



e-cert overview DOCUMENT





On 23rd March 2000, the European Council meeting in Lisbon requested that

"every citizen be equipped with the skills needed to live and work in the new information society".



Erkki Liikanen
European Commissioner



Certificate in e-Literacy
The International Standard of Competence for Internet Users

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Introduction

The Internet is one of the most exciting and fascinating inventions of modern times. The Internet is the world's largest collection of computers, connecting millions of people and organisations across the globe, thus creating what is generally referred to as the "Information Society", "Information Super Highway", or "Cyberspace".

The Economist magazine described the Internet as "the most transforming invention in human history. It has the capacity to change everything – the way we work, the way we learn and play, What is more, it is doing so at far greater speed than the other great disruptive technologies of the 20th Century, such as electricity, the telephone and the car."

It is the most rapidly evolving phenomenon in the history of mankind. At the end of 1984, there were over 1,000 users connected to the Internet. By 1992, this figure had risen to 1 million users. Today, there are over 407 million Internet users world-wide, and this figure is forecast to increase to 1,000 million by 2007.

The growth of the Internet is unprecedented in human history. Its phenomenal growth is even more pronounced when compared with other technological breakthroughs, and the length of time taken by each, to achieve significant market penetration. It took radio 37 years to reach a user base of 50 million and it took the Personal Computer 16 years, and Television 15 years, but it took the Internet a mere 3 years from the moment it was opened up to commercialisation.



E-Economy



Internet use is increasing rapidly – faster than any other technology in the history of the world. In addition, this phenomenal growth has resulted in the creation of an on-line economy – e-Economy. Current projections suggest that in excess of \$2.3 trillion worth of goods and services will be traded online by 2002.

The total Net economy was worth \$5 Billion in 1994, but by 1998, the US Internet economy alone was worth \$301 billion, and created 1.2m jobs - University of Texas. Jobs created by the Internet industry accounted for more than 40% of all jobs added by the entire US economy, and Internet workers proved to be 65% more productive than non-Internet workers.

The next feature of this phenomenon is M-Commerce - the term used to describe mobile commerce. M-Commerce is essentially e-commerce conducted from a mobile device such as a mobile phone or handheld devices such as Personal Digital Assistant (PDA). It includes the purchase and selling of goods and services from flowers to financial information using mobile phones and/or PDAs.

A recent report from Andersen Consulting forecast that global m-commerce revenue will more than quadruple from US\$12.7 billion in 2000 to US\$55.4 billion in 2003. This forecast appears extraordinary until one considers that there are approximately 450 million mobile phones in circulation today, compared to an estimated 150 million personal computers. The number of users accessing the Internet from mobile devices is expected to increase by over 700% from 7.4 million in 1999 to over 61.5 million by 2003 in the United States alone.

Context

The European Council held in Lisbon on 23rd & 24th March 2000 set the ambitious objective for Europe to become the most competitive and dynamic economy in the world. It acknowledged that E-Commerce is becoming a driving economic force internationally. It further recognised that an urgent need for Europe to quickly exploit the opportunities of the new economy and in particular the Internet.

The Lisbon European Council issued a series of "calls for action" under Objective 2: Investing in people and skills to the 15 Member States that included the following;



- "every citizen be equipped with the skills needed to live and work in the new information society"
- "ensure that all pupils have the possibility to be digitally literate by the time they leave school"
- "Member States ensure that all the teachers needed are skilled in the use of the Internet and Multimedia resources by the end of 2002"

The eEurope Action Plan stated that each Member State must be ready to set new priorities, to provide adequate funding and to remove obstacles to achieving these targets.

The Digital Divide

There is an important social dimension to the need for E-Literacy. The "Digital Divide" – a term used to describe the widening gap between those who have access to the Internet and its component technologies and those who do not, is capable of causing increased marginalisation in society. Internet usage across countries ranges from 67% in Sweden to 0% in some third world countries. Even within countries similar usage patterns exist. Those who can not afford access to, or education on the use of, new technologies will become increasingly marginalised as more and more human and economic interaction is conducted on-line.

