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Broadband and ICT Access and Use by Households and Individuals

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**DIRECTORATE FOR SCIENCE, TECHNOLOGY AND INDUSTRY
COMMITTEE FOR INFORMATION, COMPUTER AND COMMUNICATIONS POLICY**

Working Party on the Information Economy

BROADBAND AND ICT ACCESS AND USE BY HOUSEHOLDS AND INDIVIDUALS

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FOREWORD

This report was presented to the Working Party on the Information Economy at its meeting in May 2007 as part of its work for the 2008 Seoul Ministerial on the Future of the Internet Economy, and for the *OECD Information Technology Outlook 2008*. It was recommended to be made public by the Committee for Information, Computer and Communications Policy in October 2007.

The report was prepared by Pierre Montagnier of the OECD Secretariat under the supervision of Graham Vickery, OECD Secretariat, as part of work on the economic and social impacts of ICTs and broadband. It is published under the responsibility of the Secretary-General of the OECD.

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SUMMARY

The Internet, and its most recent expression, broadband, is now part of everyday life for a billion people, but billions are still excluded from this major technological advance. This paper focuses on how ICTs, the Internet and broadband diffusion and use among households and individuals are sources of significant change and how these technologies have, and will continue to have, major economic and social impacts. The indicators and discussion presented in this paper shed light on selected areas of household and individual use. Other areas such as consumer-to-consumer electronic commerce, e-government, the blurring frontier between private and work life due to ICT, and associated impacts on production, organisation and productivity, are not the focus of this analysis.

Overall an increasing share of household income is devoted to communication. This is a general trend across OECD countries although there are differences among them (Section 1). Personal computers, the Internet and broadband have reached relatively high diffusion levels across and within OECD countries but again there are significant differences among them. This has driven major changes in people's lives as these technologies are pervasive and powerful enabling tools. Focusing mainly on the Internet and broadband, diffusion and usage patterns are analysed by selected socio-economic variables, tracking pervasiveness and variety of use and the impact of broadband on patterns and frequency of use (Section 2).

With increasing frequency of Internet use there are clear signs of changes in time allocation patterns, with broadband having a significant effect on these patterns (Section 3). Finally, different rates of PC and Internet diffusion across different populations have resulted in digital divides (haves versus have-nots), and, as shown in previous OECD analysis, as the simple digital access divide declines a digital use divide is increasingly significant. How has this evolved? This second level use divide persists beyond connectedness and is increasingly important with increasing broadband access (Section 4). Technology use and learning play a vital role, and background and socio-economic status have a direct bearing on how people use information technology in general, and broadband in particular. Some policy implications and proposals for future work conclude this paper.

BROADBAND AND ICT ACCESS AND USE BY HOUSEHOLDS AND INDIVIDUALS¹

Introduction

The development of the “information infrastructure” and information and communication networks in the 1990s was designed to ensure access to “information highways”. Over the past decade, the policy focus shifted first to the more complex notion of the “information society”, and progressively from readiness to diffusion to use, and is now shifting from use to the impacts of use. In the meantime, broadband² access has surged, providing new paths for innovative Internet use.

The Internet, and its most recent expression, broadband, is now part of everyday life of a billion of people, but billions are still excluded from this major technological evolution. This paper focuses on how the diffusion and use ICT, and the Internet and broadband in particular, among households and individuals, are sources of significant change and will continue to have major economic and social impacts. The paper focuses on household and individual use and does not examine business or government use, new developments in particular sectors, ICT pricing issues or, for example, new collaborative mechanisms being developed in areas such as user-created content (see OECD, 2007).

The first section of the paper explores household expenditures on communications to set the scene for the following more detailed analysis. The second section describes the diffusion of, and access to, personal computers, the Internet and broadband and how they are shaped by different socio-economic characteristics. The third section analyses the impacts of the Internet and broadband on time allocation. Finally, different rates of ICT diffusion across different populations have resulted in digital divides (haves versus have-nots) and subsequently by-use divides (OECD, 2004), and this paper explores how the use divide is evolving. Some policy implications and proposals for future work conclude the paper.

1. Communication expenditures: A decade of relative expansion

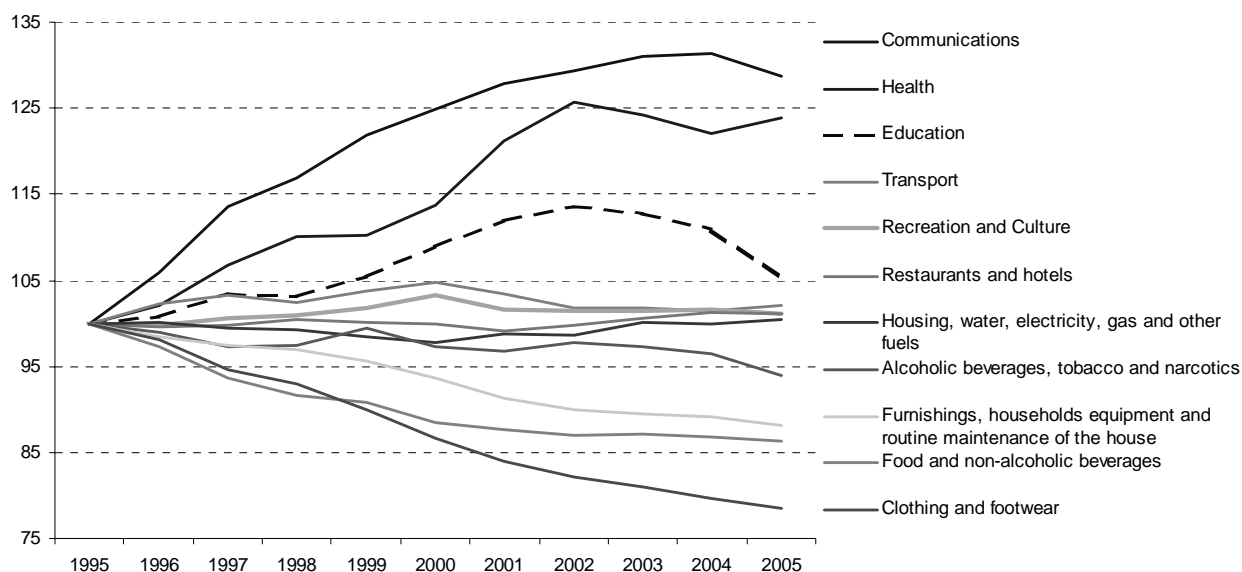
Since the mid-1990s, the share of communication in total household expenditures in the OECD area has increased. This trend reflects the development of mobile telephony, the Internet and broadband. Even after the Internet bubble burst in 2001 the trend continued, with consumer demand for an increasing array of communication products and services being a significant factor driving this growth. Price decline has been one factor driving expanded demand, with increased competition a significant factor pushing down services prices, and Moore’s law (more power for less money) also having a significant effect on equipment, reducing price/performance ratios.

¹ The author thanks In-Hoe An (National Internet Development Agency, Ministry of Information and Communication, Korea), Régis Bigot (CREDOC, France), John Horrigan (PEW Research Center), Anders Hintze (Statistics Sweden), Martin Mana (OECD Secretariat, now Czech Statistical Office), Thomas Le Jeannic, Emmanuelle André and Samuel Dambrin (INSEE, France), Lea Parjo (Statistics Finland) and Ben Veenhof (Statistics Canada) for providing data used in this report.

² The OECD definition of broadband is download speeds equal to or faster than 256 kbit/s. Many broadband services are now considerably higher than this in most OECD countries. The term “high-speed Internet” used in this paper is synonymous with broadband. In some of the surveys cited in this report users self-identified as to whether they were using a high-speed connection.

In 1995, total household communications expenditures in the OECD area were USD 264 billion, or nearly 1.9% of final consumption expenditure. In 2005, this amount in current terms had grown more rapidly than other consumption items and had multiplied by a factor of 1.9 to reach USD 500 billion or nearly 2.4% of final consumption expenditure. At the OECD level, this average share increased very significantly during the second part of the 1990s and has flattened off somewhat since 2001, with a slight decline in 2005. Expenditures devoted to health have followed a very similar trend and have grown more rapidly than all other expenditure items apart from communications (Figure 1).

Figure 1. Changes in the proportion of households' expenditure by category in the OECD,¹ 1995-2005²
Base 100 in 1995



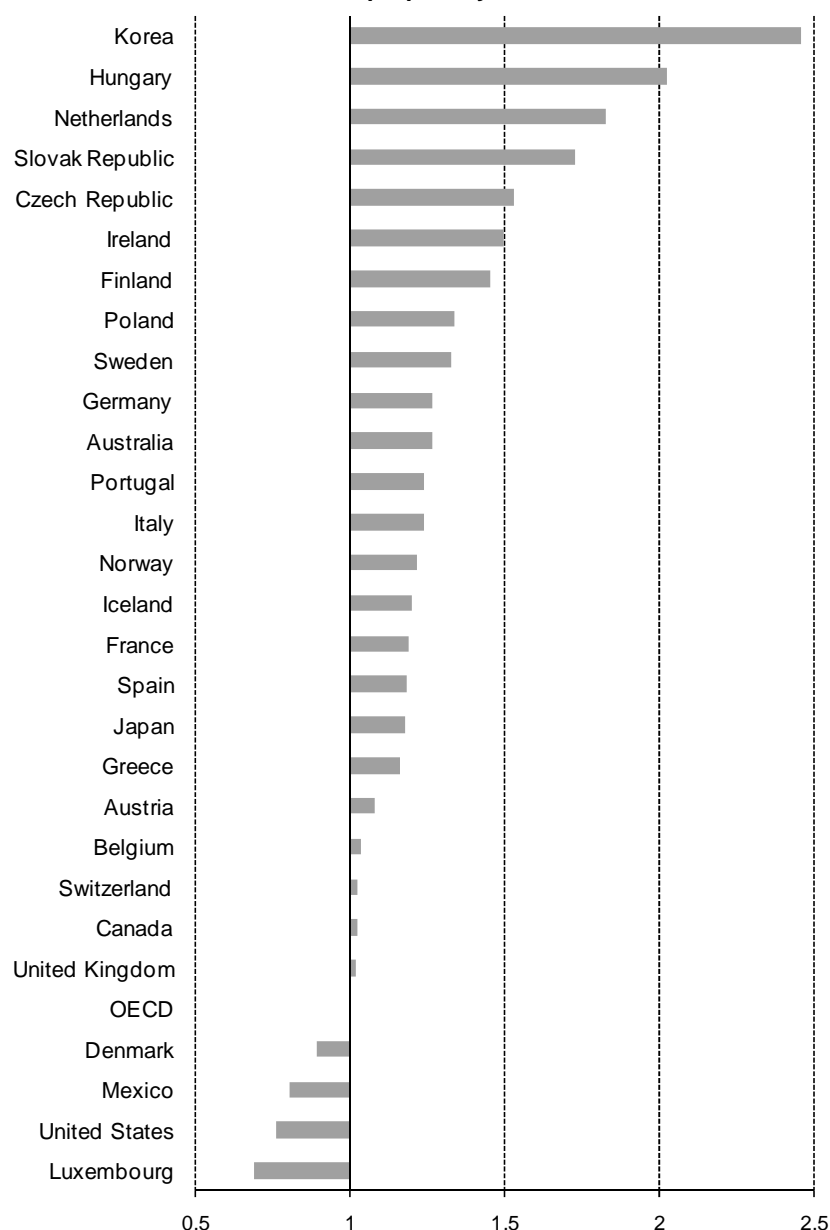
1. OECD-28, New Zealand and Turkey not included.

2. 2005 estimated.

Source: OECD, based on SNA database, 2007.

Households in OECD countries have widely different propensities to allocate expenditures to communications, but without exception this propensity has increased in absolute terms over the period 1990-2004 (see Annex Table 1). Across countries the relative propensity index in 2004 shows that for that year, the share of expenditures devoted to communications by Korean households was 2.5 times higher than the OECD average. By contrast, in Luxembourg this share was 0.7 of the average (Figure 2 and Annex Table 2). However, this relative propensity has not been constant over time. The ranking was unchanged between 1999 and 2004 for the top countries (Korea, Hungary and the Netherlands), but increased dramatically for the Czech Republic and Ireland and significantly for Germany, and decreased slightly for the United Kingdom, Japan and the United States (see Annex Table 2).

Figure 2. Relative communication expenditures¹ by households in OECD countries, 2004
Relative propensity index²

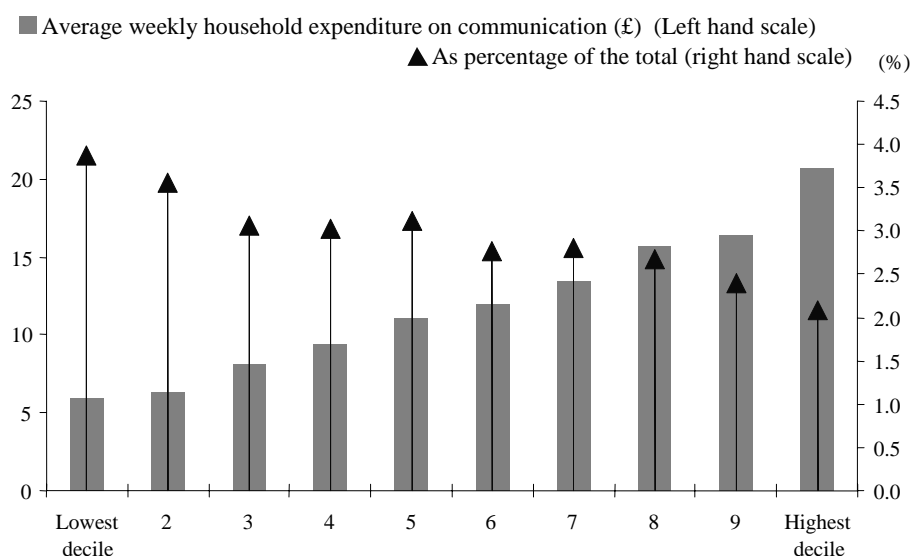


1. Communication includes Telecommunication equipment and services and Postal services. The detailed definition of communication expenditures is provided at the end of Annex 1.

2. The index is calculated as: (Communication expenditures of Households / Total Expenditures of Households) for country *i* / (Communication expenditures Households / Total Expenditures of Households) for OECD total. The OECD index is equal to one.

Source: OECD, based on data from the SNA database. See also Annex Table 2.

People purchase communications services across all income groups and, compared to their income, relatively more in lower income groups. In the United Kingdom in 2005-2006 households of the highest decile income group spent GBP 20.70 a week for communications, or around 2% of average weekly expenditures, while households of the lowest decile spend only GBP 6 per week but this is around 4% of average weekly expenditures (Figure 3). Similar patterns have been found for ICT household expenditures in Canada. In 2002, ICT expenditures as a share of total average household expenditures were 6.3% in the lowest income quintile and 3.9% in the highest (Sciadas, 2006).

Figure 3. Average weekly household expenditures on communications¹ in the United Kingdom, 2005-06

1. Communication includes postal services, telephone and telefax equipment, and telephone and telefax services.

Source: OECD, based on data from Office for National Statistics, United Kingdom (2006).

Looking in more detail at ICT expenditures there is an increasing orientation towards services and intangibles. For example in Norway general consumption expenditure grew at a compound average growth rate (CAGR) of 2.6% between 2002 and 2005 while communication expenditures rose at 7.4%. On the ICT equipment side, Moore's Law has had a significant impact on consumption patterns and ICT services grew more rapidly compared with ICT equipment as price/performance ratios for equipment declined rapidly. Expenditures on audio-visual, photographic and information processing equipment grew at 4.5% and within that group equipment for reception, recording and reproduction of sound grew at a CAGR of 6.6%, both less than the growth rates for communications expenditures overall. The CAGR reached 19.6% for telephone and fax equipment (linked with communication services), which was nevertheless a small part of the total in 2005 (0.23%). Telephone and fax services plus cultural services saw their share in general consumption expenditures rise from 3.4 to 3.8% between 2000 and 2005, and within this group expenditures on television and radio taxes and hire of equipment grew from 0.7 to 0.8% of general consumption expenditures (see Annex Table 3). In France the share of final consumption devoted to mobile services alone increased from 0.66% in 2000 to 1.16% in 2002, and remained at this higher level between 2002 and 2005 (AFOM, 2007).

Increasing expenditures on communication equipment and services is not the only sign of growth and maturation of the information society in OECD countries. Increasing access and intensity of access among households and individuals are also signs of change.³

³

The relations between pricing and take-up have not been investigated in this analysis which focuses on the evolving patterns of take-up.

2. Access and usage pattern of broadband and selected ICTs: Recent developments

2.1. Speed of diffusion

Diffusion of technologies is never homogeneous. Beyond the nature of the technology itself, diffusion depends on a range of economic, social and human factors affecting uptake, and ICT tools require particular interaction skills not necessarily needed for other goods and services. In terms of the technologies themselves, analogue technologies are being replaced by new digital technologies: for example cassette players or video tape recorders are declining and being superseded by MP3 and DVD recorders. On the other hand to begin with home personal computers diffused slowly, requiring at least a decade before being widely adopted due to needs to develop new skills. In contrast, the mobile phone has been adopted very rapidly as there are very few differences in usage skills compared with fixed telephones, and their use is straightforward. Home Internet access diffused much more rapidly than PCs but more slowly than mobile, as it relied on the PC installed base, (Sciadas, 2002). Since the beginning of the 21st Century, broadband is spreading extremely rapidly, catching up with the PC installed base and narrow-band Internet and it has generally diffused more rapidly than narrowband Internet at home (Table 1 and Annex Figures 1-8).

In Korea, more than nine out of ten households had home broadband access⁴ at the end of 2005 (NIDA, 2006). In 2006, this share was nearing 50% in Belgium and was above that in Canada, Netherlands, United Kingdom, and the Nordic Countries (Denmark, Finland, Iceland, Norway and Sweden). In France, by mid-2006, more than nine in ten home Internet users were broadband connected (CREDOC 2006).

Table 1. Pace of diffusion for selected ICT goods/services in selected OECD countries

... 20 to 50% of households	<i>Estimated number of years to move from ...</i>							
	Canada	Denmark	Finland	France	Japan	Netherlands	Norway	United Kingdom
TV	2	..	..	..	..	..	..	..
Colour TV	..	..	7	4	3	4	..	..
PC	7	6	5	7	5	8	7 ¹	7
VCR	3	..	6	5	5	6	..	..
Mobile phone	4	3	2	2	..	..	..	3
Mobile phone ¹	..	..	3	3	4	2	..	..
Internet ² at home	3.75	3.5	5.3	..	..	2.5	2 ¹	4.2
Broadband at home	4	2.2	2	..	..	2.2	1.75 ¹	..
... 20 to 40% of households								
Internet at home	2.25	1.7	2.9	4 ¹	..	1.5	1.5 ¹	2
Broadband at home	2.6	1.6	1.6	2 ¹	..	1.7	1.25 ¹	1.6

1. Percentage of individuals.

2. Including both narrow and broadband.

Source: OECD estimates, based on data from the OECD Telecom database, Statistics Canada, Cabinet Office (Japan), Statistics Finland, Statistics Netherlands, INSEE and CREDOC (France), and the Office of National Statistics (United Kingdom).

The diffusion of high-speed Internet has been very rapid. Early high-speed Internet users had the socio-economic characteristics of early technology adopters (younger, more highly educated, richer), but with rapid diffusion this was only for a very short period. Looking for instance at the history of home

⁴ Assuming that xDSL wired access at home is a good proxy for broadband access.

