raise their awareness of training and career opportunities, and to help them
prepare for working life; this obligation is carried out by means of the Careers Service,
which is a network of local careers service companies working under contract with
government

✓ Access to higher education has been dramatically expanded in recent years, especially
since 1992 when the former 'polytechnics' gained degree granting powers; a major recent
reform is the introduction of a tuition fee of £ 1 000 per year – representing a quarter of
the average cost of a course[c]; student grants will be phased out and replaced by student
loans repayable after students have graduated and are in work earning a sufficient level of
income.

✓ In 1996-97, British universities received some £ 1.75 billion from public funds for
research, and attracted a further £ 600 million from private sources; the level of funding
received by individual institutions and individual departments or research units is based on
a rigorous national research assessment exercise, carried out every four years.

✓ Over 40 science, business and research parks have been set up by higher education
institutions to promote the development and commercial application of advanced
technology; these parks enable businesses to have access more easily to the research
expertise of university staff; the LINK scheme encourages businesses and higher education
establishments to work together on government financed research with potential industrial
applications (2.1.1.3).

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c Loans will not be available for tuition fees, however, the amount to be paid will be determined by a sliding scale
based on parental income; tuition will continue to be free for students from low income families.

2.1   ENGLAND

2.1.2   <u>DEPARTMENT FOR EDUCATION AND EMPLOYMENT</u> (DfEE)

2.1.2.2 NATIONAL LEARNING TARGETS

▸ National Learning Targets (NLTs) for England promote progress towards two main goals: (1) a global competitive economy, with successful firms operating in a fair and efficient labour market, and (2) an inclusive society, where everyone has an equal chance to achieve their full potential.

▸ Targets were adopted taking into account opinions received as a result of a national consultation exercise, as well as the advice obtained from the National Advisory Council for Education and Training Targets.

▸ Similar Targets are being adopted in Scotland, Wales and Northern Ireland.

▸ NLTs are set for key stages in the life cycle: at 11-years-old, at 16-years-old, at 19-years-old, and for adults generally; there are also targets for organizations through Investors in People (2.5.1).

▸ Targets are set in areas where the Government feels greatest improvement is currently needed; the targets are quantitative; they are said to be "at levels that are challenging but realistic"; the deadline for all targets is 2002, it being understood that new targets will be set at that time.

▸ The Targets are the central piece of DfEE's Work Programme to 2002, and additional resources have been committed; a governmental Action Plan was published in March 1999 which detail the policies, programs and machinery being put in place to help achieve the Targets.

▸ The government hopes that NLTs can engage partner organizations as well, at regional, sectoral, local and institutional levels – i.e., all organizations who deliver 'target units of outputs' (awards and qualifications); for example, Government Offices (GO) at regional level will work closely with the Regional Development Agencies (RDAs) to try and ensure that GO targets for a given Region are built into the RDA's economic development strategies.

- In the Action Plan, there are many direct links between NLTs, additional funding commitments and specific initiatives; for example, the University for Industry (2.1.2.6) and Individual Learning Accounts (2.1.2.7) initiatives as well as additional support granted to Investors in People (2.5.1) are presented as new tools that will help reach the target of reducing the number of non-learners by 7 %.

▸ The current baselines for the 2002 Targets (for England) are:

<u>FOR 11-YEAR-OLDS</u>
- 80 % reaching the expected standard for their age in literacy – 63 % in 1997
- 75 % reaching the expected standard for their age in numeracy – 62 % in 1997

<u>FOR 16-YEAR-OLDS</u>
- 50 % achieving five GCSEs[a] at grades A-C or equivalent – 45 % in 96/97
- 95 % of 16-year-olds getting at least 1 GCSE or equivalent – 92 % in 96/97

<u>YOUNG PEOPLE</u>
- 85 % of 19-year-olds with a 'level 2' qualification[b] – 72 % in 98
- 60 % of 21-year-olds with a 'level 3' qualification[c] – 50 % in 98

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a GCSE: General Certificate of Secondary Education, awarded for successful completion of core courses; passes are graded from A to G; GCSE at A level are the main academic qualification for entry to higher education and are normally taken at age 18 and over.

b In the academic stream, 'level 2' is attained once 5 GCSEs at grade C or higher have been obtained; in the formal vocational stream (provided by schools and colleges), 'level 2' corresponds to obtaining the Intermediate General National Vocational Qualifications (Intermediate GNVQs); in the workplace training stream, 'level 2' corresponds to obtaining National Vocational Qualifications-2 (NVQ2); 'level 2' in both vocational streams is the level of qualifications normally required for semi-skilled occupations. Broadly speaking, 'Level 2' is considered a minimum for employability; the Canadian equivalent would oe completion of secondary school.

ADULTS

- 50 % of economically active adults with a 'level 3' qualification – 42 % in 98
- 28 % of economically active adults with a 'level 4' qualification[d] – 25 % in 98
- 7 % reduction in the number of non-learners[e] – 26 % in 1997

ORGANIZATIONS

- 45 % of medium-sized or large organizations (50+ employees) to be recognized as Investors in People – 19 % in 98
- 10 000 small organizations (10-49 employees) to be recognized as Investors in People – 2,231 (2 % of all small organizations) in March 1999

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c 'Level 3' in the academic stream is attained with 2 GCSEs at A level; 'Level 3' in both vocational streams (Advanced GNVQs and NVQ3) is the level of qualifications normally required for technician, skilled, craft and supervisory occupations.

d 'Level 4' corresponds to a first degree in Higher Education or to a NVQ4 in the workplace training stream; 'Level 4' is normally required for technician or junior management occupations.

e The category of people being targeted are everybody aged 16 to 69, except those in full-time education; the proportion of 'non-learners' is the proportion of respondents in the 1997 National Adult Learning Survey who had done no learning in the previous three years; the target embraces all types of 'deliberate learning'.

2.1   ENGLAND

2.1.2   <u>DEPARTMENT FOR EDUCATION AND EMPLOYMENT</u>   (DfEE)

2.1.2.3 HIGHER EDUCATION AND EMPLOYABILITY PROGRAMME

► This development programme is designed to help the higher education sector develop strategies, structures and systems, tools and materials, and new forms of partnership, to promote flexible, responsive and cost-effective ways of meeting the needs of individuals – students, graduates and lifelong learners – and of the labour market.

► The Department has issued a Prospectus inviting higher education institutions and other organizations to bid for development work for the period 1998-2000.

► Projects can be regrouped under three main themes:
  - Using Graduate Skills: how graduate skills could be used more effectively and overcoming barriers to graduate employment.
  - Higher Education - Business partnerships: to strengthen links between higher education and small to medium-sized employers; complements the Using Graduate Skills developments through an employer-led approach designed to build longer term relationships.
  - Career Management Skills: projects focussed on the learners themselves, to develop ways for graduates to be equipped with the skills they will need to manage their own lifelong learning and working careers, during and after higher education.

► In addition, the Department invited higher education institutions to come forward with proposals which would bring together discipline-based professionals and bodies and appropriate National Training Organisations (2.1.2.5); a number of two-year projects have started which will build on the existing 50 Discipline Networks – which are designed to promote ongoing curriculum change to make graduates more employable.

2.1   ENGLAND

2.1.2   <u>DEPARTMENT FOR EDUCATION AND EMPLOYMENT</u> (DfEE)

2.1.2.4 KEY SKILLS

► For DfEE, Key Skills are the generic skills which individuals need in order to be effective
members of a flexible, adaptable and competitive workforce and for lifelong learning.
They build on Basic Skills in three ways: firstly, they include a wider range of
predominately work-related skills; secondly, they require the use of these skills in a wider
range of contexts; thirdly, the ability to use skills learnt in one environment in a
completely different one.

► The Department points out that the main stimulus for the developments in Key Skills in
recent years has been high profile pressure from employers; they have been concerned to
ensure that young people have the skills, aside from occupational, technical and
professional skills, which they will need to be effective members of the workforce.

► The Government sees Key Skills as a priority and wants to move to a position where they
are a normal part of everyone's post-16 education and training; action is being taken on a
number of fronts, including revisions to the Key Skills Units, along with piloting of a new
Key Skills qualification aimed at 16-19 years olds and covering the Key Skills of
Communication, Application of Number and Information Technology – across England,
Wales and Northern Ireland.

► The Qualifications and Curriculum Authority (QCA) is now halfway through a two-year
pilot of a new Key Skills qualification in Communication, Application of Number and
Information Technology; the pilot involves 235 centres and 20 awarding bodies, with
students following a range of main qualifications at levels 1-3 in the national qualifications
framework (see footnotes in 2.1.2.2).

2.1   ENGLAND

2.1.2   <u>DEPARTMENT FOR EDUCATION AND EMPLOYMENT</u>   (DfEE)

2.1.2.5 NATIONAL TRAINING ORGANISATIONS (NTOs)

▸ NTOs are sector-based, independent organizations which represent employers and
employment interests in industry sectors and in a defined range of occupational groups; the
majority of NTOs represent sectors of industry; a smaller number represent occupational
groups found across every sector – these are known as All Sector NTOs (e.g., the Council
for Administration).

