The ECDL in Ireland: Impact Study

December 2003

Itech-Research

The ECDL in Ireland: Impact Study

December 2003

Dr. Susan O'Donnell
Itech Research

CONTACT INFORMATION

Itech Research
Abbey House
15-17 Upper Abbey Street
Dublin 1 Ireland
info@itech-research.ie
www.itech-research.ie
Tel: (353) 1 872 4911
Fax: (353) 1 873 3917

The ECDL Foundation
Third Floor
Portview House
Thorncastle Street
Dublin 4, Ireland
Tel: (353) 1 630 6000
Fax: (353) 1 630 6001
info@ecdl.com
www.ecdl.com

ICS Skills and ECDL Ireland
Crescent Hall
Mount St. Crescent
Dublin 2, Ireland
Tel: (353) 1 644 7820
Fax: (353) 1 662 0224
info@ics-skills.ie
www.ics-skills.ie
www.ecdl.ie

For additional copies of this report, contact The ECDL Foundation.

Executive Summary

The European Computer Driving Licence (ECDL) is the world's leading end-use computer skills certification programme. Outside Europe, the ECDL is known as the International Computer Driving Licence (ICDL). With more than 3.5 million participants, the ECDL is internationally recognised as the global benchmark for end-user computer skills. It is currently available in 166 countries and has been translated into 32 languages.

The ECDL is governed globally by the European Computer Driving Licence Foundation Ltd. (ECDL-F). ECDL-F is a not-for-profit organisation dedicated to helping to raise the general level of computer skills in society.

The ECDL Foundation and ECDL Ireland (later renamed ICS Skills) were established in Dublin in 1997. They were aided by small grants from the Irish government that recognised the potential of the ECDL programme to respond to policy priorities such as lifelong learning, e-business and industrial development, and e-inclusion.

This study, commissioned by the ECDL Foundation in association with ICS Skills, analyses the impact of the ECDL programme in Ireland. The report looks at four areas:

- Building the IT certification industry
- Increasing IT skills
- Developing the IT training and testing services sector
- Developing the IT training products sector

Building the IT certification industry
Both the ECDL Foundation and ICS Skills are non-profit organisations based in Dublin. Their work has contributed to building the IT certification industry in Ireland and internationally. Both organisations reflect the social ethos of computer societies. ECDL certification products are vendor-independent. Through their activities aimed at creating a recognised standard for IT skills competence, they also foster the increase of IT skills in individuals and organisations, and the growth of the IT skills testing and training services and IT training products sectors. The ECDL Foundation and ICS Skills together currently employ 35 people full-time and five part-time, with gross annual wages of an estimated **€1.8 million.** The ECDL Foundation and ICS Skills together have generated **gross sales to date of €26.5 million.**

Increasing IT skills
The ECDL has led to a considerable increase in IT skills. An estimated 92,000 Irish adults in employment have undertaken ECDL certification. Of the companies that have

implemented an ECDL training and certification programme for their employees, almost half (45%) experienced a significant raising of the overall IT skills levels in their organisation.

Productivity benefits

To date, 250,000 people in Ireland have participated in the ECDL certification programme, more than six percent of the total population. If one considers only those in employment as office workers, the related (conservative) estimate of the productivity savings is 4 million hours or **€62.3 million annually for Irish employers.**

Developing the IT training and testing services sector

The IT training and testing services sector has embraced the ECDL. Currently, about 1,040 private, public, corporate, non-profit and community organisations in Ireland offer ECDL training and testing services. Estimated related employment is 265 people full-time, 290 part-time, and 3,700 doing ECDL training and testing as part of other duties. Considering only the full-time and part-time employees, the gross annual wages directly related to the ECDL in this sector is an estimated **€13.1 million.** In addition, ECDL training and testing services have generated **gross sales to date of €64 million.**

Developing the IT training products sector

The impact of the ECDL on the IT training products sector has also been considerable. Companies and non-profit organisations have developed both paper-based training products such as instruction manuals and books as well as computer-based training products (CBT), typically CD ROMs. Currently a range of Irish organisations is producing paper ECDL products and CBT ECDL products. Estimated employment related to these activities is 90 people full-time, two part-time, and 68 doing ECDL product development as part of other duties. Considering only the full-time and part-time employees, the gross annual wages directly related to the ECDL in this sector is an estimated **€3.6 million.** In addition, ECDL training products have generated **gross sales to date of €30 million.**

Contribution to Irish policy goals

The ECDL programme has contributed significantly to three policy areas for economic and social development in the information society.

Lifelong Learning: More than 250,000 people in Ireland have participated in the ECDL certification programme to date, raising their IT skills and knowledge of computers. This includes 92,000 adults returning to education and training through programmes such as FÁS training and Back to Education and 48,000 students and pupils through programmes such as Schools IT2000.

eBusiness: About 92,000 employed adults have raised their IT skills through the ECDL programme to date. Companies instituting an ECDL programme have established a benchmark for IT skills and their employees are more confident and efficient with computers. The growth of the ECDL programme in Ireland has led directly to growth in the informatics industry sector of training and education software, and the services industry sectors of market and non-market services in training and education.

eInclusion: Approximately 18,000 adults experiencing disadvantage have raised their IT skills levels through the ECDL programme to date, giving them increased opportunities for participation in the information society. As well, 74,000 "late adopters" of technology were introduced to computers through equalskills, part of the ECDL family of certifications. The equalskills pilot was supported by the Irish government.

Summary of economic impacts of the ECDL

The analysis resulted in the following (conservative) estimates of the wages, sales and productivity impacts of the ECDL in Ireland.

Summary table of estimated economic benefits of the ECDL in Ireland		
Item	**Current annual benefits (€ million)**	**Cumulative benefits since 1997 (€ million)**
Direct Benefits		
Gross sales	40.8	120.5
Gross wages	18.5	54.6
Indirect Benefits		
Productivity savings	62.3	186.9
Total	**121.6**	**362.0**

Summary of employment and IT skills impacts

The total number of jobs directly related to the ECDL in Ireland is 390 full-time and 300 part-time. In addition, more than 3,700 Irish employees are doing ECDL-related work as part of their other job duties in the public, corporate and community sectors.

The 250,000 candidates to date in the ECDL programme include:

- 92,000 employed adults
- 92,000 adults returning to education or unemployed
- 48,000 students and pupils
- 18,000 adults experiencing disadvantage.

Introduction and Policy Context

The Irish economy grew significantly in the 1990s. Despite the downturn in the IT sector worldwide after the end of that decade, by 2003 Ireland remained one of the best-performing economies in Europe. For a country of just under four million people, the success of the Irish economy has been very impressive.

The ECDL programme has played a central role in the growth of IT certification and skills in Ireland. The ECDL programme has stimulated the development of two economic sectors - IT training services and IT training products - in addition to stimulating development of IT skills and certification nationally.

The ECDL licensee in Ireland, ICS Skills, is the organisation responsible for stimulating this development in Ireland. The ECDL Foundation is the global governing body for ECDL.

In Ireland, more than a thousand organisations are involved in the ECDL programme. Most are ECDL test centres accredited by ICS Skills that provide ECDL training and certification. These test centres include organisations involved in public education and training (such as FÁS training centres, schools and colleges), organisations in the private and corporate sectors (such as commercial training organisations and corporate training units), and training organisations in the community and non-profit sectors.

A range of Irish organisations are involved in developing ECDL training and certification products. They develop, produce and market paper-based ECDL products such as manuals and books, or computer-based (CBT) ECDL products, typically CD ROMS with training instruction.

This report discusses the impact of the ECDL in Ireland in four areas:

- Building the IT certification industry
- Increasing IT skills
- Developing the IT training and testing services sector
- Developing the IT training products sector

The impact of the ECDL relates to three policy areas for economic and social development in the information society:

Lifelong Learning: A lifelong learning culture is seen as essential to ensure that Irish people have the knowledge and skills necessary to underpin economic competitiveness and

to facilitate the process of adapting to ongoing change. Certification in ECDL has been a part of national lifelong learning programmes such as Schools IT2000, FÁS training programmes, and Back to Education programmes.

eBusiness: The Irish government's information society policy discusses eBusiness in its broadest sense, referring to the potential of ICT to raise the competitiveness of Irish business, the security of people's jobs, the income levels they enjoy, and the levels of public resources available from tax revenues. Irish industrial development policy supports the development of sectors that will lead to strong national economic growth. The ECDL programme is a key component of the IT certification industry in Ireland, an industry that is currently not well recognised by Irish industrial policy. The IT certification industry spans other sectors such as the informatics industry sector of training and education software, and the services industry sectors of market and non-market services in training and education.

eInclusion: Government information society policy recognises that information technology presents new opportunities to address traditional problems of disadvantage and exclusion in society. ICT can deliver new channels of access and participation and can also help to offset some of the disadvantages of remoteness and restricted mobility. Certification in ECDL and equalskills has been part of national eInclusion programmes such as the CAIT Initiative (Community Application of Information Technology) and the equalskills Pilot.