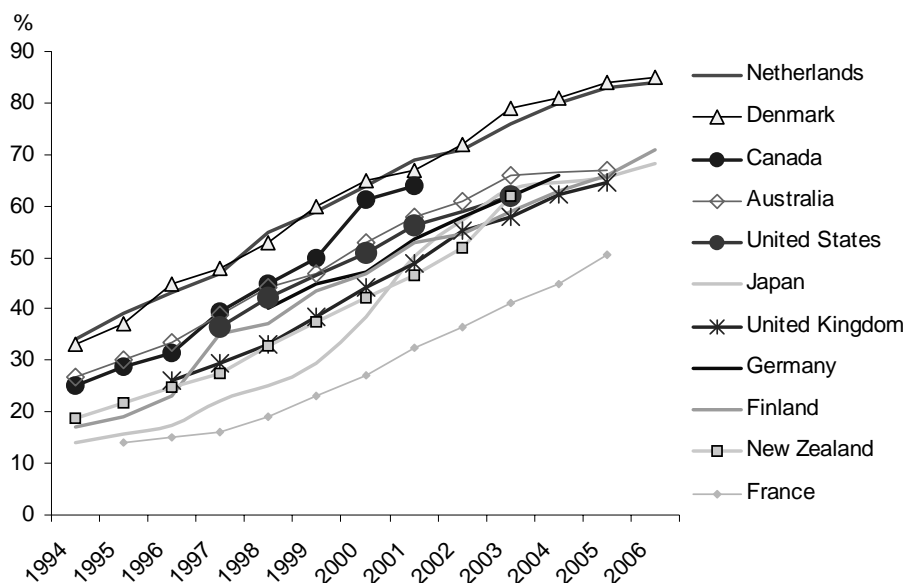
broadband connections in Finland shows that in 2003 the largest proportion was in one-person households. These accounted for around two-thirds of all broadband connections and in autumn 2003, half of all Internet connections in one-person households were broadband, compared with only of 40% for all households. Three years later, in 2006, differences had been considerably reduced; more than 93% of all Internet connections in one-person households were broadband and more than 88% of Internet connections in total households were broadband. In France, diffusion of broadband among Internet users in 2005 was so common that there were no significant differences between broadband Internet users and total users (see section 2.2 below and Annex Table 15).

2.2. *PC, Internet and broadband: Recent changes in diffusion*

Following the readiness - intensity - impact phases of diffusion (developed earlier for analysis of electronic commerce, OECD, 2000), readiness and diffusion for PCs have been achieved, and measurable impacts can be expected. In countries such as the Netherlands, Denmark and Finland diffusion of PCs is nearing the 80% level, beyond which the diffusion slows significantly. In Japan, for instance, even below that level, it is clear that some households will never have a PC at home (Annex Figure 9).

The pace of diffusion of PC access is similar across OECD countries, except for France, where the prior uptake of Minitel has had a dampening effect. Countries such as the Netherlands and Denmark, or New Zealand, Finland and the United Kingdom, have evolved very similarly for the diffusion of PCs among households over more than a decade (Figure 4). The current level of diffusion is however still showing significant disparities between countries. In 2006, France was only reaching a level already achieved in 2001 by Australia, Germany, or the United States, and in 1999 by Denmark and the Netherlands.

Figure 4. Households with access to a home computer in selected OECD countries, 1994-2006



Source: OECD, based on ICT database and national sources. For further details, see Annex Table 4.

Another sign of the pervasiveness of PCs is to be seen in usage rates from home and overall. In Finland in 2006, for example, the PC equipment rate of households was 71% in 2006, but 8 out of 10 persons had used a computer in the last 3 months (Spring 2006) against only 3 out of 4 in Spring 2005 (Statistics Finland, 2006a). In 2006 this share was nearly 100% among people aged between 15 and 39 and four out of ten persons aged between 60 and 74 had done so. Similarly, in 2006 in 15 EU countries, 53% of

individuals had a PC at home, but more than 58% of individuals on average had been using a PC (whatever the place) at least once a week, or every day or almost every day. In the same year in the United States, according to the PEW Research Center, the share of adults using a computer at least on an occasional basis was slightly higher than the share of individuals equipped with a computer, although four years previously in 2002, the share of adults using a computer was slightly lower than the share of equipped. Thus current household penetration rates underestimate the frequency of contact people have with the PC in their daily life.

Internet penetration at home

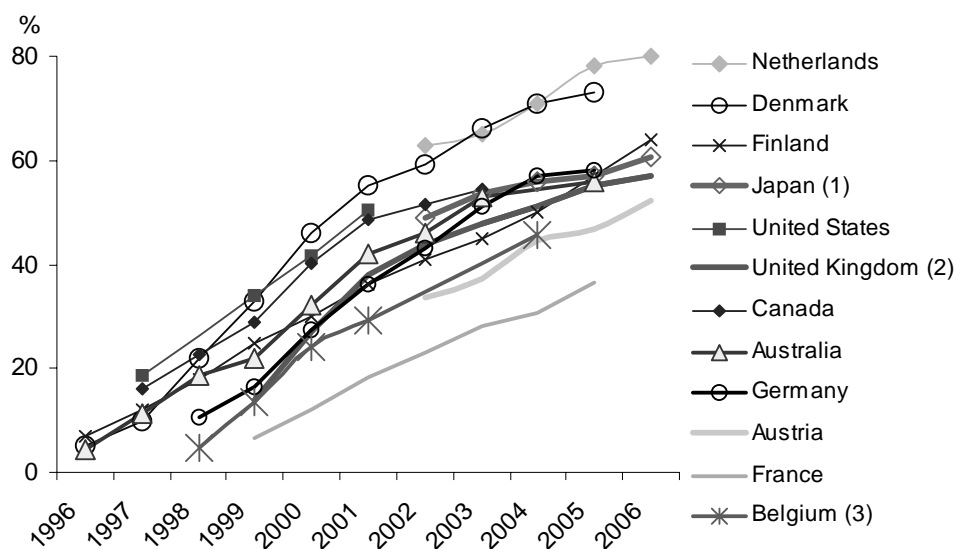
The Internet has spread significantly more rapidly than PCs in all countries for which data is available. In Denmark and the Netherlands it has reached 80% of households and more than half in most other countries (Figure 5). Even if the level of diffusion is quite heterogeneous across countries, the diffusion curve is strikingly similar across countries. Home is the first place, far ahead of other places, where people access the Internet and these levels probably mirror more accurately the use of Internet compared with the use of PCs (Annex Table 5).⁵

Nevertheless, within countries the diffusion of new technology is generally unequal between different socio-economic groups. In Finland from 2002 to 2005 the use of Internet *at home* increased by 20 percentage points among the population under 55, and in the oldest group (with the lowest number of Internet users in 2002) the share increased by only 10 percentage points. Between 2001 and 2005, Internet use in Finland from *all places* is clearly increasing for all ages; and in relative terms the population aged 50 and over has gained the largest number of new users from all places. But gender differences in use are still to the detriment of women in the over 60s group and to the benefit of women between 40 and 49 (Statistics Finland, 2006b, and Annex Figure 13a).

In Korea, during the same period, Internet usage has also spread among the older age groups. More than 36% of people in their 50s had used the Internet in 2005, against less than 15% in 2001. During the same period, this share has multiplied by 4 among people above 60, reaching 12%. But although the gender gap has almost disappeared for the young generations of Koreans, it remains important and is even increasing among older age groups (Montagnier and Van Welsum, 2006, Annex Figure 13b).

Even in Finland where mobile use is very high, diffusion has differed across different socio-economic groups. For example between 1996 and 2005 mobile phones have been clearly first used mostly by men, but then from 1999 by women in all age groups, although at various rates. Nevertheless, for those born before 1950 owning a mobile is still rarer among women than men (Statistics Finland, 2006b).

⁵ There are also considerable differences in take-up across different technologies, with cable modem being a popular access platform for home subscribers in countries where it is widely available and where it can provide competitive services with other broadband services, for example in the United States.

Figure 5. Household access to the Internet in selected OECD countries, 1996-2006

1. Households that own equipment that can use Internet.

2. April-June quarter until 2002.

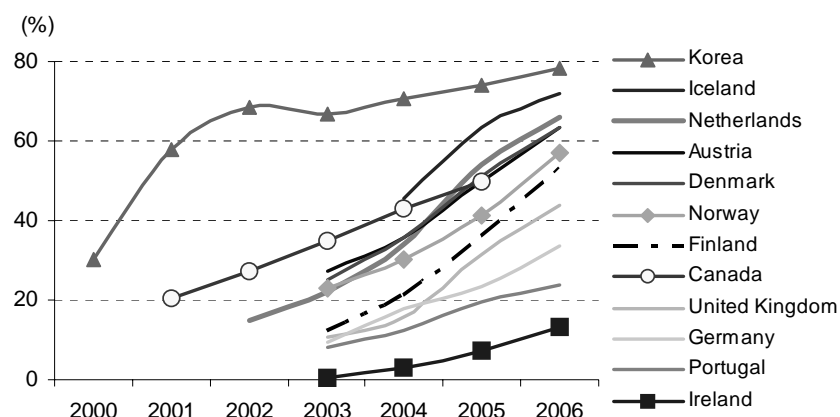
3. 1997/1998 instead of 1998.

Source: OECD, based on data from National Statistical Offices, the US Bureau of the Census, and Statistics Bureau of the Ministry of Internal Affairs and Communications of Japan, Survey of Household Economy. See also Annex Table 5.

Broadband penetration at home

Broadband use has surged in households since around 2000. Although entering the broadband age⁶ has not been at the same pace across OECD countries, recent speed increases and price declines suggest that high-speed household Internet availability and connection is, or will soon become, common in most OECD countries (Figure 6 and Annex Figure 16). Furthermore, the expansion of broadband availability goes far beyond the OECD area; the number of countries with commercial broadband at speeds of 256 Kbs or more rose from 81 in 2002 to 166 in April 2006 with most countries now having services available over 1 Mbs (ITU, 2006; see Annex Figure 17).

⁶ See *A Nation Online: Entering the Broadband Age*, US Department of Commerce, September 2004.

Figure 6. Households access to broadband Internet in selected OECD countries, 2000-06

Source: OECD, based on data from National Statistical Offices, Eurostat, and NIDA (Korea). See also Annex Table 6.

2.3. *Internet and broadband access and use patterns across selected socio-economic variables*

Socio-economic characteristics (educational attainment, income, age, gender, or place of access) have significant impacts on the pattern of access for PCs and the Internet, with more highly educated, higher income, younger males having higher levels of access. The impact of these different characteristics around 2002 was described in detail in earlier work (OECD 2004, Chapter 4). Their impacts have not changed greatly and, even if reduced, existing differences have tended to persist as the penetration of both PCs and the Internet has continued. However, usage patterns are changing, not only because a larger share of the population now has access to PCs and the Internet, but also due to the spread of broadband (see section 2.4). In the sections below some recent developments by socio-economic variables are described for access and use, and the issue of the divide is further addressed in section 4.

Education

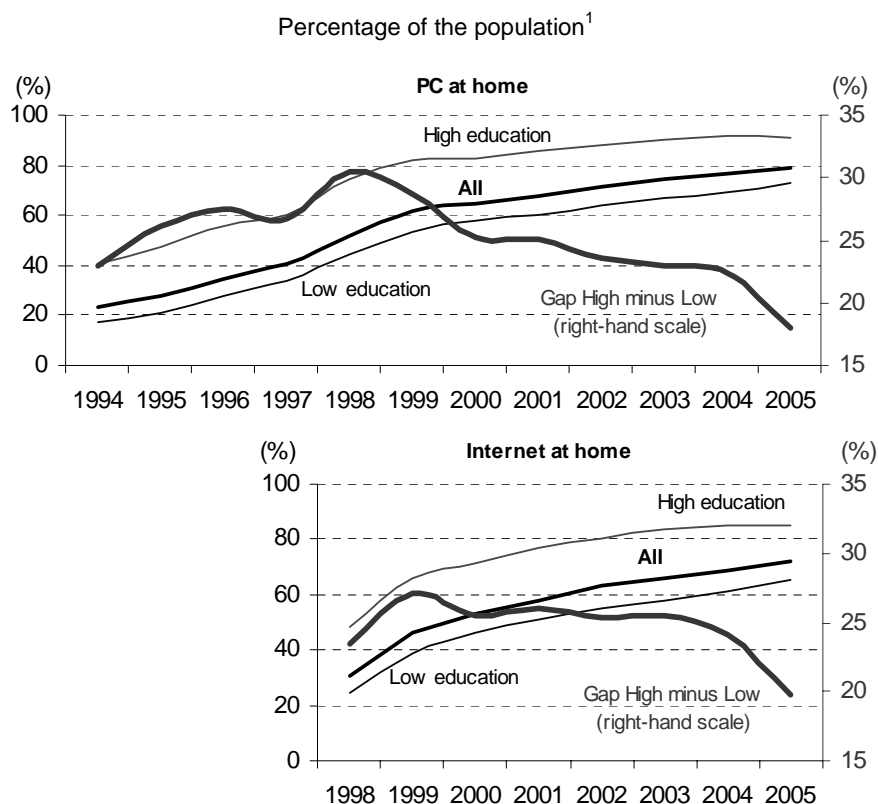
With the rapid uptake of Internet and even more rapid switch to broadband, some of the impacts of different socio-economic characteristics appear to be declining, at least in some countries. For example in Sweden both PC and Internet diffusion are increasing steadily and the gap between high and low education groups is diminishing (Figure 7), and this is also the case for Internet access in Denmark. But in Canada, Korea and the United States the gaps are not declining significantly (Annex Figure 10). And in 2005 Internet access by education level was still showing significant gaps in a number of OECD countries (Annex Figure 11).

Age: A generational effect

Earlier OECD analysis showed that the use of ICTs by older people appears to be positively related to age of retirement from the work force and to educational attainment (OECD 2004, Chapter 4). Once online, their patterns of use were similar to, or more intense than, those of younger age groups, except for lower propensities to purchase and use the Internet for entertainment. This suggests that older age groups will not be handicapped by a technological divide as they work longer, provided that they have the educational background to take advantage of new technologies (OECD, 2004). More recently, analysis for Canada underlined that people will not stop using the Internet as they age. Rather, Internet use among tomorrow's older Canadians will reflect the higher rate of today's younger adults (McKeown *et al.*, 2007).

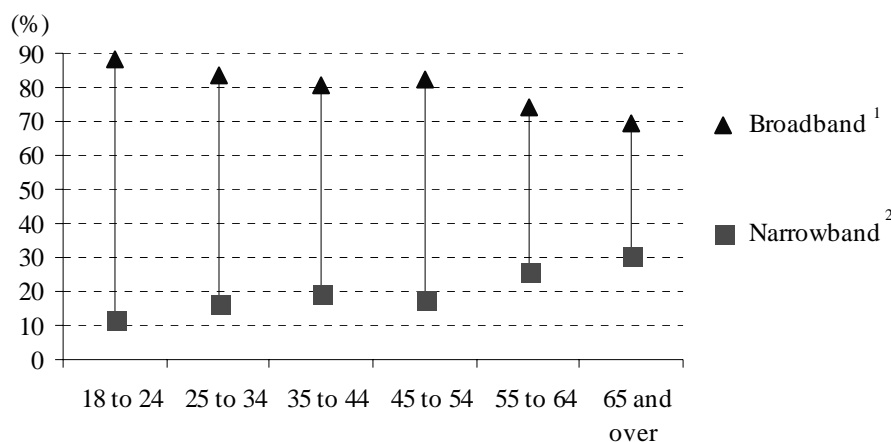
Based on available evidence, however, online activities by age group are different when using broadband, as shown earlier for Internet use. There are also enduring differences by age group in terms of access speed. Older age groups tend to have lower speed connections once connected, compared with younger age groups (see Figure 8 for Canada). This is in part due to the different kinds of uses made by different age groups.

Figure 7. Diffusion of PC and Internet in Sweden by level of education, 1994-2005



1. People aged 16-84.

Source: OECD, based on data from Statistics Sweden, 2007.

Figure 8. Internet use at home by type of connection by age group in Canada, 2005

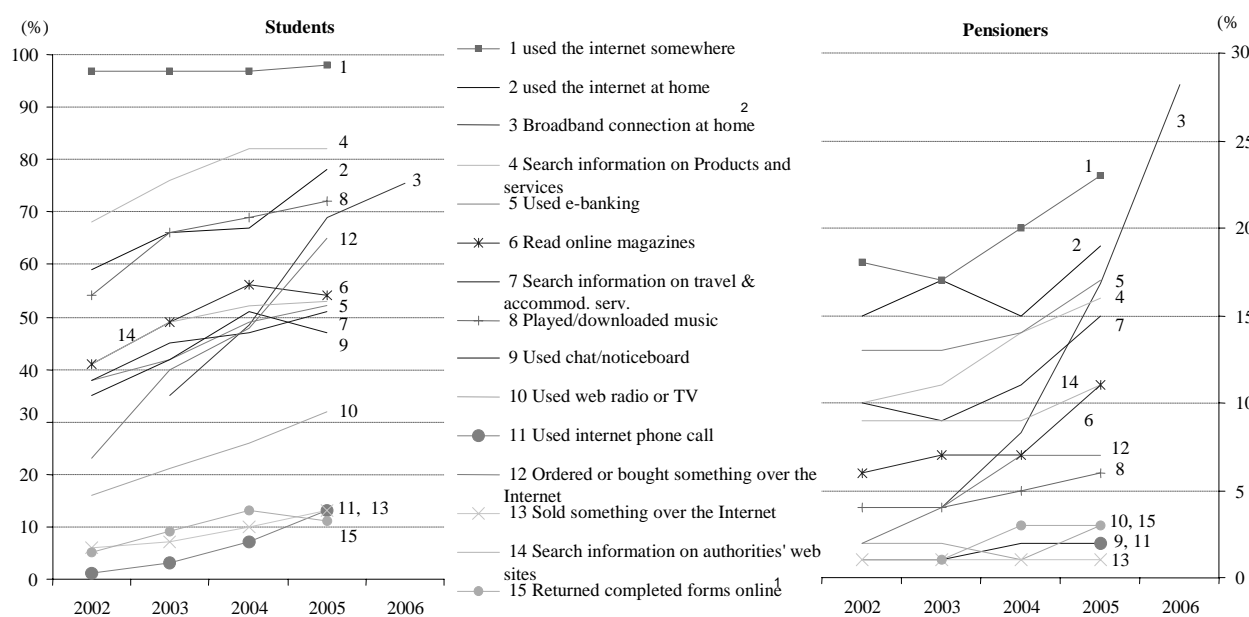
1. Broadband includes all respondents who identified that they access the Internet at home using cable or satellite, and all respondents accessing the Internet using a telephone connection or other connection (e.g. television, wireless (cellular phone or PDA), other) that they identified as a high-speed connection

2. Narrow band includes all respondents accessing the Internet at home through a telephone or other connection e.g. television, wireless (cellular phone or PDA), other) that they identified was not a high-speed connection.

Source: Statistics Canada, Canadian Internet use survey.

Looking at ICT usage patterns among students, employed persons and pensioners in Finland it was found that although PC and Internet use was very widespread among the two first groups, for pensioners the motivation for using the Internet is quite low (only one in five pensioners) (Sirkiä *et al.*, 2004). The low proportion of Internet users was not linked to income, but the key factor was that the Internet did not provide services that met the everyday needs of pensioners, and the services provided did not help to resolve problems they felt important. As underlined by the authors, “the most crucial factors are certainly the nature of ICTs as well as the poor compatibility ... with pensioner’s everyday life.” It has also been noticed that, despite the overall growth of Internet users, the difference in the use of ICTs between generations seems to have grown further (Figure 9).

Figure 9. Broadband access and selected Internet activities¹ among students and pensioners in Finland, 2002-06



1. Activities undertaken during the past three months on Internet, whatever the place, except for "Returned completed forms online", for which no specific period has been indicated.

2. Broadband connection at home is from Statistics Finland, *Consumer Survey*, and refers to the month of November of each year.