▸ The new NTO Network was established in 1998 and replaces Industry Training
Organisations, Lead Bodies and Occupational Standards Councils.

▸ To become part of the Network, NTOs must first go through a rigorous recognition
process; by spring 1999, some 70 NTOs were in place, covering 90 % of the workforce.

▸ A NTO National Council has also been created, which works closely with DfEE to ensure
the network is promoted effectively and that links are established with key partners.

▸ DfEE expects that NTOs will become the 'one-stop shop' for national information on skill
needs and education and training solutions for their sectors and occupational groups; the
Department expects NTOs to achieve this through 4 strategic priorities:

  – ESTABLISH AND DEVELOP A SECTOR VISION BY MAINTAINING A CLEAR PICTURE OF THEIR
    SECTOR, AND SECURING AGREEMENT WITHIN IT ON THE SKILLS WHICH ARE NEEDED FOR
    SECTOR COMPETITIVENESS.

    NTOs will therefore need to analyze the changing environment in which their sectors
    operate, and show how sector competitiveness priorities will be addressed over a
    'rolling' 3-year period in their strategic plan; DfEE expects NTOs to decide on the types
    and volume of skills that the sector will require, and to agree on targets with employers
    of all sizes across the UK, not only for provision to meet skills needs and shortages,
    NVQs, SVQs and other qualifications (2.1.2.2), but also for Investors in People (2.5.1),
    and equal opportunities.

  – PROVIDE INFORMATION BY MAINTAINING AN UP TO DATE AND WELL FOUNDED
    ASSESSMENT OF THE SKILL NEEDS OF THE SECTOR, AND BE ABLE TO SUPPLY
    INFORMATION ABOUT PRIORITIES FOR SKILLS TRAINING TO EDUCATION AND TRAINING
    PROVIDERS.

NTOs should also provide best practice intelligence on how firms, especially SMEs, can use skills and skill investment to enhance business competitiveness; the Department will expect NTOs to provide information on relevant learning opportunities, qualifications and standards, training and education provision and training frameworks, and to ensure that these are widely marketed both locally and nationally.

— INFLUENCE SECTORS AND PARTNERS BY USING THEIR ASSESSMENT OF THE SKILL NEEDS OF THE SECTOR TO INFLUENCE OTHER ORGANIZATIONS IN THE EDUCATION AND TRAINING FIELD, AND TO BE ACKNOWLEDGED BY THEM AS MAJOR PARTNERS IN IMPROVING EDUCATION, TRAINING AND BUSINESS PERFORMANCE.

NTOs must also be recognized by employers, accrediting and professional bodies as providers and maintainers of high quality occupational standards and qualifications frameworks; they should have communications systems in place to provide feedback on needs and provision, and be able to inform employers of all sizes in the UK about training which will improve their business performance; the Department expects NTOs to operate proactively to help bring about change; where there is a lack of suitable provision, the NTO will be expected to bring its influence to bear to secure this.

— DEVELOP AND CARRY OUT APPROPRIATE STRATEGIC AND OPERATIONAL PLANS.

Plans must be owned and driven by employers, and supported by other key partners, with implementation confirmed by systematic evaluation; NTOs must ensure that their resources, staffing and structure are sufficient in quality and quantity to ensure impact and influence, and to cover planned expansion, without bias or conflict of interest.

NTOs will be expected to develop key Government initiatives across a range of Departments at strategic and operational levels; they will need to be aware of the implications of devolved legislation in Scotland and Wales, and the establishment of Regional Development Agencies (RDAs) in England.

NTOs must have the capacity to design projects, bid for funds, handle contracts and meet planned time scales and outputs, particularly for Government priorities.

NTOs must work in partnership with related NTOs, with the NTO National Council and the Scottish Council for NTOs in developing national thinking and activity on learning, education and training.

2.1   ENGLAND

2.1.2   DEPARTMENT FOR EDUCATION AND EMPLOYMENT   (DfEE)

2.1.2.6   UNIVERSIIY for INDUSTRY   (UfI)

▸ The University for Industry[a] (UfI) will be a new kind of organization for open and distance learning aimed at helping people get knowledge and skills in a way that suits their lifestyles and the operational needs of their businesses.

▸ Using modern information and communications technologies, it will broker high quality learning products and services and make them available at home, in the workplace and at learning centres country-wide.

▸ UfI Limited is independent of government and has been set up as a company limited by guarantee; it will have the status of an educational charity.

▸ UfI will not be an education or training provider in the traditional sense; instead, it will deliver products and services through partners such as the education and training sectors, employers, trade unions, and governmental bodies at all levels; this will be achieved by:
  - creating a nation-wide, distributed, open, and dista   arning network;
  - providing a wide range of high-quality learning p   es, which give maximum flexibility for users, allowing them to learn where   en and how they want;
  - encouraging   ple to 'own' their learning by making it relevant to their working lives and personal aspirations; and
  - building learners' confidence in their ability to manage their own learning through access to specialist support and interaction with other learners.

▸ UfI has a target of stimulating demand for up to one million courses and learning packages per year, by 2004.

▸ The plan calls for creating a network of UfI-endorsed Learning Centres across the UK[b], which will have three roles: offer public access points to UfI services, provide local learning facilities, and be a focus for UfI learner support services.

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a As UfI staff readily admit, the University for Industry is neither a university nor for industry particularly; a new brand name should soon be adopted.

b UfI will operate in England, Wales and Northern Ireland; a similar yet separate organization will be created in Scotland.

Learning Centres will be in convenient locations such as shopping and leisure complexes, as well as colleges, schools, universities, libraries and community centres; also planned is the establishment of Learning Centres within the existing training centres of companies; the objective is to have up to 1 000 Centres up and running by the end of 2001.

A wide variety of organizations will own and operate Learning Centres, on contract with UfI; contracts will be let indirectly through Learning Centre Hubs.

► Some 100 Learning Centre Hubs will be established; some will be specially-created legal entities, others will be less formal arrangements –with a chosen lead body acting as the contracting partner.

► Hubs will play a crucial role in the management of the overall network; their main functions will be to lead the establishment of Learning Centres across their region or area and to provide support and networking services for Learning Centres (e.g., learner support services, links to adult guidance services, training and accreditation of advisers).

► UfI's will also be to promote the idea of lifelong learning; this will be done by:
  - providing information and advice, through the existing Learning Direct[c] advice line, UfI Internet site, and at the local Learning Centres
  - making sure the right courses and learning materials are available, either by directing people and employers to existing resources or by contracting out the creation of new learning materials; rigorous quality control will be applied using independent expertise.
  - by building long-term relationships with individuals and employers, for example through individual and corporate membership schemes

► Initially, priority will be given to the following categories of potential clients:
  - the 15 % of adults who have low or very low literacy skills, and the 33 % with low or very low numeracy skills

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c   Learning Direct is a telephone help line set up to help adults with learning and career queries; it is free, available from 9 to 9 weekdays and Saturday mornings, covers all of the UK, and is staffed by experienced career advisors; advisors can help people find out about learning opportunities, local career advice, how to pay for their learning, where to get childcare, and organizations that can help; DfEE reports that over 750 000 callers nationwide have contacted Learning Direct in the 18-month period since the line opened, which is far above all expectations.

- the 12 million people who work in SMEs and the 3 million employed in the retail and distribution sectors
- the 5 000 businesses in the automotive parts sector, the 5 000 businesses in the environmental markets and the 500+ companies in the multimedia industry

- and all individuals and businesses who need to develop their information and communication technology skills

‣ UfI's budget for the first year is £ 40 million; it's current staff is 70 will grow to 200 at maturity.

2.1   ENGLAND

2.1.2   DEPARTMENT FOR EDUCATION AND EMPLOYMENT (DfEE)

2.1.2.7 INDIVIDUAL LEARNING ACCOUNTS (ILAs)

▶ The Individual Learning Accounts (ILAs) initiative, which was part of the current
government's electoral platform, is built on two key principles: that individuals are best
placed to choose what and how they learn, and that responsibility for investing is shared –
between the individual, the employer and government.

▶ ILAs are meant to increase investment by individuals in their own learning by providing a
vehicle for saving to learn; the initial focus is on people in work or seeking to return to
work.

▶ Everybody over the age of 18 will be able to open an ILA; ILAs will be owned by those
who open them, and subject to some conditions, will attract other contributions – public
and private.

▶ The first million people who open an account – among those in the labour force, but
excluding those whose education or training is already funded by the state, e.g., full-time
students – will qualify for a £150 contribution from the government (through their local
Training and Enterprise Council - TEC[a]), provided they: (a) contribute at least £ 25 of
their own money and (b) spend the money on eligible learning relevant to their current or
prospective employment.

▶ ILA holders will be able to claim a 20 % discount on eligible courses against the amount
they pay up to a limit of £ 500 per year[b]; there will also be discounts of up to 80 % on
some key courses; 'computer literacy' courses have been identified so far[c].

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a TECs are a network of employer-led private companies set up in 1990, under contract with government to bring
business know-how to bear on the development of training strategies to meet local skill requirements; they are also
responsible for managing the delivery of training for unemployed adults and young people; there are 79 TECs in
England and 22 in Scotland – where they are known as local enterprise companies or LECs.

b This means the maximum discount available per year is £ 100 if the eligible learning cost is £ 500 or more.