General Colin L. Powell, the new US Secretary of State, speaking on the 'Digital Divide' stated that "When I address this issue I use an even stronger term: digital apartheid. What is at stake is today's technology 'have nots' – especially the young – and whether they may find themselves marginalised for life because they lack the skills and tools to participate in our globalised, knowledge-based economy. If digital apartheid persists, we all lose. The digital have nots will be poorer, more resentful of progress than ever before and will not be able to become the skilled workers or potential customers that are needed to sustain the growth of the Internet economy. Marketable skills increasingly mean digital skills, and high-tech companies have been among our earliest and most enthusiastic allies in equipping young people for careers in the digital economy".



The benefits to the individual of becoming digitally-literate will be realised both economically and socially. Increasingly, in the high-tech and services sector, new jobs being created demand an e-Literate workforce conversant with new technology and electronic ways of doing business. In the modern labour market, literacy not just in terms of reading and writing, but also computer and e-literacy will increasingly become determinants of success at an individual and national level in the e-economy.



Bridging the Digital Divide in Ireland: The Role of FIT

The Fast-Track to Information Technology (FIT) project established by the Department of the Taoiseach in 1997 is aimed at re-skilling long-term unemployed for jobs in the IT industry. Recently, the Board of FIT adopted the Certificate in E-Literacy as a compulsory component of its curriculum. The Board determined that it is now essential for every FIT trainee to become digitally literate before entering employment. FIT reflects the important social dimension to the need for E-Literacy.

"The failure, at individual or community level, of distributing the full benefits of new technology throughout society will further compound problems of social deprivation". FIT seeks to play an important role in ensuring that this does not happen, by highlighting the need for e-equality and making a positive contribution to ensuring that all FIT graduates achieve this basic level of e-Literacy. In so doing, FIT is responding to the call to action by the Information Society Commission where it stated that "it is also imperative that strong action is taken to demonstrate the relevance of new technology to people's lives through the development of appropriate content and awareness and information campaigns".

In taking a lead in this manner, FIT and its affiliated companies as shown below, are playing an important part in meeting National and European objectives in relation to eEurope and digital literacy.



National Importance

In the new Information Society, it is imperative for both economic and social reasons that every citizen is accorded the opportunity of achieving a basic level of literacy in the new technologies - e-Literacy.

If Ireland is to achieve the national objective of becoming an E-Commerce Hub, it requires a concerted effort on the part of the social partners to ensure that there is sufficient investment in achieving a basic standard of usability among the general population.

Unless the population at large possess the necessary skills to function effectively in the Information Society, the potential social and economic benefits of the new technologies will be limited and any opportunity which may exist today to gain a competitive advantage will be lost. An E-Literate population is in our national interest.

"...if consumers are not educated and equipped to do business electronically then this could represent a serious impediment to the growth of e-commerce here. It is in everybody's interest to prevent this from happening".

"E-government presents a tremendous opportunity for the use of ICT in the provision of government services. Government must drive initiatives to ensure that ICT offers opportunities for electronic citizenship"

This requires a basic level of E-Literacy to be had by all citizens if we are truly to offer the opportunity of E-Citizenship.

Any definition of literacy in the Information Society must now include by right digital literacy or "e-literacy" - which defines the essential set of basic skills and competencies required of citizens in order for them to be fully participant members of the Information Society. It includes the ability to browse the Web, use e-mail, search the Web, find and retrieve information, transfer files, shop on-line, understand issues such as Internet security, e-commerce and viruses.



Certificate in E-Literacy



In responding to these imperatives, a broad alliance of industry leaders, academics and IT practitioners have created the Certificate in E-Literacy to set a standard of competency in skill-sets essential for citizens to be in a position to interact effectively in the Information Society. It establishes a standard – an international benchmark against which competency may be assessed and measured.