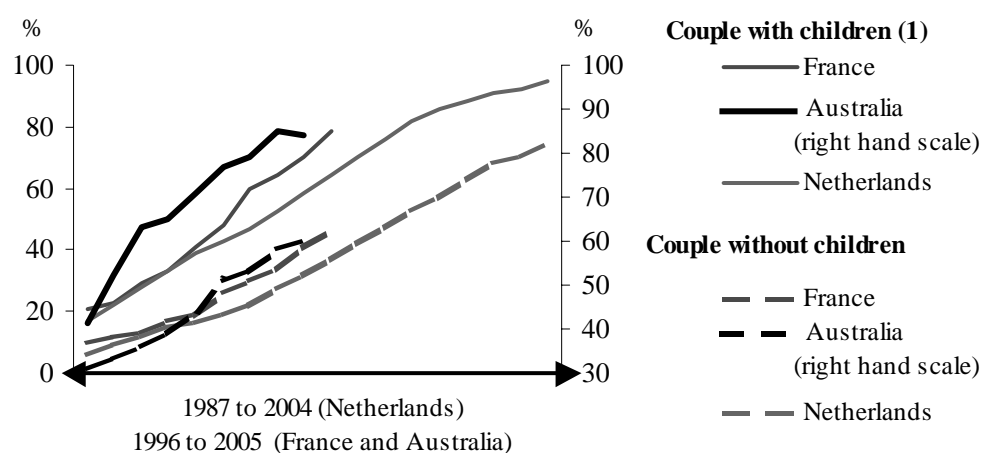
Source: Research Project *The Finns and the Future Information Society*, as published by Statistics Finland, 2006b.

Gender

There remain significant ICT access differences by gender. Access by women tends to lag that of men, and although the gaps are generally declining they remain large in older age groups and in areas of newer technologies (Montagnier and Van Welsum, 2006). Furthermore there are differences in where men and women access the Internet. Men are more likely to access from both home and work in many countries, although gaps are declining, whereas women are more likely than men to access from educational establishments. There are also some significant differences in ICT use. For example, emailing was a very common activity for all Internet users (more than six Internet users out of ten) and the gender difference did not exceed 5 percentage points, whereas downloading software was much less widespread and much more a male oriented activity and women were considerably more likely to engage in health-related activities or in on-line shopping. Men were also more likely to play games and visit sports pages across all age groups (see Annex Figures 13-15 and Annex Tables 7 and 8).

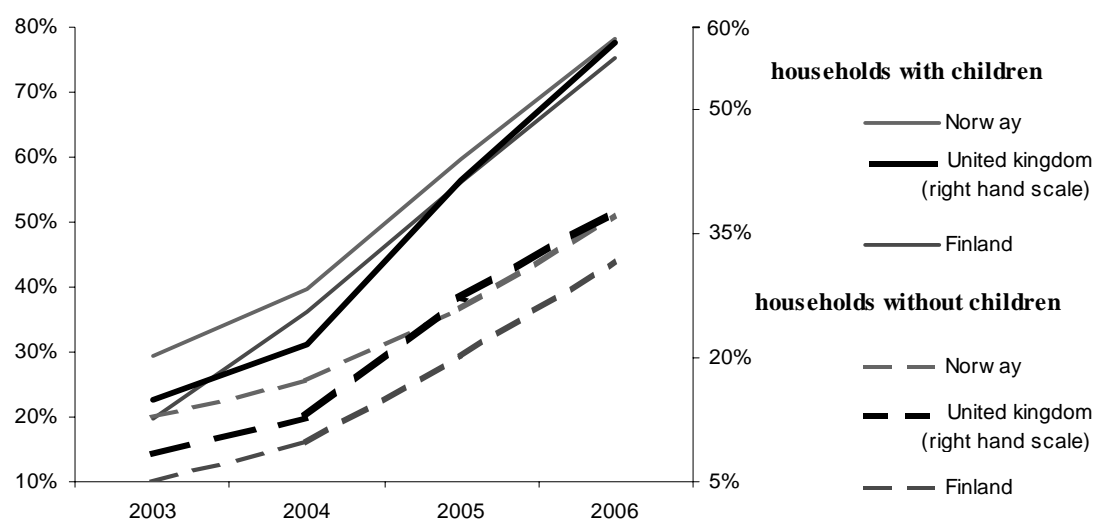
Children

Children in the family have a clear positive impact on PC and Internet diffusion and broadband access among households (for PCs see OECD 2004). Broadband enables a far greater variety of online activities, and children undertake some of these activities. Age of households is probably also an explanatory factor, households with children being younger on average. As the diffusion of PCs is nearing saturation, gaps between families with and without children are starting to narrow and there is a slow catching-up process (Figure 10), but based on available evidence, broadband diffusion is showing similar disparities, with families with children leading those without children (Figure 11).

Figure 10. PC uptake among individuals with or without children in Australia, France and the Netherlands

1. With one child for France.

Source: OECD, based on data from Australian Bureau of Statistics (ABS), Central Bureau of Statistics (CBS) and INSEE, February 2007.

Figure 11. Broadband uptake among households with or without children in Finland, Norway and United Kingdom, 2003-06

Source: OECD, based on data from Eurostat - Newcronos database.

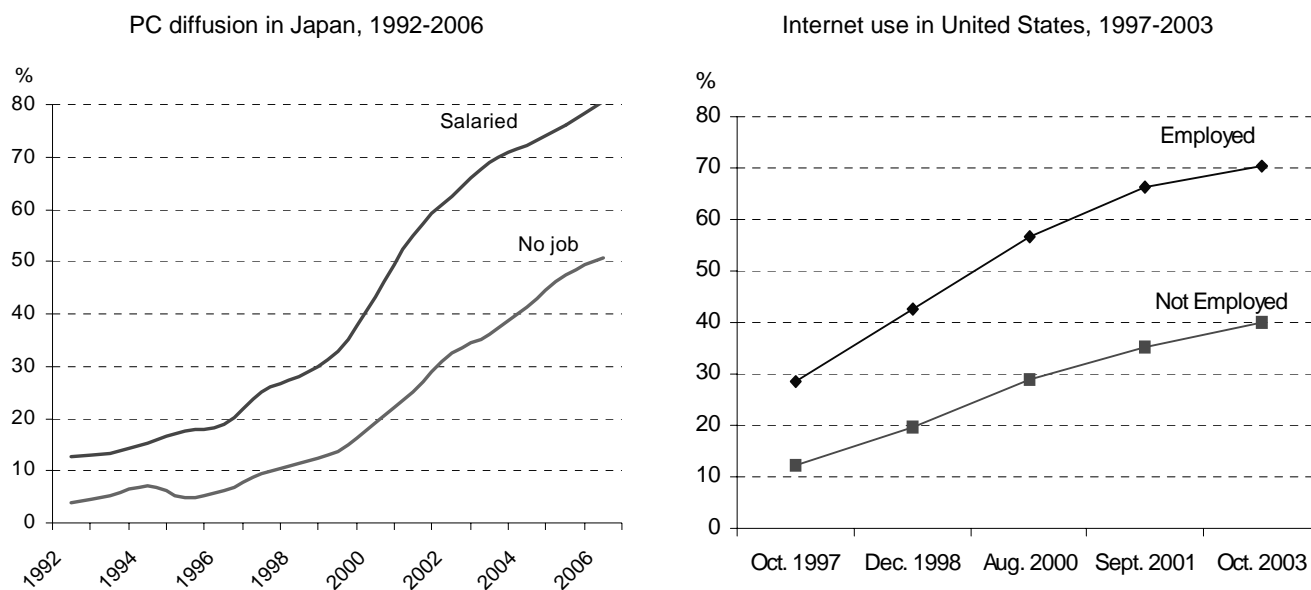
Place of connection

The home remains the most common place to use the Internet in OECD countries. In Europe the exception is the Slovak Republic, but work is not very far behind the home for access in the Czech Republic, Greece, Portugal or Spain (see Annex Table 8). In all countries except Korea and the Netherlands, men are more likely to access the Internet from home than women. Overall, work or public places (cybercafés, etc) substitute for home access in countries where home access for various reasons (mainly poor network availability and cost of access) is still in its infancy. Social norms governing interactions in public places also influence Internet usage pattern (Orbicom, 2005). In Korea, for example,

people like to connect to the Internet in commercial public access facilities despite very high home usage rates, but women are less likely to access the Internet from commercial public access facilities.

Work has also been an important contributor to diffusion and usage of ICTs. In Finland, computer use became widespread in working life during the late 1980s. In 1984, only 17% of wage and salary earners used ICT, 44% in 1990, 66% in 1997, and 75% in 2003 (Statistics Finland 2006b). Among older people (60+) in Canada, being unemployed has been negatively related to Internet use over time (Silver, 2001). Similarly, the diffusion of PCs in Japanese households clearly follows whether one is employed or not (Figure 12). More recently, it has been shown for Luxembourg that Internet use at work has a significant influence on the probability to be connected from home (Poussing, 2006).

Figure 12. PC and Internet diffusion and use in the United States and Japan, by employment status



Source: US Department of Commerce, 2002 and 2003, and Economic Planning Agency (Japan).

Internet and mobility

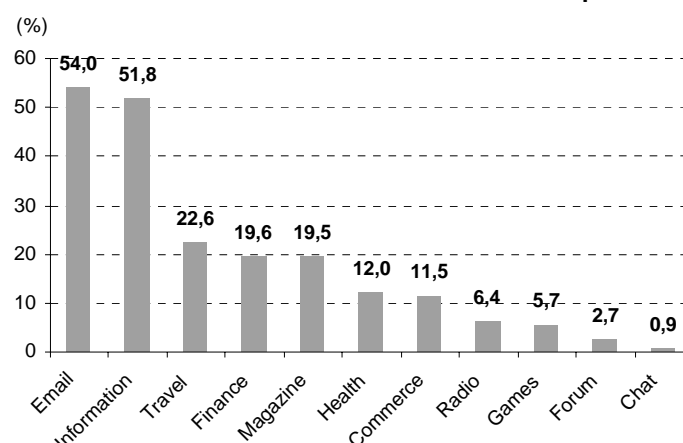
People spend most of their time at home or work, and accessing the Internet is predominantly from these places. But mobile Internet access is increasing. Mobile phones are not necessarily the only tool used, but they are one indicator. In France, in 2003, only 5% of mobile phone owners were accessing the Internet using their mobile phones, but by mid-2006, this share was 8% (CREDOC 2006). In the United Kingdom, the share of adults accessing the Internet via mobile phones remained constant at 8% between January 2001 and April 2003, but increased to 17% by October 2005 (UK NSO, 2007). The propensity to use mobile Internet access varies greatly by country. In Korea, for example, people are much more inclined to use their mobile to connect to the Internet. In September 2002, one-third of mobile users (aged 12 and more) had accessed the Internet via a wireless connection more than once within the previous 6 months and in September 2005, 43% had done so. Access was dominated by the mobile phone (99.6%), compared to other devices such as Notebooks, PDAs, or smart phones (MIC-NIDA, 2005).

Accessing the Internet through mobile devices, even from home, is one indicator of “mobility readiness”. In 2005 in the Nordic Countries, the share of all households accessing the Internet at home via a portable computer varied from 15% in Finland to 37% in Iceland. For hand-held computers and mobile phones, this share was highest in Denmark with 4 and 12% of all households respectively. Shares were

significantly higher in households with two adults and children (Nordic Council of Ministers, 2005, Annex Table2.3). In many countries the home broadband service is increasingly Wifi, which allows multiple access points, and portable computers are often used as a second access point in multiple user families.

Using the computer or accessing the Internet from the workplace for non-work reasons has important implications for firm efficiency and productivity. In Canada in 2005, among Internet users from any location in the last 12 months, four out of ten had used the Internet at work for personal non-business use and the share of non-business use at work was 35% among home Internet users. Three out of four who had used the Internet at work for personal non-business use did so at least once a week, and 37% every day (Statistics Canada, Canadian Internet use survey, 2005). In Luxembourg in 2004 more than two-thirds of salaried employees used the Internet at the workplace for non business related purposes, and more than half of these were looking for non business related information (Poussing, 2006). Around one in five is collecting travel information, reading newspapers or magazines or doing financial operations. Other activities such as games, listening to radio, accessing discussion fora or chatting online are less frequent (Figure 13).

Figure 13. Non business related use of the Internet at the workplace in Luxembourg, 2004

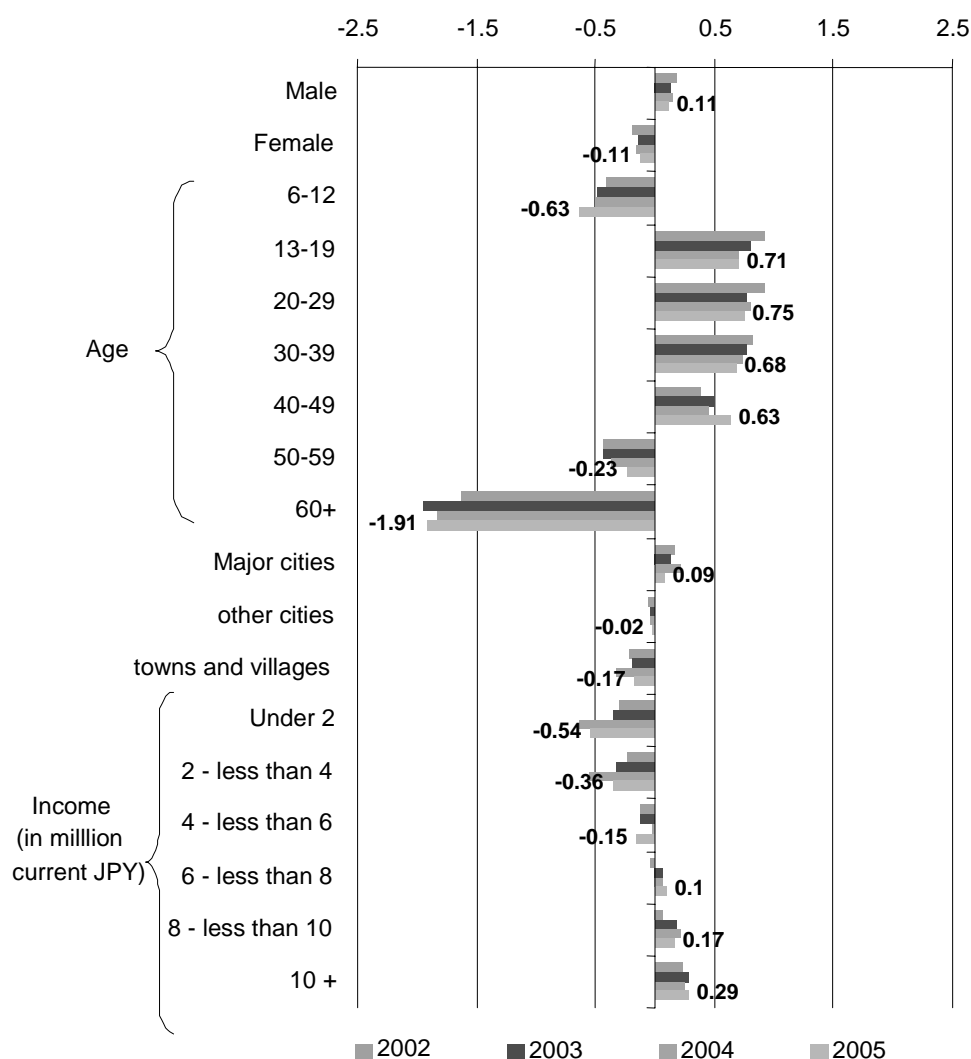


Source: Poussing, 2006.

The relative effects of different socio-economic variables

Different socio-economic characteristics influence each other and only looking at one gives a perspective influenced by others. However, using micro-data and econometric techniques it is possible to isolate the effect of each variable, controlling for the effects of all others. Age and education have the most significant impact on Internet access in France when using these analytical techniques (see Frydel, 2006, and Annex Table 14). Broadband now accounts for more than nine home Internet connections out of ten in France, and additional tabulations show that there are no significant differences between broadband and Internet *access* for the same set of socio-economic variables (Annex Table 15).

Analysis of Internet use by households in Japan shows that age group had the greatest impact, followed by household income, while city size and gender had smaller impacts (Ministry of Internal Affairs and Communication of Japan, 2006). Figure 14 shows that age of both the youngest and oldest age categories had a negative influence (*i.e.* the respondents in these age groups were less likely to use the Internet) with the 60+ group having a particularly strong negative influence. Household income shows a clear threshold around JPY 6 million.

Figure 14. Impact of demographic factors on Internet usage by households in Japan, 2002-05¹

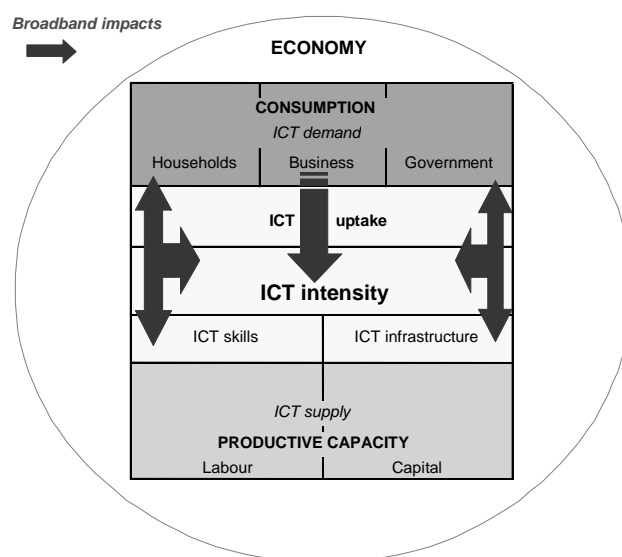
1. The impact rating is determined via multivariate analysis using qualitative data for both predictor and non-predictor variables, and demographic characteristics as the predictor variables. A positive figure indicates a factor promoting Internet usage, while a negative figure indicates a factor hindering it.

Source: Ministry of Internal Affairs and Communication of Japan, *Communications Usage Trend Survey*, 2002 to 2005.

2.4. Broadband's impacts on Internet activities

Broadband's impacts on users are multifold. It creates new means for expression, the potential for wealth creation and a potentially more creative interactive society. "What is important is not the new technology but new ways of doing things" (OECD, 2004, Chapter 4; Committee for the Future Technology Assessments of Finland, 2004). As shown below, broadband impacts are related to the frequency (section 2.4.1) and time/duration of use (section 3) and to the variety and diversity of use (section 4). Household use (and subsequent impacts) of ICTs, and particularly the Internet and broadband, is influenced by a mix of complex socio-economic factors and relations. Businesses and government also play crucial roles (Figure 15). More narrowly, broadband amplifies or accelerates the impacts of Internet activities on households and individuals.