- ▸ Employers will be able to contribute to individual learning accounts tax free, provided they offer learning accounts to their lowest paid employees; individuals will not pay tax on an employer's contribution if the contribution is used for learning explicitly agreed to between employees and their employers.

- ▸ While the concept of ILAs is relatively simple, its implementation is complex and challenging; for example, 'eligible courses' have to be identified and a national system put in place to insure that employer contributions are only used for agreed learning; moreover, ways and means have to be found to convince financial institutions to play the key role of holding and administering the accounts; it is also part of the plan that ILA holders have access to information, advice and guidance so that they can plan their learning effectively.

- ▸ Efforts are also being made to involve National Training Organisations (2.1.2.5) and trade unions, to see how to maximise the participation of employers and worker organizations.

- ▸ The government's commitment for this initiative is £150 million over three years, allowing the number of accounts to reach one million by 2002.

- ▸ ILAs will be closely linked with other initiatives designed to boost lifelong learning, the University for Industry in particular (2.1.2.6).

- ▸ As with the University for Industry, it is expected that stimulating the demand for learning will also have a substantial impact on the supply of learning opportunities and learning materials.

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c   For those in receipt of the £ 150 government contribution, the discounts will come into effect only after the contribution has been spent.

2.1   ENGLAND

2.1.2   DEPARTMENT FOR EDUCATION AND EMPLOYMENT   (DfEE)

2.1.2.8   THE NATIONAL SKILLS TASK FORCE

▸ The mandate of the Skills Task Force is to advise Government (through the Secretary of State of Education and Employment) on developing "a national skills agenda which will ensure the economy has the skills required to sustain high levels of employment, compete in the global market place and provide opportunity for all."

▸ The chair of the Task Force is the Director-General of the British Chambers of Commerce; its members represent a wide range of interest, from small to medium-sized firms to large corporations, and include trade unionists and members with a background in further and higher education, Training and Enterprise Councils, and local authorities.

▸ The first report of the Task Force, issued in September 1998, included the following recommendations:
  - ensuring a stronger focus on priority skill needs in national education and training provision, building on better information and a more responsive system;
  - better targeted help for employers, particularly SMEs, in the overall recruitment process to ensure that optimum use is made of the existing skills base;
  - a renewed emphasis on raising the extent, quality and relevance of learning in the workplace as one of the most effective mechanisms to respond quickly to evolving skill needs and gaps;
  - effective strategies for responding to critical skill shortages and gaps, bringing together employers, National Training Organisations (2.1.2.5) and public and private training providers – with an initial focus on IT skills (2.1.1.4).

▸ The second report, issued in May 1999, is focussed on three main issues: (1) how to improve vocational education and training; (2) how to equip all people in the labour force with key employability skills; and (3) how to ensure that all have the information they need on the labour market to make informed choices and plan ahead.

▸ With respect to vocational education and training, the Task Force recommends a number of measures designed to increase participation and attainment, facilitate progression from one level to the next, and offer wider opportunity to acquire higher level skills.

▸ The Task Force's recommendations in the area of employability are focussed on the
'key skills' required in the knowledge economy[a] (2.1.2.4); an overall strategy is proposed
for the six key skills generally as well as specific measures to deal with two particularly
serious problems, i.e., the capability in the application of number and broader mathematics
skills amongst all people, and major skill gaps in Information technologies amongst older
workers.

▸ With respect to labour market information, the Task Force suggests measures to improve
the relevance, coherence and availability of the abundant data already available; included
are recommendations to disaggregate at regional and sub-regional levels data collected at
national level; to require that common standards be used in all surveys conducted by
publicly funded bodies at local, regional and national levels; to create a national website
that would bring into a single system information on occupations and occupational trends,
earnings, vacancies, anticipated skill requirements and learning opportunities; and to
clarify the respective roles of the different public bodies involved in the collection and
dissemination of labour market and skills information[b].

▸ A third report is expected in late Autumn 1999, which will deal with management skills,
adult learning in the workplace as well as funding and performance management issues.

▸ The Task Force's final report, which is to include recommendations on the shape of a
"National Skills Agenda", will be issued in Spring 2000.

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a Communication, Application of number, Information technologies, Problem solving, Working with others, and
Improving one's own learning and performance

b The major players in the production and dissemination of labour market information being the Department for
Education and Employment, the National Training Organisations (2.1.2.5), the Regional Development Agencies,
and local agencies involved in education and training.

2.2   NORTHERN IRELAND

2.2.1   DEPARTMENT OF ECONOMIC DEVELOPMENT

► Among the responsibilities of the Department of Economic Development (DED) are:
  - training and employment matters, through the Training and Employment Agency (2.2.1.1);
  - the promotion of industrial R&D and technology transfer through the Industrial Research and Technology Unit (2.2.1.2); and
  - support to the development of an economic strategy for Northern Ireland, known as Strategy 2010 (2.2.1.3).

2.2   NORTHERN IRELAND

2.2.1   <u>DEPARTMENT OF ECONOMIC DEVELOPMENT</u>

2.2.1.1 **TRAINING AND EMPLOYMENT AGENCY**

▸ The Training and Employment Agency (T&EA) was established in 1990 as an Executive Agency within the Department of Economic Development; in 1990-2000, it will have a total budget of £ 213 million and 1 370 staff; it operates 34 local offices.

▸ Its main mission includes supporting investment from companies outside Northern Ireland, promoting management development and encouraging employers to develop the skills of employees, helping people looking for employment to receive the careers guidance and skills they need, and helping people find jobs and employers find suitable employees.

▸ The agency offers a number of programs designed to bridge the gap between higher education and industry; for example:

- The Industrial Scholarship Scheme is a five-year extended degree course culminating in a Masters degree in Electrical/Electronic or Manufacturing/Mechanical Engineering from The Queen's University of Belfast; the objective is to encourage the brightest and best qualified young people to enter technological management in the manufacturing sector; the scheme is operated as a Government - Industry - University project and offers comprehensive educational and industrial training and experience.

- The Engineering Education Scheme aims to increase the number of top quality young people entering the creative levels of engineering; the scheme targets high calibre, well motivated students who have the potential to become future leaders in their field; the students work in teams to find a solution to a real industrial problem; with the help of an engineer, a teacher mentor and University staff the teams go through a research and development process in reaching their chosen solution.

2.2   NORTHERN IRELAND

2.2.1   DEPARTMENT OF ECONOMIC DEVELOPMENT

2.2.1.2 INDUSTRIAL RESEARCH AND TECHNOLOGY UNIT – IRTU

▸ The Industrial Research and Technology Unit (IRTU) is another Executive Agency within the Department of Economic Development; its mandate is to encourage industrial innovation, research and development, and technology transfer; its governing Board includes senior representatives from industry and the universities; its total budget is approximately £ 21 million per year.

▸ IRTU delivers on its mission in two ways: by providing scientific, technological and environmental services to industry and Government, and by administering a number of R&D financial assistance programs.

▸ Worth noting amongst the R&D support programs are: COMPETE for the development of new products and processes; START for companies and/or universities engaged in precompetitive research and development; the TECHNOLOGY AUDIT SCHEME to assist companies auditing their own technological capabilities and needs; and SMART AWARDS to help individuals or small firms bring innovative ideas to production stage.

2.2   NORTHERN IRELAND

2.2.1   <u>DEPARTMENT OF ECONOMIC DEVELOPMENT</u>

2.2.1.3 STRATEGY 2010

- Commissioned in 1998, the Economic Development Strategic Review, published in March 1999 under the title *Strategy 2010,* is an ambitious set of proposals; they will be considered in due course by the Northern Ireland Assembly.

- Some 300 people – from business and the wider economy and community – have been involved in the creation of the Strategy proposals, through a Strategy Steering Group (largely from the private sector), 18 Working Groups and a Consultation Panel.

- The report is first and perhaps foremost a dramatic call to action; to quote from the Preamble:

    The world is changing faster than ever before...The days of an economy cushioned by public expenditures are over...Knowledge and innovation are key. We will prosper in future by our ideas, skills and enterprise. We have to look outwards, learn what others do well, then work to do it better. We need nothing less than a cultural change in our business and in society at large.

- After analyzing Northern Ireland's key strengths and weaknesses, the report proposes a number of overriding objectives, including a shared determination to equip the Province for the knowledge-based economy with better education, higher skills and a commitment to R&D and innovation, and a strengthening of the culture of enterprise (coupled with a "roll-back of the State").

- Action proposed with respect to the TRANSITION TO THE NEW ECONOMY includes:
    - maintaining state-of-the-art telecommunications infrastructures;
    - promoting and supporting networking among industry in order that firms learn from each other and "co-operate in order to compete";
    - greater integration of economic and educational policy;
    - more collaboration between business and the education and training systems in delivering the skills and capabilities needed by business;
    - additional resources for university/business collaboration, for university spin-out companies, and for R&D undertaken by small firms; and
    - involving business people in the careers guidance system and giving teachers-in-training direct experience of industry.