The Certificate in E-Literacy is an independent validation of an individual's competence in the basic usage and fundamental knowledge of Internet technology. The Certificate in E-Literacy sets out the minimum skill sets required for e-citizenship in the Information Society. The skill sets have been established by a panel of international experts who are practitioners in the fields of Internet technologies, IT industry, international standardisation, and academia.

Objectives of the Certificate in E-Literacy Course

- To equip every citizen with the digital literacy skills and knowledge required to live and work in the new information society
- To bridge the digital divide by enabling citizens to acquire the skills and knowledge necessary to participate fully in a truly inclusive information society
- To enhance the productivity of employees working in the increasingly digital and knowledge-based economy
- To empower e-citizens to reap the benefits that the information revolution can provide
- To increase consumer confidence by ensuring that all citizens have a broad understanding of the security and privacy issues relating to on-line communication and e-commerce transactions
- To establish an international standard of competency in digital literacy as a benchmark qualification for all e-citizens



Benefits of the Certificate in E-Literacy

Every individual that achieves the Certificate in E-Literacy will have demonstrated a fundamental knowledge, awareness and understanding of Internet technologies, and will have achieved an essential level of proficiency in the usability of the key technologies to function effectively as an e-citizen both at work and at home. The Certificate in E-Literacy is primarily concerned with the people and communities who must be included in the information revolution if we are to become an Information Society in its truest sense.

Unless the population at large possesses the necessary skills to function effectively in the Information Society, the potential social and economic benefits of the new technologies will be limited and any opportunity which may exist today to gain a competitive advantage will be lost. The Certificate in E-Literacy is a new international standard of competency in digital literacy that establishes a benchmark qualification for the skills and knowledge required of all citizens in the new information society. The benefits of the Certificate in E-Literacy (E-CERT) to the individual and the employer:

Benefits to the Employer

- Provides independent validation of an employee's competence in the skills and knowledge needed to work in the knowledge-based digital economy
- Establishes an internationally recognised standard of competence in digital literacy.
- Ensures that employees need no longer inadvertently cause their employer liability for software piracy due to inappropriate use of shareware downloaded from the Internet.
- Facilitates significant cost reduction by increasing employee productivity through enhanced proficiency in searching, navigating and communicating on the Internet, Intranet or Extranets
- Ensures that employees maintain the integrity of the organisation by not causing any liability to their employer resulting from inappropriate use of online communications i.e. poor netiquette.
- Ensure increased protection of corporate and national information infrastructure by equipping citizens with the skills necessary to avoid and recognise computer viruses, as well as preventing their inadvertent propagation



Benefits to the Individual

- Provides an internationally recognised qualification that validates individual competence in digital literacy while also leading to higher level job roles in the Internet and E-Commerce industry which now accounts for some 2 million jobs worldwide
- Increase the awareness of online security threats and how to maximise the level of preventative techniques.
- Increase consumer confidence in shopping on-line due to increased knowledge and comfort in executing online transactions using digital signatures, digital certificates, and digital payments.
- Ensure increased protection of national information infrastructure by equipping citizens with the skills necessary to avoid and recognise computer viruses, as well as preventing their inadvertent propagation
- Empower citizens to fully exploit the resources of the Internet such as e-government, e-banking, revenue on-line, e-learning, travel, sport, health, recruitment, m-commerce and wireless Internet
- Ensure that individuals are proficient users of on-line communication tools such as e-mail, ftp, video conferencing, Internet telephony and newsgroups
- Ensure that citizens are aware of the possible infringements to their individual privacy e.g. cookies, and steps that may be taken to minimise ones exposure to these risks
- Increases an individuals productivity and proficiency in using the Internet, Intranets or Extranets thereby enhancing the employability of the individual

What will an E-Literate Citizen be qualified to do

Every individual that achieves the Certificate in E-Literacy will have demonstrated a fundamental knowledge, awareness and understanding of Internet technologies, and will have achieved a level of proficiency in the usability of the key technologies to function effectively as an e-Citizen. The Certificate in E-Literacy shall signal to employers that an individual has achieved a minimum standard of competency in the essential features of the Internet and as a result, enhances the value of the individual to the employer.