Study methodology

This study was conducted from August to October 2003. The methodology included:

- A survey conducted by telephone of 100 ECDL test centres in Ireland. (Randomly selected - survey response rate 87%).
- A survey conducted by email of 100 Irish companies that have instituted an ECDL training programme for staff. (Survey response rate 82%).
- An analysis of published documents and confidential sales information.
- A review of previous research and case studies undertaken for ICS Skills.
- Interviews with selected organisations and ECDL candidates, to develop profiles.

The high response rate to the two surveys conducted implies a high level of confidence in the survey results. This study is the most comprehensive to date on the impact of the ECDL programme in a national market.

Background: the ECDL/ICDL

The European Computer Driving Licence (ECDL) is the world's leading end-user computer skills certification programme. Outside of Europe, the ECDL is known as the International Computer Driving Licence (ICDL).

The ECDL/ICDL is internationally recognised as the global benchmark for end-user computer skills and is the only certification to be adopted by governments, international organisations and corporations alike. The ECDL/ICDL certifies that the holder is fully competent in the use of a personal computer and common computer applications and knows the essential concepts of IT.

With over 3.5 million participants, the European Computer Driving Licence (ECDL) is the world's biggest end-user computer skills certification and is internationally recognised as the global benchmark for end-user computer skills. It is currently available in 166 countries and has been translated into 32 languages around the world.

The European Computer Driving Licence Foundation Ltd. (ECDL-F) is the global governing body and worldwide licensing authority for the ECDL range of products. It is a not-for-profit organisation dedicated to helping to raise the general level of computer skills in society and providing access for all to the information society.

The following stated aims are the core elements of the ECDL-F mission:

- To help raise the general level of computer skills in society
- To establish a global benchmark for core computer skills competency and IT knowledge
- To provide essential qualifications that allow all people to participate in e-Society
- To provide a range of inclusive programmes that are open to everyone

As the global governing body for the ECDL, the ECDL-F has a strong role in quality assurance, setting standards and guidelines and auditing its external service providers on a regular basis.

ECDL-F is committed to expanding its range of end-user computer skills certification products and therefore has an active approach to product development. Many new products have come on stream over the last twelve months and more are in the pipeline.

ECDL-F also provides a focal point for the many international licensees around the world, facilitating communication and interaction and providing an effective marketing support function.

ECDL history

The ECDL concept originated in Finland where the Finnish Information Processing Association introduced the Finnish Computer Driving Licence in 1994.

Shortly thereafter in 1995, the Council of European Professional Informatics Societies (CEPIS) created a task force, supported by funding from the European Commission, to examine how to raise IT skill levels in industry throughout Europe.

The task force identified the Finnish Computer Driving Licence as a potentially suitable vehicle and carried out Pilot Tests during 1995 and early 1996. Following this, a new test was launched as the European Computer Driving Licence (ECDL) in August 1996 in Sweden.

In 1997 the European Computer Driving Licence Foundation Ltd (ECDL-F) was established in Dublin with a grant OF €19,500 from the Irish government and the ECDL was subsequently rolled out across Europe and internationally.

From its earliest beginnings through to the present, the ECDL certification programme has reflected the strong social ethos of national computer societies and its certification products are vendor-independent.

ECDL governance

The ECDL-F was established by CEPIS (Council of European Professional Informatics Societies) within Europe. The national licensee must be a member of this organisation. The ECDL-F establishes ECDL and ICDL licensees around the world who administer its computer skills certification programmes on a local basis, based on a strict set of standards and quality guidelines.

The ECDL/ICDL member organisation in each country is responsible for authorising its own local test centres. These include schools, universities and vocational colleges, as well as private and state-run training centres.

ECDL-F has produced a set of standards and quality guidelines, which govern the procedures for the introduction of the ECDL/ICDL concept and ensure that the concept is operated in a consistent fashion in all member countries through adherence to these common quality standards.

In addition to the above the ECDL-F undertakes a regular rigorous audit process with visits to each country and a thorough examination of the procedures in place and the test centres which have been approved.

ECDL syllabus

The ECDL is an internationally recognised and accepted qualification that enables candidates to demonstrate their competence in core computer skills and knowledge of information technology (IT) at a general level.

The ECDL syllabus is unique in that it has been designed to be entirely vendor-independent. This gives candidates the flexibility and freedom to acquire these core skills and confidently apply them in any software environment they may be required to use.

The ECDL consists of seven modules. Module 1 is a theoretical test of computing knowledge at a general level and modules 2-7 are practical skills tests. An ECDL candidate must complete the seven modules and their related tests before being awarded the ECDL certification.

The seven ECDL Modules are:

1. Concepts of Information Technology
2. Using a Computer and Managing Files
3. Word Processing
4. Spreadsheets
5. Databases
6. Presentations
7. Information and Communication

As the world's leading end-user computing skills standard, the ECDL is informed by documented expert opinion from the worlds leading computer societies and other expert groups.

The validity of the ECDL certification is underpinned by the professional standing of computing societies and respected international bodies worldwide. They bring together the expertise and advice of more than 250,000 practicing professionals. As licensees in most territories they are the guarantors of the credibility and the control of the ECDL in their territory.

The ECDL is based on a single agreed syllabus document. The syllabus lists the facts to be known and the skills that must be mastered for a candidate to achieve the ECDL certification.

To maintain the ECDL as the worldwide standard, the ECDL syllabus has evolved over the last six years from version 1.5, to version 3.0 and, more recently, to syllabus version 4.0

(released in April 2003). The most recent version 4.0 development process included over 1,200 documented expert inputs ensuring that the ECDL continues to be relevant, up-to-date and meaningful.

ECDL-F Products

ECDL-F has the broadest range of end-user computer skills certification programmes in the world.

There are four levels within the ECDL-F range of certification programmes, from **equalskills** at entry-level to **ECDL Specialist** modules at the most advanced end of the scale.

The most recent additions to the ECDL-F range of end-user certification programmes are **ECDL Advanced, ECDL for Computer Aided Design, ECDL Certified Training Professional** and **e-Kids** (an ECDL-endorsed product).

The forthcoming launches of two brand new certification programmes will further expand the ECDL-F product range. Both programmes are at foundation-level and cater for beginners. **equalskills** was launched in July 2003 and **e-Citizen** will be introduced in 2004.

equalskills

equalskills is an entry-level certification programme in end-user computer skills for complete beginners. It is the newest addition to the expanding range of ECDL-F end-user computer skills certification products.

equalskills is specifically designed for those with no experience whatsoever of computers. The programme is intended as an enjoyable ice-breaker for those fearful of or left behind by technology and is a fun, informal and simple introduction to computers and the Internet for the computer novice.

The aim of equalskills is to introduce complete beginners to computer and Internet usage. It is intended to build confidence and remove candidates' inhibitions around computer use. equalskills is open to everyone regardless of status, education, age, ability or understanding.

The equalskills programme is intended to give candidates an appreciation of what a computer can do and what tasks can be executed online using the world wide web.

e-Citizen

e-**Citizen** is a new end-user computer skills certification programme developed by ECDL-F. It is an improver-level certification specifically developed to cater for those with a limited knowledge of computers and the Internet.

e-Citizen is intended to help candidates bridge the digital divide by giving them the necessary skills to interact on-line across a broad range of environments, from dealing with government departments to communicating on-line with family and friends.

e-Citizen is specifically designed for those who have used computers previously but are using the Internet on a very limited basis or not at all. e-Citizen is open to everyone regardless of status, education, age, ability or understanding.

Building the IT Certification Industry

The activities of the ECDL Foundation and ICS Skills have contributed in a significant way to the development of the IT certification industry in Ireland.

The term "IT certification industry" refers to the activities of companies globally engaged in developing, promoting and marketing IT certifications. These activities have considerable associated impacts on increased levels of IT skills training by individuals and organisations and the growth of economic sectors related to IT skills testing and training services and IT training products.

The European Computer Driving Licence (ECDL) is the world's leading end-use computer skills certification programme. Outside Europe, the ECDL is known as the International Computer Driving Licence (ICDL). With more than 3.5 million participants, the ECDL is internationally recognised as the global benchmark for end-user computer skills. It is currently available in 166 countries and has been translated into 32 languages.

The ECDL programme is a major component of the IT certification industry in Ireland, an industry that is not clearly recognised by Irish industrial policy. ECDL programme activities encompass the informatics industry sector of training and education software, and the services industry sectors of market and non-market services in training and education.

