## Statistics <br> in focus

## INDUSTRY, TRADE AND SERVICES

POPULATION AND SOCIAL CONDITIONS

SCIENCE AND TECHNOLOGY

## $17 / 2006$

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## Contents

E-skills at a glance.
1
Digital literacy is a problem for a large part of the population .. 2

Only a few people attend computer training courses ...... 3

The level of e-skills is particularly low in societal groups at risk for employment 4

Digital literacy mainly acquired and maintained via informal channels.

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## How skilled are Europeans in using computers and the Internet?

One of the most remarkable developments over the past ten years has probably been the way in which the Internet - previously known only to a small circle of scientists and university students - has infiltrated, and become an important part of, our everyday lives. The Internet is not only changing our way of communicating with friends, relatives and colleagues, but also our way of working and shopping. Many traditional services are slowly being replaced by their electronic or online counterparts: banking, ticket sales, travel and holiday information, contacts with public administration, etc.
This rapid growth faces a barrier, however; namely the capability of citizens or the labour force to understand and use the applications or, more generally, their ability to use Information and Communication Technologies.
This edition of Statistics in Focus explores the results of the 2005 Community survey on ICT usage in households and by individuals to gain insight into the current state of Europeans' e-skills.

## E-skills at a glance

By way of introduction, Graph 1 shows the skill levels of different subgroups of the population (for more information on the skill levels, see Methodological Notes):

- a first observation is that $37 \%$ have no computer skills whatsoever, while only $22 \%$ seem to be acquainted with a wide range of computer activities.
- as expected, educational level is an important factor: while only $11 \%$ of people with a higher education have no basic e-skills, this applies to more than 60\% of people not educated beyond lower secondary level.
- as regards age, more than 3 out of 4 people over 65 years of age have no computer skills at all, but even among young people aged 16 to 24 , about $10 \%$ appear to have no basic e-skills.

Graph 1 - Individuals' level of basic computer skills (2005), EU-25 (as a percentage of the total number of individuals aged 16 to 74)


Source: Eurostat, Community survey on ICT usage in households and by individuals

## Digital literacy is a problem for a large part of the population

Digital literacy involves the confident and critical use of Information Communication Technology (ICT) for work, leisure and communication. It is underpinned by basic ICT skills: the use of computers to retrieve, assess, store, produce, present and exchange information, and to communicate and participate via the Internet. The focus of the 2005 survey is on basic skills in computer and Internet use. These e-skills can cover a wide range of activities from simply opening or moving files, to creating and managing complex computing services.
As seen in Graph 1, a considerable proportion of European citizens have no computer skills at all. The fact
that $37 \%$ of the population lack basic computer skills is not so surprising when considering Graph 2 , which shows that more than one in three (34\%) of EU residents have never used a computer, ranging from $8 \%$ in the Nordic countries Sweden, Denmark and Iceland to $65 \%$ in Greece. It is clear that a lack of e-skills will prevent these people from participating fully in the information society.
In the same graph, we see that a majority of $57 \%$ do not regularly use the Internet. About 43\% have never used it (not in the graph). In Greece, only 18\% of people aged 16 to 74 are regularly online (i.e. on average at least once a week).

Graph 2 - Individuals not using computers or the Internet (2005)
(as a percentage of the total number of individuals aged 16 to 74)


Source: Eurostat, Community survey on ICT usage in households and by individuals.
Notes: Data on computer use not available for Belgium (percentage not regularly using the Internet: 47\%) ; no data available for France and Malta.

Taking a closer look at the groups of society at risk of exclusion (Graph 3), we observe - as expected - that digital literacy is a particular problem for the older generation ( $61 \%$ of people over 55 years of age have never used a computer), people who don't have an upper secondary education ( $57 \%$ have never used a computer, compared to 'only' $25 \%$ and $8 \%$ for mid- and higher levels of education respectively) and the unemployed (36\%). On the other hand, the gender gap (not shown in the graph) is relatively small, with $37 \%$ of women having no computer experience, compared to $31 \%$ of men.
Combining age groups with level of education, the differences are even clearer, as almost $80 \%$ of people over the age of 55 with a lower-level education have never used a computer.
When comparing economically prosperous regions with relatively poorer regions (i.e. regions where per capita GDP is below 75\% of the EU average), we see that in the
latter the proportion of the population which has never used a computer is almost double that in the more prosperous regions not covered by Objective 1.

