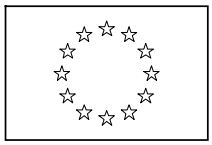

COMMISSION OF THE EUROPEAN COMMUNITIES

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COMMISSION STAFF WORKING DOCUMENT

Benchmarking Report following-up the "Strategies for jobs in the Information Society"

[with the support of the High Level Group
"Employment and Social Dimension of the Information Society" (ESDIS)]

1. INTRODUCTION

The Commission's Communication on "Strategies for Jobs in the Information Society"[1] built on experience of Member States and set out the key areas of progress to seize the job opportunities and to enhance the living and working conditions for all citizens in the Information Society.

It served as an important input to the Lisbon European Council which in March 2000 set the strategic goal for Europe to become *the most competitive and dynamic knowledge-based economy in the world capable of sustainable economic growth with more and better jobs and greater social cohesion.*

As a response to Lisbon, the European Employment Strategy further reinforced its focus on life-long learning and quality jobs in the knowledge-based economy. This approach is supported by the *e*Europe Action Plan, the European Union's roadmap to the Information Society by 2002, with one of its three key objectives focusing on investing in people and skills. The European Commission has also launched the "*e*Learning: Designing Tomorrow's Education" initiative in May 2000 in order to speed up changes in the education and training systems for Europe's move to a knowledge-based society.

The aim of this report is to provide up-dated findings on the impact of the Information Society on jobs, and to track progress in response to the recommendations of the "Strategies". This report also contributes to some of the mandates of ESDIS under the *e*Europe Action Plan to follow-up its Action lines "Working" and "Participation for all in the knowledge-based economy".

The Member States have submitted data and supported this benchmarking particularly through the **High Level Group** "Employment and Social Dimension of the Information Society" **(ESDIS)**. In addition, a specific Eurobarometer survey on "ICT and working" (results November 2000) have been used.

This report presents the situation at the moment of its production in January 2001. To reflect the dynamic progress in this area, data of this report will be up-dated and can be consulted at the ESDIS-Website[2].

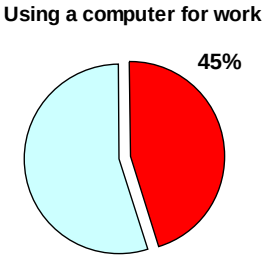
[1] COM (2000) 48 final of 4 February 2000 [abbreviated in the following as "Strategies"]
[2] http://europa.eu.int/comm/employment_social/soc-dial/info_soc/esdis/index.htm

2. KEY MESSAGES

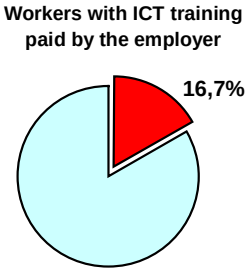
The data **confirms that the "Strategies for Jobs in the Information Society" addressed the most pressing issues** for ensuring that citizens benefit from the employment and social opportunities of the knowledge-based economy, and confirms the urgency of the actions identified.

… the impact of ICT on jobs is already higher than expected …

The "Strategies" predicted that Information and Communication Technologies (ICT) would be affecting jobs across all sectors. This is true and is even faster than expected…. Already **45 % of workers use a computer for their work**



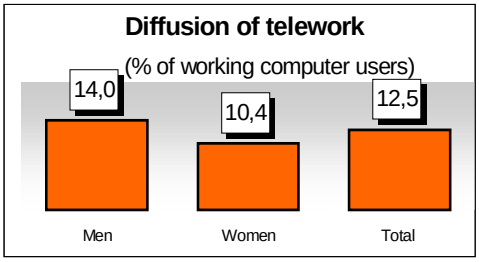
… but employers are not training their workforce …



Despite the high level of usage of computers for work, training is not being provided by employers. In fact, **most workers have to learn how to use a computer on their own**!

… telework is expanding and improves both productivity and quality of work…

The number of workers benefiting from telework is rapidly increasing. 13 % of computer users now telework. More **men than women** have the opportunity to use it, and telework is most widespread among **managers** (19 % of users).



3. BENCHMARKING THE *STRATEGIES*

The "Strategies" set out specific recommendations to Member States, Social Partners, and businesses on learning, working, public services and the enterprise in the Information Society. This report tracks a baseline for benchmarking progress.

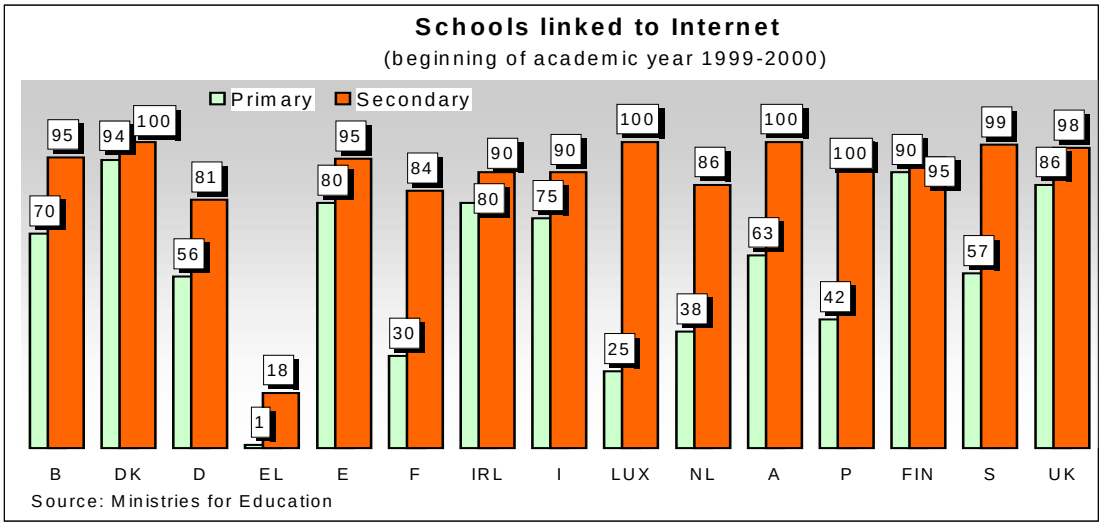
3.1. Learning in the Information Society

The labour market supply of Information Society (IS) competence depends both on preparing the youth and on life-long learning for the existing workforce. Thus, a key message from Lisbon is to adapt education and training to the needs of the knowledge-based economy. In response, and drawing on the "Strategies", the **Employment Guidelines 2001** have already been adjusted:

– Guideline 5 calls for developing *eLearning* for all citizens with specific IS targets for schools.
– Guideline 15 further specifies the objective of ensuring IS literacy for all workers (see section 3.2.).

… hardware and connectivity is quickly expanding at schools …

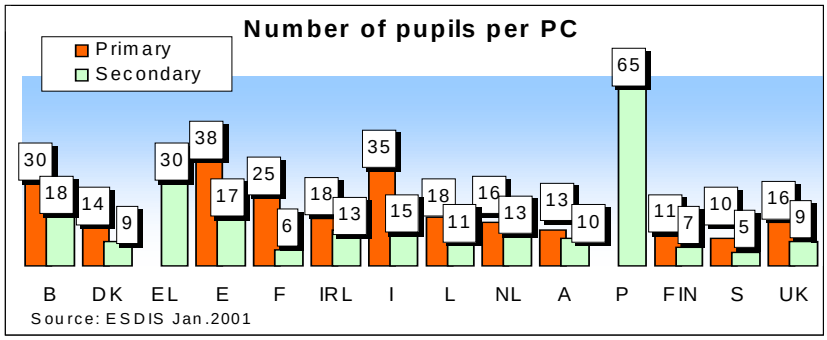
By the end of 2001, all schools must have access to the Internet and multimedia-resources. Member States are quickly approaching this target, with some already there.[3]

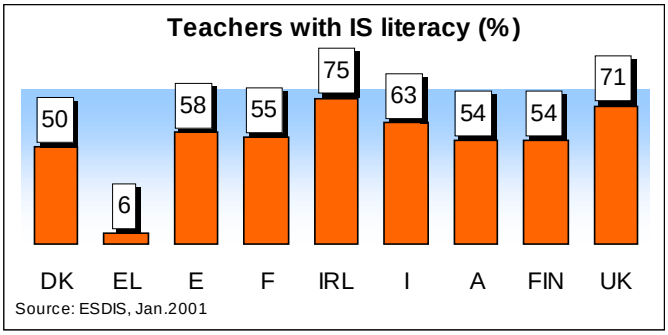


[3] This is a dramatically changing situation – up-dates are reported at the ESDIS web-site: http://europa.eu.int/comm/employment_social/soc-dial/info_soc/esdis/index.htm

… but efforts need to be accelerated to ensure integration in learning process …

The number of PCs per pupil is too low to allow sufficient integration into the learning process





A precondition for using IS tools and contents in education is the **digital literacy of teachers. Big efforts are still needed** to achieve the target that all teachers should be skilled in the use of these technologies by the end of 2002.

To further support progress, the Commission has recently launched the "***e*Learning*: Designing Tomorrow's Education" initiative***[4]. This major initiative seeks to mobilise the educational and cultural communities, as well as the economic and social players in Europe, in order to speed up changes in the education and training systems for Europe's move to a knowledge-based society. The Member States of the European Union have decided to work together to harmonise their policies in the field of educational technology and share their experience. eLearning aims to support and coordinate their efforts and to accelerate the adaptation of education and training systems in Europe.

*e*Learning is focusing on four areas:

- Improving ICT infrastructures in the education and training domains;
- Increasing training at all levels, fostering digital literacy for all and contributing to reduce the ICT skills gap;
- development of European educational multimedia content and services,
- promoting innovation at large scale and networking existing initiatives at all levels.