▸ Proposals dealing with the DEVELOPMENT OF A STRONGER CULTURE OF ENTERPRISE include:

- raising the prestige of business as a career and providing role models to attract talent into the wealth creating sectors;

- encourage the use of private equity finance generally;

- enhanced tax incentives to encourage profitability and increase the rewards of success; and

- change the corporate rate tax to help Northern Ireland compete with the Republic of Ireland for inward investment.

▸ The Report proposes targ or 2010, all expressed in specific and measurable terms; these include raising the Province's GDP per capita by 10 per cent points compared to the UK (from 80 % to 90 %), increasing the birth rate of new businesses by one third[a], increasing the share of high-tech industries in total employment from 2.9 % to 6 %, and increasing business R&D as a per cent of GDP from 0.6 % to 1.5 %.

▸ Finally, the Report suggests that an Economic Development Forum be established which would have membership from both the private and public sectors and would have responsibility for monitoring and adjusting the Strategy – as eventually adopted by the Assembly; an annual report on progress against targets would be provided to the Forum by the Department of Economic Development.

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a In 1997, the rate of registration of new companies in Northern Ireland was 31 per 10 000 of population aged 16 or over; that same rate was 30 for Scotland, 27 for Wales, 47 for the South East of England, and 39 for the UK as a whole.

2.2   NORTHERN IRELAND

2.2.2 **DEPARTMENT OF EDUCATION**

▶ In Northern Ireland, education is a central government responsibility with local authorities having a consultative role; the Department of Education for Northern Ireland (DENI) has responsibility for the development not only of primary and secondary education but also of further education, higher education and community and adult education; vocational training is provided through the Training and Employment Agency (2.2.1.1).

▶ Following the publication by the UK Government of a Green Paper on lifelong learning (2.1.2.1), the government of Northern Ireland launched its own consultation exercise to obtain the public's views on how UK-wide policies for lifelong learning could be implemented in the Province.

▶ An action plan has now been adopted which includes the following elements:
- the creation of a Strategic Collaboration Fund to support local partnerships in adult education and training between further education colleges and the main stakeholders, including business and the community;
- participation in further education will be expanded by 8 000 full-time and part-time places by 2002;
- a skills identification and monitoring system will be put in place to help in planning the delivery of vocational education and training, and a Skills Survey will be published yearly;
- the establishment of a Skills Task Force for Northern Ireland; the Task Force has been drawn from local industry, commerce and the trade unions; it will advise Government on skill and labour needs;
- the University for Industry will be launched in the Province in 2000 (2.1.2.6); and
- 25 000 Individual Learning Accounts will be provided by 2002 (2.1.2.7).

2.2   NORTHERN IRELAND

2.2.3   THE QUEEN'S UNIVERSITY OF BELFAST

2.2.3.1 QUESTOR – Environmental Science and Technology Research Centre

▸ QUESTOR was set up in May 1989 with nine founder industry members and five participating university departments; the model used is that of the (US) National Science Foundation's Industry/University Cooperative Research Centers Program[a].

▸ The Departments of Agriculture, Chemical Engineering, Civil Engineering, and Computer Science, and the Schools of Biology and Biochemistry, Chemistry, and Psychology are participating in the Centre's research programme.

▸ Currently there are some 20 industry members; membership in the Centre confers many benefits such as direct input into the selection of research projects, prior access to all research carried out in the Centre, royalty-free access to all patents taken out by the Centre, the opportunity to network with other Members often from different sectors of industry, the opportunity to network internationally with other Centres linked to QUESTOR, the opportunity to assess QUESTOR students and post-docs over a period of time as potential employees, and the opportunity to interact with other areas of Queen's University.

▸ One representative from each member organization sits on the Centre's Industry Advisory Board which meets every six months; all proposed research projects are presented to the Board for selection based on industry relevance, quality of the research and ability to achieve the goals set out.

▸ This industry/university partnership allows the University to carry out basic research and the industry partners to apply this research to minimise their environmental impact while generating wealth; this partnership allows input from industry into the choice of research topics and helps to focus the relevance of the research.

▸ A mixture of graduate students, research associates and research fellows are involved; they are selected from a large field of young people who are attracted to apply to the Centre by a combination of environmental relevance and opportunities for industrial research experience.

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a http://www.eng.nsf.gov/eec/i-ucrc.htm and http://www.eng.nsf.gov/eec/siurc_intro.htm

► Graduate students and post-doctoral staff are in regular contact with senior industrialists who can advise on the relevance of their work; the industry links help ensure that the students can integrate more smoothly into the work environment; one source of funding is the Teaching Company Scheme (2.1 . 2);

► QUESTOR is aligned with Foresight UK (2.1.13), which has identified "Environmentally Sustainable Technology" as one of the highest priority for generic research.

► QUESTOR prides itself of being unique in Europe particularly because of the comprehensive range of its services and research activities; QUESTOR has links with other such centres in the world and is ranked in the top 10 % in the USA; it won a Queen's Anniversary Prize for Higher and Further Education in 1996.

► The total funding to date for industry-relevant environmental research is £14 million; current staff is 35.

► Building on the success of QUESTOR, a second Centre was created in 1999, which will specialize in ionic liquid technologies; it will be known as QUILL (Queen's University Ionic Liquid Laboratories).

2.3   SCOTLAND

2.3.1   THE SCOTTISH PARLIAMENT

2.3.1.1   SCOTTISH ENTERPRISE

- Scottish Enterprise (SE) is the economic development agency for Lowland Scotland, covering 93 % of Scotland's population. Established in 1990, it is an "executive agency" which, by legislation, has responsibility to promote industrial efficiency and competitiveness, enhance skills, and develop employment It operates through a Network of 13 Local Enterprise Companies (LECs). A similar organization exist for the Highlands and Islands area of Scotland (2.3.1.2).

- SE is accountable to the Scottish Parliament; the Scottish Administration and Executive makes appointments to the Board, establishes overall objectives, provides most of the budget, and sets performance targets.

- Scottish Enterprise has responsibility for the Network of LECs as a whole including overall strategic planning, resources allocation, accountability, and the provision of specialist services. Its 12 Board Members, who come from business, labour, education and the voluntary sector, are appointed by the Secretary of State for Scotland.

- LECs operate under contract to Scottish Enterprise. LECs deliver various business development initiatives as well as training services. Their activities reflect both the national strategy and locr' circumstances. LEC Board Members are drawn from across their communities.

- The total budget of Scottish Enterprise in 1997/98 was £ 469 million, 88 % of which came from a government grant-in-aid. The main categories of expenditures were Skills & Knowledge (29 %), Physical Business Infrastructure (25 %) and Business Competitiveness (11 %).

- Scottish Enterprise is unique in a number of ways:
  - its arms-length agency status enables it to think in the longer term and to take more risk than a standard government department can;
  - it integrates complementary capabilities – economic development, skills enhancement, property, equity finance, exports and inward investment – that are usually handled by different institutions;
  - its Network allows for the implementation of local strategies within a nation-wide strategy; and

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- its Boards at national and local levels provide a vast pool of the right kind of expertise and experience from both the private and the public sectors.

▸ Scottish Enterprise has adopted an integrated approach to economic development; its aim is to create an upward spiral of development where research, learning, new ideas and enterprise feed off each other.

▸ Its current 4-year strategic plan is articulated around the contributions it can make to four broad goals: the development of many (more) innovative and far-sighted organizations; positives attitudes to learning and enterprise; economic development as an inclusive process; and making Scotland a competitive place where to live, work, invest and visit.

▸ An on-going initiative is a country-wide consultation around the theme 'Achieving prosperity through learning', to support the development of a strategy to help ensure that Scotland has the skills to compete in the knowledge economy.

▸ The Glasgow Development Agency (GDA) is the largest local enterprise company (LEC) within the Scottish Enterprise Network; its mission includes supporting business to improve Glasgow's economic performance, developing skills, and helping improve the physical environment.

▸ Under Supporting Business, the GDA has targeted key industry sectors for special support; one scheme is TECHNOVATE, a partnership between GDA, industry and the universities which aim to encourage and develop the commercialization of university expertise and research excellence in hi-tech areas (software, biosciences, optoelectronics and advanced instrumentation); under the scheme, Commercial Managers have been appointed within the three Glasgow universities to help increase start-up and spin-out activities; wherever technology-based businesses emerge, further support is offered by GDA and its two specialist technology management companies (Targeting Technology Inc. and Services to Software).

▸ Under Developing Skills, one initiative called PROFIT THROUGH KNOWLEDGE is designed to help small to medium-sized companies develop a business opportunity or address a business need via the targeted application of graduate and undergraduate skills and knowledge; graduates and final-year undergraduates are recruited and placed within companies to undertake defined projects that boost business performance; companies are expected to meet the salary costs of the participants; the GDA provides ongoing consultancy support and advice through the period of the project (up to nine months).

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2.3   SCOTLAND

2.3.1   THE SCOTTISH PARLIAMENT

2.3.1.2 **HIGHLANDS & ISLANDS ENTERPRISE**

▸ Highlands & Islands Enterprise (HIE), established in 1990, is a government sponsored
  development agency (an *executive agency* in Canadian terms), similar to Scottish
  Enterprise (2.3.1.1); the HIE Network consists of a main body, Highlands & islands
  Enterprise and 10 Local Enterprise Companies (LECs); its total budget in 1999-2000 is
  £ 80.6 million.