Conclusions similar to those for computer use can be drawn for Internet use. As mentioned above, more than half the citizens of Europe do not regularly use the Internet. Again, older people or those with a lower-level education are far less likely to use the Internet. But even in the middle age-group of persons aged 25 to 54, more than half belongs to the 'offline population'. $77 \%$ of people with a lower-level education do not regularly use the Internet, meaning that specific programmes for e-learning or jobsites aimed at those with a lower-level education may reach only a quarter of their potential target users. Similarly, we see that most unemployed persons (68\%) are not regularly online.


Source: Eurostat, Community survey on ICT usage in households and by individuals.

## Only a few people attend computer training courses

Graph 4 below shows that more than half the population (aged 16 to 74 ) have never taken a course (of at least three hours) on any aspect of computer use. Only a minority (of about 11\%) have taken a course in the last year, and the course taken by about half the $42 \%$ who have taken a course at all was more than 3 years ago. Although the level of participation in computer training differs across countries - which can be explained by the level of participation in computer use (see Graph 2) - the pattern is not very different when comparing the countries.

Taking a closer look at the data (not shown), participation appears to be highest amongst those with a higher-level education - these people may have easier access to computer training because of the nature of their jobs - and amongst young people aged 16 to 24 - probably in the framework of a formal education programme.
However, computer training is only one way to improve digital literacy. Informal methods such as assistance from colleagues or self-study will be added to the discussion in the last section of this Statistics in Focus.

Graph 4 - Most recent training course (of at least 3 hours) on computer use (2005)
(as a percentage of the total number of individuals aged 16 to 74)


Source: Eurostat, Community survey on ICT usage in households and by individuals.
Notes: (i) EU-25 excluding BE, FR, IT, MT and NL. (ii) Italy (IT): 'Between 1 and 3 years ago' includes 'More than 3 years ago' (not available separately)

## The level of e-skills is particularly low in societal groups at risk for employment

Table 1 lists, for a selected set of computer and Internet activities, the percentage of computer users and Internet users respectively who have already carried out these activities. Although the selected activities cannot cover all basic skills, the set gives an insight into people's abilities. From the table, we see that slightly more than half of those who have ever used a computer have had some experience with spreadsheets, while $13 \%$ have already done some computer programming. Unemployed people do not score better than employed people for any skills, but in most cases the differences are minor.

Looking at Internet skills, Internet users are relatively unlikely to have carried out a wide range of basic Internet
activities. Indeed, while most people know how to use search engines or how to send attachments with an email message, only a few are familiar with using services for making phone calls over the Internet, using peer-to-peer networks or creating webpages. The type of connection available at home seems to play a role, as the skills level for Internet activities necessitating a higher bandwidth such as telephoning over the Internet or file sharing via peer-to-peer networks - is much lower among those without a broadband connection at home. It is equally likely, however, that the skills level determines whether a household signs up for broadband.

Table 1 - Computer and Internet users' skills for carrying out selected activities (2005), EU-25 (as a percentage of individuals aged 16 to 74 who have already used a computer (top part) or the Internet (bottom part)