While most mobilised resources will be national, they are also supported by Community instruments: the Structural Funds; the education, training and youth programmes for innovative actions and exchange of good practice; the research programmes, notably the Information Society Technologies (IST) programme; the European Investment Bank and the development of partnerships between public authorities and industry.

[4] COM(2000)318 final of 24 May 2000; http://europa.eu.int/comm/education/elearning/index.html

3.2. Working in the Information Society

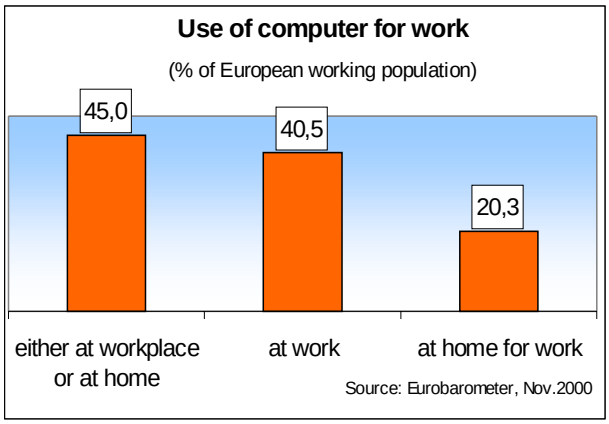
3.2.1. All workers need digital literacy

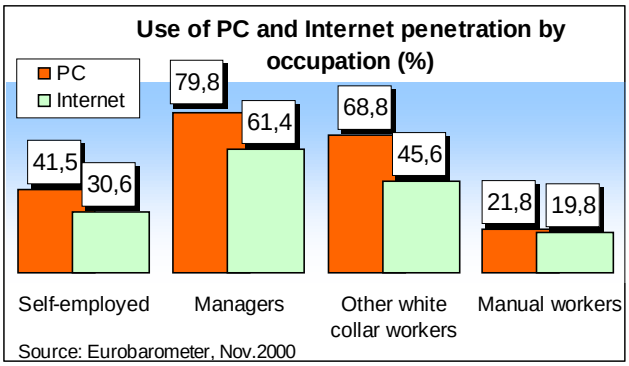
The key message of the "Strategies" was that **all jobs have to adapt** to the Information Society.

Guideline 15 of the Employment Guidelines 2001 **invites the Social Partners**, at all relevant levels, to conclude agreements, where appropriate, on lifelong learning to facilitate adaptability and innovation, particularly in the field of ICT. In this context, the conditions for giving every worker the opportunity to achieve IS literacy **by 2003** should be established.

… the impact of ICT on jobs is already stronger than expected …

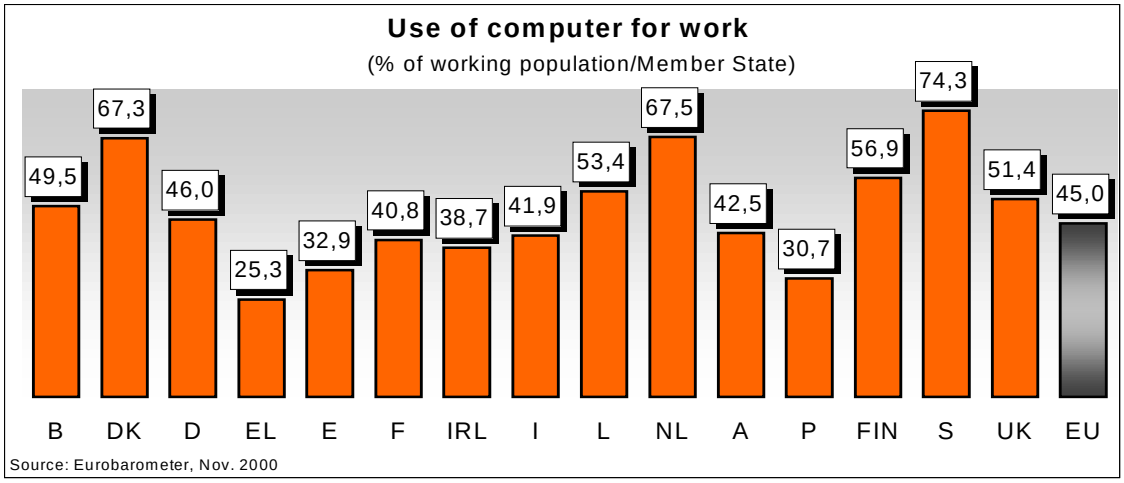
The urgency of this objective is confirmed by recent surveys. The real pace of ICT penetration in jobs across all sectors is even faster than predicted last year. Currently, **45 % of all workers** and 73,5 % of white collar workers are already using a computer **for their work**, either at the workplace and/or at home.





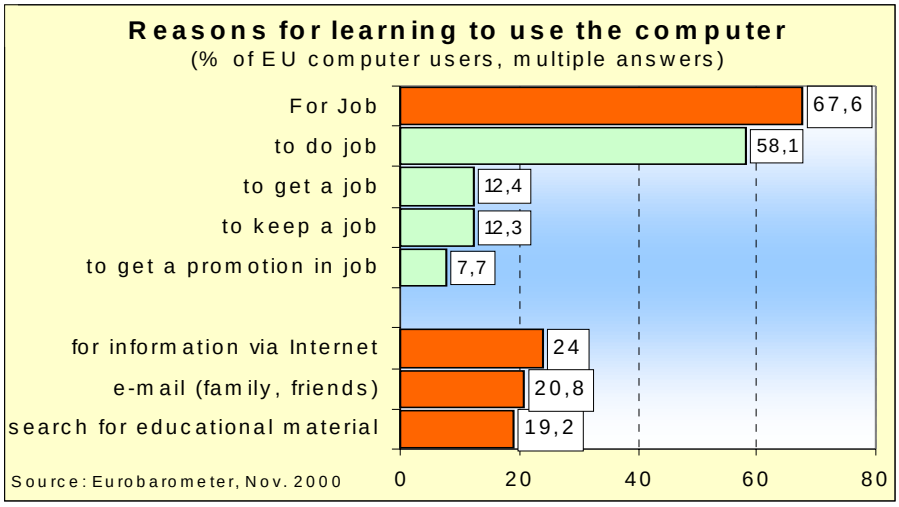
The growth of Internet penetration (35 % of all workers) signals an increasing readiness for e-commerce.

However, there is a marked divide across Member States – showing that the workforce in some Member States could be at risk of being left behind.



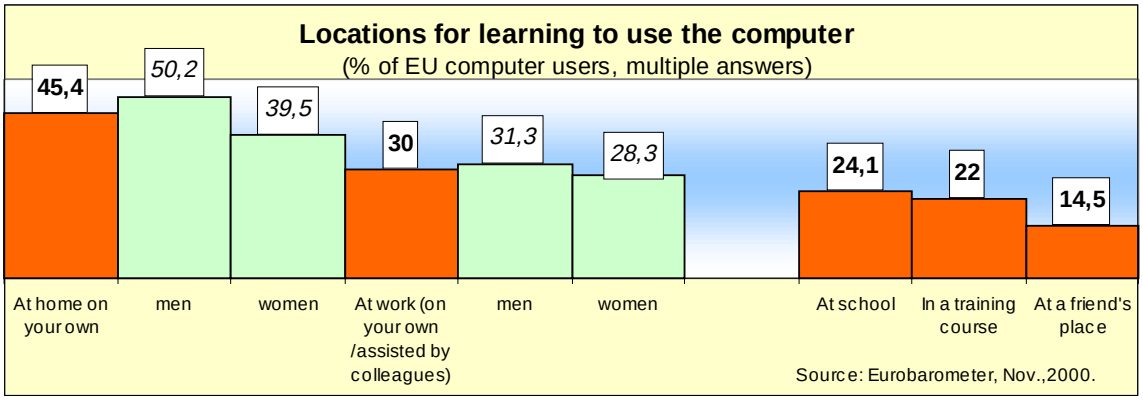
… job is most important reason for learning basic ICT skills …

To do, get, keep, or improve a **job** is **by far the most important reason to learn** to use a computer.

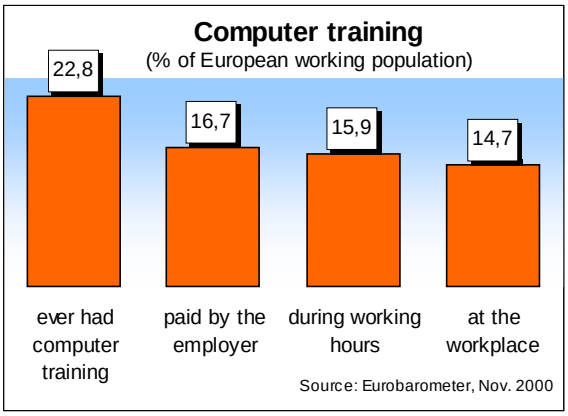


… but there is an enormous lack of training …

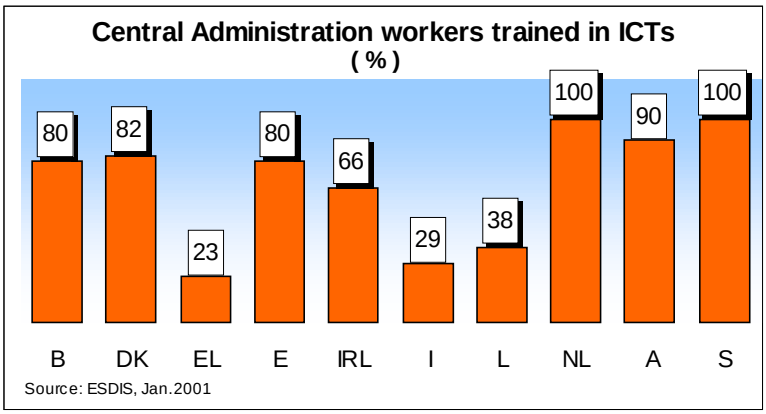
In sharp contrast to the high number of workers using computers, the proportion receiving training from employers is disappointingly low. In fact, **most workers have to learn** how to use a computer on their own.