Target Audience

Any individual who uses the Internet, or anyone who is interested in learning to use the Internet. This course is intended for all citizens of the Information Society. The target population of the Certificate in E-Literacy is every citizen seeking full participation in the Information Society. The Certificate in E-Literacy allows workers, students and citizens to formally show, with their certification, that they have basic knowledge and competence in e-literacy.



Course Prerequisites

No experience of the Internet or indeed of computing is required. Anyone can begin their journey into the world of information technology through this programme. However, if one has previous knowledge of using a computer it is a definite advantage.

Certification Awards

In order to achieve the Certificate in E-Literacy, you must pass the E-CERT exam administered by any E-CERT Authorised Test Centre.

Certification Testing

The E-CERT examination is independently administered at E-CERT Authorised Test Centres worldwide. The E-CERT examination measures an individual's knowledge, technical skills and Internet usage proficiency while also establishing a basic level of competency for Internet users.



CERTIFICATE IN E-LITERACY MODULES

Lesson 1 – Overview of the Internet. This lesson introduces the candidate to the world of the Internet. The candidate will be required to understand the origins of the Internet and the people and the events that made it happen. The candidate will understand the difference between the Internet and the World Wide Web. The origins of the World Wide Web and the technologies that ensure that it works are explained. An initial glimpse at the possible uses of the Internet will be presented.

Lesson 2 – Surfing the World Wide Web. This lesson introduces the candidate to the functionality of Microsoft Internet Explorer and Netscape Navigator web browsers as well as making the candidate aware of alternative web browsers. The candidate will be required to understand basic networking concepts, domain names and Internet addressing. The candidate will be required to demonstrate the ability to view web pages using the most popular browsers and to effectively operate the toolbar. The candidate shall be able to demonstrate competence in bookmarking their favourite web-sites and setting browser preferences.

Lesson 3 – Using Electronic Mail. This lesson introduces the candidate to electronic mail. The candidate will be introduced to a number of the more popular e-mail Clients and will be required to demonstrate the ability to configure them for use. Using these packages the candidate shall be able to create an e-mail, address and demonstrate competence in sending, receiving, forwarding and deleting e-mails. He or she shall be able to demonstrate the ability to use address books, folders and the toolbar functions and know how to utilise e-mail directories to locate an individual's e-mail address. The candidate shall demonstrate the ability to attach files to an e-mail.

Lesson 4 – Effective Internet Search. This lesson introduces the candidate to a selection of the most popular search engines currently available on the Internet. The candidate shall be required to demonstrate the ability to use a search engine and to demonstrate competence in evaluating the search results. The candidate shall be able to qualify searches to get the most accurate results. This lesson outlines for the candidate the importance of good and effective search techniques when using the Internet as an information source.

Lesson 5 – Connecting to the Internet. This lesson requires the candidate to demonstrate knowledge on the options available to them when connecting to the Internet. The candidate shall exhibit an understanding of Computer hardware terminology, the hardware options available and the hardware specification most suitable for the needs of those wishing to connect to the Internet. The candidate shall be able to choose the most appropriate type of Internet account as well as understand the criteria to use when choosing the most suitable Internet Service Provider.



Lesson 6 – On-line Communities. This lesson introduces the candidate to on-line communities and explains who they are and how they work. The lesson requires the candidate to understand the basic concepts of newsgroups and demonstrate the ability to subscribe to a newsgroup, to create a message for a newsgroup and to post that message to the newsgroup. The candidate shall also demonstrate their competence with interacting with chat rooms and bulletin boards and shall be able to subscribe to, and unsubscribe from, mailing lists.