|  | All individuals (age 16-74) | Broadband at home | No broadband at home | Student | Employee, self-employed | Unemployed | Retired, inactive |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Computer skills |  |  |  |  |  |  |  |
| Use a mouse to launch programs such as an Internet browser or word processor | 94 | 97 | 96 | 98 | 95 | 95 | 87 |
| Copy or move a file of folder | 78 | 85 | 80 | 91 | 81 | 71 | 58 |
| Use copy and paste tools to duplicate or move information on screen | 72 | 81 | 75 | 87 | 75 | 66 | 52 |
| Use basic arithmetic formulae (add, substract, multiply, divide) in a spreadsheet | 52 | 61 | 53 | 65 | 55 | 46 | 33 |
| Compress files | 38 | 51 | 37 | 50 | 41 | 31 | 20 |
| Write a computer program using a specialised programming language | 13 | 19 | 12 | 22 | 14 | 12 | 7 |
| Internet skills |  |  |  |  |  |  |  |
| Use a search engine to find information | 88 | 93 | 89 | 94 | 90 | 84 | 77 |
| Send an email with attached files | 74 | 83 | 74 | 79 | 77 | 61 | 59 |
| Post messages to chatrooms, newsgroups or an online discussion forum | 33 | 41 | 28 | 61 | 30 | 33 | 18 |
| Use the Internet to make phone calls | 12 | 17 | 8 | 17 | 11 | 9 | 7 |
| Use peer-to-peer file sharing for exchanging movies, music, etc. | 16 | 25 | 11 | 31 | 15 | 16 | 6 |
| Create a web page | 15 | 20 | 12 | 24 | 14 | 13 | 8 |

Source: Eurostat, Community survey on ICT usage in households and by individuals.
Note: Data for EU-25, excluding BE, CZ, ES, FR, IE, MT and NL.

The information concerning the six computer skills listed in Table 1 has been used to regroup individuals into four categories (for more information, see the Methodological Notes on page 7). In Table 2 on the next page, important differences across countries can be noted. As already observed in Graph 1, 37\% of all individuals aged 16 to 74 have no computer skills, but across Europe this ranges from only one in ten people in Denmark, Sweden and Norway to almost two out of three (65\%) in Greece. In Luxembourg and Iceland, people appear to be fairly well able to use computers with $42 \%$ in the group with high basic computer skills. Among the new Member States, Estonia and Slovenia are doing better than the EU average.

In most countries, the gender aspect of e-skills is not very relevant, but as one would expect, the generational aspect plays an important role. In about half the countries, e-skills appear to be particularly rare among those aged 55 to 74 but even in the age-group 25 to 54 - people who are typically in the labour force - basic computer skills are a problem for many. In this age band, on average $29 \%$ of Europeans lack basic skills, but in Greece, Italy, Cyprus,

Lithuania and Hungary, this applies to $50 \%$ or more of middle-aged people. On the other hand, we see that this group of people is well skilled in using computers in Denmark, Luxembourg, Iceland and Norway where more than 4 out of 10 persons can be classified in the group 'high level of basic computer skills'. The highest skill levels can of course be found among younger people, although in Greece and Hungary about one in three young people has no basic computer skills. Not surprisingly, skill levels are also relatively good for those with a higher education and for students.

As seen in Table 1 above, skills level does not vary much between employed and unemployed computer users. However, unemployed persons score much worse when considering the total group of unemployed persons (Table 2), mainly because an important part is hardly using computers (see also Graph 3). More than two in three unemployed persons are unskilled in computer use in Latvia, Lithuania and Hungary, but in Denmark, Germany, Sweden and Norway, this applies to very few jobless people.

Table 2 - Individuals' level of basic computer skills (2005)
(as a percentage of the total number of individuals aged 16 to 74)