The ECDL Foundation and ICS Skills

The ECDL Foundation and ICS Skills are two separate non-profit organisations based in Dublin. Their work has contributed to building the IT certification industry in Ireland (ICS Skills) and internationally (the ECDL Foundation). Through their activities aimed at creating a recognised standard for IT skills competence, they also foster the growth of IT skills in individuals of all backgrounds and in organisations in the public, corporate, private, government, and community and non-profit sectors. Their activities also support the development and growth of companies and non-profit organisations in the IT skills testing and training services sector and the IT training products sector.

Globally, income for the ECDL Foundation is generated primarily from royalties from sales of ECDL skills cards and joining fees paid by national ECDL licensees.

Income for ICS Skills is generated primarily by sales of ECDL skills cards. The work of the organisation includes:

- Promoting the growth of the ECDL certification and the ECDL family of certifications in Ireland

- Developing, supporting, auditing and validating accredited test centres authorised to administer ECDL tests in Ireland

- Supporting ECDL training product producers and suppliers in Ireland

Data for building the IT certification industry

The ECDL Foundation and ICS Skills combined currently employ 35 employees full-time and five employees part-time engaged in building the IT certification industry, with gross annual wages of an estimated €1.8 million. In addition, the ECDL Foundation and ICS Skills combined have generated gross sales to date of €26.5 million and have annual sales of €7.5million.

Increasing IT Skills

The ECDL programme has had a significant impact on the development of IT skills in Ireland – by companies, by students and pupils, and by adults who are employed, unemployed and returning to education or experiencing disadvantage. IT skills development is considered essential to ensure that Irish people have adequate knowledge and skills to adapt to ongoing change and that Irish workers have the necessary IT skills to allow business to be efficient and competitive.

Increasing IT skills in companies and by employees

Many Irish companies have supported the ECDL for their employees. More than 100 Irish businesses and large corporations have become accredited ECDL test centres for the specific purpose of undertaking a major programme of ECDL certification for their employees. A survey of these companies conducted for this study found that:

- Almost half (45%) experienced a significant raising of the overall IT skills levels in their organisation
- About half (47%) experienced some raising of IT skills levels
- A small number (8%) reported no impact on IT skills levels or could not say

Analysis for this study determined that an estimated 92,000 Irish adults in employment have undertaken ECDL training and certification to date. For 58,000 (64%) of the employees, the ECDL training improved their IT skills considerably. The remaining 34,000 experienced some improvement. Overall, about 75,000 have achieved their full ECDL certification to date.

An earlier study of the ECDL conducted by UCD found that for corporate organisations and their employees, benefits of the ECDL included:

- Establishing a benchmark of IT skills
- Raising the general familiarity with IT
- Facilitating file sharing
- Increasing employee confidence with computers
- More efficient performance in the workplace

ICS Skills has undertaken a number of case studies of ECDL training and certification in Irish companies. A review of those case studies identified the following benefits:

- Ensuring that employees have a common level of technical ability with computers
- Increasing staff confidence with computers and more creative uses of IT

- Customers experiencing more efficient and streamlined services
- Improving communication among company branch offices through email
- Improving use of company intranet and file sharing with associated reduction of stationary and printing costs
- Reducing the need for IT support by staff and encouraging a problem-solving approach
- Raising productivity and efficiency of staff
- Improving staff communication with the IT support desk
- Increasing the professionalism of presentations by staff

Increasing IT skills in students and pupils

Analysis for this study determined that an estimated 48,000 Irish students and pupils have undertaken the ECDL certification to date. About 30,000 completed their full ECDL certification while still at school and others have completed it in further training and employment. About 27,000 (56%) of the students and pupils experienced significant improvement in their IT skills, with 21,000 experiencing some improvement.

Profile – Paraic Atkinson

Paraic Atkinson, a student at St. Macartan's College in Monaghan, lives in Ballybay, Co. Monaghan. The 16 year-old began his ECDL in September 2002 during his transition year of secondary school. Before his ECDL experience, he had little computer knowledge. His primary school had only one computer per classroom and there was no computer in the family home.

During his transition year, Paraic and his fellow students had four ECDL classes per week in one of the school's two computer rooms. The classes were instructor-led, with all the students having their own computer. He completed his full ECDL in April 2003. His favourite aspects of the ECDL training were learning about the Internet and email, and Presentations, and his least favourite were learning about the physical aspects of computers and the operating system.

Paraic believes the ECDL has considerably improved his IT skills and increased his confidence with computers. His skills in Presentations, word processing and the Internet have been useful for school projects such as history projects. As part of his transition year, Paraic completed a work placement at a local accountancy firm where he found his spreadsheets skills particularly useful. He expects to continue to use all these skills in further education and employment.

"The ECDL is a very good way for anyone to learn computers, from starting from scratch to a work situation," says Pauric. "I would recommend that anyone doing their ECDL should complete the full certification programme and try and use their IT skills as much as possible in a practical situation to keep their mind refreshed."

Increasing IT skills in adults experiencing disadvantage

Analysis for this study determined that an estimated 18,000 Irish adults experiencing disadvantage have undertaken ECDL training and certification to date. This includes people with disabilities and others assessed by their trainers to be experiencing social disadvantage. About 14,000 of these candidates have completed their full ECDL to date. About 15,000 (83%) saw a significant improvement in their IT skills, and the remaining 3,000 saw some improvement.

Students in the Department of Computer Science, Trinity College Dublin have undertaken a number of studies of the ECDL and people with disabilities. People with disabilities undergoing the ECDL believe it is important that the ECDL qualification establishes a benchmark of IT skills for everyone. People with disabilities who undertake computer training believe that computers are important in their lives, and many people with disabilities who do use computers are interested in attaining ECDL accreditation.

Profile – Yvonne Lynch

Yvonne Lynch lives in Bray, Co. Wicklow and is a student at the Bray NTDI (National Training and Development Institute). Yvonne, who is 30 years old, began her ECDL training in 2002 in the evening at a local community school. At the time she had been unemployed for several years. When she started at the NTDI in April 2003, she had already completed two ECDL modules. Before that she had taken various IT training programmes as part of other courses and had been using computers while employed at a school.

Most of the NTDI students are people with disabilities. Yvonne has Spina Bifida Hydrocephalus, although fortunately the condition is not a daily concern. She "flew through the ECDL." At NTDI Bray, Yvonne and her fellow students have computer training every day of the week, including all day Monday and Friday and most of Wednesday and Thursday. All the ECDL students work at their own pace, using an ECDL manual and sample papers, and consulting their two ECDL tutors only when they need assistance.

Yvonne completed her full ECDL in September 2003. Her favourite aspects of the course were Presentations and the Internet, and her least favourite, spread-sheets. On her home computer, she tends to use word-processing the most, while

during her work placement at a local school, she uses both word-processing and database. She expects to use all these programmes in further employment. After finishing her work placement, Yvonne hopes to move on to a new employment situation.

Even though Yvonne had computer training and experience before taking the ECDL, she believes ECDL certification improved her IT skills considerably. "The ECDL has given me more confidence in using computers. I understand the programmes at a more in-depth level, rather than in bits and pieces."

Increasing IT skills in adults returning to education/unemployed

Analysis for this study determined that an estimated 92,000 Irish adults returning to education or unemployed adults have undertaken ECDL training and certification to date. 73,000 of them completed their full ECDL to date. Approximately 70,000 (76%), experienced a significant improvement in their IT skills, with the remaining 22,000 experiencing some improvement.

A UCD study conducted in 2000 found that for ECDL candidates in this sector, the main benefit received from completing the programme was "increased knowledge of computers," and "increased job prospects."

Profile – Pilot Project for IT Skills Development in Late Adopters: equalskills

Ireland has the distinction of having developed equalskills, a new IT certification in the ECDL family of certifications for people with little or no previous knowledge of computers. These are primarily adults who do not use computers at work, women at home, unemployed adults and retired adults.

equalskills, developed and piloted with the support of the Irish government, is now an IT certification product available internationally. The equalskills pilot, launched in 2001, provided basic IT training free of charge to 74,000 participants in the counties of Cork, Kerry, Limerick, Clare, Tipperary and Offaly. The evaluation of the equalskills pilot found that equalskills:

- Effectively met the need to provide basic introductory computer training
- Gave participants the necessary skills to access the Internet and send/receive emails
- Consistently achieved stakeholder satisfaction ratings over 80%
- Was very well received both within the pilot area and nationally
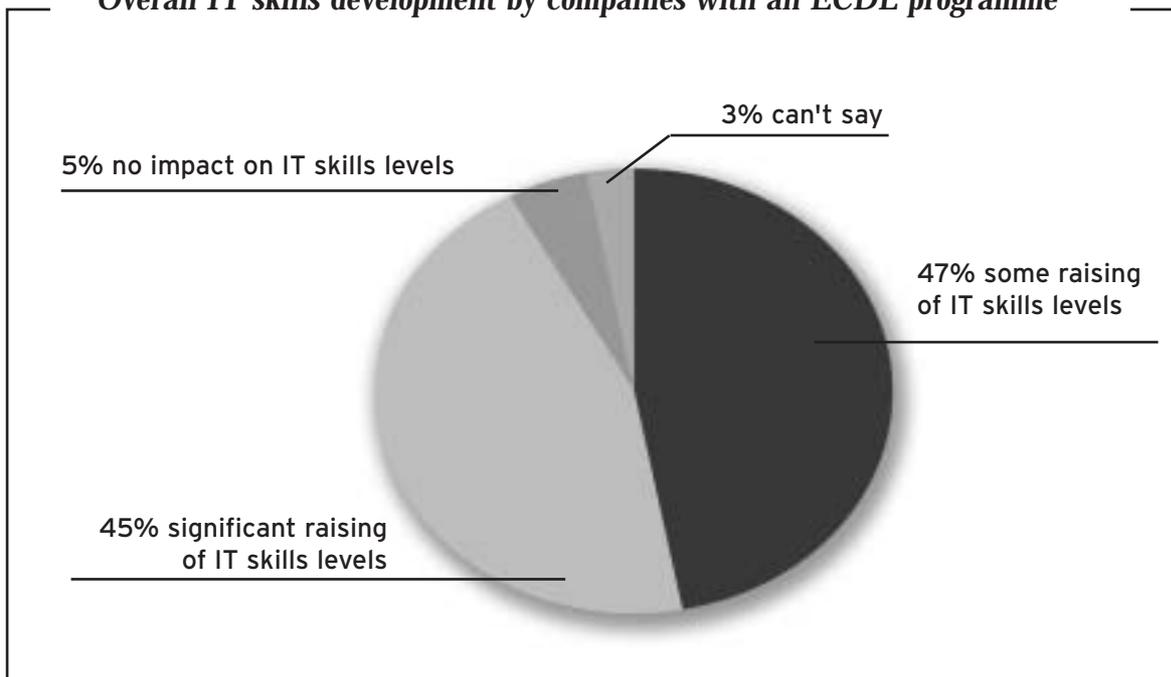- Gave participants a window to access information and knowledge

Summary of data for increasing IT skills

An estimated 92,000 Irish adults in employment have undertaken ECDL training and certification to date, resulting in a significant improvement in IT skills for about 58,000 (64%). Of the companies that have implemented an ECDL programme for their employees, almost half (45%) experienced a significant raising of the overall IT skills levels in their organisation. The most most common benefits of an employee ECDL programme are:
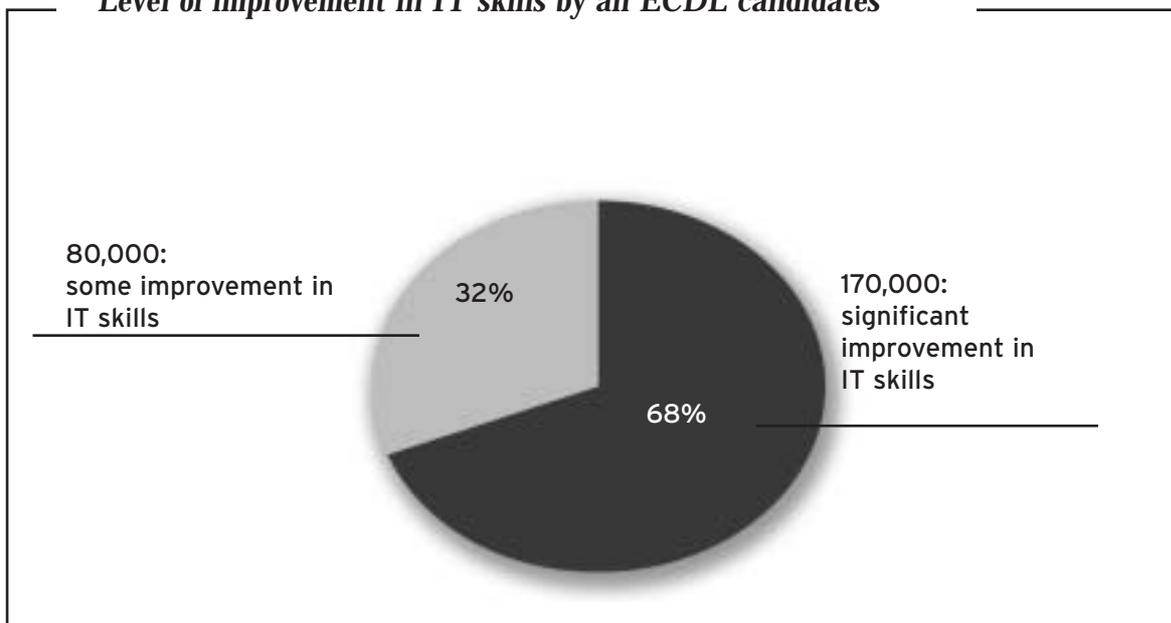
- Establishing a benchmark of IT skills
- Raising general familiarity and confidence with computers
- Facilitating file sharing and internal company communication
- Raising performance efficiency in the workplace

In total, an estimated 250,000 people in Ireland have undertaken ECDL training and certification to date. In addition, further skills development was achieved through other ECDL products, including 74,000 "late adopters" of technology who achieved basic familiarity with computers through the equalskills pilot, and more than 5,000 others who undertook ECDL certification in Advanced, Specialist or Trainer programmes.

- Chart 1:
Overall IT skills development by companies with an ECDL programme

3% can't say

5% no impact on IT skills levels

47% some raising
of IT skills levels

45% significant raising
of IT skills levels

- Chart 2:
Level of improvement in IT skills by all ECDL candidates

80,000:
some improvement in
IT skills

32%

170,000:
significant
improvement in
IT skills

68%

- Chart 3:
ECDL participation by candidate type

18,000: adults
experiencing disadvantage

48,000: students
and pupils

92,000: adults returning
to education/unemployed

7%

19%

37%

37%

92,000:
employed adults
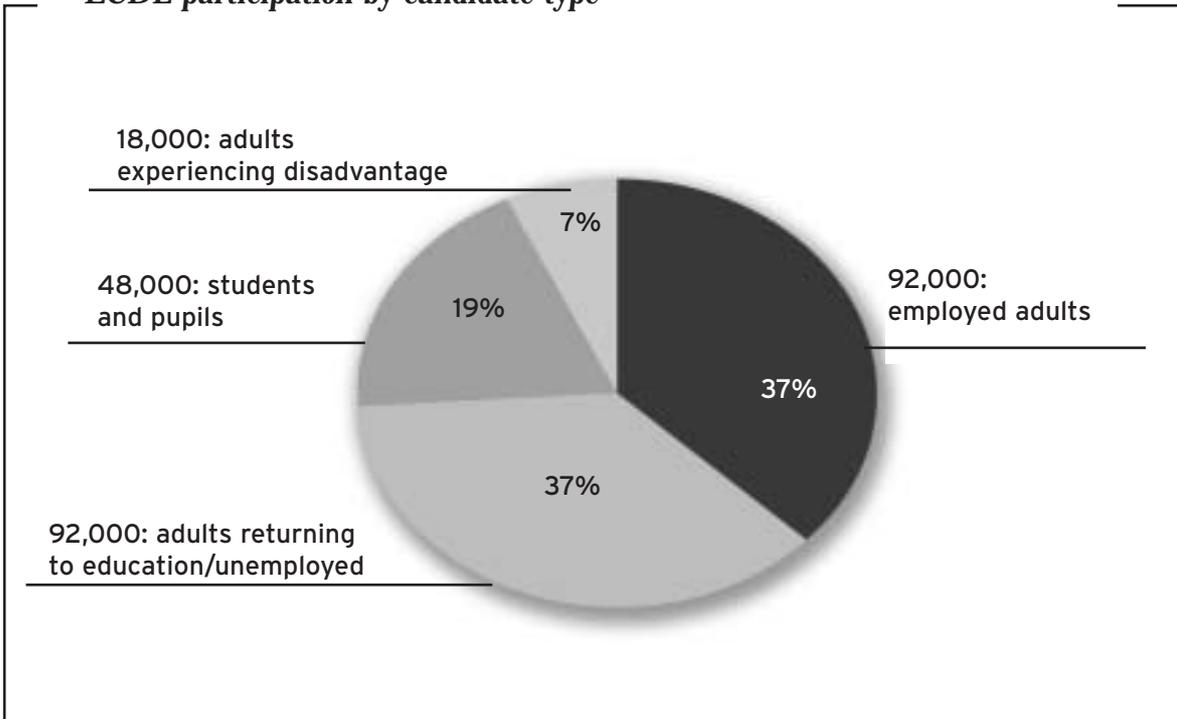
- Chart 4:
Level of ECDL certification by all candidates to date