Only 22 % of workers ever had computer training for their job. **Only 16 %** of the workforce had a **training paid by the employer**.



The need for a commitment to training in digital competence is even more urgent and broader than predicted. This reinforces the emphasis the European Employment Strategy puts on the important role of Social Partners and private enterprises to ensure life-long learning in IS literacy.

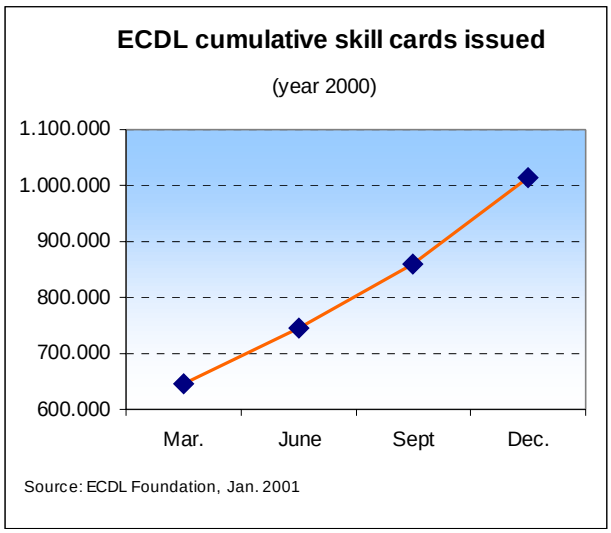


By contrast, public administrations can be taken as a model – for their high standards of employee training

… approaching a European diploma in basic Information Society skills …

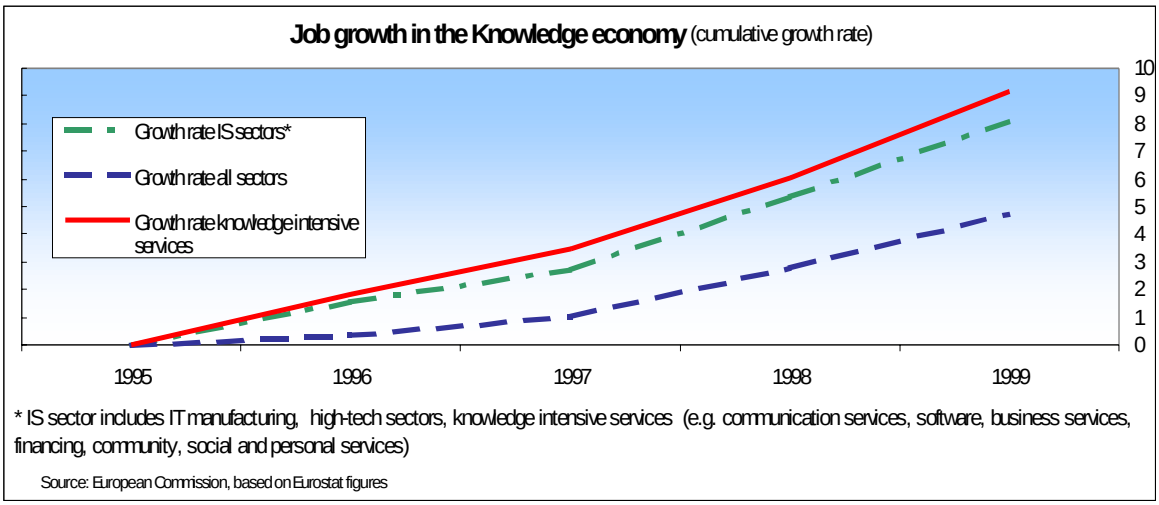
The "Strategies" argued that a European diploma in basic digital skills would stimulate up-take of certified training and its recognition across Europe. The eEurope Action Plan took-up the recommendation of ESDIS to identify a European diploma in basic digital skills and set a target for its establishment of 2001.

To meet this objective, the vast majority of Member States are promoting the European Computer Driving Licence (ECDL)[5].The strong growth of ECDL "skill cards" (the basis of the ECDL certification scheme) issued across Europe to date confirms its increasing attraction for users.



3.2.2. Jobs are growing … but there could be more

The increasing skills gap is a **barrier for** the development of European ICT sectors in the short term, of e-business and, as a consequence, **productivity and job growth in the wider economy** in the long run.



… growth not just in ICT, but in associated industries "up and down stream" …

The **spill-over of job creation** is impressively evident, for example, in the case of the packaged software industry.

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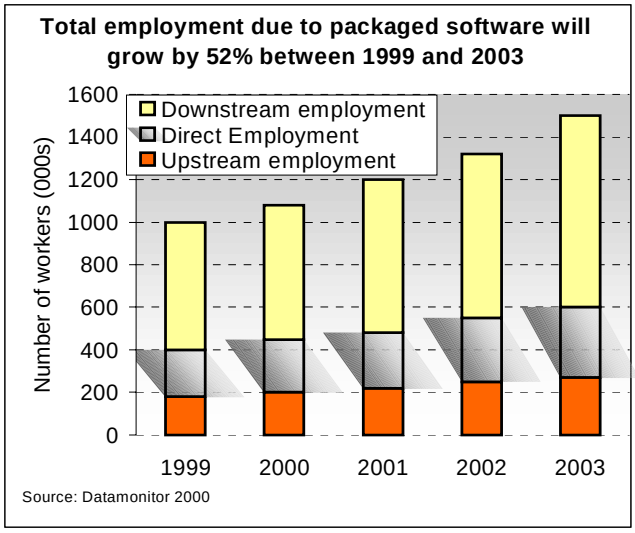
[5] see "Bilan des actions menées par la Présidence pour la mise en oeuvre du Plan d'action eEurope – Contributions des Etats membres", p. 47-48: http://www.presidence-Europe.fr/pfue/dossiers/01787/01787-fr.pdf

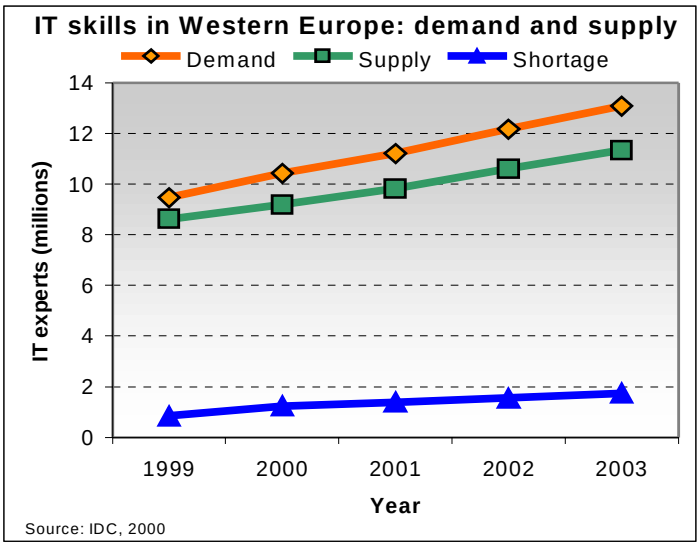
According to recent analysis from Datamonitor, each job in this industry creates nearly four jobs in the wider European economy, **both 'upstream'** (at its suppliers) **and 'downstream'** (service industries that rely on packaged software to conduct their business), with 50% growth over four years.



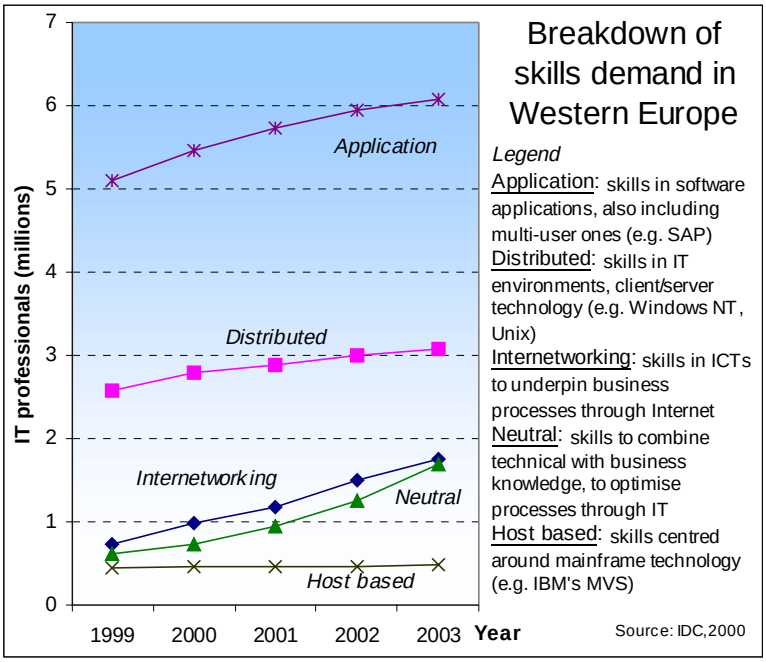
…**however job growth has not been maximised because of insufficient skills ..**

The spill-over of employment opportunities due to ICT is spread throughout the economy, across a range of sectors, occupations and skill-levels. To realise this job potential of the knowledge-based economy demands **a wide-range of skills**, including basic ICT skills and their adaptation to business (as set-out in section 3.2.1). In this respect, the conversion of skills through life-long learning is essential, particularly up-grading the competence of low-skilled people to adapt them to the job opportunities of the knowledge-based economy. Confronted with the present trend of an ageing population, continuous up-dating of skills is also needed to off-set the decreasing number of young educated entrants to the labour market.
Thus, it is **not only the shortage at the level of ICT experts which is limiting**, though it is very important.