Figure 15. Broadband's impacts: Selected relationships from household and individual usage perspective



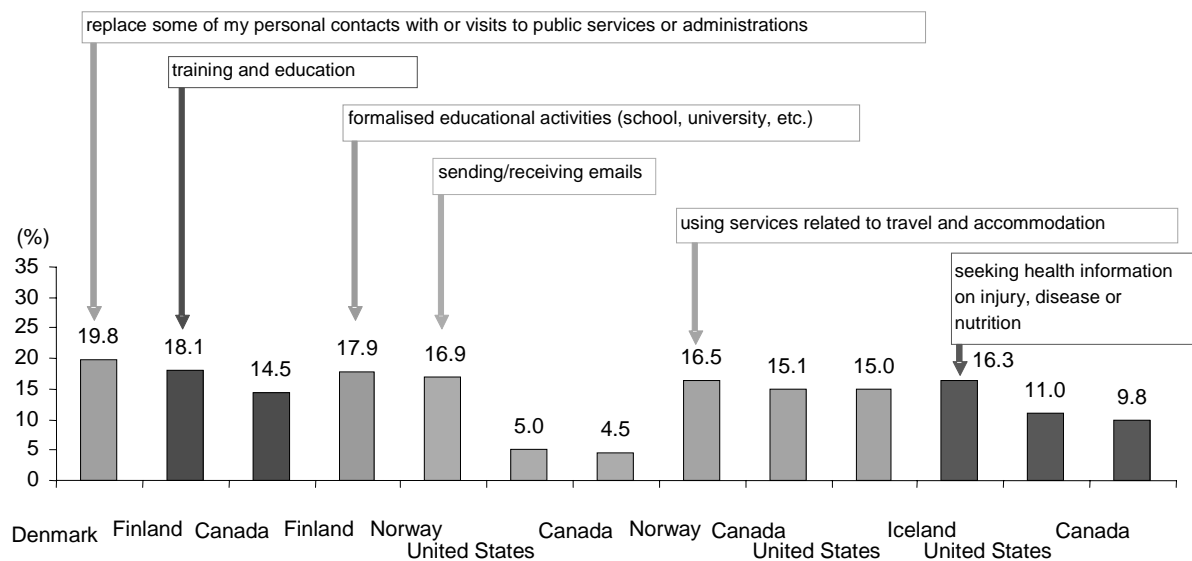
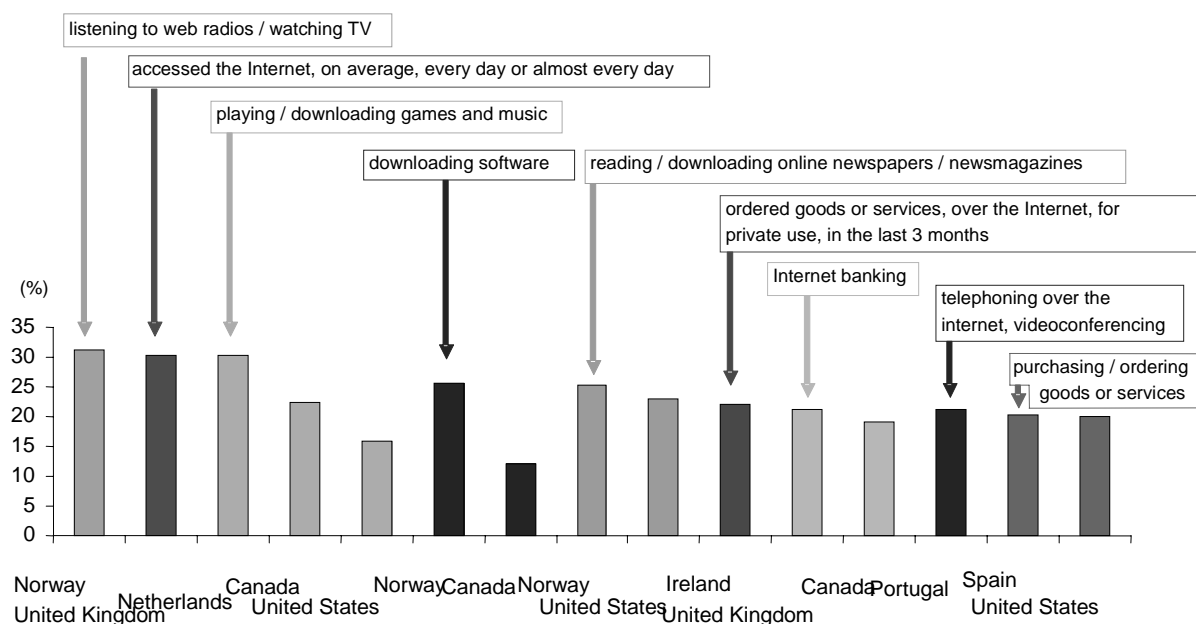
Source: Adapted from OECD (2005), *Guide to Measuring the Information Society*, and Sciadis (2003), *Monitoring the Digital Divide... and Beyond*.

2.4.1 Broadband's impact on Internet activities: An accelerator effect

Broadband is providing an accelerator effect to various online activities. People having home access to broadband are much more inclined to undertake online activities compared to those who have not. And the differences are very large as shown in Figure 16. In 2006 among broadband users, 30% more are listening to radio or watching TV via their PC compared to narrowband users in Norway; 20% more are reading or downloading online newspaper or newsmagazines in the United States; and 20% more are purchasing or ordering goods and services in Spain and the United States. These changes in activity can be considered as an indirect indicator of the marginal utility of broadband (Figure 16, and Annex Tables 9-13).

Other signs of broadband utility can be seen in the increasing frequency of daily Internet access. Daily access via broadband compared with narrowband increased in all 20 European countries surveyed in 2006, and in the United Kingdom almost 30% more broadband users were accessing the Internet daily, compared to narrow band users. Having broadband clearly increases the frequency of Internet use, and partly there is a shift by users who previously accessed the Internet less frequently (at least once a week, but not every day, or at least once a month but not every week, Annex Table 10). Access prices have a significant impact on frequency of use and broadband access prices are generally declining while the average speed is increasing (Annex Figure 16).

Figure 16. Broadband impact on selected Internet activities, selected OECD countries, 2006¹
 Difference, in percentage points, between broadband users and narrowband users^{2,3}



1. 2005 for Canada.

2. Differences, in percentage points, for a specific activity: for European countries, between individuals who live in a household with a broadband access and those who live in a household with Internet access but with no broadband access.

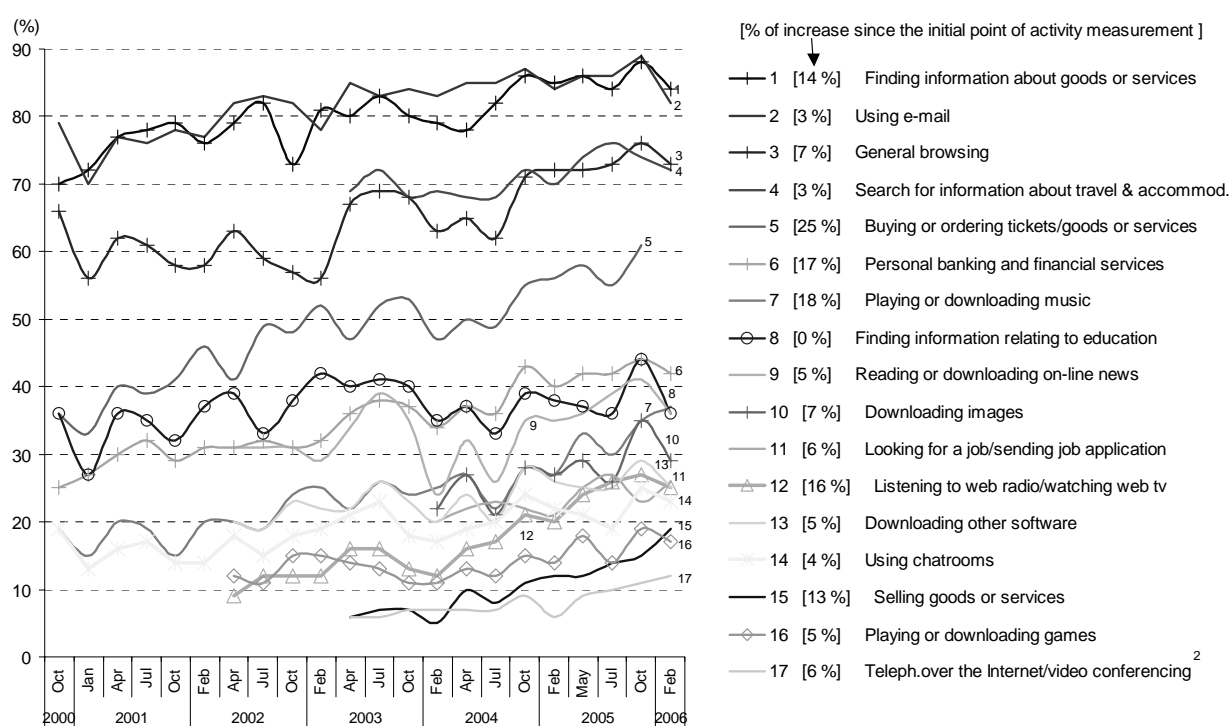
3. Countries for which the difference is the highest have been selected. For a complete list of the countries see Annex Tables 9-13.

Source: OECD, based on data from National Statistical Offices, the Pew Internet and American Life Project and Eurostat Newcronos database. See Annex Tables 9 to 13.

2.4.2 Recent evolution of selected Internet activities: Type of Internet activities

Various activities have grown in importance with broadband. Playing or downloading music, games, images, telephoning or videoconferencing are all developing rapidly for example in Great Britain (Figure 17), and the growth in new online activities can be seen in many OECD countries (see Figure 24 for listening to web radio/watching TV). Broadband has an influence, but there is also a complex interaction between speed, easiness and complementarity with other services (delivery), and development of new services. In only a very short period of time, the Internet has become a major shopping place, as shown for example in Great Britain by the rapid progress between 2000 and 2006 of buying or ordering tickets or goods and services. Selling goods and services has also grown rapidly as consumers increasingly develop their own trade activities, bypassing traditional intermediaries.

Figure 17. Internet activities of people¹ in Great Britain, 2000-06



1. Adults.

2. February 2004 and July 2005 estimated.

Source: Office of National Statistics.

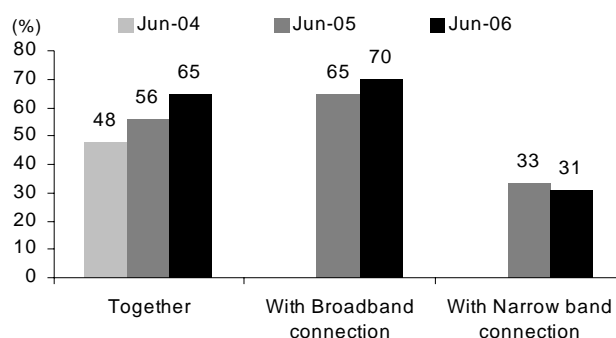
These new activities are not undertaken equally by all users. A recent report demonstrates that in the United States, for example, there are considerable differences across user groups (Horrigan, 2007). As underlined by the author, the level of education plays a role through exposure to and use of broadband, wireless, and other information technologies which often begins in schools. Level of education is important for both intensity and type of online activity. In Sweden, for example, between 2003 and 2006 the gap between the highest and lowest education attainment level has significantly increased for Internet banking, been stable for reading or downloading online newspapers/news magazines, and significantly declined for obtaining information from public authorities' web sites or sending completed forms (Annex Figure 20).

2.4.3 Broadband impacts on frequency of use

Broadband not only increases the share of the population conducting online activities, but they also conduct them more frequently. For example in France in 2006 seven out of ten broadband connected

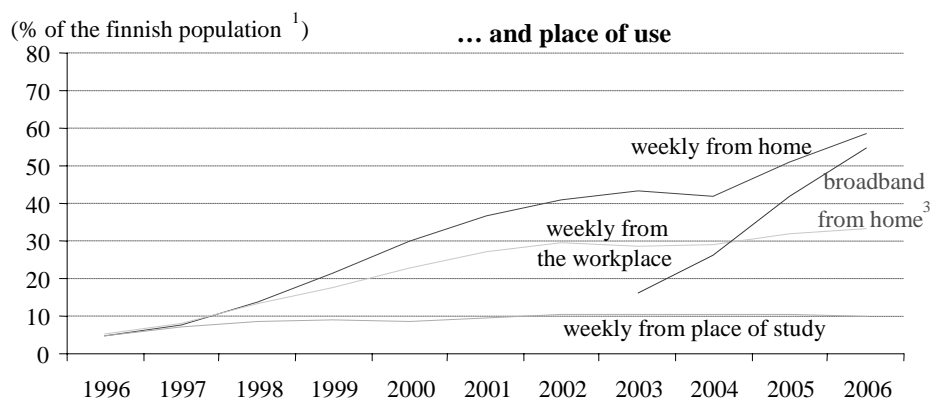
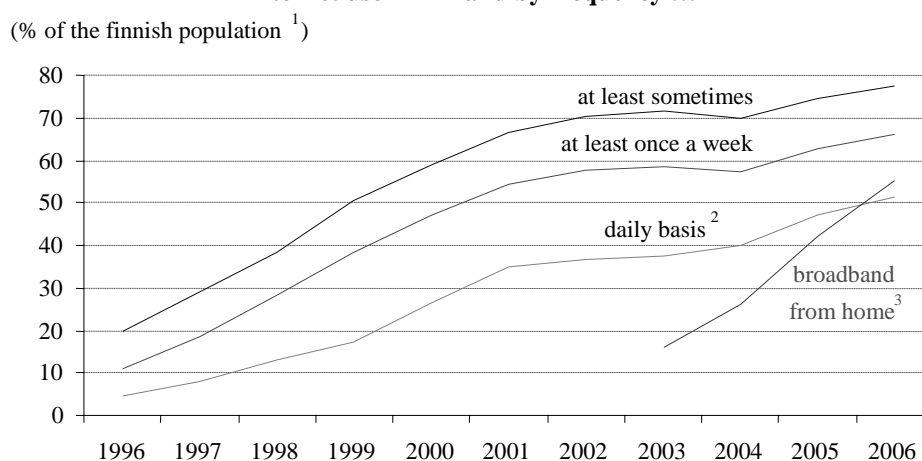
people accessed the Internet daily, whereas with narrow band only three out of ten did so (Figure 18). In Finland Internet connections are predominantly from home, and the weekly frequency increase is more significant at home compared to other places (Figure 19).

Figure 18. Broadband impact on daily Internet connection in France, 2004-06
Percentages of people accessing Internet from home daily



Source: CREDOC, 2006.

Figure 19. Evolution of Internet frequencies and place of access: Finland
Internet use in Finland by frequency ...



1. People aged 15 to 75 up to 2003, and 15 to 79 from 2004 onwards. Households for broadband at home.

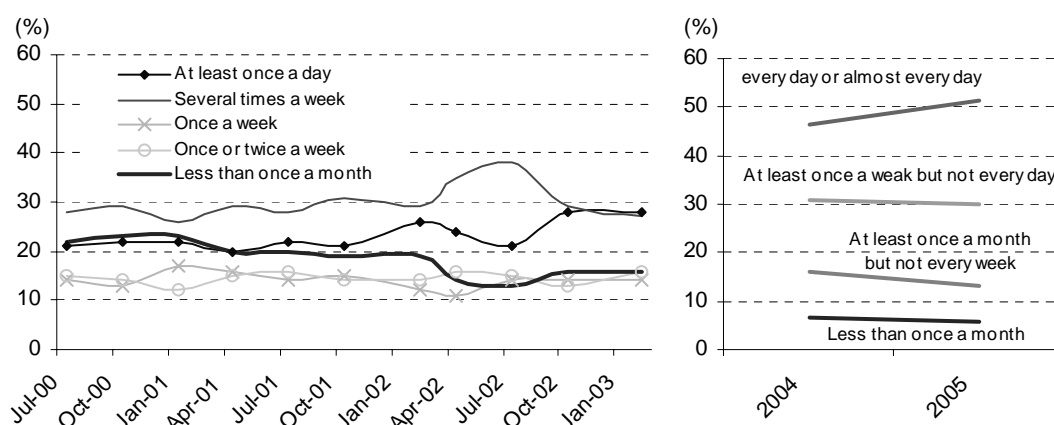
2. From home, work or place of study.

3. Percentage of households having broadband home Internet access.

Source: OECD, based on data from Taloustutkimus Oy, *Internet Tracking*, and Statistics Finland.

In the United Kingdom, frequency of access was relatively constant in 2000-2002, with the noticeable exception of a decrease in very low frequency users (less than once a month) and the increase in daily users. Between February 2004 and July 2005 the share of households having access to home broadband Internet rose from 12 to 31% and this amplified the trend towards more frequent use (Figure 20, ONS, Omnibus Survey). In Mexico, the share of daily Internet users tripled between 2004 and 2006 (Figure 21). Although broadband diffusion among households is still relatively low, the share of Internet users accessing Internet via cable TV jumped from 11 to 22%.

Figure 20. Frequency of access to the Internet in the United Kingdom¹, 2000-05²

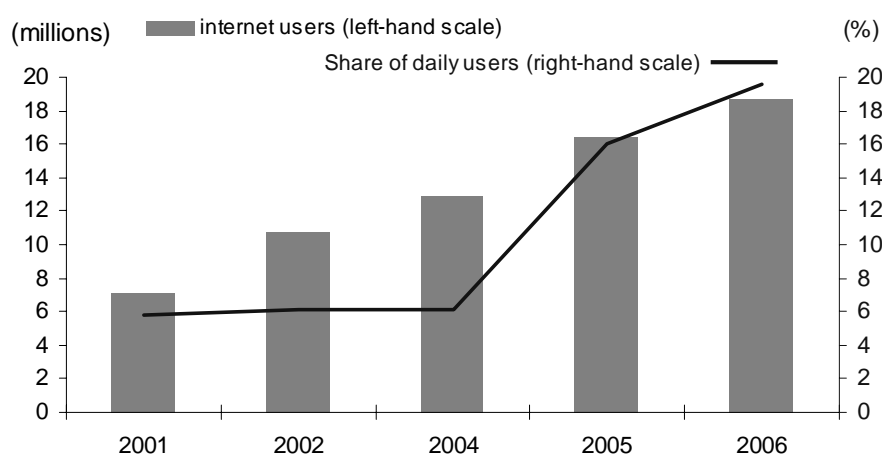


1. Great Britain only.

2. Break in the series in 2004.

Source: OECD, based on data from the Office of National Statistics of the United Kingdom.

Figure 21. Internet users and frequency of use in Mexico, 2001-06¹



1. For 2001 and 2002, month of December. For 2004 and 2005, month of June. For 2006, month of April and preliminary results.

Source: INEGI.

3. Time use

Time devoted to everyday communication is changing, partly spurred by the Internet and broadband. In the past 20 years new ICT tools have changed both the way to communicate and the amount of time

allocated to it. For example, time using mobile phones has increased dramatically. In the United States minutes called on cellular phones rose from 27 to 721 billion between 1993 and 2002, and in Canada from 2 to 39 billion (Sciadas, 2006). More recent figures in France, Germany, Italy, Spain and the United Kingdom show that mobile voice traffic more than doubled between 2000 and 2005 (AFOM, 2007).

3.1. *Time use changes with the Internet: Amplification with broadband*

The use of computers and the Internet has been one of the most rapidly expanding activities, particularly from home, in the past 20 years and has a potential impact on changing people's use of time. In the United Kingdom total time spent using ICTs, and in particular the time spent online by Internet users, increased significantly between 2001 and 2005, and the average weekly number of SMS messages almost doubled (OFCOM, 2006). The average European Internet user spent 11 hours 20 minutes a week online in September 2006, compared to 10 hours 15 minutes in 2005, an increase of 11% (EIAA, 2007).