|  | EU-25 | DK | DE | EE | EL | IT | CY | LV | LT | LU | HU | AT | PL | PT | SI | SK | FI | SE | UK | IS | NO |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | All individuals aged 16-74 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| No basic computer skills | 37 | 10 | 21 | 37 | 65 | 59 | 54 | 44 | 53 | 20 | 57 | 31 | 46 | 54 | 39 | 29 | 33 | 11 | 25 | 14 | 10 |
| Low level | 15 | 13 | 23 | 16 | 12 | 5 | 9 | 20 | 10 | 13 | 7 | 12 | 19 | 9 | 12 | 17 | 17 | 20 | 16 | 11 | 23 |
| Medium level | 26 | 37 | 34 | 18 | 14 | 18 | 22 | 24 | 19 | 25 | 16 | 26 | 22 | 16 | 22 | 35 | 37 | 37 | 29 | 33 | 32 |
| High level | 22 | 39 | 22 | 29 | 9 | 19 | 15 | 11 | 18 | 42 | 20 | 31 | 13 | 21 | 27 | 19 | 13 | 32 | 31 | 42 | 35 |
|  | Men |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| No basic computer skills | 34 | 9 | 18 | 35 | 63 | 53 | 54 | 43 | 52 | 10 | 58 | 26 | 46 | 50 | 38 | 28 | 32 | 11 | 23 | 13 | 9 |
| Low level | 15 | 13 | 22 | 14 | 12 | 5 | 10 | 22 | 11 | 12 | 6 | 12 | 18 | 10 | 12 | 17 | 14 | 18 | 14 | 11 | 19 |
| Medium level | 23 | 27 | 29 | 19 | 15 | 17 | 19 | 22 | 17 | 22 | 13 | 24 | 20 | 16 | 21 | 30 | 36 | 28 | 22 | 24 | 25 |
| High level | 29 | 50 | 31 | 32 | 10 | 25 | 17 | 13 | 20 | 55 | 23 | 38 | 15 | 24 | 29 | 25 | 19 | 44 | 40 | 52 | 47 |
|  | Women |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| No basic computer skills | 39 | 11 | 24 | 40 | 67 | 64 | 55 | 45 | 53 | 29 | 57 | 35 | 47 | 57 | 41 | 30 | 34 | 12 | 26 | 15 | 11 |
| Low level | 16 | 14 | 25 | 17 | 12 | 5 | 9 | 19 | 9 | 14 | 8 | 13 | 19 | 8 | 11 | 17 | 20 | 22 | 17 | 11 | 27 |
| Medium level | 29 | 47 | 38 | 18 | 14 | 18 | 24 | 26 | 21 | 28 | 19 | 28 | 24 | 16 | 23 | 39 | 38 | 46 | 35 | 42 | 39 |
| High level | 15 | 28 | 13 | 25 | 8 | 13 | 12 | 10 | 17 | 30 | 17 | 24 | 10 | 19 | 26 | 14 | 7 | 20 | 22 | 31 | 23 |
|  | Aged 16 to 24 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| No basic computer skills | 10 | 0 | 1 | 13 | 32 | 28 | 18 | 2 | 11 | 2 | 34 | 5 | 6 | 13 | : | 3 | 3 | 1 | 7 | 9 | 0 |
| Low level | 13 | 3 | 15 | 18 | 22 | 5 | 14 | 23 | 9 | 4 | 7 | 9 | 20 | 10 | : | 14 | 20 | 10 | 10 | 3 | 10 |
| Medium level | 37 | 39 | 45 | 24 | 26 | 32 | 37 | 47 | 37 | 30 | 24 | 33 | 44 | 29 | 28 | 48 | 56 | 43 | 29 | 32 | 43 |
| High level | 40 | 59 | 38 | 45 | 20 | 35 | 32 | 28 | 44 | 64 | 35 | 54 | 29 | 48 | 67 | 34 | 21 | 46 | 54 | 56 | 47 |
|  | Aged 25 to 54 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| No basic computer skills | 29 | 3 | 10 | 29 | 59 | 50 | 51 | 38 | 50 | 14 | 50 | 21 | 45 | 49 | : | 21 | 23 | 5 | 17 | 7 | 4 |