According to a widely quoted industry study, the **overall demand for IT expert skills** in Europe is expected to grow from 10 million **to 13 million.** However, supply is not matching this demand with the risk that up to 1.7 million equivalent jobs will be unfilled.



The increased demand for experts is **highest for skills supporting ICT adoption by the wider economy** - like software applications, Internetworking and skills combining technology with business knowledge to optimise business processes through IT.



There are two levels of skill shortages: ICT technicians and ICT professionals (with a degree at university level). Higher levels of investment in human capital are needed now as there is a lead time to deliver the necessary expertise.

… Skills gap: different levels …

Skill type	*Estimated shortages*	*Actors Involved*	*Time scale to react*
ICT Technician	600,000 – 1 million	Both sides of industry; education and training institutions; professional bodies; public authorities.	6 months to 1 year (Short to Medium)
ICT Professional	300,000 - 500,000	Training institutions; higher education bodies; professional bodies; public authorities.	5+ years (Medium to Long)

… Faster reaction to technical skill shortages (2nd level) …

The **demand for technicians is** generally higher than for professionals. And as the training needed is shorter, a conversion of skills is easier, and thus **a reduction of the gap can be faster**. In this respect, businesses **themselves can contribut**e a large part of training needs. Thus, the "Strategies " called for the promotion of business driven IS courses at 2nd (technical) level and the recognition and support to participants of industry certified training schemes.

Member States are taking initiatives using all educational possibilities as set out in the following:

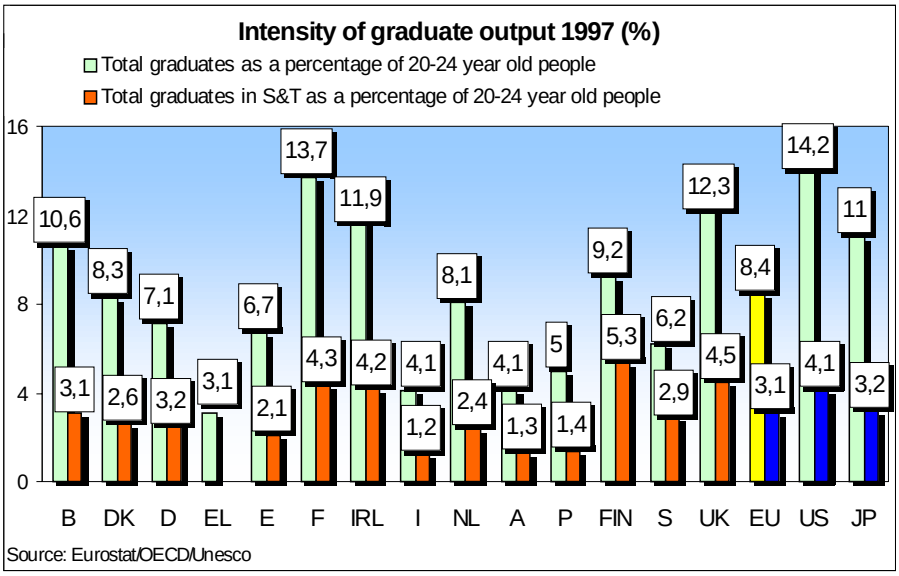
ICT training places at 2nd level

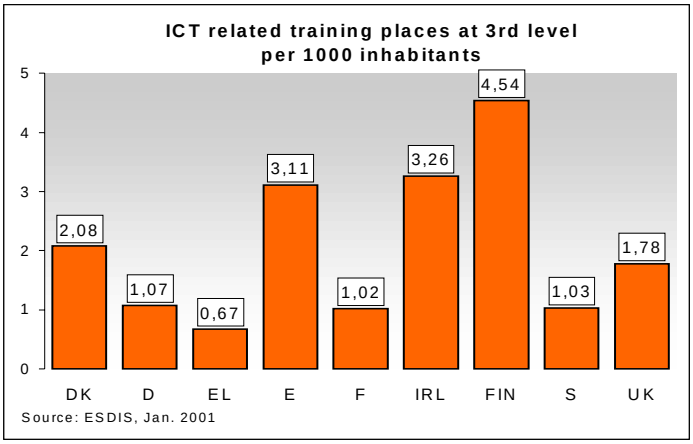
Country	*No. of places*	*Notes*
D	53.000	ICT and media training places
EL	28.600	
E	86.184	refers to 2nd level (conversion) training in ICT subjects for 35.621 employed and 50.563 unemployed (of which 40,8 % women);
F	75.000	the figure relates only to apprentices trained in centres of the chambers of commerce
IRL	7.495	specific ICT training; training including some ICT elements involved 59.992 more people
FIN	12.831	the reported number refers only to students at Polytechnics (which are at a higher level than vocational training institutions and should thus be rather considered as 3rd level); female participation 22 %
S	32.350	

Source: ESDIS, Jan.2001

… up-take in the training of professionals …

The EU has a lower share of graduates in science and technology than the US. Here again, however, the performance varies strongly among Member States, with the top countries at world level.





Against this background, the "Strategies" called for an increase in capacity and uptake of 3rd level (university) IS education, maintaining gender balance and matching industry requirements.

To facilitate this match, a consortium of leading European companies in this sector, supported by the European Commission, identified thirteen job profiles:

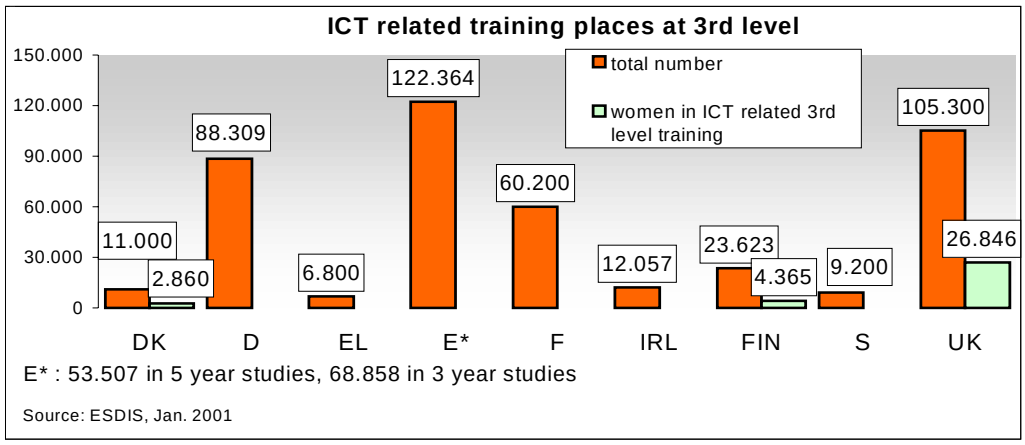
- Software architecture and design;
- Digital design;
- Systems specialist;
- Digital signal processing;
- Communications network design;
- Multimedia design;
- Software and applications development
- Radio frequency engineering;
- Data communication engineering;
- IT business consultancy;
- Technical support;
- Product design;
- Integration and test engineering.

Source: http://www.career-space.com/job_careers/index.htm

… women equally use computers at work, but are behind in IS expert jobs …

Women and men have about the same share of computer usage at work (contrasting the gap in Internet penetration in the entire population – see section 3.3.). There is also no significant evidence for gender specific differences as concerns the usage of various forms of basic applications and related computer training.

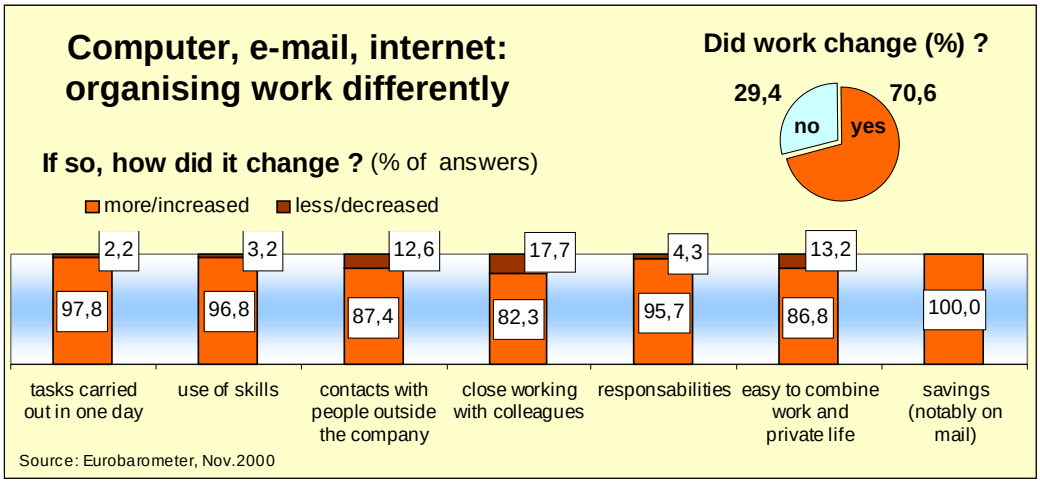
However, the picture is very different at higher levels of IS training. The proportion of women in ICT related 3rd level training is low. Still, it is 26 % in Denmark, 18 % in Finland, and 25,5 % in the UK.



3.2.3. Changes in organisation of work

…positive impact on productivity and quality of work…

The overwhelming majority of users indicate that their work has benefited from computers, e-mail and the Internet. They stress an increase in individual productivity and higher job quality, notably in terms of increased skills, contacts outside and within the company, more responsibilities and reconciliation of work with private life.