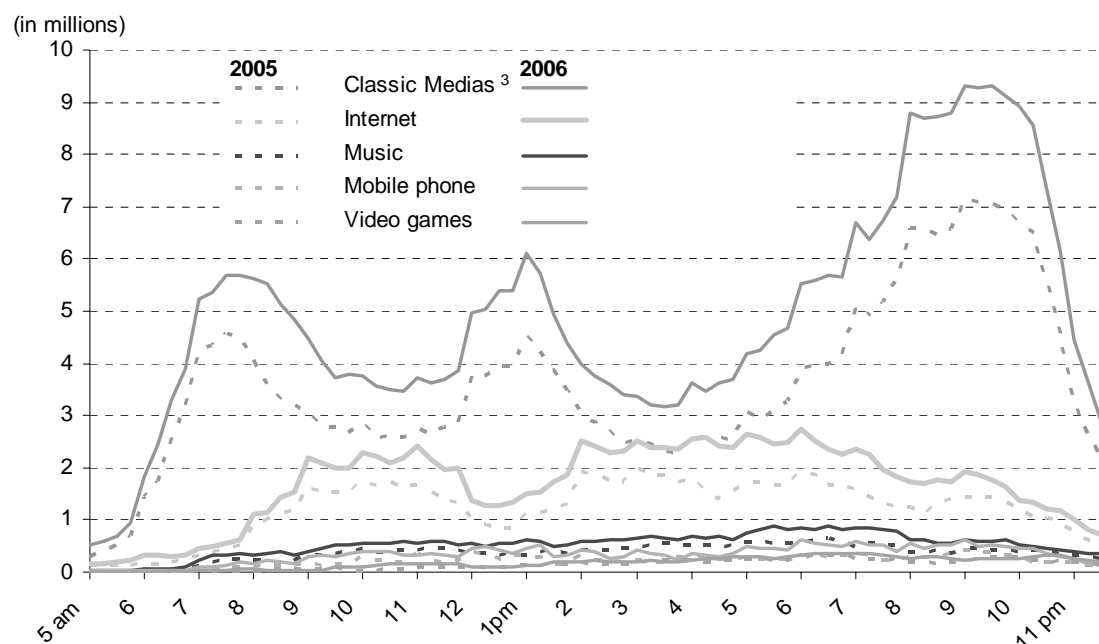
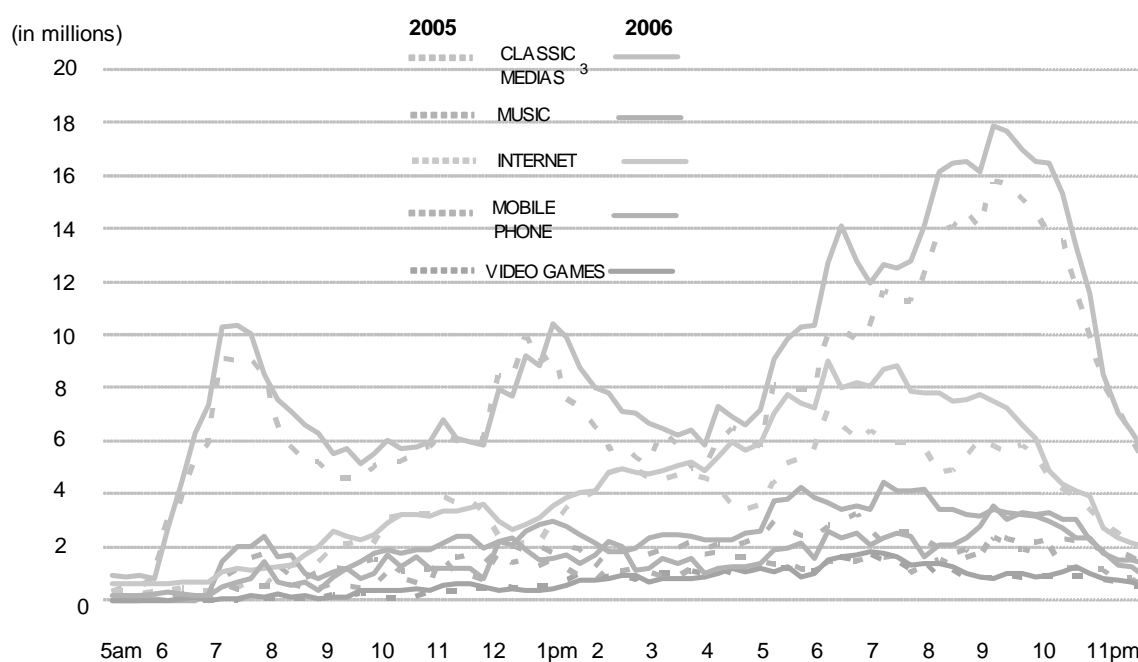
In France, the Internet has stimulated media consumption (Médiamétrie, 2007). Using more than one medium (TV, radio, press and Internet) during the same day is increasing; 18.5 % of people aged 13 or more in 2006 compared to 11.4% in 2005. A significant share of Internet consumption (compared to other media consumption) occurred at the work place, and this increase was mainly concentrated in the afternoon. Time increase devoted to the Internet is not substituting for time devoted to other media, but rather to other kind of activities, such as sleep, travel, etc.

3.2. *Private lives and work lives are blurring*

A significant share of contacts with the Internet occurs during working time, mirroring the low number of contacts with established media (TV, radio, press, cinema) during work. Peak-time periods for established media, in particular TV news (morning, midday, evening) are also low-time periods for Internet contact (Figure 22). Similar results have also been observed in 2004 (Cette, 2005). The frontier between private life and working time is blurring, particularly with the development of portable tools (e.g. notebooks, mobile phones). And working life is impinging to a greater extent on private life for working people equipped with portable ICT business tools (mobiles or computers). Private tasks were undertaken by 48.3% of those equipped during their working time, compared with only 30% among working people without a portable ICT tool. This trend to mix private and business life during working time was most pronounced for people equipped with a business portable computer (52.5%). A similar blurring frontier between private and work-related activities in various time-periods within an average working day has been observed and measured in Luxembourg in 2004 (Poussing, 2006).

3.3. *Multitasking is increasing*

The youngest group of Internet users has almost double the number of contacts with the Internet and other media compared to users overall. For the Internet, the number of contacts is at a maximum in the evening, clearly linked with the daily education schedule, and the established media do not attract young users in the evening as much as older age groups. Furthermore, the youngest Internet user age-group has almost double the cumulated number of daily contacts with the Internet compared with all Internet users (Figure 23). Nevertheless, it should also be borne in mind that watching TV or listening to the radio is increasingly via a computer, especially by younger age-groups (Figure 24). Multitasking is certainly one important explanatory factor for high Internet use in the youngest Internet users.

Figure 22. Media consumption¹ by Internet users in France, 2005-06**Figure 23. Media consumption¹ by young Internet users² in France, 2005-06**

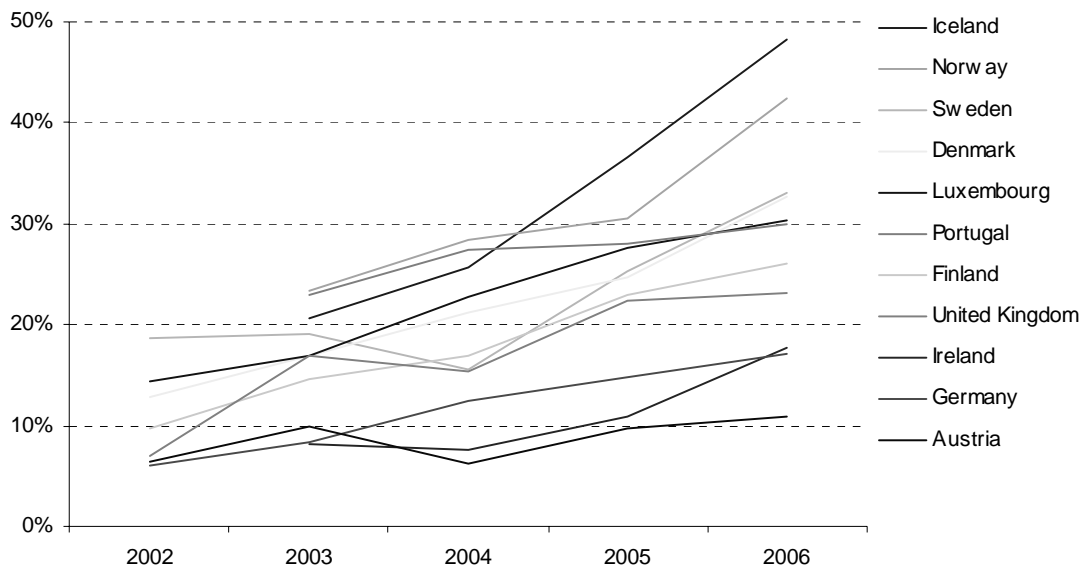
1. Penetration rate, in million of Internet users aged 13 or more, who had at least a contact with Internet or other media, during the day: Monday-Sunday, aggregates 2005 and 2006, 05 a.m. to 12 p.m.

2. Internet users aged 13-24.

3. Classic media include television, radio, press and cinema.

Source: *Media In Life*, Médiamétrie, 2007.

Figure 24. Internet users listening to web radio/watching TV, selected OECD countries, 2002-06
Percentage of Internet users

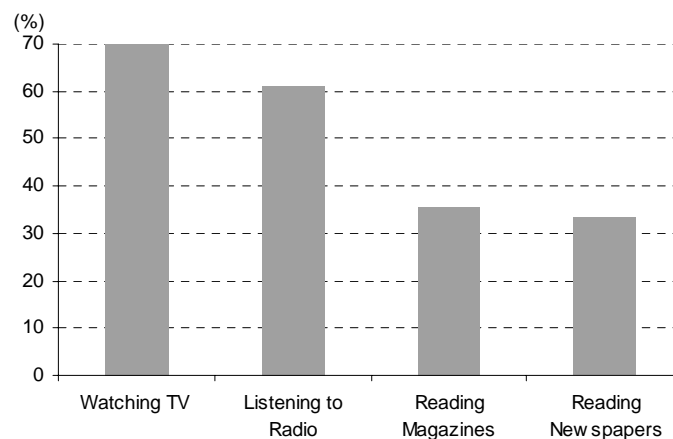


1. Aged 16-74.

Source: OECD; based on data from Eurostat, 2007.

The Internet allows different activities to be pursued in parallel and broadband diffusion has provided the possibilities of online media consultation. Not necessarily using triple play, a large share of American adult Internet users watch TV, listen to the radio or read magazines or newspapers online (Figure 25). In addition, in the United States the average time devoted daily to computer-related telephone calls, mail and emails has been constant between 2003 and 2005 at around 19 minutes a day (US BLS, 2006). Playing games and computer use for leisure decreases with age, except for people aged 55+, mirroring different time-use patterns after retirement. Use on weekends is greater for the less than 35 group, and compared to week-days, is increasing on weekends with level of income and educational attainment.

Figure 25. US adult Internet users who use other media while going online, 2006
Percentage of total adult Internet users¹



1. Based on 146.8 million adult Internet users, from BIGResearch's July 2006 survey.

Source: eMarketer, January 2007.

In Finland, an average of around one hour per day is spent with the PC and Internet. The time devoted to online activities is increasing for all age categories, no doubt driven by broadband applications and services, but the 15-39 group used it considerably more than the 60-74 group, and students use PCs and the Internet more than employees and retired persons (Statistics Finland, 2006b). For specific online activities, in 2006 the 15-39 group is still spending on average over twice as much time using email, chat or the Internet compared to the 60-74 group, although differences are declining (Table 2). Over the period 2001-2006, the average leisure time spent online from home has increased considerably and one third of people aged between 15 and 74 are spending more than 5 hours a week (Annex Figure 18). Nevertheless, if defining “net-addicts” as those using PCs and the Internet more than five hours a day (that is more than five times the average time), it was found that less than 2% of home Internet users are net-addicts.

Table 2. Average time spent on using email, chat or Internet, per week, during leisure time, in Finland

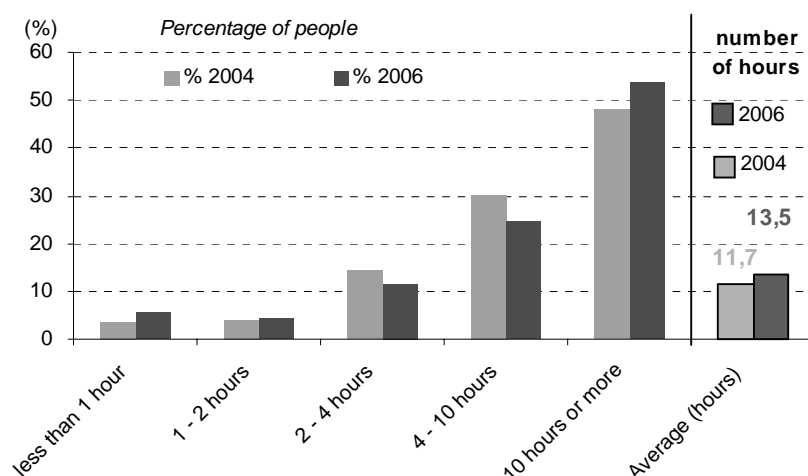
	2004	2005	2006	variation 2004-2006 (%)
15-39	3h30 mn	5h40 mn	6h	71%
40-59	1h40 mn	2h	3h10 mn	90%
60-74	40 mn	1h40 mn	2h30 mn	275%
Together	2h30 mn	3h50 mn	4h30 mn	80%
Ratio younger/older	19%	29%	42%	

1. Persons aged 15 to 74.

Source: Statistics Finland. See also Annex Figure 18.

Similarly, in Korea increasing time is devoted to ICT tools especially the Internet, not only during leisure time. Between 2004 and mid-2006 the average time per week spent online increased by almost two hours, from 11.7 to 13.5 hours. But the increases are at the low and high-user ends of the scale: low intensive users (less than 2 hours) have stagnated or only slightly increased, mid-intensive users (between 2 and 10 hours) have decreased, and intensive or regular users (more than 10 hours) have significantly increased (Figure 26).

Figure 26. Weekly Internet access hours in Korea, 2004-06¹



1. June 2006.

Source: OECD, based on data from NIDA.

In Norway, the average time devoted to the PC at home was multiplied by 4.6 between 1994 and 2005, with the greatest changes in the younger age groups. In 2005 people aged 16-24 were spending, in an average day, almost one and a half hours on their PC compared to only 10 minutes in 1994. From 2000 and the widespread advent of broadband, increased time was spent by all age categories, particularly on the Internet. People aged 67-79 were devoting only 16 minutes of their time to the PC in an average day in 2005, but people aged 45-66 devoted 37 minutes. Time devoted to the Internet was multiplied by 2.4 between 2000 and 2005, and PCs by 2.2. Trends by age categories are similar for the Internet and PCs (Figure 27 and 28) and Internet access is highest in the highest educational attainment group (Annex Figure 10).

Figure 27. Minutes used in Norway, on an average day, by different age groups: Home PC, 1994-2005

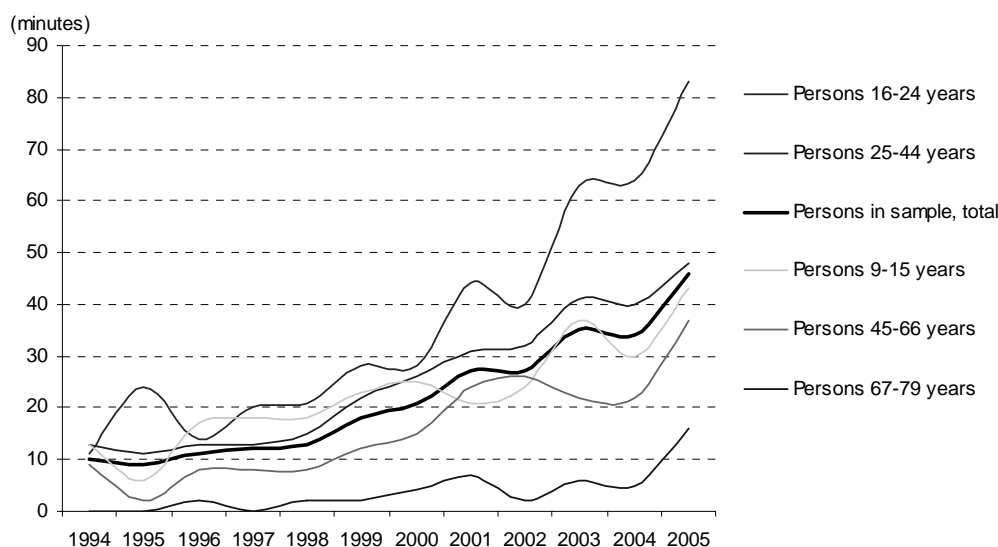
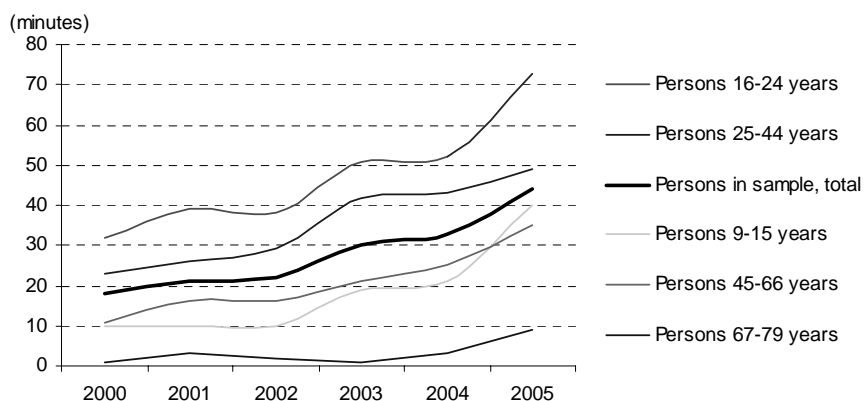
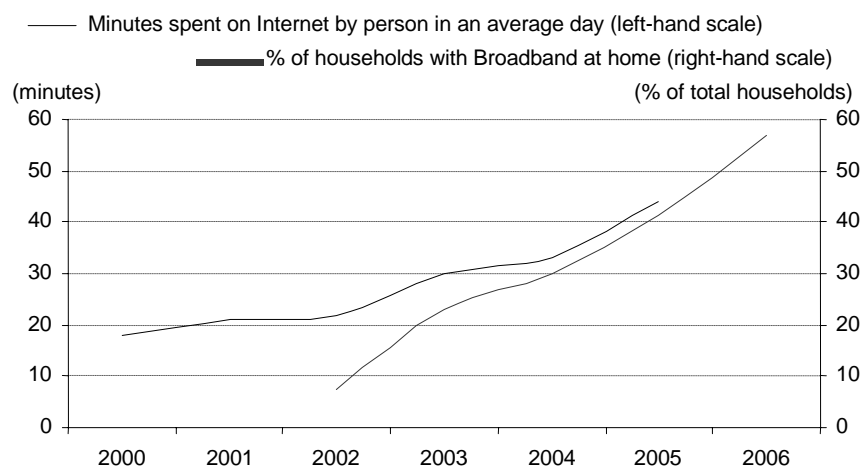


Figure 28. Minutes used in Norway, on an average day, by different age groups: Internet, 2000-05



Source: Statistics Norway.

The diffusion of broadband has a clear positive influence on the time devoted to Internet use (Figure 29 for Norway) and on the range of usages that are available, but the longer usage time does not necessarily imply a higher variety of usage despite the broader range of available uses. In Finland also the increase in regular use between 1996 and 2005 has come from the fast diffusion of broadband access and, in particular, replacement of slow connections with broadband connections (Statistics Finland, 2006c).

Figure 29. Broadband diffusion and time spent on the Internet in Norway, 2000-06

1. 2003 estimates for the percentage of households with broadband at home.