58,000:
achieved fewer than
7 modules

23%

77%

192,000:
achieved full ECDL
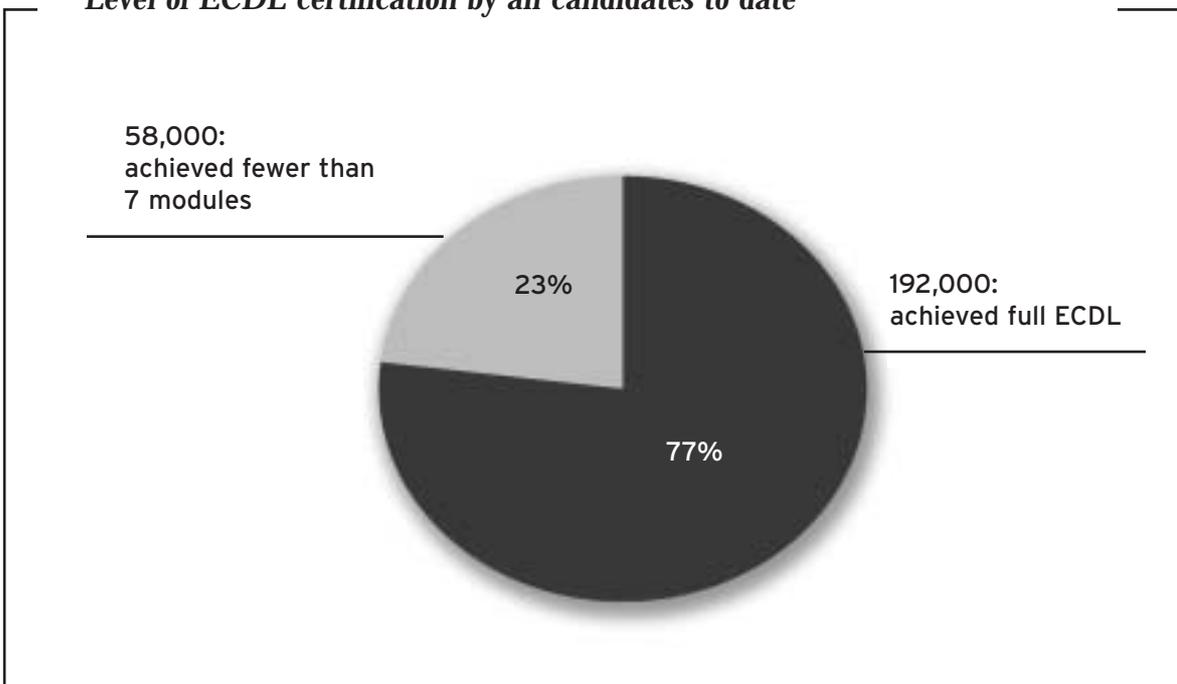
Productivity Benefits

The productivity benefits of computer training and certification are difficult to measure. Research remains inconclusive. A study conducted in Norway by Cap Gemini Ernst & Young (2001) found that office workers in Norway spent an average of two hours and 51 minutes every week trying to solve their own and other people's computer problems. However, the study did not measure the extent to which training and certification could reduce that figure. More than 50 percent of the office workers surveyed had already received computer training.

In Ireland, no published studies to date have investigated the link between computer training and certification and productivity. A recent report by Amárach (2003) found that Irish office workers make up one quarter of the Irish working population. Nearly nine of ten office workers surveyed feel that computers have increased their own personal work productivity. However six in ten reported a substantial increase in time spent dealing with emails, with one third feeling overwhelmed by email. One in ten emails is personal in nature and one fifth of time online is spent looking at non-work related websites (e.g. travel and personal banking).

The productivity estimates in this report are based on data from the two reports from Norway and Ireland described above, and the survey undertaken for this study. Using the figure of 92,000 adults in employment that have undertaken ECDL certification, we estimated that at least one-half (46,000) were office workers using computers at work. The data from the Norway study suggests that time spent on computer problems every week that could be reduced by ECDL training and certification include the following: printing/printer problems (22 minutes); waiting period to get help for functional enquiries (22 minutes); other computer problems (16 minutes); accessing information in databases/systems (14 minutes); Internet connection/access (13 minutes); accessing problems with email (12 minutes); accessing word processing, spread sheets, presentation applications (11 minutes) - a total of 110 minutes per week.

The analysis resulted in a figure for estimated annual productivity savings of €62.3 million for Irish employers. The analysis details are included at the end of this report.

Developing the IT Training and Testing Services Sector

In Ireland, the ECDL has stimulated significant development in the IT training and testing services sector. This economic activity is not clearly recognised by Irish industrial policy. IT training and testing services is part of the services industry sector.

The ECDL provides this sector with a core certification in IT skills recognised by employers and public authorities in Ireland, Europe and internationally. In turn, the Irish companies, non-profit organisations and public training and education institutions in this sector capitalised on the ECDL to develop training programmes tailored to a wide range of clients.

ECDL Test Centres

The companies, organisations and institutions in this sector involved with the ECDL are known as "ECDL Test Centres." An ECDL test centre provides a testing environment that meets the requirements of the ECDL programme and staff qualified to administer the programme. ECDL test centres administer all the ECDL tests in Ireland and most of them also deliver ECDL training.

Accreditation of test centres by the ECDL Licensee in Ireland – ICS Skills – involves an initial audit and annual audits thereafter. ICS Skills encourages continuous best practice of Irish test centres though its annual audits and ECDL Best Practice Awards. Once accredited, ECDL test centres can purchase from ICS Skills the ECDL skills cards used to verify completion of the ECDL tests. Test centres administer the ECDL tests and may also deliver ECDL training. The test centres each set their own fee structure for ECDL training and testing.

By October 2003, **1,040 ECDL test centres** were operating in Ireland, in all four provinces: 300 in Dublin and 240 in the rest of Leinster, 310 in Munster, 120 in Connacht, and 70 in Ulster (Donegal, Cavan and Monaghan). The test centres can be categorised as follows:
- Public education and training and public sectors
- Private training and corporate sectors
- Community and non-profit sectors

Almost half the test centres are in the public education and training sector. Almost one quarter are private training companies. The remaining one quarter are in the community, corporate and government sectors.

Affiliated to these test centres are an estimated 750 organisations or groups, from small community groups to local businesses, that organise or deliver ECDL training to their employees, who are then sent to take their ECDL test in a test centre.

Services in the public sector

500 test centres, almost half the total, are educational institutions or public training organisations. These test centres have been responsible for about 47 percent of all ECDL training and testing in Ireland.

Another 25 test centres are public sector bodies - government departments or other public bodies. These test centres are responsible for about 2 percent of all ECDL training and testing. These test centres are typically responsible for training and testing employees of their own government department or public body.

Working with the public sector test centres are an estimated 215 affiliated organisations – public, private or community organisations that send their employees to public sector test centres for ECDL testing.

Estimated **current total employment in public sector test centres is: 55 full-time and 145 part-time.** In addition, 1,990 public sector employees are doing ECDL training and testing work as part of their overall duties.

To date an estimated 122,500 candidates have undertaken the ECDL certification programme in public sector test centres. About 80% of public sector test centres charge their ECDL candidates a fee. The average fee is €219. The estimated gross sales to date by public sector test centres is: €21.5 million.

Profile – St. Macartan's College (www.stmacs.com)

St. Macartan's secondary school for boys is situated at the edge of Monaghan town. Founded in 1841, St. Macartan's has 700 students. The school and its 48 staff offer a wide range of subjects and cater for a large intake of boys of mixed ability. In 2002, St. Macartan's opened its second state-of-the art computer room. The school has invested heavily in providing ECDL training both in terms of computer resources and teaching hours to deliver the course.

ECDL is a required course for students aged 15 to 16 in their transition year – a year traditionally used to explore new and different ways of learning. The cost to students is €50, far below the usual commercial cost. Most of the school's administrative and teaching staff have also undertaken the ECDL. St. Macartan's recently won an ECDL Ireland best practice award for its ECDL certification programme.

In the evening, St. Macartan's offers ECDL to students' parents. Many of the evening ECDL candidates are women – both younger women working in offices who want to upgrade their IT skills, and older women at home who want to make good use of a home computer, keep up with the IT activities of their children, and use email to contact their children at school as well as friends abroad.

Vincent McCarvill, the school's ECDL coordinator, and his fellow teachers Gerry Reilly and Paul West deliver the ECDL training and testing to both students and adult candidates. To date, St. Macartan's has trained more than 500 students and adults in the ECDL. Most have experienced significant raising of their IT skills and have completed the full ECDL. Feedback from graduating students suggests that the ECDL certification has given them a head start at university, allowing them to immediately perform assignments using computers.

Services in the private and corporate sectors

240 test centres are private training organisations. These test centres are responsible for about 30 percent of all ECDL training and testing. As a group, they provide training across the social spectrum and in all employment and occupational categories.