… technologies have to be supported by organisational change …

These effects of ICT on work highlight the key role of work organisation. Studies have indicated that only a tenth of all Information Society investment of business is in ICT (hardware and software), while 90 %, the vast majority, is in human resources, notably training, and changes in the organisation of work.

Real productivity gains can only be achieved when work organisation processes have been adjusted to take account of the higher level of skill and the greater flexibility made possible by the technologies. This is the most important element in terms of productivity gain. This is the area in which the labour market institutions, particularly social partners, have the greatest impact.

Thus, the key role of work organisation is stressed in the Employment Guidelines 2001. Guideline 13 invites the social partners to negotiate and implement at all appropriate levels agreements to modernise the organisation of work, including flexible working arrangements. Subjects to be covered may, for example, include the introduction of new technologies, and new forms of work (e.g. telework).

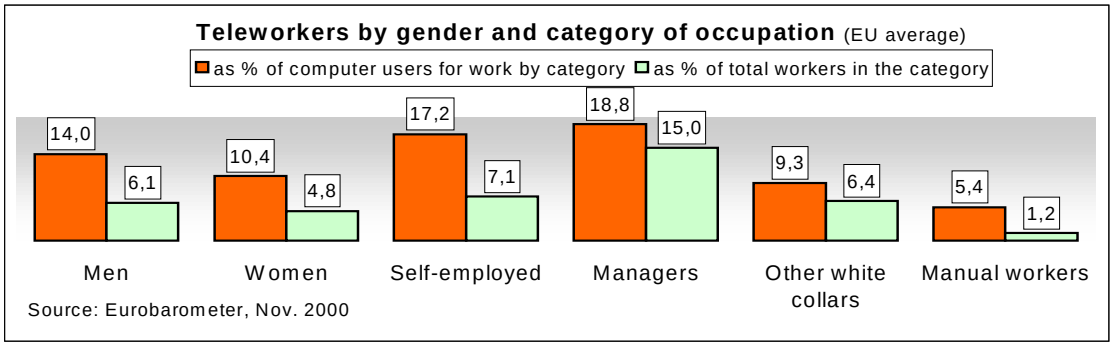
… telework is progressing and promising ...

The number of workers benefiting from telework[6] is rapidly increasing. **13 % of computer users**, or 5.6% of all workers **telework**. As stressed above, the number of

[6] The Eurobarometer survey applied the following definition: "Telework occurs when paid workers carry out all, or part of, their work away from their normal places of activity, usually from home, using

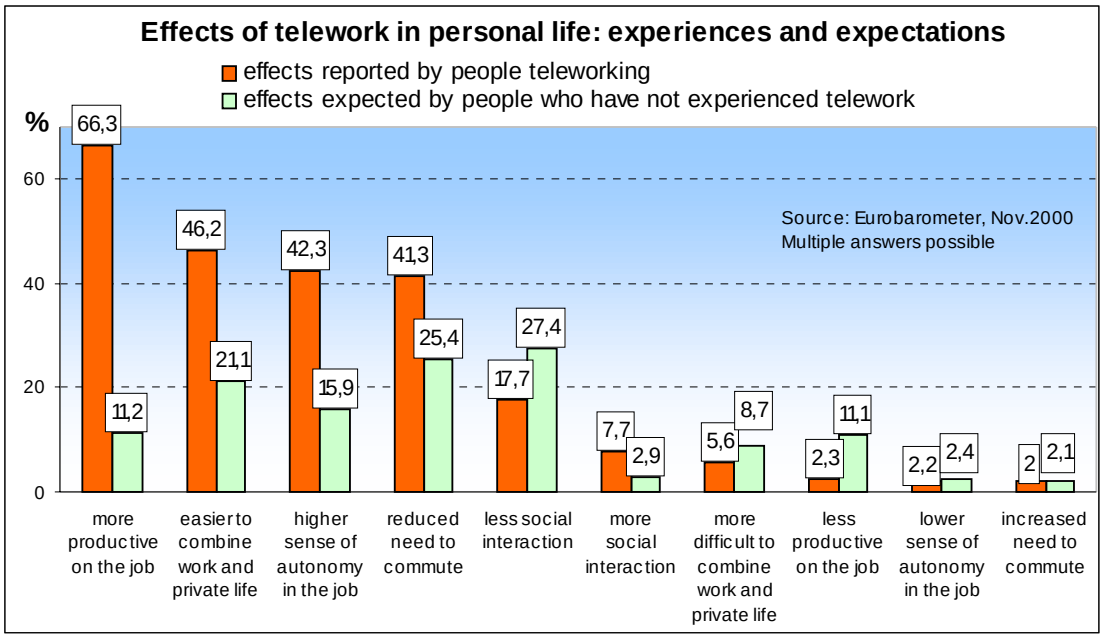
'undeclared' teleworkers will be still much higher as a **fifth of the entire workforce claims to use a computer at home for purposes of their work**.

However, there are clear differences according to gender and type of occupation: **More men** than women have the opportunity to use it. Telework is most widespread among **managers** (19% of users), who use it frequently in addition to computer use at their office, and **self-employed** (17 %). This distinction is also relevant in terms of gender, as women are still under-represented in these job categories.



…with positive effects on work and on personal life …

Teleworkers overwhelmingly indicate that this form of work enhances their **productivity and job quality,** contrasting more sceptical expectations of those who have never experienced telework. Combining work and private life is frequently regarded as a further advantage of telework, although it is important to maintain a time divide between both.



information and communication technologies". For further analysis on the situation of telework see also "Benchmarking progress on new ways of working and new forms of business across Europe", ECaTT Final Report, supported by the IST programme, August 2000

In order to facilitate the uptake of telework, social partners at European level have been consulted by the Commission with a view to a framework on telework. Further to encouraging responses, this work is expected to advance in 2001.

3.3. Preventing a "digital divide" through public access and services

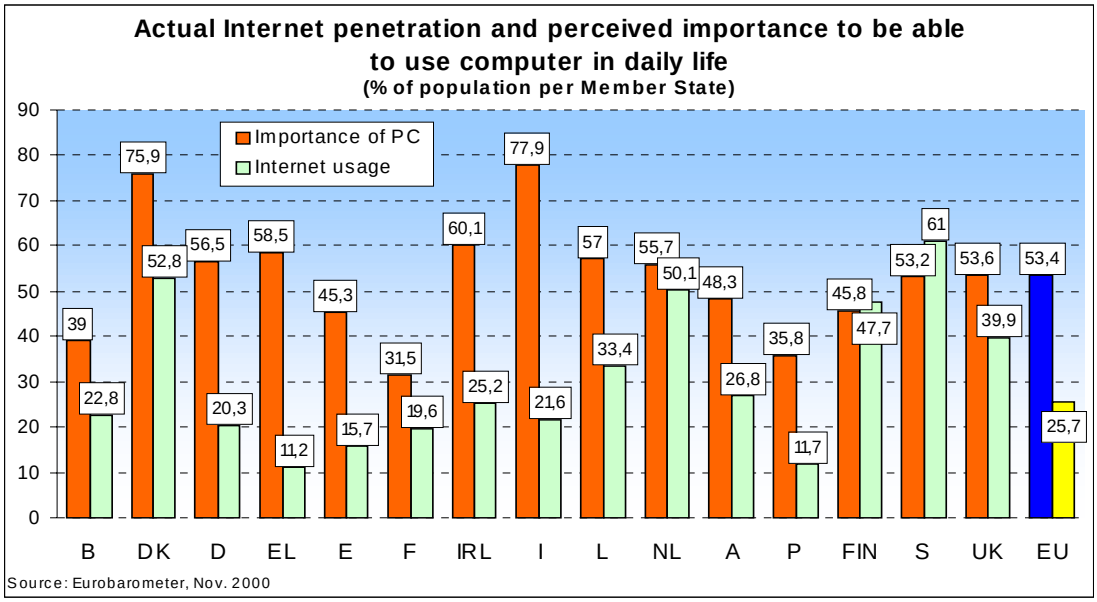
Internet access is increasingly a precondition for seizing the economic and social opportunities in the knowledge-based economy. Thus, Lisbon called for an Information Society for all.

... demand much higher than actual Internet penetration ...

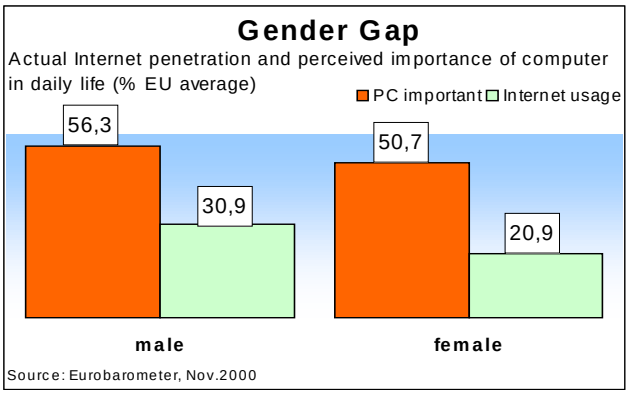
More than half of the European population considers it important to be able to use a computer in their daily life.