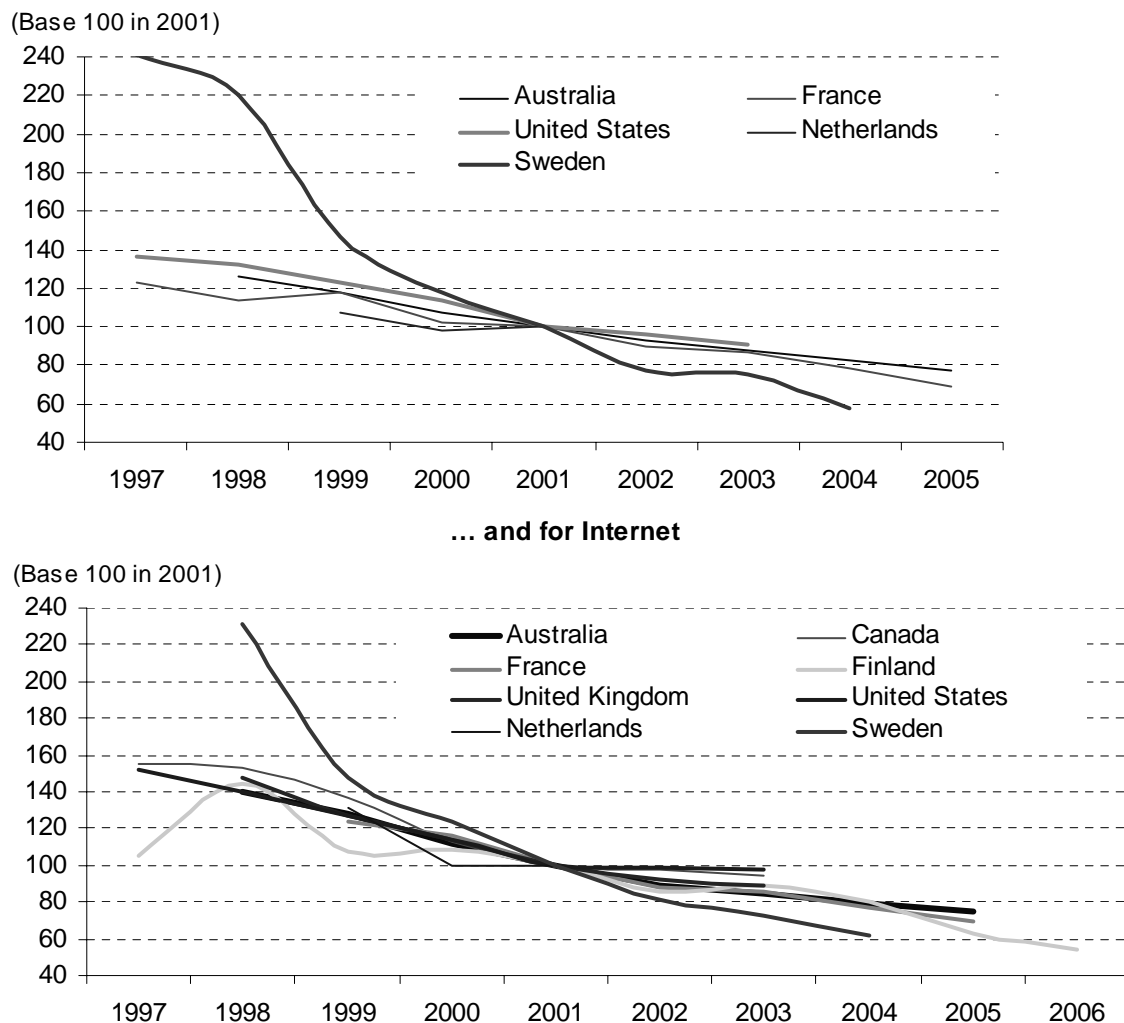
Source: OECD, based on data from Statistics Norway and Eurostat.

4. From the digital divide to the knowledge divide

4.1. The digital divide: Some signs of decline

The digital divide and different rates of ICT uptake by households and individuals reflect economic and social structures and development, infrastructure deployment, skills, training and knowledge, and relative income, none of which are necessarily directly linked to ICTs (Sciadas, 2003). Thus, although some measures of the digital divide may decrease over time, some will remain, reflecting more enduring socio-economic differences. Furthermore, it has been noted in Finland that marginalisation due to ICT is not different from other types of marginalisation (Statistics Finland, 2003).

Differences in PC and Internet penetration by income level are decreasing in all OECD countries for which data are available, and decreases are more rapid in *e.g.* Sweden (Figure 30). On the other hand access to PCs and the Internet by income quartiles, quintiles and deciles not only shows a significant gap between the top and bottom groups (expressed in penetration rates in percentages) but in most countries except Sweden and Finland this measure of the penetration gap has increased despite declining Gini coefficients (a measure of dispersion), suggesting that such partial measures must be considered with care (Annex Table 22).

Figure 30. Gini coefficients for PC and Internet access by income level 1997-2006

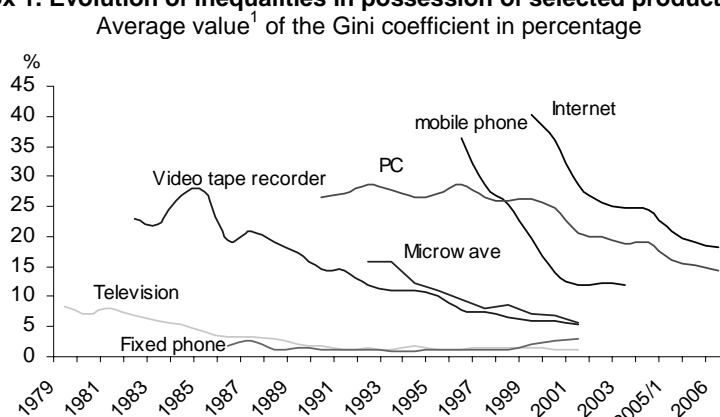
Source: OECD estimates, based on data from National Statistical Offices. See also Annex Table 22.

The narrowing differences in penetration across different socio-economic groups can be seen in France for selected ICT goods (mobile phone, PC, and Internet) and other goods (microwave, television, fixed phone, or video tape recorder). But it is also clear that ICT goods adoption is much more markedly driven initially by higher income, education or occupation (“early adopters”) compared with other goods and that PCs diffuse more slowly across different groups (see Box 1 below).

Box 1. France: a specific diffusion pattern of ICT compared to other technologies

In France, penetration rates differ among products. Moreover, for a given diffusion rate, the disparities (measured through a set of socio-economic variables) are greater for the Internet or the PC than for the mobile phone, *i.e.* some products are intrinsically more widespread and “democratic” than others. Compared with “old” goods, new ICTs seem to have higher but, except for PCs, more rapidly decreasing rates of disparity. This is especially the case of mobile phones, but the Internet has also more rapid decreasing rates of disparity compared to PCs.

Figure Box 1. Evolution of inequalities in possession of selected products in France



1. Gini coefficient average calculated from values for each category (age, income, diploma, profession, and size of agglomeration).

Source: OECD, based on Bigot (2002, 2006) and CREDOC (2004, 2005).

Results based on econometric simulations suggest that some parts of the population will never have a mobile phone or a PC. For similar penetration rates, colour TV, fixed phone or VCRs had much lower disparity levels.

Table Box 1. Gini coefficients at various product penetration rates¹ for selected goods in France

Gini coefficient expressed in percentages

	Penetration rate of the product in percentage			
	0	15	30	60
PC	30	26	22	13 ²
Internet	45	29	24	..
Mobile phone	24	19	16	10
Color TV	30	18	11	4
Video tape recorder	27	20	14	8
Microwave	33	22	15	7

1. Projections are based on econometric estimates.

2. Based on extrapolation of the observed trend.

Source: OECD, based on data from Bigot (2002) and INSEE.

Diffusion of the PC has been slow, and disparities show a similar slow pace of decline. The Internet shows even bigger initial disparities; however, in the early period of diffusion, the impact of different social factors (location, occupation, education or income level) has been more rapidly reduced, and in the last three years the pace tends to parallel that of PCs. ICTs thus seem to have a specific diffusion pattern whereby the level of disparities in diffusion, for a given penetration rate, is systematically higher compared with other products. Within ICTs, mobile phones and the Internet are diffusing rapidly and the Internet ranks second of all technologies in terms of diffusion speed.

Source: OECD, based on Bigot (2002, 2006) and CREDOC (2004, 2005).

4.2. The changing face of the digital divide: Towards a second level socio-economic divide

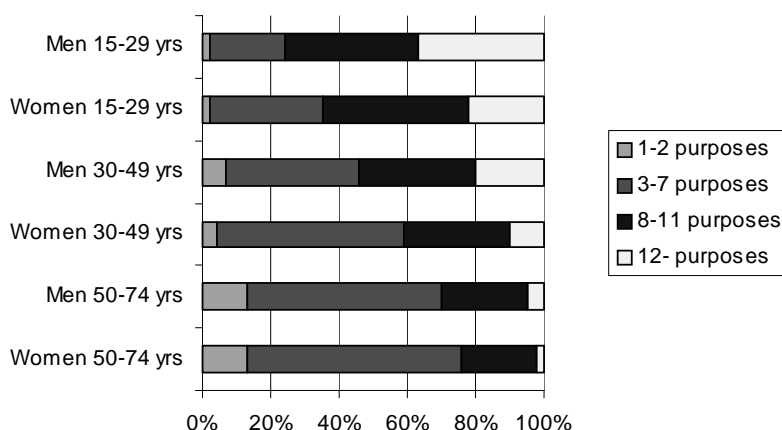
Activities on the Internet mirror social activities or interests of people: who they are, their tastes, their activities and the social group to which they belong. Although the digital divide is decreasing and access differences among various social groups is declining (as shown above and in OECD 2004), a second level digital divide may be developing based on digital usage inequalities and related socio-economic factors.

The second level digital divide can be indirectly observed through the diversity and variety of Internet use, and the very heterogeneous abilities of individuals to find information online in an efficient and effective way (Hargittai, 2002, as quoted in Pénard and Suire, 2006).

Diversity and variety of Internet use

It has been shown in Finland (Sirkiä *et al.*, 2005) that the range and variety of Internet use was highly differentiated according to age, and to a lesser extent according to gender. Young people used the Internet in considerably more varied ways than older people. In 2004, 6 out of 10 of the 15-29 group list 8 purposes of use, against only 1 of 7 50-74 years old. Less than 5% of Internet users aged 15-29 used it for only 1 or 2 purposes, compared with nearly 1 in 5 aged 50 and over. In 2006 differences still remained considerable. Only 2% of the youngest age group used it for 1-2 purposes but 1 in 10 Internet users aged 50 and over still do. More than two-thirds of the youngest group are now using the Internet for more than 8 different purposes and this is the case for less than 30% of people aged 50 and more (Figure 31). Men tend to use the Internet in more ways than women.

Figure 31. Number of purposes of use of the Internet in Finland, 2006
Percentage of Internet users by age group and gender



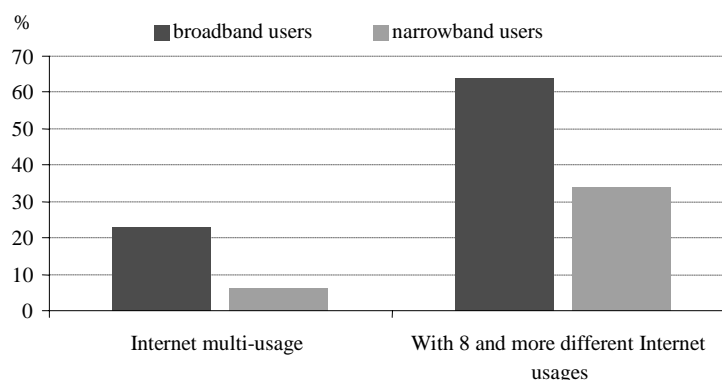
1. 21 activities are measured. For the list of the activities, see Annex Table 19.

Source: Statistics Finland (2007), *Everyday Use of ICT in Finland 2006*, to be published in May 2007 (or in Finnish: Statistics Finland, *Suomalaiset tietoyhteiskunnassa 2006, Katsauksia 2007/1*). See also Annex Table 19.

Broadband has a very significant effect on this variety of use from home. As shown in Figure 32, home broadband Internet users had much more varied uses than those with a slower Internet connection. The share of multi-users is four times higher among broadband users compared to non-users.⁷ One-third of the narrowband users had eight and more different uses, and this share doubled among broadband users. It has also been underlined (Sirkiä *et al.*, 2005) that residents of urban areas use the Internet for more purposes than those living in rural areas. This is in line with another survey of Statistics Finland (Learning Regions 2004) showing that the urban population in Finland makes more varied use of the Internet. The results of this Finnish study suggest that exploring further the differences between urban and rural broadband development and use may show further differences between the two groups. Overall it was seen that so far the Internet is not abolishing distance as far as variety of use is concerned (Sirkiä and Nurmela, 2005). More than geographical location being the single explanatory factor, a broader group of socio-economic and social capital factors may explain the variety of Internet use.

⁷ Similar results had already been underlined in the United States in 2003 (US Department of Commerce, September 2004, Figure 7 page 10).

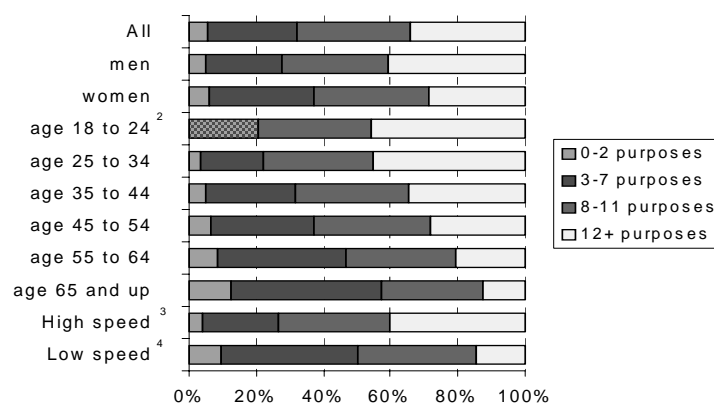
Figure 32. Broadband effect on variety of home Internet use in Finland, 2004
Percentage of the respective category



Source: OECD, based on data from Sirkiä *et al.*, 2005.

Similar effects can be observed in Canada, both for age and for broadband⁸ (Figure 33). In 2005, people aged 18-34 are clearly using the Internet in a more varied way. More than 45% of them have 12 and more different purposes, compared with only one-third of people aged 35-44, and much less in older age brackets. In Canada it is only people aged 65 and over who in the majority (56%) use the Internet for less than 8 purposes. Similarly, more than 4 out of 10 broadband users use it for more than 12 purposes, compared with less than 1 out of 6 narrow band users (Figure 33), and only 1 out of 4 broadband users is using it for less than 8 purposes compared with more than 1 out of 2 narrow band users. Broadband is clearly a strong incentive to increase the variety of Internet use.

Figure 33. Number of activities¹ that home Internet users participated in during the last 12 months, Canada, 2005



1. 21 activities are measured, in line with the Finnish list in Annex Table 19.

2. Due to low reliability of the estimate for the 0-2 purposes category (coefficient of variation exceeds 33.3%), this category has been combined with the 3-7 purposes category for the 18-24 age group.

3. "High speed" includes all respondents who identified that they access the Internet at home using cable or satellite, and all respondents accessing the Internet using a telephone connection or other connection (e.g. television, wireless (cellular phone or PDA), other) that they identified was a high-speed connection.

4. "Low speed" includes all respondents accessing the Internet at home through a telephone or other connection (e.g. television, wireless (cellular phone or PDA), other) that they identified was not a high-speed connection.

Source: Statistics Canada, *Adhoc* tabulation, based on data from the *Canadian Internet use survey 2005*, February 2007. See also Annex Table 20.

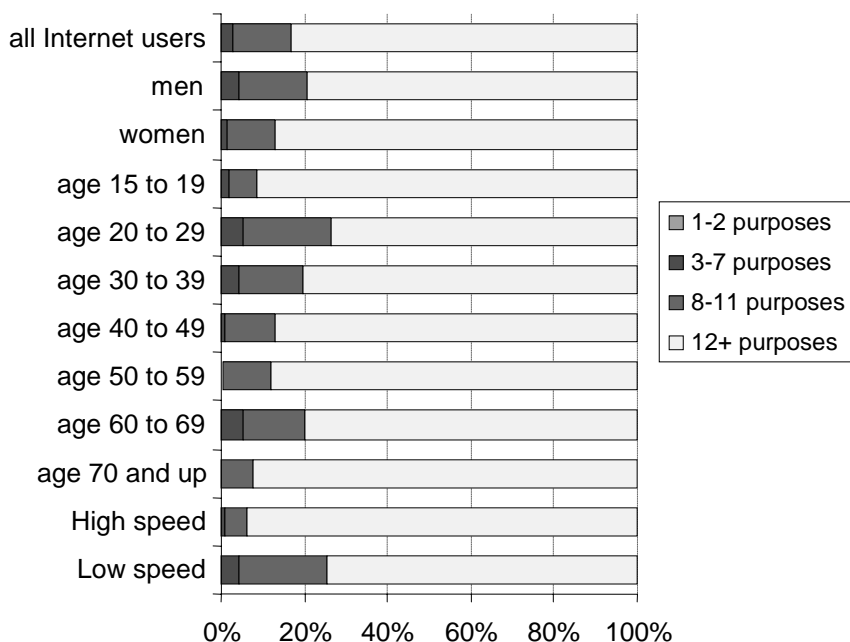
⁸

It has also been underlined that rural location continue to be one of the three important barriers, together with lower level of income and lower levels of education attainment, to Internet use in Canada in 2005 (McKeown *et al.*, 2007).

In the Netherlands, it has been similarly noted that the frequency of Internet usage is much higher for younger than older people, and this also holds for the variety of use of the Internet. Users with 10 Internet activities were aged 32 years on average, against 49 years on average for those with only 1 activity (CBS, 2007, and Annex Table 21).

France appears to have a somewhat different distribution compared to other countries. More than 8 out of 10 Internet users (having used Internet during the last month) had more than 12 different Internet activities. This might be due to the high level of broadband penetration at home in France with more than 3 individuals out of 4 with an Internet broadband connection at home in June 2005, more than 9 out of 10 one year later, which has an influence on the variety of activities. Compared with other countries (Canada, Finland and the Netherlands) variety of use amongst Internet users appears to increase with age for those who do use the Internet, although numbers in the older age groups are relatively low and may reflect the fact that users in this age group are very largely “early adopters” with socio-economic characteristics (education, income) which make them more advanced users. Broadband has a clear multiplicative effect on the variety of usages (Figure 34).

Figure 34. Number of activities¹ that Internet users participated in during the last month, France, 2005



1. 22 activities measured.

Source: INSEE, *ad hoc* tabulations, based on data from the survey « *Enquête Technologies de l'information et de la communication* », October 2005. See also Annex Table 18.

Regarding differences in use by age, diffusion of ICTs is close to saturation in some countries (*e.g.* Denmark, Finland, Korea, the Netherlands) and use will grow in the remaining older groups as they become progressively equipped (Statistics Finland, 2006a). The share of advanced users among retired people should grow, not only due to a mechanical increase of Internet-using people who are reaching the age of retirement, but also because increasing numbers of routine activities (such as social contacts, administrative tasks, etc.) are done via the Internet. Social contact and interaction between older and younger age groups is also increasingly via the Internet which will further spur use by older groups, particularly as broadband uptake spreads through the population.

Education, knowledge, social capital and the second-level divide

When looking at drivers of Internet connection at home, another analysis made in France for the year 2005 goes beyond the usual socio-economic factors and shows that some aspects of “social capital” are important explanatory factors in driving use and explaining the existence of a second-level divide (CREDOC, 2005). In this analysis social capital has been indirectly measured through *social networks* and *cultural behaviour*, holding other factors constant (*i.e.* gender, age, educational attainment, occupation, income, and living place). First, and surprisingly, an existing and dense social network (regularly seeing family members, inviting friends over to the house, participating in one or more associations) has no significant influence on the probability to be connected from home. On the other hand, the variety of cultural practices (*i.e.* go to the cinema, see a play, a concert, visit a museum, regularly visit a library, etc.) has a strong influence on the computer equipment and Internet connection at home, controlling for other factors. People who don’t have any activity of that kind are 3.3 times less likely to be Internet-connected at home compared to those conducting 5 such activities. This suggests that there is a “distance” to the Internet which is not necessarily physical. Another recent study focusing on French low-level income household access to ICT in 2005, has shown that inequalities of access were to a major extent explained by the lowest level of diploma of households with low-level income – the higher the diploma the more likely access (Sautory, 2007).