In addition, 100 test centres are corporate sector companies. These test centres are responsible for about 12 percent of all ECDL training and testing. Typically, a corporate sector test centre will be responsible for training and testing employees of their own company.

Working with these private sector test centres are an estimated 320 affiliated organisations – public, private or community organisations that send their employees to private sector test centres for ECDL testing.

Estimated **current total employment in private sector test centres is: 90 full-time and 55 part-time.** In addition, 1,180 private sector employees are doing ECDL training and testing work as part of their overall duties.

To date, private sector test centres have trained an estimated 105,000 people in the ECDL. About 70% of them charge their ECDL candidates a fee. The average fee is €500. The estimated gross sales to date by private sector test centres is: €37 million.

Profile – Bausch & Lomb (www.bausch.com)

The Bausch & Lomb company produces products for eye health. Its core businesses include contact lenses and lens care products, and ophthalmic surgical and pharmaceutical products. The company has its headquarters in Rochester, New York and employs 11,500 people worldwide including 1,700 in Ireland.

The ECDL programme in the Bausch & Lomb Irish plant in Waterford began in earnest in 2001. By October 2003, more than 480 employees had signed up for the ECDL and almost 300 had successfully completed the full ECDL certification. To achieve this level of activity, ECDL coordinator Noel Wilson and Deputy Test Centre coordinator Gary Pheasey work with a team of about 20 part-time ECDL trainers and testers in a

dedicated computer learning centre. Bausch & Lomb recently won a best practice award for its ECDL programme.

The trainers are employees trained in the ECDL who then go on to train fellow employees working on the same shift. The trainers are given the responsibility of managing their group for the duration of the programme, including scheduling, notification, booking of rooms, booking exams, and arranging exam testers. Bausch & Lomb's shift work schedule allows employees to do their ECDL training in two-hour sessions from early morning to midnight. ECDL candidates pay €190 for their training through pay deductions; the cost is refunded when they complete the ECDL.

The ECDL programme has raised the overall IT skills levels both of the organisation and the ECDL candidates, most of whom are operators working on the shop floor and not day-to-day computer users. Bausch & Lomb recruits internally for many of its positions and increasingly ECDL certification is specified as a job requirement. One of the main benefits of the ECDL certification to the company is benchmarking baseline IT skills levels. Since the implementation of the ECDL programme, the company has also experienced reduced reliance on IT support.

Services in the community and non-profit sectors

175 test centres are community groups and non-profit organisations. These test centres are responsible for almost 10 percent of all ECDL training and testing. A particular feature of these test centres is that many of them train the most difficult-to-reach groups who are marginalised in the information society, such as rural and isolated citizens, the long-term unemployed, women at home, retired people, and people with disabilities.

Working with the community and non-profit sector test centres are an estimated 215 affiliated organisations – public, private or community organisations that send their employees to public sector test centres for ECDL testing.

Estimated **current total employment in community and non-profit sector test centres is: 120 full-time and 90 part-time.** In addition, 530 community and non-profit sector employees are doing ECDL training and testing work as part of their overall duties.

To date, community and non-profit sector test centres have trained an estimated **22,500 people in the ECDL.** About 67% of these test centres charge their ECDL candidates a fee. The average fee is €378. The estimated **gross sales to date by community and non-profit sector test centres is: €5.5 million.**

Profile - NTDI Bray (www.rehab.ie/ntdi)

The NTDI (National Training and Development Institute) is the largest non-government training institute in Ireland. The NTDI assists people at a disadvantage in the labour market to learn the necessary skills to achieve sustainable employment in jobs that reflect their interests and abilities. Most of their students are people with disabilities. More than 50 NTDI centres across the country cater for more than 4,500 students each year, with the centre in Bray offering training and employment services for students in Wicklow and south Dublin counties.

NTDI Bray, similar to the other NTDI centres, offers the ECDL as part of a range of training and social and personal supports and services aimed at improving employment options for their students. ECDL and all other training is delivered within a flexible, lifelong learning framework. Most of the students at NTDI are previously long-term unemployed. The NTDI Bray recently won an ECDL best practice award for its ECDL programme.

ECDL coordinator Carmel Bennett and two of her colleagues, Deirdre Neary and Debbie Kinsella, are involved in training, testing and administering the ECDL at their centre. The student-centred ethos means small class sizes and plenty of personal attention for the students, who work at their own pace. Currently NTDI Bray is training 24 ECDL candidates in a classroom setting, between the Bray and Arklow centres, and 12 ECDL candidates by distance learning. The distance learning students devote 30 hours per week to their ECDL training. They receive a visit once per fortnight from a tutor and maintain more regular contact by phone or email.

Summary of ECDL training and testing services

In Ireland, there are currently 1,040 training and testing centres and 750 affiliated organisations. About 25% do not charge a fee for the ECDL, particularly educational organisations.
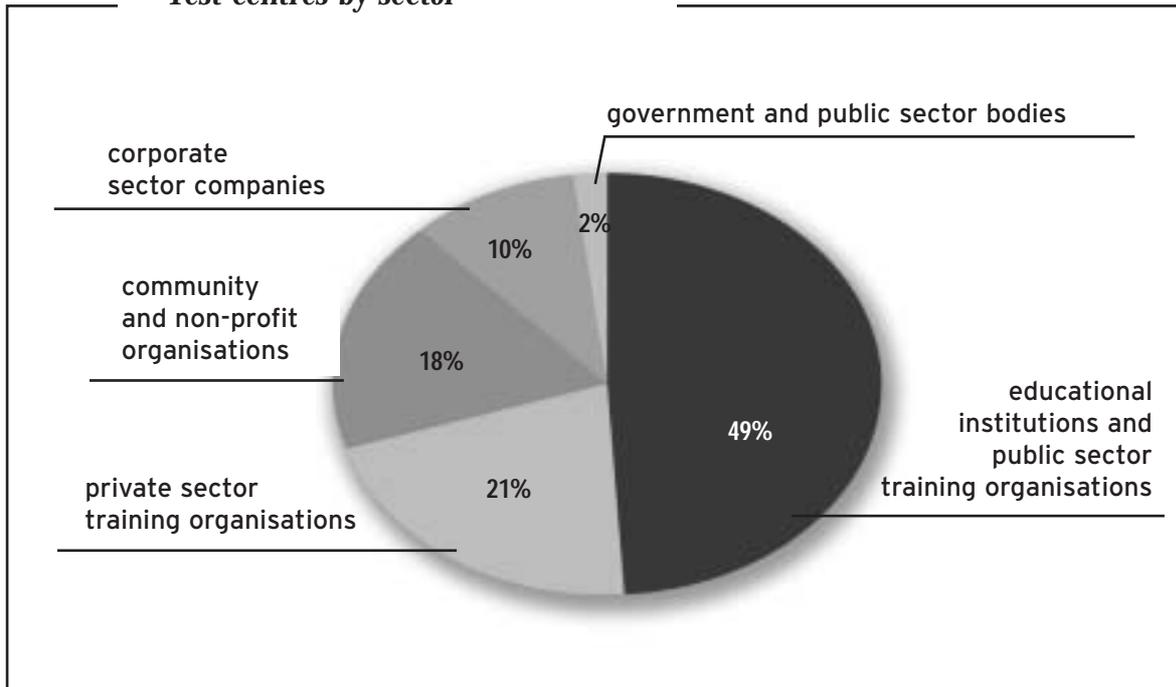
Estimated current employment in training and testing centres:
- 265 employees full-time
- 290 employees part-time
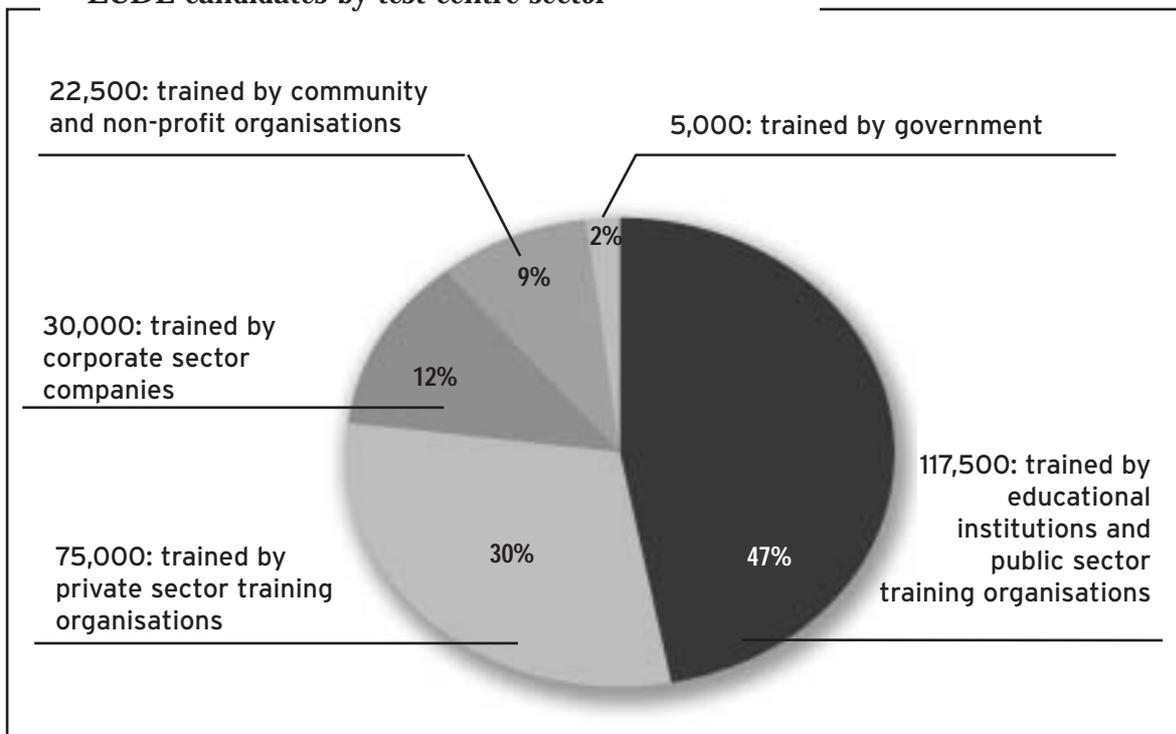- 3,700 employees doing ECDL training and testing work as part of other duties