| Low level | 17 | 12 | 25 | 18 | 14 | 6 | 11 | 26 | 13 | 13 | 9 | 14 | 22 | 11 | : | 20 | 19 | 19 | 17 | 10 | 24 |
| Medium level | 29 | 39 | 38 | 21 | 17 | 21 | 24 | 25 | 20 | 27 | 19 | 30 | 22 | 17 | 26 | 39 | 42 | 38 | 33 | 36 | 31 |
| High level | 25 | 45 | 27 | 32 | 10 | 23 | 14 | 11 | 17 | 45 | 22 | 35 | 11 | 23 | : | 20 | 16 | 37 | 34 | 47 | 41 |
|  | Aged 55 to 74 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| No basic computer skills | 65 | 27 | : | : | 93 | 87 | 88 | 83 | 90 | 45 | 84 | 67 | 81 | : | : | 73 | 68 | 27 | : | 36 | 30 |
| Low level | 14 | 21 | 23 | 9 | 3 | 3 | 3 | 8 | 4 | 17 | 3 | 10 | 10 | 4 | : | 12 | 12 | 26 | 17 | 20 | 30 |
| Medium level | 15 | 33 | 22 | : | 3 | 6 | 6 | 7 | 4 | 17 | 6 | 15 | 6 | 6 | : | 13 | 17 | 32 | 20 | 27 | 26 |
| High level | 7 | 18 | : | : | 1 | 4 | 2 | 2 | 3 | 21 | 6 | 9 | 2 | : | : | 3 | 4 | 15 | : | 17 | 14 |
|  | Lower educational level |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| No basic computer skills | 61 | 18 | 30 | 49 | 89 | 80 | 83 | 63 | 66 | 33 | 83 | 56 | 61 | 69 | : | 59 | 47 | 24 | 54 | 21 | 36 |
| Low level | 13 | 18 | 24 | 16 | 5 | 4 | 4 | 15 | 5 | 17 | 5 | 10 | 10 | 10 | : | 13 | 17 | 23 | 20 | 16 | 26 |
| Medium level | 17 | 31 | 30 | 15 | 5 | 9 | 8 | 16 | 14 | 21 | 7 | 17 | 19 | 12 | : | 20 | 28 | 32 | 15 | 34 | 21 |
| High level | 10 | 33 | 16 | 19 | 1 | 7 | 5 | 6 | 15 | 29 | 5 | 17 | 10 | 9 | : | 8 | 8 | 21 | 11 | 29 | 17 |
|  | Middle educational level |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| No basic computer skills | 29 | 8 | 19 | 40 | 51 | 37 | 46 | 46 | 59 | 11 | 40 | 25 | 48 | 8 | 33 | 20 | 35 | 11 | 19 | 13 | 9 |
| Low level | 19 | 14 | 25 | 19 | 18 | 6 | 14 | 23 | 13 | 11 | 9 | 14 | 22 | 8 | 16 | 20 | 19 | 23 | 17 | 11 | 28 |
| Medium level | 30 | 40 | 36 | 17 | 21 | 27 | 27 | 22 | 16 | 32 | 23 | 29 | 20 | 27 | 25 | 40 | 34 | 37 | 32 | 34 | 32 |
| High level | 23 | 38 | 20 | 23 | 11 | 30 | 13 | 9 | 11 | 45 | 27 | 32 | 9 | 57 | 26 | 20 | 12 | 29 | 33 | 42 | 31 |
|  | Higher educational level |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| No basic computer skills | 11 | 3 | 12 | 24 | 23 | 20 | 20 | 16 | 18 | 4 | 17 | 11 | 11 | 5 | : | 7 | 13 | 2 | 7 | 4 | 1 |
| Low level | 12 | 7 | 16 | 8 | 19 | 6 | 12 | 18 | 8 | 6 | 7 | 9 | 17 | 6 | : | 10 | 14 | 12 | 10 | 3 | 13 |
| Medium level | 35 | 40 | 35 | 23 | 30 | 28 | 36 | 40 | 31 | 27 | 29 | 31 | 41 | 27 | 30 | 41 | 52 | 41 | 36 | 32 | 36 |
| High level | 41 | 50 | 37 | 45 | 28 | 46 | 32 | 27 | 42 | 63 | 46 | 48 | 31 | 63 | 61 | 42 | 21 | 45 | 47 | 62 | 49 |