However, with Internet penetration at about a quarter of EU population, real access does not meet this demand. There is still a **multiple access gap – across Member States, and across gender, age, income, employment and educational levels.**

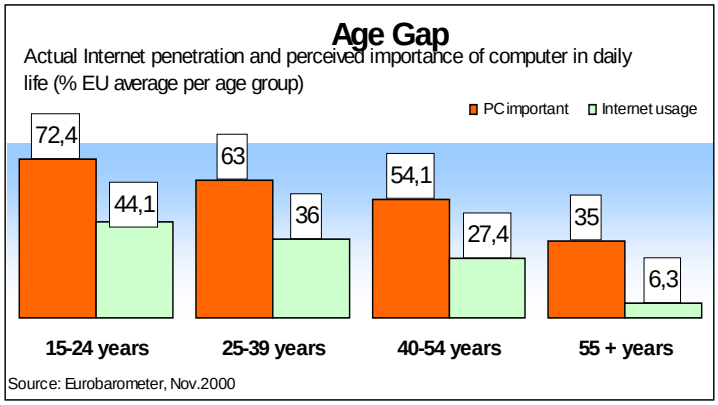
Strong differences in Internet penetration persist among **Member States**, despite all having had relative growth.



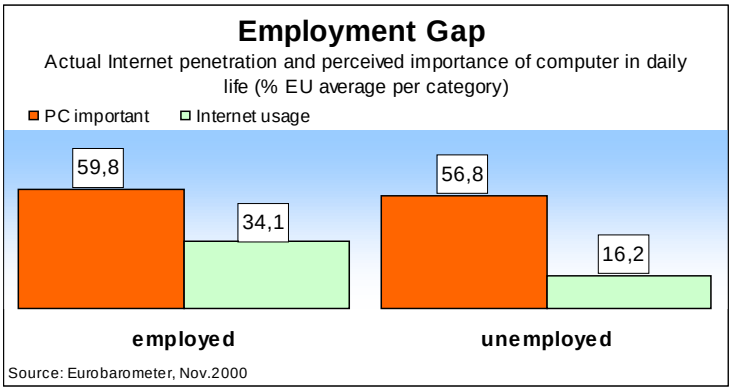
Access of **women** to the Internet has advanced since last year. Still, it is **only two thirds** that of men, while female perception of computer importance is equally high.



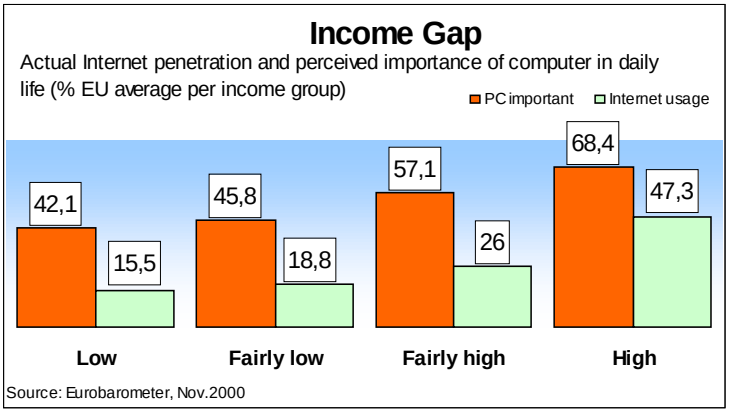
Older people have scarcely any access to the Internet despite a relatively high level of interest which confirms that older people are a key target for inclusion in the Information Society. Awareness campaigns targeted at specific digital benefits for older people will further raise their demand.



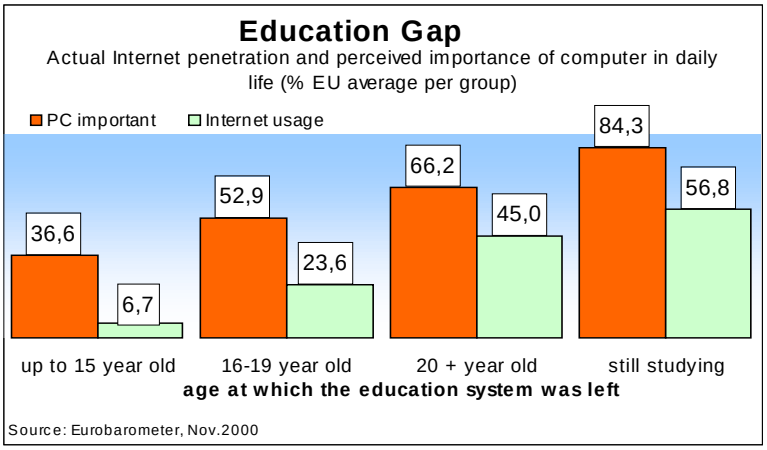
Unemployed are strongly lagging behind in internet usage which needs to be overcome as it is an increasingly important condition for their employability.



Income strongly defines access to the Internet –high income earners have three times higher usage rates.



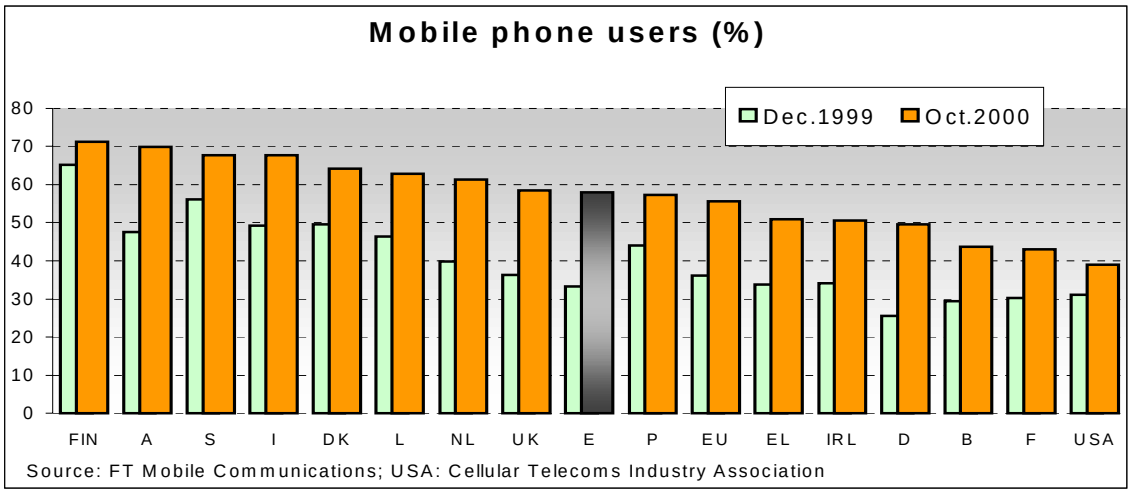
Further, **education levels** impact on the uptake of digital opportunities. Graduates have double the usage rates of non-graduates, whilst people who are still studying (including older students) are even higher users.



There is a risk that factors of exclusion would be multiplied, unless appropriate policies are put in place to ensure access for all.
Further to these findings, a **report on e-Inclusion** will be drawn up by ESDIS in 2001 stimulating enhanced co-ordination of activities to bridge the digital divide. In this context, issues of ICT accessibility, which have been highlighted in the 'Strategies JIS' in respect to the employability of people with disabilities, will also be addressed.

... mobile communications - an opportunity for cohesion ...

Mobile communications are known to be a European asset, with the EU ahead of the US in terms of penetration rates. Moreover, compared to Internet access the penetration rates of mobile technologies are less divergent across the Union, with southern Member States doing very well. Thus, mobile communications and services could contribute to a more cohesive Information Society.



3.3.1. Incentives to enhance access and digital literacy

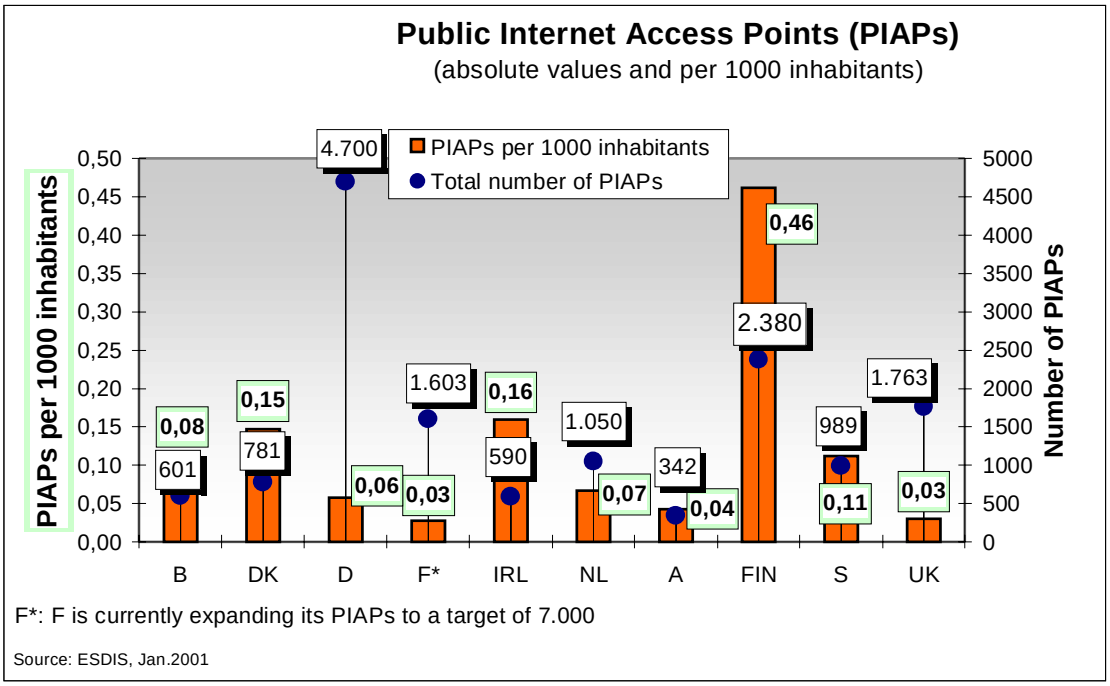
To ensure access and digital literacy for all, the "Strategies" emphasised the role of public Internet access points (PIAP). They should be set-up in all communities, supported by on-site training.