Estimated gross sales for ECDL training and testing:
- €64 million to date
- €21.3 million annually

- Chart 5:
Test centres by sector

government and public sector bodies

corporate
sector companies

2%

10%

community
and non-profit
organisations

18%

49%

educational
institutions and
public sector
training organisations

private sector
training organisations

21%

- Chart 6:
ECDL candidates by test centre sector

22,500: trained by community
and non-profit organisations

5,000: trained by government

2%

9%

30,000: trained by
corporate sector
companies

12%

117,500: trained by
educational
institutions and
public sector
training organisations

47%

75,000: trained by
private sector training
organisations

30%

Developing the IT Training Products Sector

The introduction of the ECDL offered a unique opportunity for companies and organisations in the IT training products sector. This sector is recognised in Irish government policy as the informatics industry sector of training and education software, including training and education for consumers and students, and corporate training and education. The IT training software sector is considered a key economic growth sector for the Irish economy.

A number of Irish companies and public sector organisations have capitalised on the opportunity offered by the ECDL to develop, market and produce computer-based and paper-based training products for the ECDL.

CBT (Computer-Based Training) and paper products

Computer-based training (CBT) products are typically CD ROMs for stand-alone computers or networked computers. Learners can use CBT products in a variety of settings, from self-study with no tutor support to classroom environments led by a trainer. Learning with CBT products is sometimes called "e-learning." One aim of e-learning is to reduce the contact time between learners and tutors or trainers.

CBT allows the learner to interact with the training product in a dynamic way, with the CBT product anticipating a variety of user responses and offering visual and audio cues to encourage correct responses. Another advantage of CBT products is that they can be used with a network system to efficiently manage learning by large numbers of learners.

Paper training products are typically manuals, books and study packs. They are similar to computer-based training products in that learners can use them in a variety of settings, from self-study with no tutor support to classroom environments led by a trainer. However they do not offer the interactive learning experience of computer-based training.

Paper training products are increasingly combined with some form of digital element, such as supplemental information available for download from a web site. Paper training products can also be used alongside computer-based products for learners who want to use CBT but prefer the additional support of a printed document.

ECDL computer-based training and testing products

A variety of Irish companies currently develop, produce and market ECDL computer-based training products such as: ThirdForce plc/The Electric Paper Company, NETg, and International Academy of Computer Training. The IPA, profiled in the next section, also recently launched its own ECDL CD ROM.

Profile: ThirdForce plc/The Electric Paper Company (www.electricpaper.ie)

In early 2003, the Irish company Rapid Technology (founded in 1998) renamed itself ThirdForce. At the same time, it acquired the The Electric Paper Company (founded in Dublin in 1988). Electric Paper is the leading supplier of ECDL CBT products in Ireland and the UK, and it markets its products internationally. Electric Paper is based in Blackrock, Dublin and has offices in the UK, the US and Australia.

ThirdForce/Electric Paper develops IT training products that assess, train and test IT literacy. ECDL training is the core of their product offering in Ireland and internationally. In mid-2003, the company began a roll-out of its flagship ECDL product throughout the Arab region.

ThirdForce/Electric Paper has two core ECDL training products on CD ROM: ECDL Training and ECDL Networked. They also provide a free ECDL Trainer's Implementation Guide in Adobe pdf format. ThirdForce/Electric Paper also offer Autotest, an automated ECDL testing system for Accredited Test Centres.

Profile: NETg (www.netg.com)

Thomson NETg is a multinational corporation with international headquarters in London and US headquarters in Illinois. Its Irish company, founded in 1998, is based in Dublin. The multinational also has offices in Australia, Austria, Belgium, Canada, France, Germany, Hong Kong, Italy, the Netherlands, Switzerland and Singapore.

NETg, part of the Thomson Learning group, has 5,000 clients in the corporate sector worldwide, including industry and category leaders. In total, Thomson NETg offers more than 3,000 IT, desktop and professional skills e-learning courses. NETg offers a range of ECDL products on CD ROM.

Profile: International Academy of Computer Training (www.iactonline.com)

The International Academy of Computer Training, established in 2002, was formerly the Irish Academy of Computer training and has an office in central Dublin. IACT has produced an ECDL Multimedia Training Kit which includes a book and CD-ROM. It sells this product online from its company website and also through a chain of computer bookshops in the UK.

Paper ECDL Training Products

A variety of Irish organisations or companies currently develop, produce and market ECDL paper training materials such as: the Blackrock Education Centre, the IPA, Gill & MacMillan and OlasIT.

Profile: Blackrock Education Centre (www.blackrock-edu.ie)

Blackrock is one of 30 Education Centres across Ireland financed by the Department of Education that provide support services to teachers and other educators. The Blackrock Education Centre, established in 1972, provides services in the south Dublin region and in Wicklow county.

Blackrock Education Centre produced the first ECDL training manual in Ireland. It has since expanded its product line and currently offers training manuals for ECDL Syllabus 3.0, ECDL Syllabus 4.0, ECDL Advanced Word Processing, and ECDL Advanced Spreadsheets. It also produces a Companion Workbook for ECDL Training with online resources. All of its paper-based ECDL training materials are available to purchase online from their web site and from numerous book outlets in Ireland and internationally.

Profile: The IPA (www.ipa.ie)

The Institute for Public Administration (IPA) is a national organisation based in Dublin. It provides training, education, publishing and research programmes at aimed at developing best practice in public administration and management. The IPA provides training to more than 14,000 public servants each year in areas such as general management and human resources management.

ECDL training is core to the IPA's IT training programmes. Since 1999, the IPA has been a leading provider of ECDL training to Irish public servants. It also has more than 50 corporate ECDL training programmes in place. To accompany its own and its corporate training, the IPA developed the paper-based IPA ECDL Study Pack. Recently, it also developed an IPA ECDL CD-ROM courseware product. These products are available for purchase directly from the IPA.

Profile: Gill & MacMillan (www.gillmacmillan.ie)

The Irish publishers Gill & Macmillan publish three books for the ECDL training, all written by the Irish technical writing organisation Redacteurs. The titles are: ECDL for Microsoft Office 2000, ECDL Advanced - The Complete Coursebook for Word Processing, and ECDL Advanced - The Complete Coursebook for Spreadsheets. Gill & MacMillan sell these products directly from their company website as well as through bookstores in Ireland and internationally.

Profile: OlasIT (www.olasit.ie)

The Irish company OlasIT, founded in 1988, provides computer training and consulting services to the corporate market. At its training centre in Stillorgan, Dublin, it offers a range of courses in popular office and corporate software packages as well as customised IT training. ECDL is central to its computer training. OlasIT produces the ECDL Workbook, which it uses for its own ECDL training courses and sells directly to outside clients.