|  | Students |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| No basic computer skills | 4 | 0 | 0 | : | 19 | 14 | 5 | 1 | 1 | 0 | 19 | 2 | 2 | 1 | : | 1 | 2 | 1 | : | 6 | 0 |
| Low level | 11 | 3 | 13 | : | 22 | 5 | 13 | 17 | 5 | 3 | 9 | 4 | 17 | 5 | : | 10 | 21 | 9 | : | 2 | 10 |
| Medium level | 41 | 38 | 44 | 29 | 33 | 37 | 41 | 49 | 42 | 30 | 29 | 28 | 47 | 29 | : | 51 | 58 | 43 | : | 31 | 49 |
| High level | 43 | 59 | 42 | 44 | 26 | 44 | 41 | 32 | 52 | 67 | 43 | 67 | 34 | 65 | 73 | 38 | 19 | 47 | 62 | 61 | 41 |
|  | Unemployed |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| No basic computer skills | 39 | 12 | 16 | : | 56 | 62 | 42 | 66 | 71 | 36 | 67 | 32 | 53 | 57 | : | 38 | 43 | 10 | : | 34 | 13 |
| Low level | 19 | 14 | 27 | : | 11 | 4 | 9 | 19 | 11 | 18 | 7 | 19 | 24 | 11 | : | 26 | 21 | 21 | : | 11 | 30 |
| Medium level | 25 | 36 | 38 | : | 20 | 17 | 32 | 13 | 13 | 26 | 10 | 26 | 17 | 19 | : | 24 | 26 | 33 | : | 21 | 25 |
| High level | 17 | 37 | 18 | : | 13 | 17 | 16 | 3 | 5 | 21 | 16 | 22 | 6 | 13 | : | 12 | 10 | 36 | : | 34 | 32 |
|  | Employees, self-employed persons |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| No basic computer skills | 25 | 5 | 10 | : | 55 | 44 | 50 | 32 | 43 | 12 | 44 | 17 | 37 | 46 | : | 19 | 24 | 7 | 16 | 9 | 5 |
| Low level | 16 | 13 | 24 | : | 16 | 7 | 11 | 25 | 13 | 12 | 9 | 12 | 23 | 11 | : | 19 | 18 | 20 | 14 | 12 | 23 |
| Medium level | 31 | 40 | 38 | 22 | 18 | 23 | 24 | 29 | 22 | 27 | 22 | 31 | 26 | 18 | : | 41 | 42 | 39 | 33 | 36 | 32 |
| High level | 28 | 42 | 28 | 35 | 11 | 26 | 16 | 14 | 21 | 50 | 26 | 39 | 14 | 24 | : | 22 | 16 | 34 | 37 | 44 | 40 |
|  | Non-manual workers |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| No basic computer skills | : | : | : | 14 | 36 | : | 29 | 16 | 21 | : | 26 | : | 28 | 23 | : | 10 | : | : | 10 | 5 | : |
| Low level | : | : | : | 13 | 19 | : | 13 | 23 | 11 | : | 11 | : | 21 | 10 | : | 18 | : | : | 11 | 8 | : |
| Medium level | : | : | : | 26 | 27 | : | 34 | 40 | 31 | : | 28 | . | 32 | 25 | 34 | 46 | : | : | 37 | 38 | : |
| High level | : | : | : | 47 | 18 | : | 24 | 21 | 36 | : | 35 | : | 19 | 42 | 44 | 26 | : | : | 42 | 49 | : |
|  | Manual workers |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| No basic computer skills | : | : | : | 44 | 81 | : | 85 | 53 | 67 | : | 73 | : | 55 | 72 | : | 40 | : | : | 28 | 18 | : |
| Low level | : | : | : | 22 | 10 | : | 7 | 27 | 15 | : | 6 | : | 26 | 12 | : | 20 | : | : | 19 | 21 |  |
| Medium level | : | : | . | 15 | 6 | : | 6 | 15 | 12 | : | 11 | . | 15 | 11 | : | 28 | : | : | 25 | 30 |  |
| High level | : | : | : | 19 | 3 | : | 2 | 4 | 5 | : | 9 | : | 4 | 6 | : | 12 | : | : | 28 | 32 |  |