▸ HIE – based in Inverness – sets the overall strategy and targets, carries out area-wide
  programmes, and provides economies of scale; LECs are contracted to HIE to deliver
  network-wide programs and pursue development in a way that matches local needs; the
  extent of delegation to LECs is substantial and wide-ranging, with the majority of Network
  staff resources and many individual functions based in local areas.

▸ HIE pursues a broad strategy involving economic, social and cultural objectives and
  activities; in pursuing these objectives, HIE recognizes "that sustainable development will
  require an integrated approach to tackling development issues. Strong communities require
  economic prosperity through business growth. Business growth depends on quality
  workforces with high skill levels. High skill levels come from communities which reward
  personal achievement and advancement."

▸ A fundamental principle in the operation of the HIE Network is "the partnership of private
  sector experience, community awareness and public sector commitment working together
  to create a healthy economy and society".

▸ HIE's strategic objectives are: Growing Businesses, Developing Skills, and Strengthening
  Communities.

  – GROWING BUSINESSES: accounts for some 60 percent of the budget; currently, the main
    priorities are to improve business competitiveness, assist new business starts, attract
    inward investment, and improve the competitiveness of business locations.

    Specific activities include: the expansion of high technology projects; the setting-up of
    applied research facilities in health and biotechnology; start 250 new businesses; the
    establishment of a Business Technology Centre; and assistance to telecom infrastructure
    development.

— <u>DEVELOPING SKILLS</u>: accounts for 20 percent of expenditures; the priorities for 1999-2000 are to match training and opportunities, extend access to training and opportunities, and assist the development of the training and learning infrastructure.

Specific activities include: the implementation and promotion of Modern Apprenticeships (a UK-wide initiative) in industry sectors that are important to the region and/or in which skill shortages are anticipated; input to the Scottish University for Industry (the Scottish version of UK's UfI – 2.1.2.6); the promotion of the Investors in People scheme (2.5.1); the development of a sectoral skills strategy with a focus on a number of key sectors for the area; and support to the University of the Highlands & Islands project.

— <u>STRENGTHENING COMMUNITIES</u>: accounts for six percent of the current budget; the priorities are to promote investment in community assets (land, buildings, the environment), to develop community strengths and leadership, and to enhance the value of culture and heritage.

Specific activities include: matching grants through LECs for 300 community projects; the promotion and development of music as an industry; and the development of a new approach to Gælic development.

► Every year, HIE, jointly with the Scottish Parliament, sets very specific targets for a series of critical activities under each of the three main strategic objectives; results for past years are published at the same time; salaries of HIE staff are related to their performance in attaining yearly targets.

► HIE pays particular attention to value-for-money and performance measurement; it is currently developing a new performance measurement framework and system; HIE also undertakes a range of research and development activities across each of the three strategic objectives.

2.4   WALES

2.4.1   THE NATIONAL ASSEMBLY FOR WALES

2.4.1.1 NATIONAL ECONOMIC DEVELOPMENT STRATEGY

▸ A draft National Economic Development Strategy has been developed by the European
Task Force, a public, private and voluntary sector partnership created in October 1998 to
prepare advice for the new National Assembly for Wales; the Strategy will be the vehicle
for setting strategic priorities for economic policies and programmes of the Assembly.

▸ The main objectives of the Strategy are to raise Welsh GDP closer to the levels in the UK
and Europe, and to raise the performance of the less well-off regions of Wales closer to
that of the best.

▸ Three main priorities for action are proposed: (1) to strengthen human resources, enabling
more people to participate in the labour force and raising the skills of those already
working; (2) to move the balance of the Welsh economy by favouring growth sectors,
increasing the stock of small businesses, and raising the competitiveness and productivity
of existing businesses; and (3) supporting less well-off communities and disadvantaged
groups and ensuring that full opportunities are available to them.

▸ The key actions being proposed under the first of these priorities – HUMAN RESOURCES –
are:
  – to promote the rapid development of the University for Industry initiative (2.1.2.6);
  – to reinforce national education and training targets (2.1.2.2);
  – to support stronger links between business and schools;
  – to strengthen the National Grid for Learning with ICT equipment and training for
    teachers and students; and
  – to support informal learning through voluntary and community activity.

▸ Under the second priority – BUSINESS DEVELOPMENT & ENTERPRISE – some of the key
actions proposed are:
  – to encourage and support the development of entrepreneurship;
  – to encourage and support innovation and R&D; and
  – to improve skill levels within businesses.

► With respect to Entrepreneurship Development, the specific objectives to be pursued include:

- changing attitudes towards entrepreneurial behaviour among all stakeholders, especially amongst young people;
- broadening the National Curriculum to ensure that all children and young people are exposed to the 'entrepreneurial experience';
- providing a broad range of business pre-start and start-up support;
- providing proactive support for developing entreprenurial behaviour amongst existing businesses; and
- increasing the level of co-operation among businesses and other stakeholders at local, national and international levels.

► With respect to Innovation and R&D, the specific objectives include:

- creating and growing more indigenous technology-based businesses;
- ensuring SMEs have access to new technologies;
- creating incubators, innovation centres and Science parks;
- providing business with a comprehensive innovation and technology support infrastructure; and
- improving the linkages between the academic base (universities and colleges) and businesses, especially by providing incentives for academic institutions to collaborate with industry.

► Finally, with respect to Skills in Business, the specific objectives include:

- promoting up skilling and re-skilling in SMEs (which would lead to recognized qualifications);
- supporting joint action between unions and employers to establish employee development and training schemes; and
- providing training in management skills, especially higher level skills.

2.4   WALES

2.4.1   THE NATIONAL ASSEMBLY FOR WALES

2.4.1.2 THE WELSH DEVELOPMENT AGENCY

► The Welsh Development Agency (WDA) is a public body established under an Act of the British Parliament in 1975; its initial mandate was to help regenerate the Welsh economy in the wake of heavy industry decline in the late 1970's and early 1980's.

► Over the years, the Agency's work has evolved into a range of targeted programs designed to achieve its corporate aims, i.e.:
- marketing Wales to attract quality inward investment;
- increase profitability, competitiveness and growth of companies based in Wales;
- stimulating high quality environmental improvement, urban regeneration and property development to enable Wales to compete for business investment and offer a good quality of life; and
- encouraging reinvestment in Wales.

► Following WDA's recent merger with the Development Board for Rural Wales and the Land Authority for Wales, as well as the incorporation of Welsh Food Promotions into its structure, the Agency is now an all-Wales body that plays a central role in economic development.

► WDA is organized into four regional divisions and one international division which are supported by specialist services based in the Head Office.

► A wide range of business services are available, including:

TECHNOLOGY AND INNOVATION: The Technology and Innovation Group is a specialist arm of the WDA devoted to helping businesses in the application, management and development of technology; among its many activities are:

- The Centres of Expertise program, to identify and promote technical collaboration between businesses and academic groups recognized for the excellence and industrial relevance of their research as well as their track record in working with industry;

- The Regional Technology Plan (RTP): being implemented through a wide variety of projects involving government agencies, universities and colleges, local government, companies and social partners;

- Technology Audit: the service offered is a comprehensive review and assessment of an organization's technological strengths and weaknesses, ideas, technical capabilities and expertise, leading up to recommendations;

- Technology Exploitation: to create partnerships between businesses and organizations in order to reduce the risk and cost of product development; and

- Technology Search: to provide businesses with the identification and evaluation of product and technology opportunities on a world-wide scale.

SKILLS DEVELOPMENT: WDA's Skills Development program includes four major initiatives:

- Graduate Wales: to help companies use the skills of graduates and the Higher Education sector;

- The Waterton Centre: a world class centre for manufacturing;

- The Welsh Semiconductor Training Centre: to develop specialist skills for the Welsh semiconductor industry; and

- Information Services: providing labour market information for firms wishing to locate or grow in Wales.

▸ WDA has been actively involved in a massive study of skill needs in Wales which looked at the past and future evolution of the Welsh economy, at changing skill needs, and at current and future skill gaps and shortages; the research results will be used in the adoption and implementation by the new Assembly of a strategic policy for skills development and attainments.

▸ Recently, the Agency has been asked to take the lead in developing an Entrepreneurship Action Plan for Wales (a component of the National Economic Development Strategy – 2.4.1.1); a preliminary action plan has been developed with the help of a steering group drawn from the private and public sectors; a consultation process is underway.

2.5   UNITED KINGDOM

2.5.1   INVESTORS IN PEOPLE

- Investors in People is a national Standard – similar in purpose to an ISO – which sets a level of good practice for training and development of people to achieve business goals.

- Investors in People is more than simply the implementation of training and development programmes: it is intended that for participating firms, the Standard become an integral part of the overall business planning process and human resource development policies.

- The Standard was developed in 1990 by the National Training Task Force in partnership with leading national business, personnel, professional and employee organizations[a]; after extensive field tests, the Standard received the full endorsement of a wide range of interested parties in 1991.