… public Internet access points – broad initiatives, but not yet convenient access …

National governments, regional, and local authorities, and private-public initiatives, are developing innovative approaches to set up PIAPs: in government offices (Ireland); libraries (Sweden, Belgium, Denmark, Finland, France, UK); post offices (France), employment services (France, UK, Austria), centres for the elderly (Spain), or in the streets of a city (Austria/Vienna; Italy/Bologna).[7]

[7] see also "Bilan des actions menées par la Présidence pour la mise en oeuvre du Plan d'action eEurope – Contributions des Etats membres", p. 49-51:
http://www.presidence-europe.fr/pfue/dossiers/01787/01787-fr.pdf

However, the average number of inhabitants per PIAP is in several cases still above 10.000. Thus, further efforts will be needed to ensure convenient access in all neighbourhoods.



F*: F is currently expanding its PIAPs to a target of 7.000

Source: ESDIS, Jan.2001

Whilst public locations are necessary to ensure accessibility across the territory, home usage is still mostly favoured by citizens, with about 75 % of all Internet users accessing it (also) from home.

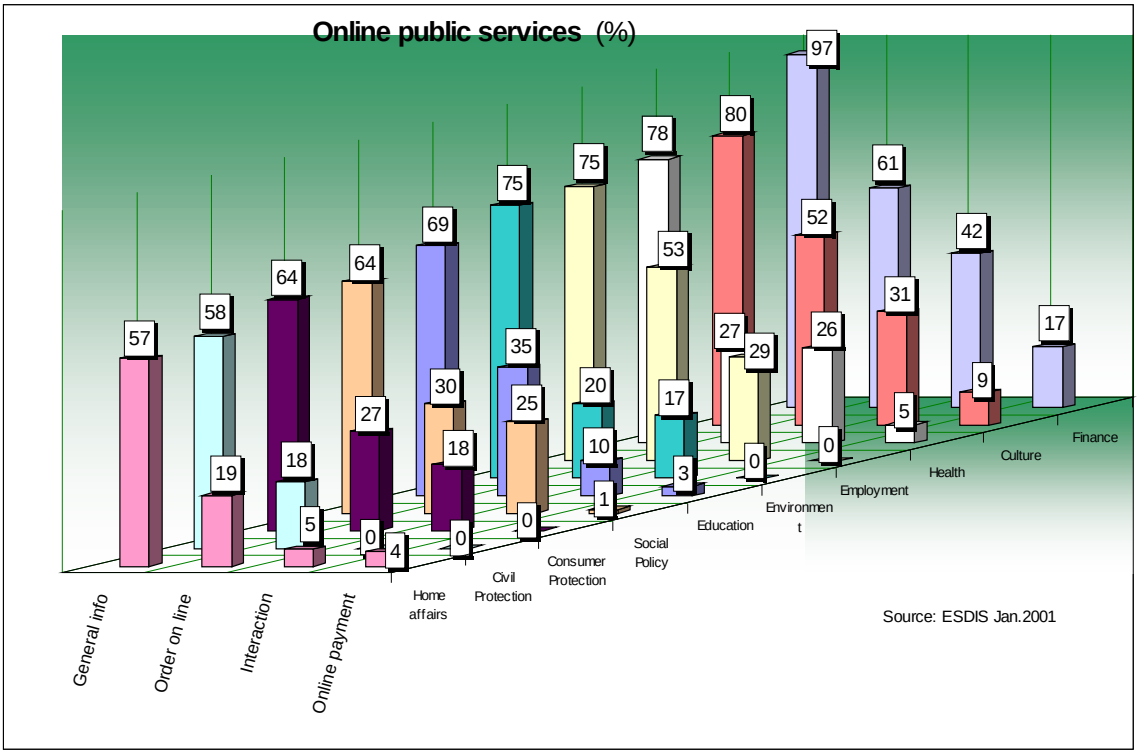
Thus, **incentives for citizens themselves to acquire and/or use IS equipment** are a further component encouraged by the "Strategies". Some Member States have launched initiatives in this respect, e.g. the "Computers within reach" initiative in the UK providing recycled computers to low income families; different forms of tax relief as a means of increasing access to computers and of encouraging access to broadband networks in Sweden; or a flat rate charge for internet access, recently in Spain. In this context, PIAP serve also as springboard for individual access, by raising awareness and providing training. In France 2500 PIAP with targeted on-site training facilities are being set-up, while creating 4.000 new jobs for multimedia trainers.

3.3.2. Provide appropriate public content and services

The attraction of the Information Society, particularly for disadvantaged groups, depends on the on-line content and services. The "Strategies" highlighted the catalyst role of public services in this respect and recommended exploiting their positive impact on employment and social life.

… much general information, but little interactivity …

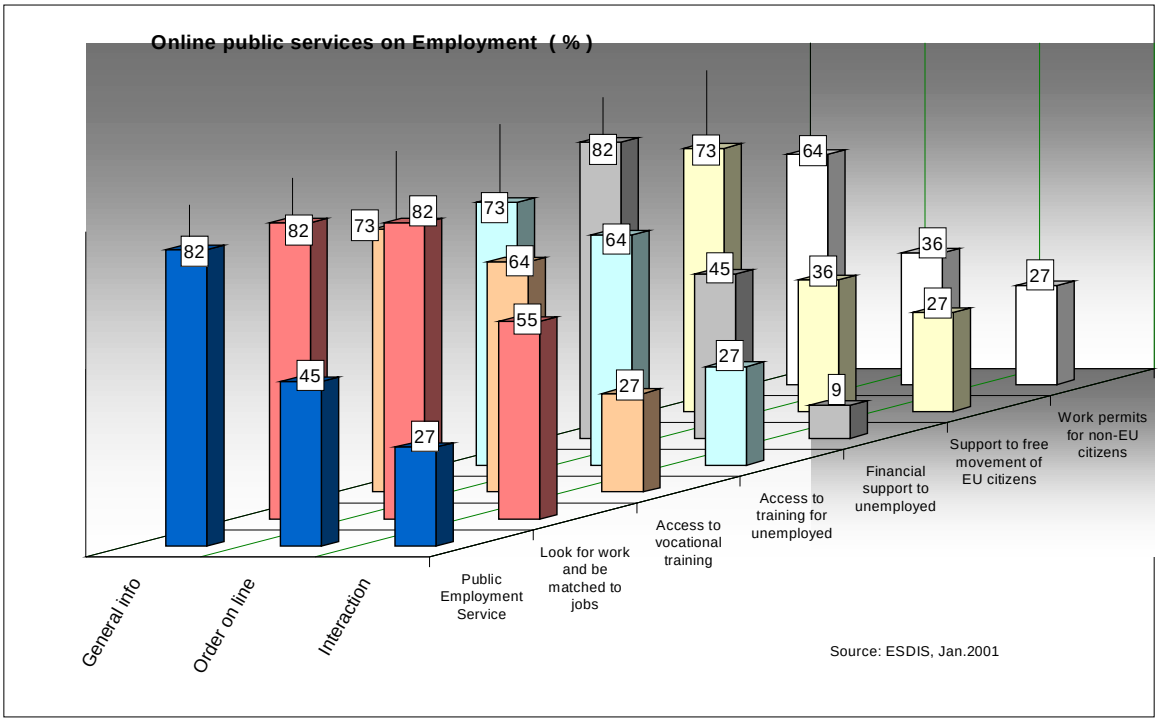
Public authorities across Europe are rapidly taking up this challenge. However, much public content on the web is limited to general information. On-line interaction, the real digital advantage for citizens, is still confined to few areas, with tax and cultural services ahead.



In the table above, each column represents the weighted EU average of on-line services. Four modalities are distinguished: provision of general information only; online ordering service possible; full interaction between citizen / businesses and public service providers; online payment.
For instance, in the area of "Home Affairs", the columns show the percentage of how many services, out of a series (issuing of passports, of driving licences, of residence permits, payment of police fees) are offered online, in the different forms (from "General information", 57%, to "Online payment", 4%).

… on-line services in employment and social policies still scarcely realised …

Interactivity needs to be particularly expanded in areas relevant for employment and social protection. Surveys indicate demand: for example, about a third of unemployed computer users are already looking for a job on the internet.
This is an important area of opportunity for public employment services.



… government sites in place, but response to demands of citizens and business still to be developed …

All national governments have established Internet sites. However, the "Strategies " emphasised the need for user-friendly central sites with cross-references to all relevant services, organised in a way that responds to the demand of citizens rather than administrative structures. In this respect, further efforts are needed both with respect to "Citizens' sites" and "One Stop Internet Shops for Business".