Source: Eurostat, Community survey on ICT usage in households and by individuals.
Note: (i) Data not available for BE, CZ, ES, FR, IE, MT, NL and FI. (ii) 'No basic computer skills' includes individuals who have never used a computer.

17/2006 - Industry,trade and services/Population and social conditions/Science and technology - Statistics in focus

Still in Table 2, we see that in most countries, within the group of employed persons, manual workers are about three times more likely to have no computer skills than non-manual workers. This phenomenon can partly be explained by the fact that non-manual workers are more likely to need computers at work. In 2005 the share of
employed persons in the European Union using computers in their normal work routine exceeded $50 \%$ for the first time (see Graph 5), and the figure has been growing at an annual rate of 3 to 4 percentage points in recent years.

Graph 5 - Employed persons' use of computers in their normal work routine (2005)
(as a percentage of the total number of employed persons)


Source: Eurostat, Community survey on ICT usage and e-commerce in enterprises.
Note: EU-25 includes estimates for FR and MT for 2005 ; data for FR, MT and IS: 2003 ; data for BG and RO: 2004.

## Digital literacy mainly acquired and maintained via informal channels

When asked how they obtained their basic computer or Internet skills (see Table 3), two methods - also the most informal or ad-hoc - appear to be by far the most common: informal assistance from colleagues, relatives and friends (relevant for $59 \%$ of those who have already
used a computer) and self-study via learning-by-doing (relevant for 58\%).

The same conclusion can be drawn for each of the societal groups shown in the table.

Table 3 - Way of obtaining e-skills (2005)
(as a percentage of individuals aged 16 to 74 who have already used a computer; the breakdown by level of basic computer skills is expressed as a percentage of individuals in the various skills levels)

|  | All computer users | Gender |  | Educational level |  |  | Degree of urbanisation |  |  | Level of basic computer skills |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | Men | Women | Lower | Middle | Higher | Urban | Middle | Rural | Low | Medium | High |
| Formalised educational institution (school, college, university, etc.) | 31 | 29 | 33 | 34 | 28 | 35 | 30 | 31 | 35 | 16 | 30 | 47 |
| Training courses in adult education centres, on own initiative | 15 | 13 | 18 | 11 | 15 | 19 | 15 | 15 | 16 | 10 | 17 | 20 |
| Training courses in adult education centres, on demand of employer | 23 | 21 | 25 | 12 | 23 | 32 | 24 | 23 | 20 | 14 | 25 | 29 |
| Self-study using books, cd-roms, etc. | 28 | 35 | 21 | 22 | 27 | 37 | 29 | 29 | 27 | 10 | 26 | 48 |
| Self-study (learning by doing) | 58 | 64 | 52 | 52 | 57 | 65 | 60 | 59 | 54 | 38 | 61 | 76 |
| Informal assistance from colleagues, relatives or friends | 59 | 58 | 59 | 58 | 59 | 59 | 60 | 62 | 55 | 61 | 61 | 60 |
| Some other way | 4 | 4 | 3 | 5 | 3 | 3 | 4 | 4 | 4 | 4 | 3 | 4 |

[^0]Notes: Data based on 16 countries for which comparable information is available, namely DE, EL, IT, CY, LV, LT, LU, HU, PL, PT, SI, SK, SE, UK, IS and NO.

For women, training in a more formal setting (e.g. a school or adult education centre) seems to be slightly more common than for men, while for the latter, selfstudy is more common. When considering educational levels, we see that training courses in adult education centres (whether or not at the request of the employer) are far less popular among people with a lower level of education than among those with a higher education. This could be explained by personal thresholds to enroll in courses, or more limited access via employers.
Access to more formal computer or Internet training does not appear to be an issue for those living in rural areas. Indeed, Table 3 shows no significant differences between this group and those living in more densely populated areas.