- Investors in People UK was established in 1993 to provide national ownership of the Standard; that organization is also responsible for the promotion of the Standard, quality assurance, and development; it is also charged with promoting (and protecting) the Standard internationally.

- The 'Investors in People' Standard is based on four key principles:

  COMMITMENT: commitment to invest in people to achieve business goals

  PLANNING: planning how skills, individuals and teams are to be developed to achieve these goals

  ACTION: taking action to develop and use necessary skills in a well defined and continuing programme directly tied to business objectives

  EVALUATING: evaluating outcomes of training and development for individuals' progress towards goals, the plus-value achieved, and future needs.

  These four key principles are a cyclical process and are broken down into 23 indicators, against which organizations wishing to be recognized as an 'Investor in People' will be assessed.

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a   Including the Confederation of British Industry, the Trades Union Congress and the Institute of Personnel and Development.

▶ Being recognized as an 'Investor in People' involves a number of steps:

  - understanding the Standard and its strategic implications for the organization;

  - undertaking a review against the Standard to identify any gaps in current practice;

  - making the commitment to meet the Standard and communicating that commitment to all members of staff;

  - planning and taking action, to bring about change;

  - bringing together the evidence for assessment against the Standard;

  - achievement or recognition as an Investor in People;

  - working to keep the culture of continuous improvement alive.

▶ The length of time leading up to assessment ranges from six to eighteen months, depending on how much there is to do and how quickly the required changes in the systems and attitudes can be realized.

▶ Advice on the Standard is available from (certified) independent advisers, from advisers associated with Training and Enterprise Councils[b], or from the National Advisory Centre; the services of the National Advisory Centre are intended for large, multi-sited organizations who may perceive there to be problems in implementing the Standard across a number of sites.

▶ Assessment is carried out by a UK-wide network of local Assessment Centres, with every TEC (or LEC) associated to one; there is also a National Assessment Centre, which deals primarily with large, multi-sited organizations.

▶ Assessment for recognition as an Investor in People is a demanding process; to ensure that the Standard is rigorously maintained, the assessors must examine in detail how candidates for recognition operate and the systems they use; they must verify – both by examining documentary evidence and by interviewing executives and staff at all levels – that the principles of the Standard are being actively applied throughout the whole organization.

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b Training and Enterprise Councils, known as TECs, are a network of employer-led private companies set up in 1990, under contract with government to bring business know-how to bear on the development of training strategies to meet local skill requirements; they are also responsible for managing the delivery of training for unemployed adults and young people; there are 79 TECs in England and 22 in Scotland – where they are known as local enterprise companies or LECs (2.3.1.1 and 2.3.1.2).

► Final decisions on recognition are made by the National Recognition Panel which is made up of Board-level directors of large organizations with national status who are themselves recognized as Investors in People.

► At the beginning of 1997, some 30 000 organizations – accounting for some eight million workers or 31 % of the workforce – were recognized under the Standard or committed to achieving the status.

► The current National Targets (2.1.2.2) for Investors in People require that by 2002, the number of organizations having acquired the status be: (a) 45 % of all organizations employing more than 50 people (including 70 % of those employing more than 200); and (b) 10 000 organizations employing 10 to 50 people (approximately 9 % of all organizations of that size).

► A recent survey[c] of over 2 000 UK organizations which have gained Investors in People recognition revealed that it had directly helped:
   – increase the bottom line (e.g., 70 % of companies improved productivity);
   – strengthen relationships with customers and employees (e.g., 76 % had increased customer satisfaction);
   – improve people management (e.g., 94 % had sharpened their training focus);
   – create motivating teams (e.g., 93 % had improved communications throughout the company, 88 % had increased team working).

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c *Capacity Building for the 21ˢᵗ Century*, Centre for Research in Employment and Technology in Europe (CREATE), London, October 1999.

2.6   IRELAND

2.6.1   DEPARTMENT OF ENTERPRISE, TRADE AND EMPLOYMENT

► The mandate of the Department of Enterprise, Trade and Employment covers five key areas: development of enterprise, employment promotion, trade development, protection of workers, and the regulation of businesses.

► The Department also has policy responsibility for a number of state-sponsored bodies including Enterprise Ireland (2.6.1.1), the Training and Employment Authority (2.6.1.2), FORFÁS (2.6.1.3) and the Irish Council for Science, technology and Innovation (2.6.1.4).

► The Department's strategy regarding skills is largely based on the Government's White Paper on Human Resource Development, issued in May 1997; among the key policy objectives outlined in the White Paper were:
  - increasing the level, relevance and quality of training undertaken by enterprise;
  - assisting small enterprises to overcome the skill barriers to business development; and
  - improving the level of management training and development.

► In terms of structural reform, the White Paper concluded that State support for human resource development at firm level would be delivered in the main by Enterprise Ireland, to ensure that such support is delivered in an overall company development framework (rather than in the context of interventions for the unemployed and other labour market disadvantaged groups).

2.6   IRELAND

2.6.1   DEPARTMENT OF ENTERPRISE, TRADE AND EMPLOYMENT

2.6.1.1 ENTERPRISE IRELAND

- Enterprise Ireland is responsible for the development of indigenous industry; it also supports programmes of investment in S&T carried out in industry, third level education colleges and other specialized centres; it provides a wide range of laboratory-based and technical consultancy services to Irish industry.

- Enterprise Ireland was established in 1998 as an Executive Agency, combining the resources of the former Irish Trade Board, Forbairt and the in-company training division of the Training and Employment Authority.

- It strives to offer 'single window' access to Government programs and initiatives in the areas of technology, science, innovation, enterprise development, marketing, and business training.

- Current targets for the next ten years include:
  - doubling of the sales of locally controlled businesses trading internationally (from £ 20 to £ 40 billion[a]);
  - doubling of the number of medium-sized companies with sales of over £ 20 million (from 130 to 260);
  - doubling the annual rate of establishment of new enterprises with the potential to grow rapidly;
  - increasing productivity in the small and medium-sized companies from the bottom one third of the EU fifteen countries to the top five; and
  - doubling the number of businesses which are high performers in R&D.

- Worth noting amongst the skill-related programs designed for small and medium-sized companies are:
  - *INDUSTRIAL TRAINING GRANTS:* part of the incentive package available to new investment projects; grants of up to 100 % of eligible costs of implementing training programmes for new employees.

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a In July 1999, the exchange rate for the Irish pound was $ 1.96.

- *MANAGEMENT DEVELOPMENT GRANTS:* to help improve the performance of small firms in the areas of business planning, strategic planning and information management systems; grants can also be used to recruit expertise in particular functional areas.

- *TRAINING GRANTS:* for SMEs; interested companies with similar needs are required to create clusters for training purposes, in order to reduce costs and promote networking; specific offerings combine group delivery and one-on-one sessions.

- *TECHNMAN:* to help small firms which have identified a substantial hurdle to employ an experienced technologist to improve their effectiveness; a Techman can be involved, for example, in production planning, engineering development, quality control and technical training for staff; the employment subsidy is based on a three-year contract (50 % of the salary in Year 1 up to £ 10 000 and £ 5 000 and £ 2 500 in Years 2 and 3).

- *TECHSTART:* for small companies which have outdated or limited technological expertise, to help them employ young technicians or technologists; provides an employment subsidy of £ 5 000 for a degree holder or £ 4 500 for a diploma holder on the basis of a one-year contract; a further £ 2 000 can be made available to link them to a source of external expertise (from a university or college, for example).

▸ Of particular interest are the recent efforts by the Irish Government to try and repatriate recent graduates living abroad; two programmes have been launched:

- *OPPORTUNITY IRELAND:* launched in 1998, the initiative aims to encourage the return to Ireland of as many as 5 000 software and electronics professionals over a three-year period, in particular by providing information on work opportunities; and

- *THE MILLENNIUM ENTREPRENEUR FUND:* to encourage US-based Irish technologists to establish new enterprises in Ireland by assisting 10 new high potential start-ups over a 12-18 month period with up to £ 100 000 in seed capital – in return for an equity stake.

2.6   IRELAND

2.6.1   DEPARTMENT OF ENTERPRISE, TRADE AND EMPLOYMENT

2.6.1.2 TRAINING AND EMPLOYMENT AUTHORITY (FAS)

▸ The Training and Employment Authority (FAS) offers a wide range of services to the unemployed, job seekers, businesses, and local communities.

▸ FAS has 70 Employment Services Offices, supplemented by part-time offices; it also operates 20 Training Centres providing over 170 types of training courses; total expenditure in 1997 amounted to £ 479 million.

▸ Amongst FAS's training support programs aimed at SMEs are:
  - *TRAINING SUPPORT SCHEME:* open to firms of up to 500 employees engaged in manufacturing, internationally-traded services, wholesale and retail, physical distribution and the motor industry; proposals should be incorporated into a formal business plan or strategy; priority are ; include strategic planning and management, technology, productivity, and information systems; a sliding scale is used, from 80 % of training costs for companies with 20 staff or less, to 20 % for companies with over 150 employees.
  - *NATIONAL TRAINEESHIP PROGRAM:* for the unemployed and new labour market entrants and for employers experiencing labour shortages; based on the German dual training model; employers are involved in the design and delivery of the curriculum and in the selection of participants; combines formal off-the-job training in FAS Training Centres with on-the-job training under the supervision of a company mentor; all training lead to a nationally recognized certification; Traineeships vary from six months to two years; 75 % of trainee costs are funded by FAS; a contract specifies the commitment by FAS and the employer for each Traineeship.