Summary of data for ECDL training and testing products

- Chart 7:
ECDL courseware and training products by Irish companies

€5 million:
paper products

16%

84%

€25 million:
CBT products
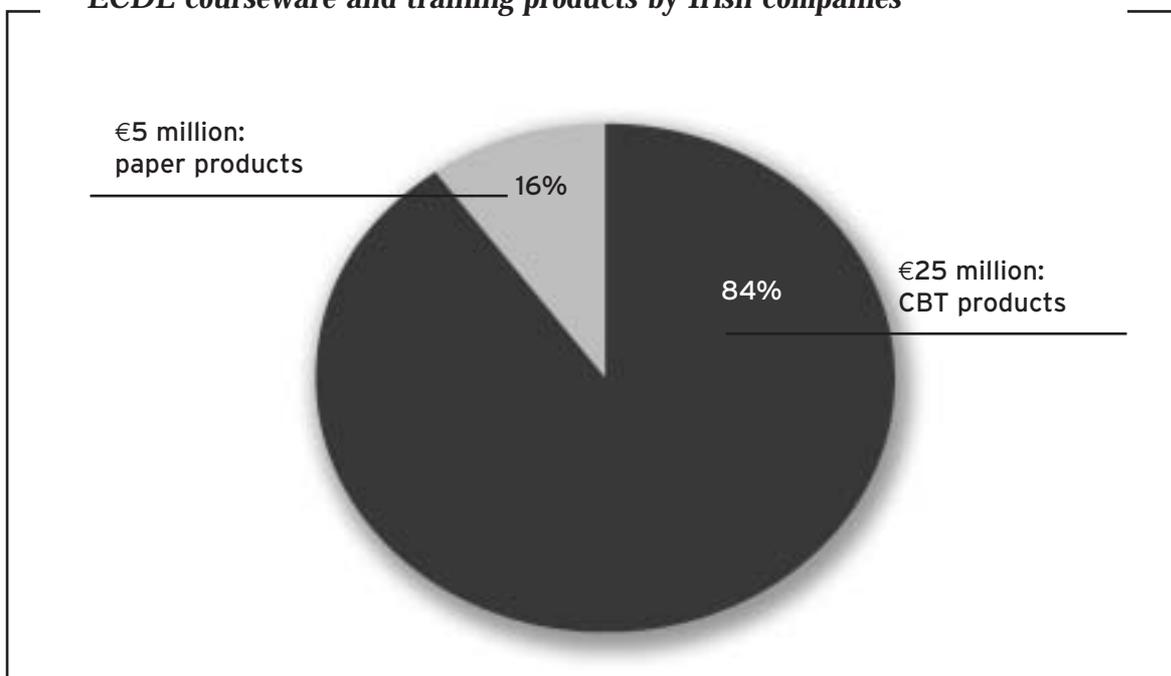
Estimated current employment for ECDL CBT products:
88 employees full-time
62 employees working on ECDL CBT products as part of other duties

Estimated current employment for ECDL paper products:
2 employees full-time
2 employees part-time
6 employees working on ECDL paper products as part of other duties

Estimated gross sales of Irish ECDL CBT products:
€25 million to date
€10 million annually

Estimated gross sales for Irish ECDL paper products:
€5 million to date
€2 million annually

Conclusion: the Impact of the ECDL in Ireland

Developing the IT certification industry

The work of the ECDL Foundation and ICS Skills, both non-profit organisations, has contributed to building the IT certification industry in Ireland and internationally. The economic impact of their activity is:

- Employment of 35 full-time, five part-time
- Gross annual wages of €1.8 million related to building the IT certification industry
- Gross sales to date of €26.5 million related to building the IT certification industry
- Gross annual sales of €7.5 million

Increasing IT skills

The most most common benefits of an employee ECDL programme include: establishing a benchmark of IT skills, raising general familiarity and confidence with computers, facilitating a work management system and internal company communication, and raising performance efficiency in the workplace. In total, 250,000 people in Ireland have undertaken ECDL training and certification to date, including:

- 92,000 employed adults
- 92,000 adults returning to education or unemployed
- 48,000 students and pupils
- 18,000 adults experiencing disadvantage

Developing the IT training and testing services sector

The ECDL provides a significant opportunity for companies and other organisations in the IT training and services sector. The economic impact of activity directly related to the ECDL is:

- Employment of 265 full-time, 290 part-time, 3,700 doing ECDL training and testing as part of other duties
- Gross annual wages of €13.1 million in the IT testing and training services sector
- Gross sales to date of €64 million of ECDL training and testing services
- Gross annual sales of €21.3 million

Developing the IT training products sector

A number of Irish companies and non-profit organisations have seized the opportunity afforded by the ECDL to develop CBT and paper-based training products. The economic impact of activity directly related to the ECDL is:

- Employment of 90 full-time, 2 part-time, and 68 doing ECDL product development as part of other duties

- Gross annual wages of €3.6 million in the IT training products sector
- Gross sales to date of €30 million of ECDL training products
- Gross annual sales of €12 million

Overall employment impact

In total, the overall employment impact of the ECDL programme in Ireland is:

- Current employment of 390 full-time, 300 part-time, and 3,770 people doing ECDL training and testing, or ECDL product development as part of other duties
- Gross annual wages of €18.5 million related to full-time and part-time employment

Overall sales impact

In total, the overall sales impact of the ECDL programme in Ireland is:

- Gross sales to date of €120.5 million
- Gross annual sales of €40.8 million

Overall productivity impact

Considering only those employees who are office workers, the overall impact is:

- Cumulative productivity saving of €186.9 million for Irish employers
- Annual productivity savings of €62.3 million for Irish employers

Reading List

Amárach (2003), *Inside the Knowledge Economy: Ireland at Work. Report for Microsoft Ireland.* Dublin: Amárach.
Available from the web: www.microsoft.com/ireland

Balfe, Lynn and Caroline O'Connell (2002) "European Computer Driving Licence: Making IT Accessible for All," unpublished B.Sc.(Hons) in Information Systems Thesis, Trinity College Dublin. Supervisor: Denise Leahy.

Brennan, Catherine et al. (2002) "ECDL Training for People with Cerebral Palsy," unpublished B.Sc. in Information Systems Thesis, Trinity College Dublin. Supervisor: Denise Leahy.

Cap Gemini Ernst & Young (2001), "Estimation of Hidden Computer Costs Within the Norwegian Population," Research conducted by Norsk Statistikk AS.

Department of the Taoiseach (2002), *New Connections: A strategy to realise the potential of the Information Society.* Dublin: Information Society Policy Unit, Department of the Taoiseach. Government Action Plan. March, 2002.
Available from the web: www.taoiseach.gov.ie.

Enterprise Ireland (2000), *ITS 2007: Strategy for Ireland's High Tech Future.* Dublin: Enterprise Ireland.
Available from the web: www.enterprise-ireland.com.

Hallissey, Andrew, Conor Kavanagh, and Aidan McDevitt (2000), "An Analysis of Attitudes and Perceptions towards the European Computer Driving License," Study conducted for ECDL Ireland by the Marketing Development Programme, UCD.

Manpower Skills Group (2003), *Salary Guide 2003.* Dublin: Manpower Skills Group.

McGlynn, Michael, Cathal Costello, and Brendan Whelan (2003) "Computer Literacy & Training: The perspective of the Visually Impaired," unpublished B.Sc. (Hons) in Business and Information Technology Thesis, Trinity College Dublin. Supervisor: Denise Leahy.

O'Donnell, Susan, Helen McQuillan, and Anna Malina (2003), *eInclusion: Expanding the Information Society in Ireland.* Dublin: Itech Research.
Available from the web: www.itech-research.ie/publications/list.html.

Warren, Padraig (2002), "Final Report: Ex-Post Evaluation of the Equalskills Initiative," Report for the Information Society Policy Unit, Department of the Taoiseach. Chinook Consulting, Dundalk. November

Analysis Details

The study methodology is described in Chapter 1. Figures for gross annual sales and employment were calculated from the survey data. The analyses for productivity savings and gross annual wages are described below.

Analysis for productivity savings for employers:
- 92,000 adults in employment who have undertaken ECDL certification
- divided by 1/2 for number of office workers (office workers make up only one-quarter of the Irish working population but it is assumed that they make up at least 1/2 of those undertaking ECDL certification)
- multiplied by 48 - 48 weeks worked each year by each employee
- multiplied by 1.83, the number of hours per week that could be saved dealing with computer problems by undertaking ECDL certification (110 minutes per week)
- equals 4,040,640 hours
- multiplied by €15.42 - average industrial hourly wage in 2003, based on an average industrial wage of €27,000 and average annual hours of 1,750
- equals €62,307,000 or €62.3 million annually
- and €186.9 cumulatively (past five years, or annual/5 X 15)

Analysis for gross annual wages in ECDL training and testing services:
- estimated employment of 265 full-time, 290 part-time, 3,700 doing ECDL as part of other duties, based on results of study survey
- 410 – full-time equivalent (part-time /2)
- multiplied by €32,000 – high-end average salary for software trainer, according to Manpower Skills Group (2003)
- equals €13,120,000 or €13.1 million

Analysis for gross annual wages in ECDL training products
- estimated employment of 90 full-time, 2 part-time, and 68 doing ECDL as part of other duties
- 91 – full-time equivalent (part-time/2)
- multiplied by €40,000 – average for analyst programmer with 3-5 years experience, according to Manpower Skills Group (2003)
- equals €3,640,000 or €3.6 million