Lesson 7 – Internet Tools and File Downloading. This lesson introduces the candidate to some other useful Internet tools such as Telnet and FTP. The candidate shall exhibit competence in configuring a popular FTP Client, connecting to FTP servers and using common FTP commands. The candidate shall be able to download files from the Internet using Web Browsers and FTP Clients. The candidate shall demonstrate an understanding of file compression, how it works and be able to extract files from compressed archived files using a software tool. The candidate will also be able to install and uninstall programs downloaded from the Internet.

Lesson 8 – File Types, Multimedia and Conferencing. This lesson introduces the candidate to multi-media file types that are found on the Internet. The candidate shall demonstrate competence in installing and using plugins playing these audio and video files when using a Web browser. The candidate shall demonstrate an understanding of streaming content and shall be able to configure and use tools to play such content and broadcasts. The candidate shall know how to use Internet Telephony and Video Conferencing tools and understand the concept of Instant Messaging on the Net.

Lesson 9 – Netiquette. This lesson requires the candidate to demonstrate an understanding of the accepted etiquette with respect to sending personal e-mails and when interacting with newsgroups, mailing lists and chat rooms. The candidate shall demonstrate an understanding of AUP's and copyright issues that arise when using the Internet.

Lesson 10 – Developing a Web Presence. This lesson requires the candidate to understand the factors that should be considered when designing a web site. The candidate shall demonstrate an awareness of the cost factors, the skill sets required, and the technology choices available to them if they choose to develop a web site. The candidate shall demonstrate competence in basic HyperText Markup Language (HTML) and the use of the basic functionality included in popular GUI based web development software.

Lesson 11 – Security and Privacy. This lesson introduces the candidate to the potential threats to their personal computer and the data contained therein. The candidate shall understand the potential exposure to both accidental and intentional threats to their data and hardware and shall have an appreciation for how a hacker or cracker operates. The candidate shall be familiar with industry statistics on internet security and shall understand the basic concepts of anti-virus and Internet protection software applications and how these can be utilised to protect the candidate's family and their PC. The candidate shall demonstrate an understanding of Digital Certificates and the procedures for using them with E-mail clients to send and receive secure E-mail.



Lesson 12 – E-Commerce: Shopping on the Internet. This lesson introduces the candidate to electronic commerce. The candidate shall be aware of the e-commerce statistics and relevant forecasts for the growth of international e-commerce. The candidate shall understand the basic concepts of Business-to-Business (B2B) and Business-to-Consumer (B2C) e-commerce. He or she will demonstrate competence in utilising the Internet to shop on-line and shall be aware of the relevant security, privacy, refund and customer service policies that are applicable to shopping on the Internet. The candidate will be required to demonstrate knowledge and competence in using the key on-line payment methods.

Lesson 13 – Wireless Internet. This lesson introduces the candidate to m-Commerce and the Wireless Internet. The candidate shall understand and be able to accomplish basic operations associated with wireless technology and, in particular, with WAP and I-Mode. The candidate shall demonstrate an understanding of telecommunications terminology. The candidate will be able to use the Mobile Internet to access m-Commerce sites and will be aware of the services available using Internet enabled mobile devices.

Lesson 14 – Web Guide. This lesson requires the candidate to demonstrate knowledge and competence in using the Internet to perform Internet tasks which make a difference to everyday life. Tasks such as basic on-line banking functions and the payment of utility bills on-line. The candidate shall be able to access a variety of useful business, financial and personal resources on the Internet including the ability to access government information and local on-line newspapers. The candidate will use a list of resources based on the candidates background and therefore of more interest and benefit to the candidate.

Lesson 15 – The Future of E-Commerce. This module introduces the candidate to the economic forecasts for the future of e-commerce. The candidate shall be aware of the growth predictions for e-commerce and the developing infrastructural and technological changes that shall take place internationally to accommodate the exponential growth of e-commerce. The candidate will be made aware of the potential impact on their lives of these changes. The candidate shall also be aware of the developing career prospects for e-literate citizens within the changing information economy.



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