2.6   IRELAND

2.6.1   DEPARTMENT OF ENTERPRISE, TRADE AND EMPLOYMENT

2.6.1.3 FORFÁS

▸ Forfás is the policy advisory and co-ordination board for industrial development and science and technology in Ireland.

▸ Forfás is involved in a number of human resources development initiatives, including:

  - *THE EXPERT GROUP ON FUTURE SKILLS NEEDS*:

    Forfás provides the research support and secretariat for the Group; the Group is one of the three elements of the 'Business, Education and Training Partnership'; Government established the Partnership in 1997 "to develop national strategies to tackle the issue of skill needs and education and training for business".

    The other elements are the Business/Education and Training Partnership Forum, which meets once or twice a year with the objective of achieving a consensus among all interested parties on the policies required to meet the skill needs of the economy; and the Management Implementation Group, which oversees the implementation of the approved policies on skills supply[a]

    The mandate of the Expert Group is to identify the skill needs of different sectors, to advise on the actions needed to address them, to develop forecasting techniques, and to advise on ways to improve the links between education, continuous training and business.

    Membership of the Expert Group includes business people, educators and training providers, policy makers, public servants and members of the industrial promotion agencies (e.g., Enterprise Ireland)

    The Group's first report (June 1998) focussed on skill shortages in the electronics and software sectors

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a It comprises representatives (:partment of Enterprise, Trade and Employment, the Department of Education and Science, the Department of Finance, the Higher Education Authority, and Forfás.

2.6 IRELAND

2.6.1 <u>DEPARTMENT OF ENTERPRISE, TRADE AND EMPLOYMENT</u>

2.6.1.4   IRISH COUNCIL FOR SCIENCE, TECHNOLOGY AND INNOVATION

▸ The Irish Council for Science, Technology and Innovation (ICSTI), established in 1997, provides advice on science and technology policy-related issues in response to specific requests from the Government or on its own initiative.

▸ In its work to date, ICSTI has established three task forces: one on public expenditures on S&T, one on the innovation infrastructure in Ireland, and one known as Technology Foresight.

- *TECHNOLOGY FORESIGHT:*

 This is Ireland's first Technology Foresight Study[a]; the main goals is to identify research and technology areas that will be key to long term national development, and to propose a plan of action; the process brings together scientists, engineers, industrialists, Government officials and others to identify priority areas for strategic research and emerging technologies

 The main part of the Technology Foresight exercise began in March 1998 when ICSTI identified eight sector areas for consideration: Chemicals and Pharmaceuticals, Information and Communication Technologies, Materials and Manufacturing Processes, Health and Life Sciences, Natural Resources (Agri-food, Marine, Forestry), Energy, Transport and Logistics, and Construction and Infrastructure.

 The work involved eight expert Panels, representative of a broadly based input from each of these sector areas; as part of the process, all the Panels undertook wide national consultation via workshops, the commissioning of contributions from international experts in specific technologies, and public contributions via press advertisements and the Foresight web page.

 The time horizon for the exercise was set at 2015 and the exercise itself was completed in twelve months; the findings are contained in eight individual Panel reports; the exercise provides input for the future allocation of funds to S&T; the Foresight steering

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a See 2.1.1.3 for a description of a similar initiative in the UK (Foresight UK).

group also meets with Government departments and agencies to consider appropriate follow-up to the recommendations contained in individual Panel reports.

The main conclusions were the following:

- The Irish economy should be repositioned, to be widely recognized internationally as a knowledge-based economy. To do this, the knowledge framework can be visualised as a "pyramid – where industry, the higher education sector, Government and society are the four interlinked faces forming a partnership at all levels".

- The co-operative support of the various partners is needed for the development of each pyramid face.

- There is a major gap with respect to the Irish research capacity, i.e., a need for a world-class research capability of sufficient scale in a number of strategic areas within Irish universities and colleges, research institutes and industry, with particular attention to the niche areas of ICT and biotechnologies.

- The Government should establish a Technology Foresight Fund of £ 500 million over five years, to upgrade the technological infrastructure of the economy and develop the Irish research capacity in strategic technologies.

2.6   IRELAND

2.6.2   THE UNIVERSITY OF LIMERICK

2.6.2.1 NATIONAL TECHNOLOGY PARK

► The mission of the National Technological Park is to create the appropriate physical, administrative and technological environment conducive to the growth of technology and knowledge-intensive enterprise.

► The National Technological Park was inaugurated near Limerick in 1984; it was the first science/technology park in Ireland; it is managed and developed by a wholly-owned subsidiary company of Shannon Development, the Irish Government's Regional Development Company for the Shannon Region; the Park is currently home to more than 90 separate organizations including multinational subsidiaries, Irish technology companies, R&D entities and support services, employing some 3 000 people.

► The Park has just become Ireland's first Digital Park; Park entities will have access for the first time to a wide range of broadband telecommunications services through Esat Telecom's fibre optic network; these applications, some of which have never been commercially available to the corporate market in Ireland before, include integrated voice, data, Internet and video conferencing facilities.

► The University of Limerick[a] is at the core of the Park's development; a central activity for the Park management is to ensure optimum usage of University facilities and services by client companies, e.g., use of University library facilities, participation in Co-operative Education programmes[b], and links to University research activities[c].

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a The University of Limerick admitted its first students in 1972; from the outset, there were close relationships between the new University and Shannon Development; it was these two institutions together with the Industrial Development Agency – IDA (responsible for inward investment promotion) which provided the dynamic for the establishment of the Park.

b Undergraduates participate in a Co-Operative Education Programme of placement in industry, commerce and the professions; almost 2 000 undergraduate placements are made annually (in Ireland and abroad) in one of the largest Co-Operative Education Programmes in Europe; from that point of view, The University of Limerick is often compared to the University of Waterloo; the current President of the University of Limerick has spent most of his academic career at the University of Waterloo.

c The University's broad strategic research areas are: Entrepreneurship, Information Technologies, Quality Manufacturing & Processing, Global Integration, Aerospace, and Education & Sports Science; the University offers a range of programmes to doctorate and post-doctorate levels.

► A prime instrument for linking business to university resources is the PROGRAMME IN ADVANCED TECHNOLOGY (PAT); PATs are government-funded, commercial R&D (or technical) organizations based in universities and providing facilities and expertise in a number of industry sectors; skills development programmes may also be provided, either on campus or on-site; several PATs are based at the University of Limerick[d].

► CAMPUS COMPANIES PROGRAMME[e]: Shannon Development and Campus Companies Venture Capital Fund recently jointly-launched a new initiative whereby both companies will invest in new businesses emanating from the University of Limerick; seed and early-stage development capital will be made available to companies promoted by staff and graduates of the University with the overall aim of assisting potential campus-based companies enter or develop in the commercial marketplace; Shannon Development can provide capital in amounts ranging from £ 10 000 to £ 250 000 or up to a maximum investment level of 30 %, and Campus Companies Venture Fund can provide capital in amounts ranging from £ 30 000 to £ 500 000 for minority equity stakes in qualifying businesses.

► THE INNOVATION CENTRE – another recent initiative of Shannon Development – is Ireland's first, digitally-networked business incubation centre; the Centre offers an integrated system for incubating and growing technology and knowledge-intensive, high potential companies; clients of the Centre are offered a range of business programmes, facilities and supports including: digitally-networked office accommodation, hands-on project management, Campus Enterprise Programme (see above), Venture Development Process, grant and equity capital programmes, and Business Mentors.

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d Including the areas of Advanced Manufacturing Technology, Ceramics & Polymer Composites, Power & Analogue Electronics, Software and Telecommunications.

e A £6 million fund established by Enterprise Ireland, the EU, AIB Bank, Montgomery Oppenheim and third level institutions; "campus companies" are defined as enterprises established, typically in high technology sectors to exploit commercial research undertaken in third level institutions; Enterprise Ireland is responsible for the Campus Companies Programme.

APPENDIX I – PEOPLE AND ORGANIZATIONS CONSULTED

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Mr. Colin Swan
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Workplace Learning Division
Individual Learning Accounts Team
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Ms. Alison Webb
Workplace Learning Division
Individual Learning Accounts Team
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Mr. Ian Stewart
National Targets Policy Team
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Mr. Ken Ogle
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Department for Education and Employment
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Mr. David McAuley
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Professor George Bain
President and Vice-Chancellor
Belfast

Professor Eric K. Beatty
Director, University Regional Office
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Professor Jim Swindall
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Professor Raymond Murphy
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Director, Northern Ireland TCS Centre
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Inverness

Mr. Hector MacNeil
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HM Chief Inspector of Schools
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Mr. Colin Reeves
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Mr. Neil J. MacFarlane
Deputy Team Leader
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Mr. David A. Stewart
Head, Qualifications and Skills Strategy Division
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Mrs. F. Hope Johnston
Head, International Relations Branch
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Ms. Evelyn McCann
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   Development
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Mr. Todd Taylor
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Professor Frances Ruane
Innovation Centre
O'Reilly Institute
Dublin

APPENDIX II – INFORMATION SOURCES

2.1 ENGLAND

2.1.1 DEPARTMENT OF TRADE AND INDUSTRY

2.1.1.1 COMPETITIVENESS WHITE PAPER

– *Our Competitive Future: Building the Knowledge Driven Economy*, UK Government's White Paper on Competitiveness, London, 1998.