A comparative study of six countries (Bermuda, Canada, Italy, Norway, Switzerland and the United States) has shown that as literacy skills increased, the increases in diversity and intensity of Internet use and use of computer for task-oriented purposes were substantial (Veenhof *et al.*, 2005). These patterns generally held for all countries with no exceptions. Having measured the likelihood of being an intense computer user based on logistics regressions, the analysis confirmed that education was strongly associated with computer use, controlling for other variables. Furthermore, differences by education level concerning perceived usefulness and attitudes toward computers were smaller, as compared with those in intensity and diversity of Internet use (the latter are closely linked to social capital). This underlines that the second level divide is certainly more pronounced for the Internet as compared with the PC, due to the respective nature of each tool. The Internet is a media, a window open to the world, and as such, implies a complex interaction with the user which goes beyond the tool itself.

Analysis in Luxembourg (Poussing, 2006) showed that Internet usages for non-business related purposes are identical at the work place compared to home, but with a lower intensity. This could be explained by the implementation of specific frameworks within firms related to ICT use. But the former issue – the close similarity in Internet activities between various places – is an additional indicator of the significant pre-existing influence of social capital in explaining the new divides in Internet use.

The influence of socio-economic factors on ICT usage, and in particular Internet usage, is at the heart of the knowledge society. For the younger age group - the “New Millenium Learners” (NML, OECD 2006b) - it has been recently underlined that the socio-economic status either reinforces a certain number of practices while avoiding some others, suggesting a diversity of profiles following diverse needs for peer-to-peer communication and knowledge development. A survey of French high school pupils on the socio-economic differences influencing the use of instant messaging for chatting shows that the lower the socio-economic status, the higher the frequency of use (Table 3 below). It is the socio-economic group that largely drives a particular communication practice. The tool itself – here instant messaging – reflects and amplifies the practice originating from the socio-economic status. Similarly, it was found that the substitution effect between mobiles and fixed phones is particularly strong among households with a low-level income and education attainment (Sautory, 2007). For this particular use the higher the socio-economic status the lower the use of the tool. The relationship between socio-economic status and the intensity and variety of ICT usage – *i.e.* cultural experiences and knowledge acquisition through Internet –

is thus not necessarily uniform across all applications, due to complex interactions. Differences in existing patterns of use are *magnified* by the distorting power of the ICT tools.

Table 3. Differences among high school pupils in the use of instant messaging for chatting by socio-economic group, France, 2005

	Total	Higher SES	Medium SES	Lower SES
Never	41	51	39	30
Sometimes	29,5	31	27	31
Frequently	18	8	22	27

Note: SES= socio-economic status.

Source: Pasquier (2005), as provided in OECD, 2006b.

Moreover, ICT tools are constantly changing. Until recently, much of ICT and Internet content was text-based (Stewart, 2000, as quoted in Veenhof *et al.*, 2005). Broadband is encouraging audio-visual online content, but text or words remain crucial; for example new video search engines can find video or TV programmes in which specific words were pronounced. Thanks to its vocal recognition system, for example the website *blinkx.com*, allows full-text search on TV or radio programmes (*20 Minutes*, 2007). Such developments will undoubtedly be reflected in new use patterns of different socio-economic groups, just as instant messaging has, as described above.

Conclusion: Some policy implications and future work

Policy responses to reduce the emerging use divide need to be wider than simply focusing on ICT-related issues. The remaining digital access divide and increasing digital use divide are linked to other kinds of social and economic divides as well as to locational factors.⁹ Efficient and creative use of ICT is one of the keys for innovation, organisational change, growth and employment, and the emerging usage divide needs to be taken into account when devising policies to increase the benefits of broadband and ICTs. When investing in and preparing for the future, one of the key questions is: what kind of knowledge society are schools and educational institutions preparing for? More broadly, what kind of educational and training processes should be encouraged to close the second level digital divide / digital use divide?

New approaches to education and training?

Broader educational efforts require attention apart from simple ICT skills issues.¹⁰ From the supply side, incentives to foster ICT-based educational resources, innovation and experimentation are one policy direction. These include improving and expanding teachers' education to master *e.g.* Internet applications in their own discipline, and to pass on these skills. A different rationale for a new generation of ICT-related policies lies in the need to accompany young people in their process of discovering ICT and making use of them in their daily lives through the use of new interactive media. It is argued that with no educational intervention, ICT uses simply mimic current practices in the peer or reference group, so there is little scope for ICTs to spontaneously foster social or economic mobility (OECD, 2006b).

⁹ As outlined earlier, enduring digital access divides are linked with locational factors (*e.g.* remote and rural locations) and socio-economic factors (*e.g.* lower income and lower levels of educational attainment), see McKeown, *et al.* 2007. Significant differences in Internet access between rural and urban locations were also found in earlier OECD work, see OECD, 2002.

¹⁰ ICT skills issues are also important for people who do not access ICTs. For example, in France in 2005, more than one in five households not equipped with a PC said lack of knowledge of use was important, whereas only one in six mentioned financial reasons (Sautory, 2007).

The dual dimensions of the Internet should be borne in mind both as a resource (*e.g.* access to various libraries, documentation centres, websites) and as a specific media which allows improved interaction (particularly via broadband) between teachers and students or among students locally or remotely for specific projects.¹¹ The goal is not that every student will *e.g.* directly use advanced online courses,¹² but that information regarding their availability and accessibility is widespread, along with the skills to access them despite different socio-economic propensities to use such resources.

Most OECD countries have programmes to promote IT education. All aim at improving quality and spreading skills more widely, but approaches are diverse despite common aims, and each country has its own focus (OECD, 2006a, Chapter 8). Initiatives go from basic education using innovative new technologies (examples in the Czech Republic, Mexico¹³ and the United Kingdom), to integrating ICTs in the school and university education process (Spain), training specific groups such as the unemployed, women or the elderly (Korea), or teacher training and the use of ICT for broader education (Hungary). In Japan measures are being taken to improve student capacities through the distribution of educational digital content, as well as teachers' and parents' understanding and teaching skills through provision of guides for teachers and for home study.¹⁴ Other measures include clear definition of standards regarding teachers' ability to use ICT in their teaching. These policy directions also hold for education and training within firms. Implementing these kinds of measures in work-related skill formation, possibly within public-private partnerships, would also strengthen lifelong learning (see *e.g.* OECD, 2006a, Chapters 6 and 8).

On the demand side new and innovative uses of the Internet and broadband are being taken up by younger and, increasingly, older age groups. Leaders and models, intermediaries and mediators play important roles in the learning process, inside and outside of educational institutions, with positive effects on digital inclusion. They are key enablers of ICT use among excluded parts of the population. Policy measures could be designed to enable and promote the role of leaders and models, and intermediaries and mediators, with potential to reduce digital inequalities.

Possible future work

The analysis of the usage divide presented in this paper could be extended for example by detailed analysis of factors driving, and impacts of, various Internet and broadband uses by place of use (home versus work, rural versus urban), controlling for different socio-economic variables including income, educational attainment, age, gender, etc. Usage divides could be analysed in particular as well as policies and programmes to overcome them. This work could exploit increasingly comparable datasets from ICT household usage surveys based on the OECD model survey questionnaire (EU, Canada, Mexico, Korea), linked for example with data from the OECD PISA surveys, to undertake internationally comparable detailed micro data analysis. Future research on reasons for using and not using broadband and other ICTs could also be a useful companion study building on analysis underway or completed.¹⁵

¹¹ For an example of the misuse and pervasiveness of ICT tools, see Jean-Emmanuel Ray (2006), *La guerre des temps. Le Net ? Never enough time !*, *La Revue du Droit Social*, January.

¹² Before end-2007, the Massachusetts Institute of Technology will become the first US university to offer all of its roughly 1 800 courses free on the Internet (Reuters, 2007).

¹³ See for example the *Enciclomedia* initiative in Mexico, in OECD 2006c.

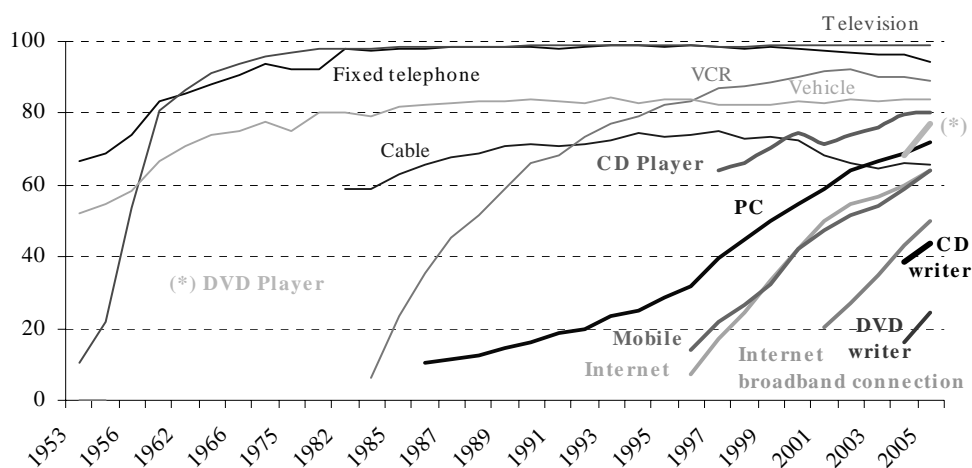
¹⁴ Comments on the first draft of this paper by the Government of Japan, May 2007.

¹⁵ See for example US Department of Commerce (2004), *A Nation Online: Entering the Broadband Age*, Washington, DC; McKeown, *et al.* 2007; and work in other countries.

ANNEX 1: FIGURES

Annex Figure 1. Historical diffusion of selected goods and services, Canada

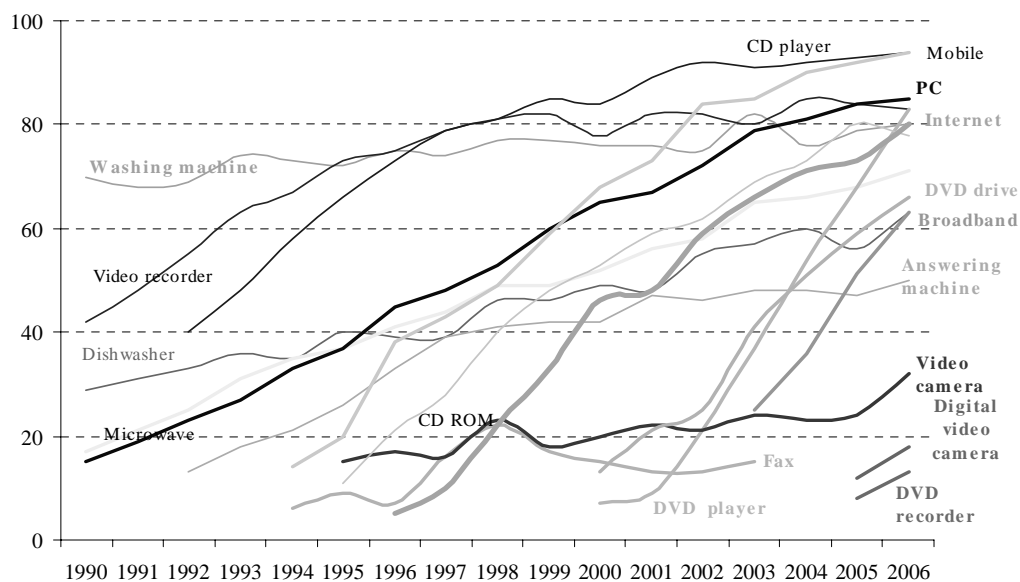
Percentage of diffusion in households



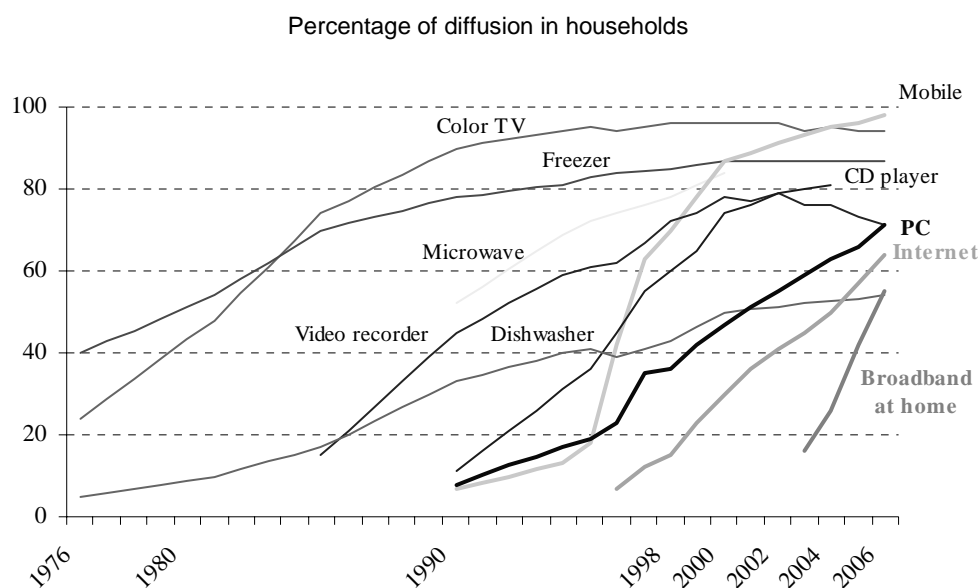
Source: OECD, based on data from Statistics Canada, 2007.

Annex Figure 2. Historical diffusion of selected goods and services, Denmark

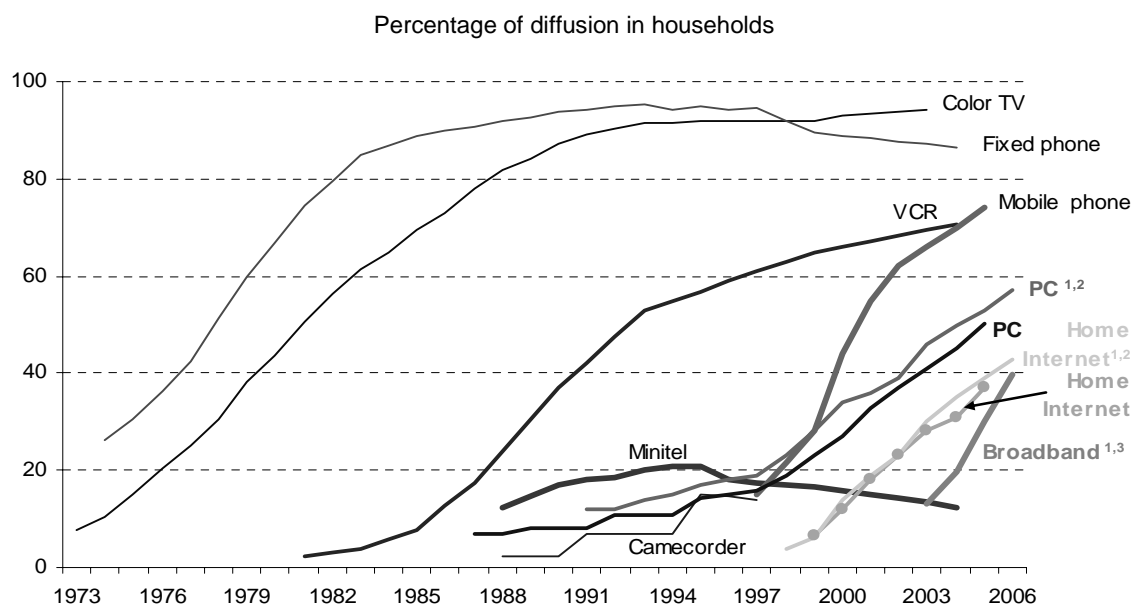
Percentage of diffusion in households



Source: OECD, based on data from Statistics Denmark, and for Broadband Eurostat, 2007.

Annex Figure 3. Historical diffusion of selected goods and services, Finland

Source: OECD, based on data from Statistics Finland, 2007.

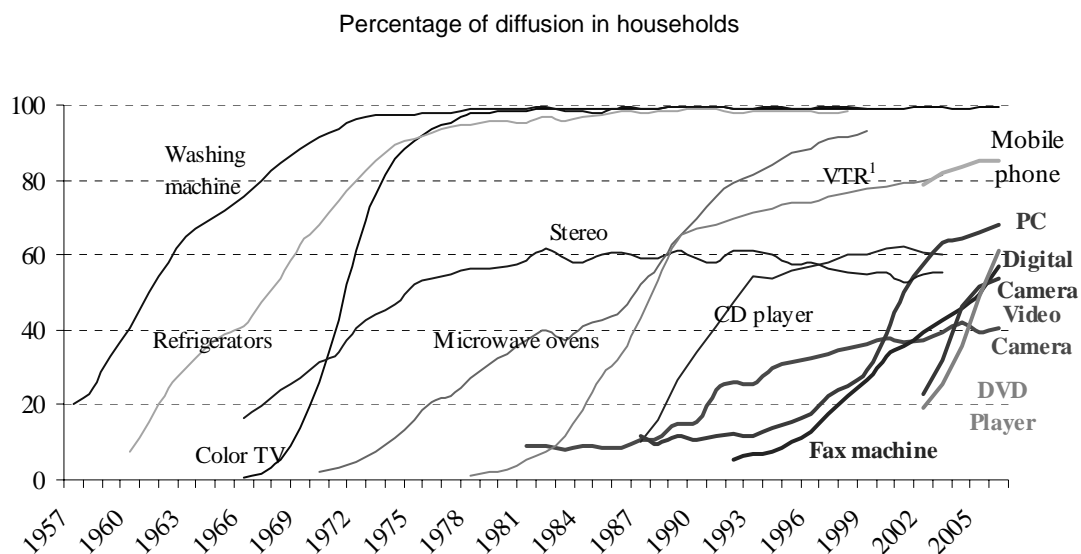
Annex Figure 4. Historical diffusion of selected goods and services, France

1. Individuals, not households.

2. Individuals aged 18 and more.

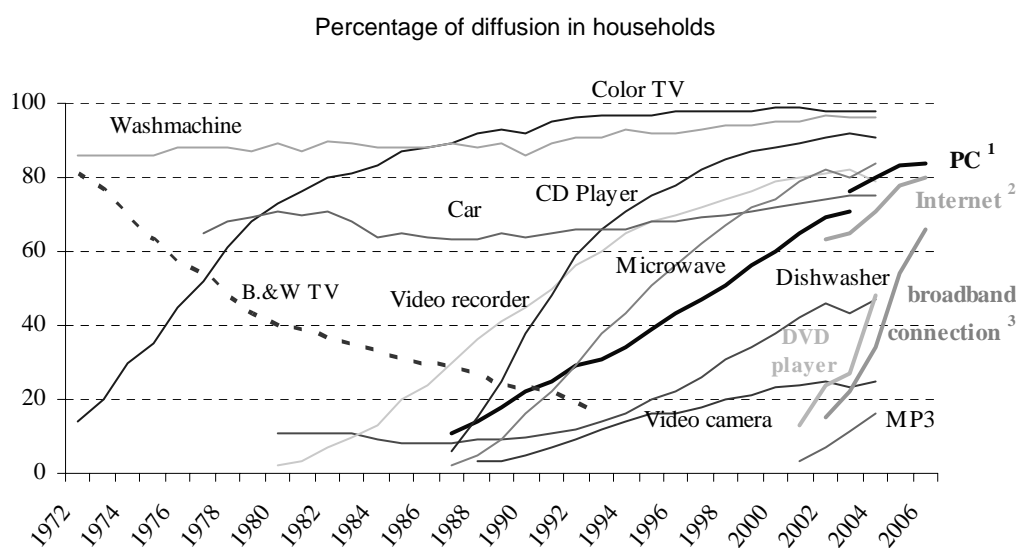
3. Individuals aged 12 and more.

Source: OECD, based on data from INSEE and CREDOC, 2007.

Annex Figure 5. Historical diffusion of selected goods, Japan

1. Video Tape Recorder.

Source: OECD, based on data from the Consumer Survey, Economic and Social Research Institute, Cabinet Office, Japan.