Finally, Table 3 shows significant differences in the relation between the level of basic computer skills and the way the e-skills were obtained. Those with relatively high skills seem to have obtained them mainly in an independent way, via self-study - especially in the sense of learning-by-doing - but also via books or cdroms. With the exception of informal assistance, all channels appear to be picked up by relatively few persons with lower computer skills. The limited popularity of courses or books within this group could be an explanation for their low level of basic computer skills, but the reason may well lie in the fact that low skills levels lead to fears or confidence problems with signing up for a computer course.

## ESSENTIAL INFORMATION - METHODOLOGICAL NOTES

## Abbreviations

EU or EU-25 (European Union); BE (Belgium), CZ (Czech Republic), DK (Denmark), DE (Germany), EE (Estonia), EL (Greece), ES (Spain), FR (France), IE (Ireland), IT (Italy), CY (Cyprus), LV (Latvia), LT (Lithuania), LU (Luxembourg), HU (Hungary), MT (Malta),
NL (Netherlands), AT (Austria), PL (Poland), PT (Portugal),
SI (Slovenia), SK (Slovakia), FI (Finland), SE (Sweden),
UK (United Kingdom);
BG (Bulgaria), RO (Romania);
IS (Iceland), NO (Norway).

## Symbols

":" confidential, or unavailable

## Aggregation of results

An EU-25 aggregate is only calculated if the available countries represent at least $55 \%$ of the number of Member States and at least $60 \%$ of the EU population.

Community Survey on ICT usage in households and by individuals (2005)
Survey period: in general, the second quarter of 2005.
Sample size: 123941 households and 181703 individuals.
Scope (individuals): individuals aged 16 to 74 years;
Scope (households): households with at least one member in the age group 16 to 74 .
Level of basic computer skills:
The respondent's ICT competences are measured using a selfassessment approach, i.e. the respondent simply indicates whether he/she is able to carry out specific tasks related to computer use, without these skills being assessed, tested or actually observed. Studies have indicated that people's perception of their computer skills is a very good indicator of their actual abilities as measured through observations or survey items that measure users' actual knowledge of computer related terms and functions. This means that self-reported ratings of digital literacy can be used as a proxy for actual skill ratings (see for instance Hargittai, E. (2005). Survey Measures of Web-Oriented Digital Literacy. Social Science Computer Review, Vol. 23 No. 3, Fall 2005, p371-379).

The six computer-related items listed in Table 1 were used to recode the respondents into levels of skills: persons who ticked 1 or 2 of the computer-related items were coded as low level of basic computer skills', persons who ticked 3 or 4 items were coded as 'medium level' while those who ticked 5 or all activities were labelled as 'high level of basic computer skills'.
Highest completed level of education:

- Lower: ISCED 0, 1 or 2 (no formal education, primary education or lower secondary education);
- Mid: ISCED 3 or 4 (upper secondary or post-secondary non-tertiary education);
- Higher: ISCED 5 or 6 (tertiary programmes which normally require successful completion of ISCED 3 or 4, or second stage tertiary education leading to an advanced research qualification).
Community Survey on ICT usage and E-commerce in enterprises (2005)

Survey period: in general, the first quarter of 2005.
Sample size: 117000 enterprises.
Scope: enterprises with 10 or more persons employed in selected activities (see below).
Activity coverage: enterprises classified in the following sections and groups of the NACE Rev. 1.1 classification: section D (manufacturing); section F (construction); section G (distributive trades); groups 55.1 and 55.2 of section H (hotels and accommodation); section I (transport, storage and communication); section K (real estate, renting and business activities) and groups 92.1 and 92.2 of section O (motion picture, video, radio and television activities).
For a full overview of NACE, see RAMON, Eurostat's classification server: http://europa.eu.int/comm/eurostat/ramon.

## References

This Statistics In Focus is partly based on the paper "ICT skills measurement in Eurostat's Information Society Statistics", submitted for the conference Knowledge Economy - Challenges for Measurement, held in Luxembourg on 8-9 December 2005.
For further information on the methodology of the Community surveys, see Eurostat's Methodological Manual for statistics on the Information Society (available from the Eurostat website).

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[^0]:    Source: Eurostat, Community survey on ICT usage in households and by individuals.