– *Our Competitive Future: Building the Knowledge Driven Economy. Implementation Plan*, London, 1999.

– *Competitiveness Through Partnerships with People*, Department of Trade and Industry and Department for Education and Employment, London, 1997.

http://www.dti.gov.uk/comp/competitive/

2.1.1.2 TCS – TEACHING COMPANY SCHEME

http://www.tcd.co.uk/index.hts

2.1.1.3 FORESIGHT UK

– *Foresight Panel Action Plans*, Summary of the Blueprint for the second round of the UK Foresight initiatives issued in December 1998, prepared by Caroline Martin, Canadian High Commission, London, August 1999.

http://www.foresight.gov.uk/default.htm
http://www.dti.gov.uk/ost/link/info.html

2.1.1.4 INFORMATION TECHNOLOGY, COMMUNICATIONS AND ELECTRONICS SKILLS STRATEGY GROUP

– *Skills for the Information Age. Final Report from the Information Technology, Communications and Electronics Skills Strategy Group*, Department of Trade and Industry and Department for Education and Employment, 1999.

http://www.dfee.gov.uk/skillsforce/7.htm

2.1.2   DEPARTMENT FOR EDUCATION AND EMPLOYMENT

2.1.2.1   **THE EDUCATION AND TRAINING DEVELOPMENT AGENDA**

- *The Education and Training Development Agenda: Towards 2000*, Overview of the Government's education and learning priorities, Department for Education and Employment, 1998.
- *The Learning Age. A Renaissance for a New Britain*, Consultation Paper, Department for Education and Employment, 1998.
- *The Learning Age. The Response*, Summary of the Green Paper consultation, Department for Education and Employment, 1999.
- *Learning to Succeed. A New Framework for Post-16 Learning*, Reform proposal presented to Parliament by the Secretary of State of Education and Employment, June 1999.
- *Education and Training in Britain*, Foreign and Commonwealth Office, London, 1998 (?).

http://www.dfee.gov.uk/index.htm
http://www.dfee.gov.uk/lwt/b.htm
http://www.lifelonglearning.co.uk/
http://www.nssb.org/inter.htm

2.1.2.2   **NATIONAL LEARNING TARGETS**

- *National Learning Targets. Action Plan*, Department for Education and Employment, 1999.
- *Targets for our Future*, Summary of responses to the consultations in England on the new National Learning Targets, Department for Education and Employment, 1998.

http://www.dfee.gov.uk/nlt/

2.1.2.5   **NATIONAL TRAINING ORGANISATIONS**

- *National Training Organisations. Prospectus 1999-2000. Strategic Guidance*, Department for Education and Employment, 1998.
- *The 1998 People Skills Scoreboard for the Engineering Industry*, Company Reporting Ltd., Edinburgh, 1999 (?).

http://www.dfee.gov.uk/ntopromo.htm
http://www.nto-nc.org/newsite99/index-nonjava.htm
http://www.empnto.co.uk/

FINAL REPORT OF THE EXPERT PANEL ON SKILLS: Supporting Documents
The Skills and the Enterprise Agenda in the
United Kingdom and Ireland in 1999

2.1.2.6 **UNIVERSITY for INDUSTRY**

– *A New Way of Learning. The UfI Network – Developing the University for Industry Concept*, UfI, Nottingham, 1999 (?).
– *University for Industry. Engaging People in Learning for Life. Pathfinder Prospectus*, Department for Education and Employment, 1998.
– *Learning Direct. A Guide*, Department for Education and Employment, 1998 (?).

http://www.dfee.gov.uk/ufi/

2.1.2.7 **INDIVIDUAL LEARNING ACCOUNTS**

– *Individual Learning Accounts. A Summary of Progress*, Department for Education and Employment, 1999.
– *Individual Learning Accounts: Early Lessons from the Development Projects*, Briefing document for TECs/CCTEs, February 1999.

http://www.lifelonglearning.co.uk/ila/front.htm

2.1.2.8 **NATIONAL SKILLS TASK FORCE**

– *Towards a National Skills Agenda. First Report of the National Skills Task Force*, Skills Task Force, Department for Education and Employment, 1998.
– *Second Report of the National Skills Task Force*, Department for Education and Employment, 1999.

http://www.dfee.gov.uk/skillsforce/

2.2 NORTHERN IRELAND

2.2.1 DEPARTMENT OF ECONOMIC DEVELOPMENT

http://www.DEDNI.GOV.UK/

2.2.1.3 **TRAINING AND EMPLOYMENT AGFNCY**

– *Corporate Plan 1998 - 2001*, Training & Employment Agency, Belfast, 1998.

Lifelong Learning. A New Learning Culture for All, Training & Employment Agency, Belfast, 1998 (?)

People Development Programmes and Services, Business Support Division, Training & Employment Agency, Belfast, 1998 (?).

Skill Needs in Northern Ireland, prepared for the Training & Employment Agency by IFF Research Ltd., Belfast, 1999 (?).

Labour Market Bulletin, 12th issue, Training & Employment Agency, Belfast, 1998.

It's the Future. A Strategy for the Software Industry in Northern Ireland, Software Industry Federation, Belfast, 1999

2.2.1.2   INDUSTRIAL RESEARCH AND TECHNOLOGY UNIT

http: 212.250.166.185 640.htm

2.2.1.3   STRATEGY 2010

Strategy 2010. Report by the Northern Ireland Economic Development Strategy Review Steering Group, Department of Economic Development, Belfast, 1999

2.2.2 DEPARTMENT OF EDUCATION

http: www.deni.gov.uk

2.2.3.1   ENVIRONMENTAL SCIENCE AND TECHNOLOGY RESEARCH CENTRE - QUESTOR

http: questor.qub.ac.uk

2.3   SCOTLAND

Skills for Scotland. A Skills Strategy for a Competitive Scotland, The Scottish Office, Edinburgh, 1999

Opportunities for Everyone. A Strategic Framework for Scottish Further Education, The Scottish Office, Edinburgh, 1999

Opportunity Scotland. A Paper on Lifelong Learning, The Scottish Office, Edinburgh, 1998

Implementing the National Grid for Learning in Scotland, The Scottish Office, Edinburgh, 1998 (?)

Adding Value to Learning. The Scottish Credit and Qualifications Framework, Scottish Qualifications Authority, Glasgow, 1999

http: www.scotland.gov.uk
http: www.sqa.org.uk

2.3.1.1 **SCOTTISH ENTERPRISE**

- *The Network Strategy*, Scottish Enterprise Network, 1999.
- *Network Operating Plan 1999-2000*, Scottish Enterprise Network, Glasgow, 1999.
- *Annual Report 1998-99*, Scottish Enterprise Network, Glasgow, 1999.
- *Annual Report 1997-98*, Scottish Enterprise, Glasgow, 1998.
- *Know-how. Achieving Prosperity through Learning*, Scottish Enterprise Network, Glasgow, 1999.
- *Developing the Scottish Economy*, PowerPoint presentation, Scottish Enterprise, July 1999.
- *The Scottish Enterprise Network*, PowerPoint presentation, Scottish Enterprise, July 1999.
- *Scottish Labour Market and Skill Trends. Final Report*, Scottish Enterprise, Glasgow, 1997.

http://www.scote., co.uk/
http://www.future-Scotland.org.uk/homepage.htm
http://www.se-learning.org.uk/
http://www.glasgowdevelopment.co.uk/

2.3.1.2 **HIGHLANDS & ISLANDS ENTERPRISE**

- *Strategy for Enterprise Development*, Highlands & islands Enterprise, Inverness, 1999.
  HIE Network Seventh Report, 1997/98, Highlands & islands Enterprise, Inverness, 1998.
- *The UHI Strategic Planning Framework, 1998-2001. Executive Summary*, University of the Highlands & Islands Project, Inverness, 1998 (?).

http://www.hie.co.uk/
http://www.uhi.ac.uk/

2.4 WALES

2.4.1 **NATIONAL ECONOMIC DEVELOPMENT STRATEGY**

- *Pathway to Prosperity. A New Economic Agenda for Wales*, Welsh Office, 1998.
- *Learning Is for Everyone*, A Welsh Office Green Paper, 1998 (?).
- *National Economic Development Strategy*, European Task Force, National Assembly for Wales, July 1999.
- *Single Programme Document*, draft proposal to be presented to the European Union's Structural Fund, 1999

http://www.wales.gov.uk/index_e.html

2.4.2 THE WELSH DEVELOPMENT AGENCY

- *Future Skills Wales. A Report Addressing the Future Skill Needs of Wales. 1998-2007*, MORI
  Research and Business Strategies Ltd., 1999 (?).
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