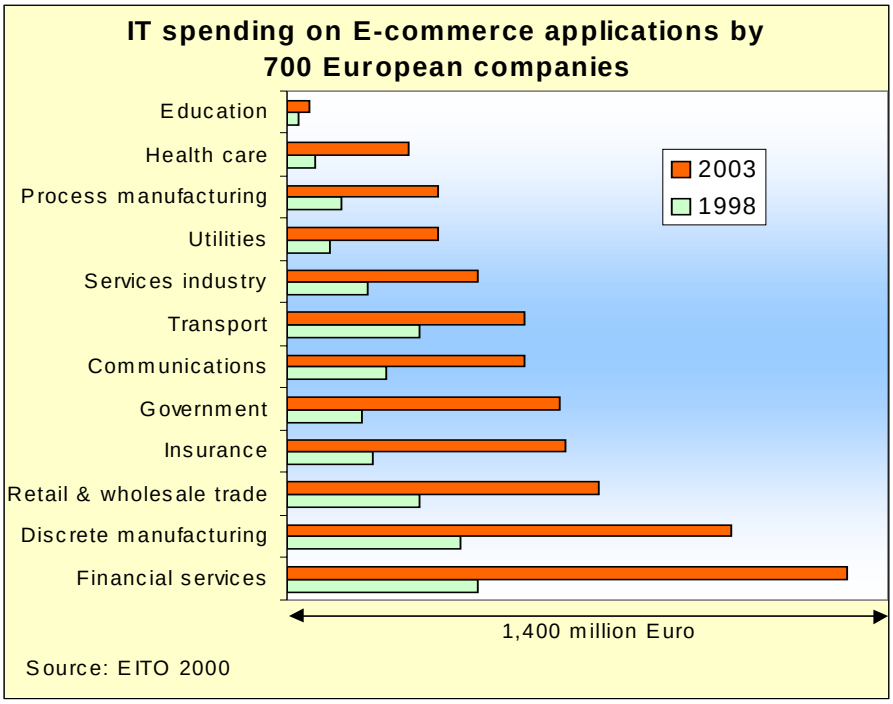
Country	*Central government site*	*Citizen's site at central government level*	*One Stop Internet Shop for Business*
Austria	www.austria.gv.at	www.austria.gv.at	
Belgium	www.fgov.be www.belgium.fgov.be		
Denmark	www.danmark.dk	www.danmark.dk www.oresunddirekt.com	www.indberetning.dk
Finland	www.vn.fi	www.opas.vn.fi www.lomake.vn.fi	
France	www.internet.gouv.fr	www.service-public.fr	www.service-public.fr www.finances.gouv.fr
Germany	www.bundesregierung.de	www.bund.de	www.mittelstand-ans-netz.de
Greece	www.infosociety.gr www.government.gr	www.government.gr	
Ireland	www.irlgov.ie	www.oasis.gov.ie	www.basis.ie
Italy	www.governo.it		www.acquisti.tesoro.it
Luxembourg	www.gouvernement.lu/	www.gouvernement.lu/	
Netherlands	www.overheid.nl		
Portugal	www.primeiro-ministro.gov.pt	www.infocid.pt	www.iapmei.pt
Spain	www.map.es	www.igsap.map.es/docs/cia/cives/cives.htm www.igsap.map.es/guia/guia1.htm	www.igsap.map.es/docs/cia/cives/empresas.htm
Sweden	www.regeringen.se	www.sverigedirekt.riksdagen.se	www.foretagarguiden.gov.se
United Kingdom	www.open.gov.uk		www.dti.gov.uk www.companies-house.gov.uk www.businessadviceonline.org www.tradepartners.gov.uk/

"*e*Government" is an important part of the *e*Europe Action Plan and progress on specific government services will be benchmarked there.

3.4. Enterprise in the Information Society

… e-business booms in traditional sectors …

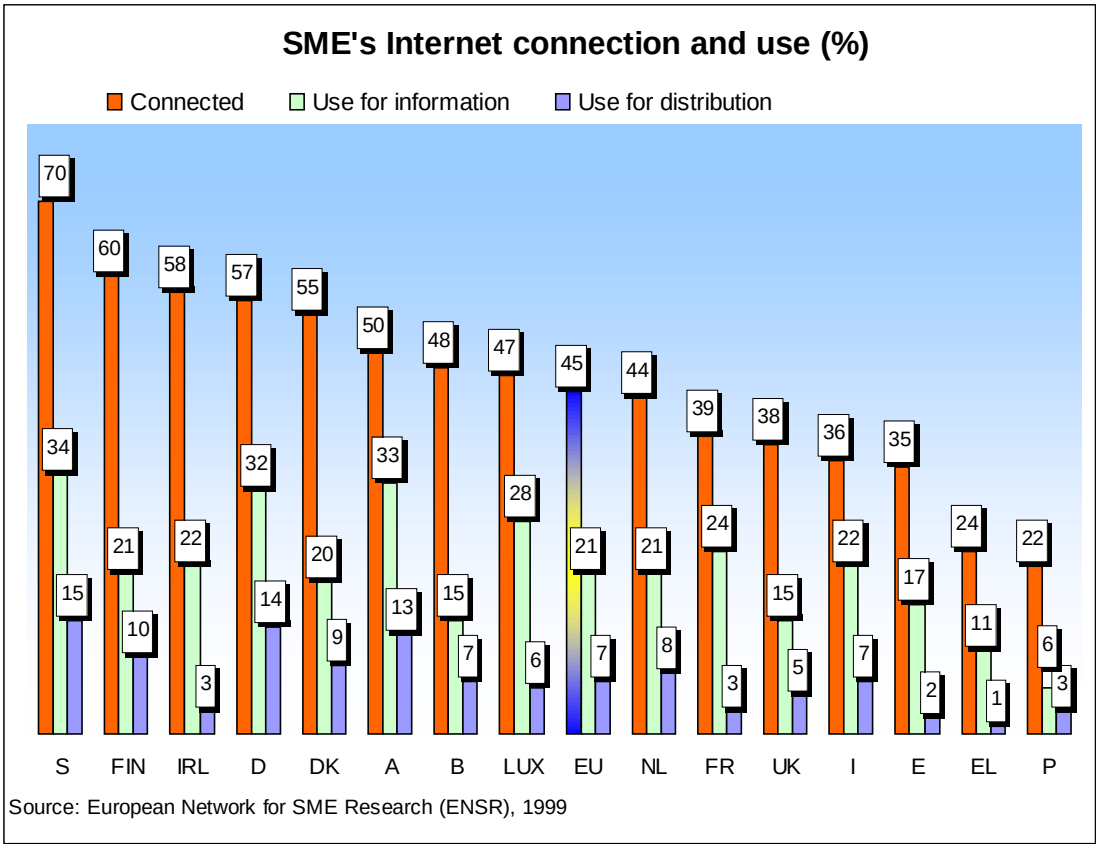
The spill-over from producers of communication tools, software and contents (short-term growth) to the wider economy (medium-term growth potential) becomes more and more evident as **big traditional industries are rapidly taking-up e-business**.



… slow adaptation of SMEs is still hampering IS job opportunities …

However, seizing the **full employment and growth potential** of the Information Society will largely **depend on** the up-take by **small and medium sized enterprises** (SMEs). Thus, the "Strategies" put an emphasis on the access of SMEs to the digital market place, and called for the promotion of innovation and competitiveness.

Only half of European SMEs are connected to the Internet. Still more striking, **only a small proportion actually use it for e-commerce**.



The Employment Guidelines 2001 reinforce the emphasis on innovative entrepreneurship exploiting new technologies to mobilise the job creation potential of the knowledge-based society.[8] Further, the Commission has followed-up issues identified by the "Strategies" enhancing the digital performance of enterprises particularly through the Communications "Challenges for enterprise policy in the knowledge-driven economy"[9] and "Innovation in a knowledge-driven economy "[10], the Staff Working Paper on "Benchmarking Enterprise Policy"[11], and the "Go-Digital" initiative for SMEs[12].

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8 see Guideline Nr. 10, but also Guidelines Nr. 13-15 encouraging adaptability of businesses and their employees

9 COM(2000)256 final of 26.04.2000, preparing the Council Decision (2000/819/EC) of 20 December 2000 on a multiannual programme for enterprise and entrepreneurship, and in particular for small and medium-sized enterprises (SMEs) (2001-2005) OJ L 333/84, 29.12.2000

10 COM (2000) 567

11 SEC(2000) 1841 - 27.10.2000

12 The IST Workprogramme 2001 will contain Action Lines covering “Go Digital” objectives. The Multi-annual Programme for Enterprise and Entrepreneurship (see above) will complement the 'Go Digital' initiative through benchmarking and the spread of best practice. A promotion campaign on e-business will be launched in parallel.

4. CONCLUSIONS

This report confirms that the "Strategies for Jobs in the Information Society" addressed the most pressing issues for ensuring that citizens benefit from the employment and social opportunities of the knowledge-based economy.

It provides evidence for an increasing, positive impact of the Information Society in terms of productivity, employment growth, and quality of work.

- The usage of ICT by the workforce proves to be more advanced than expected a year ago. However, the lack of structured training in IS competencies provided to the workforce is striking. This confirms the need for Social Partners and enterprises to ensure that every worker has the opportunity to achieve IS literacy, as called for in the Employment Guidelines.

- ICT usage enhances the productivity and quality of work. To realise this potential, not only the deployment of technologies, but also the adaptation of work organisation is essential. In this respect, increasing the opportunities for telework is particularly promising.

- Skills shortages are still a dramatic barrier for development. Though progress in adapting education and training to the Information Society is visible, it has to be accelerated to achieve the targets. The shortage of IS experts is of concern particularly given the lead time for supply through specialised education and conversion of skills.

- Whilst the evidence also shows that the development of ICT is creating job opportunities throughout the economy, across all sectors, occupations and skills-levels, in many cases, a lack of basic skills is holding back job creation. This highlights the need for a full implementation of the European Employment Strategy in order to make the most of the employment potential of the Information Society.

- As the Information Society expands, the risk of a "digital divide" is evident. Initiatives to enhance public access and to exploit digital opportunities in public services have been launched, but are not matching yet the demands of citizens.

- Though efforts to respond to the "Strategies" are visible across Europe, the report still underlines strong differences among Member States in seizing the job opportunities of the Information Society.

This report sets a baseline for regularly benchmarking the objectives established at European level, and provides empirical evidence for their further development in the framework of the European Employment Strategy.[13]
The issues of a digital divide will be further elaborated in a report on e-Inclusion to be presented in 2001.

[13] Development of data sources in order to improve the effectiveness of benchmarking is being put in place.