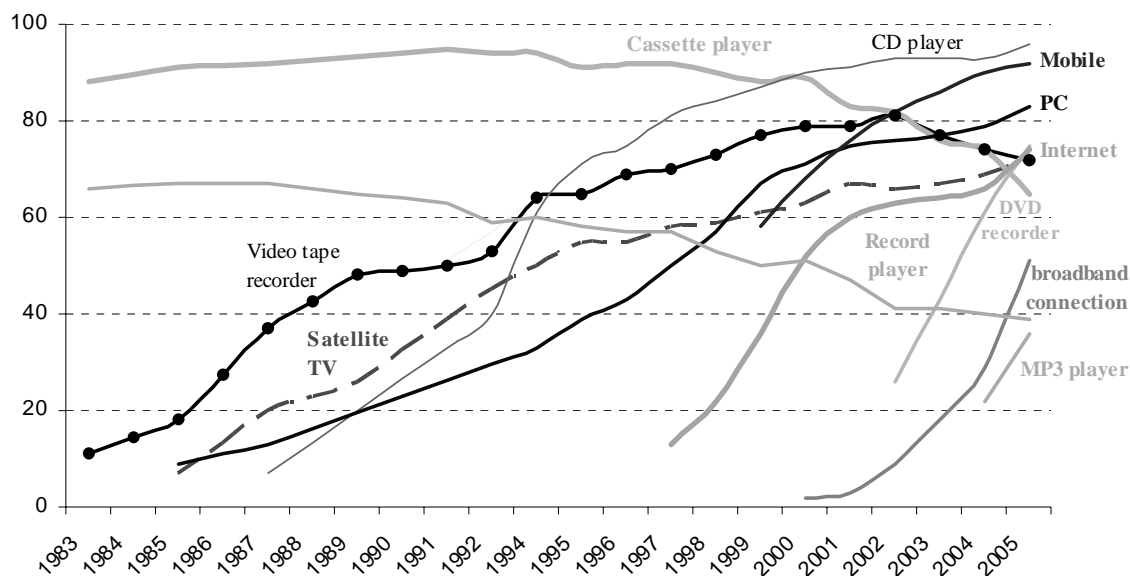
Annex Figure 6. Historical diffusion of selected goods and services, Netherlands

1. Break in series in 2004.

2. Internet connection at home.

3. Households with Internet broadband connection.

Source: OECD, based on data from CBS-Statistics Netherlands, 2007.

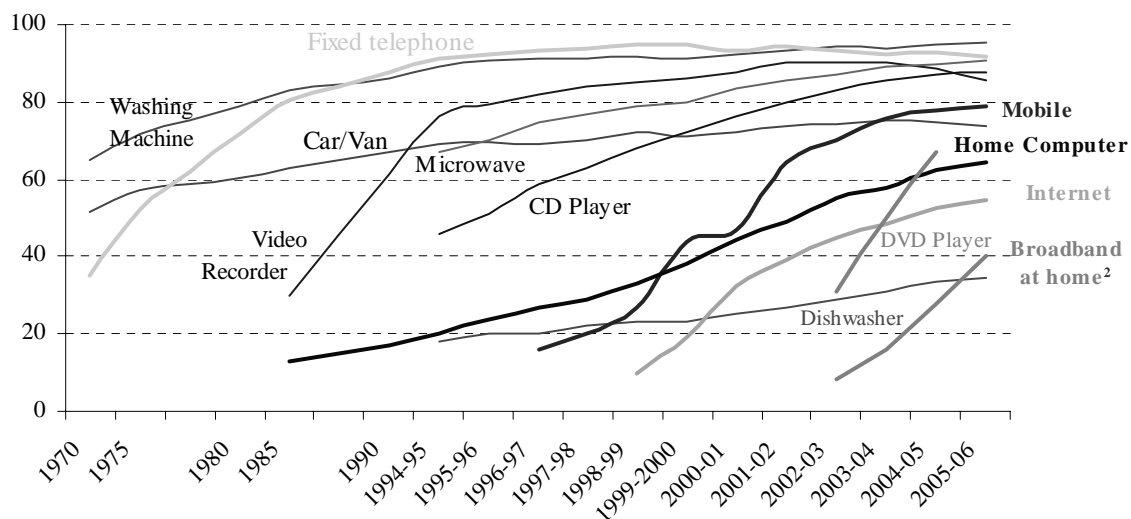
Annex Figure 7. Historical diffusion of selected goods and services, NorwayPercentage of individuals¹ who have access to different electronic media channels at home

1. Aged 9-79 years.

Source: OECD, based on data from Media-use Survey, Statistics Norway, 2007.

Annex Figure 8. Historical diffusion of selected goods and services, United Kingdom¹

Percentage of diffusion in households

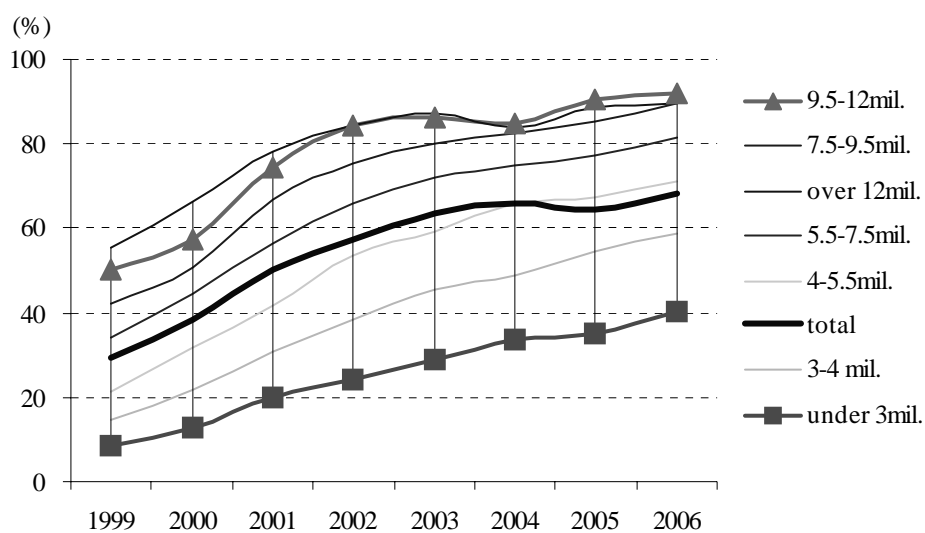


1. From 1998-99 onwards, based on weighted data and including children's expenditure. From 2001-02 onwards, weighting is based on the population figures from the 2001 census.

2. For broadband connection, before 2005, Great Britain instead of the United Kingdom. April of 2003 and 2004, and July 2005.

Source: OECD, compiled from *Social Trends n°36* (February 2006), *Internet Access households and Individuals, First Release* (August 2006), and *Family Spending 2006 Edition* (2007), Office of National Statistics, United Kingdom.

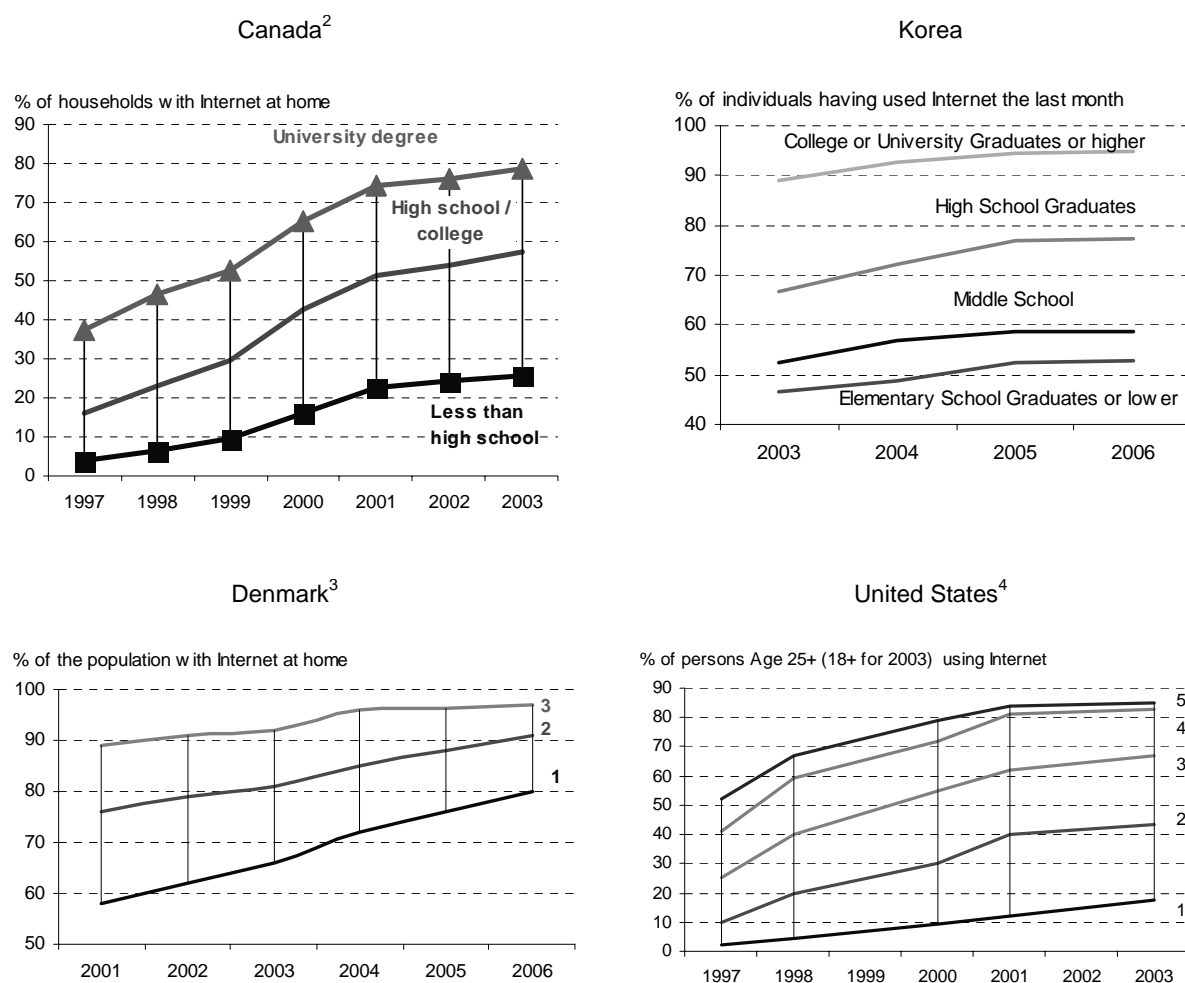
Annex Figure 9. Diffusion of PC among households by income level ¹ in Japan, 1992-2006²



1. In million of current Yen.

2. Fiscal year, ending in March.

Source: Cabinet Office, Japan.

Annex Figure 10. Internet access or use by educational attainment in selected OECD countries¹

1. Levels of education, locations and populations (households or individuals) vary among the selected countries.

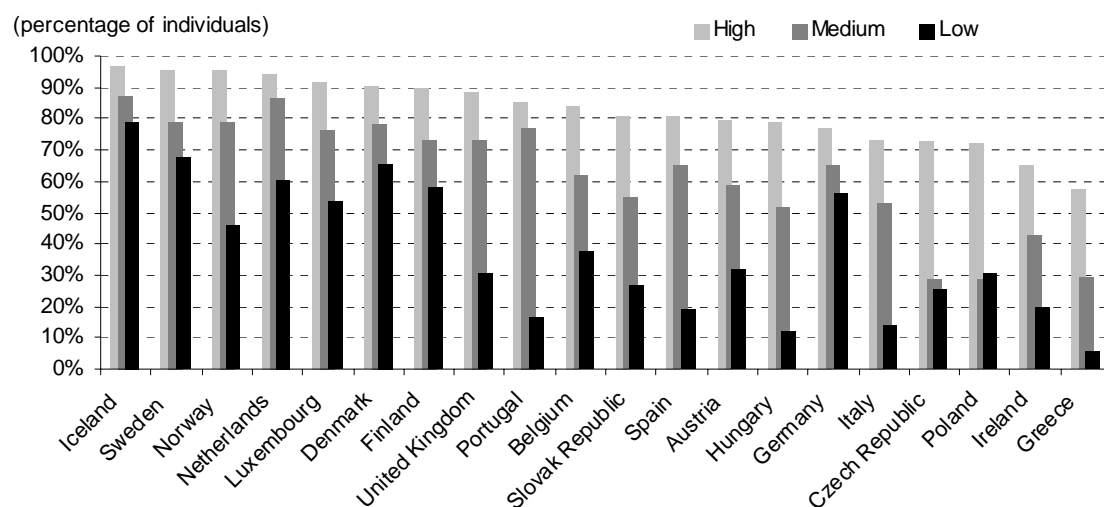
2. Levels of education of household head.

3. Levels of education: 1=Primary education/lower secondary; 2= Upper secondary education; 3=Tertiary (university) education.

4. Levels of education: 1= Less than high school; 2=high school diploma / GED; 3=Some college; 4=Bachelor's degree; 5=Beyond bachelor's degree.

Source: OECD, based on data from national statistical offices, Ministry of Information and Communication –NIDA (Korea), and from US Department of Commerce.

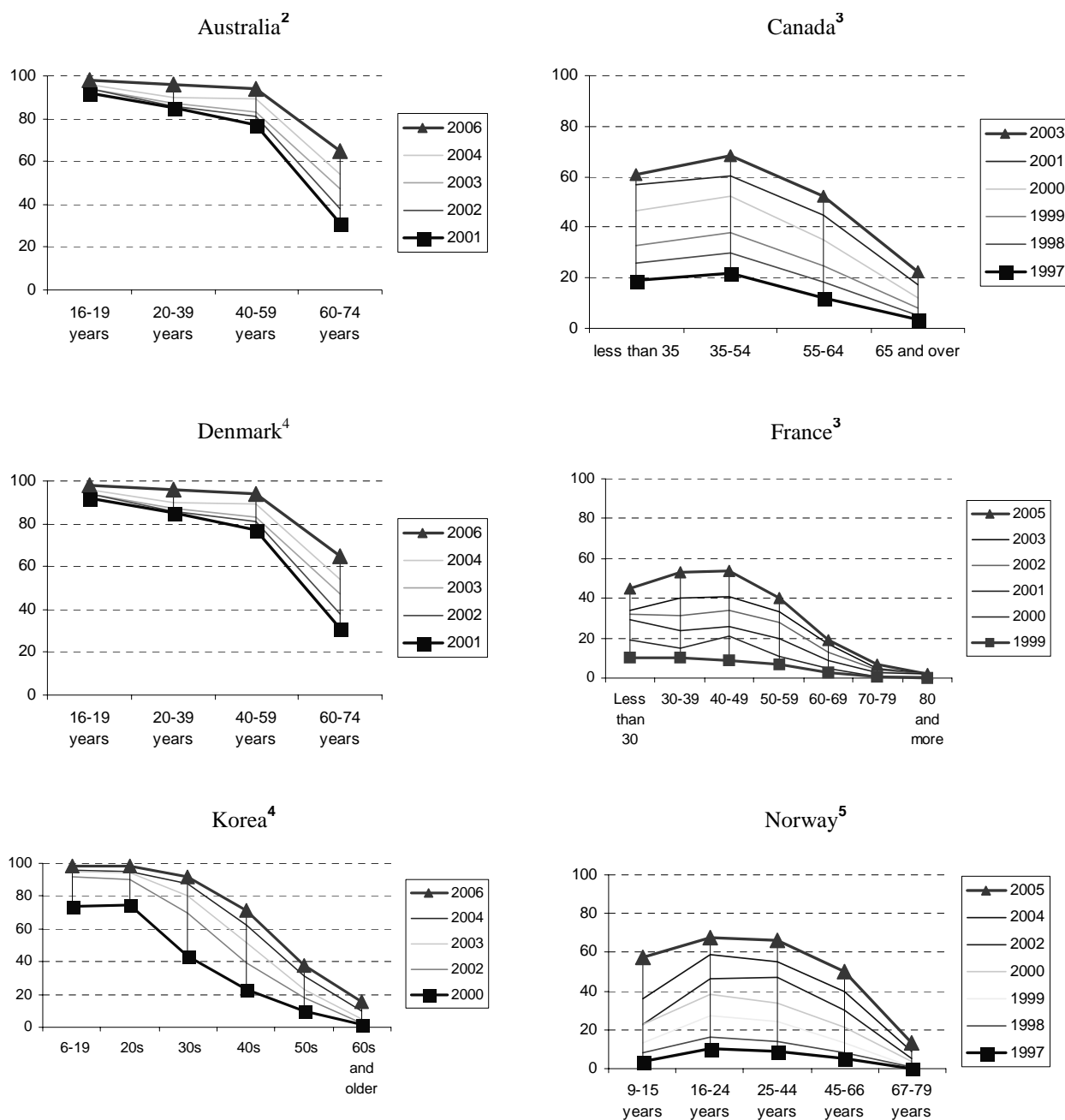
Annex Figure 11. Internet access¹ by high, medium and low education level² in selected OECD countries, 2005



1. Individuals having accessed the Internet in the 3 last months.

2. Low = ISCED 0 to 2; medium = ISCED 3 to 4; high = ISCED 5 to 6/7.

Source: Montagnier and Van Welsun (2006), based on data from Eurostat, Newcronos database.

Annex Figure 12. Internet access or use by age in selected OECD countries¹

1. Ages, place of Internet access, and units (households or individuals) vary among the selected countries.

2. Adults accessing Internet from home.

3. Households with Internet at home by age of household head.

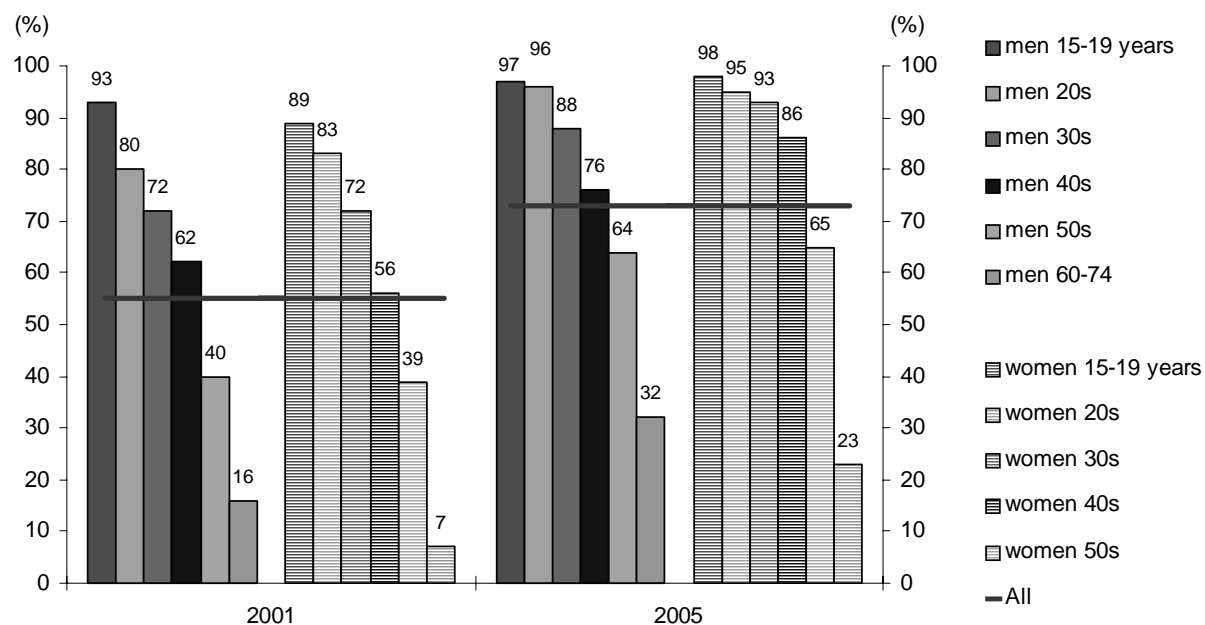
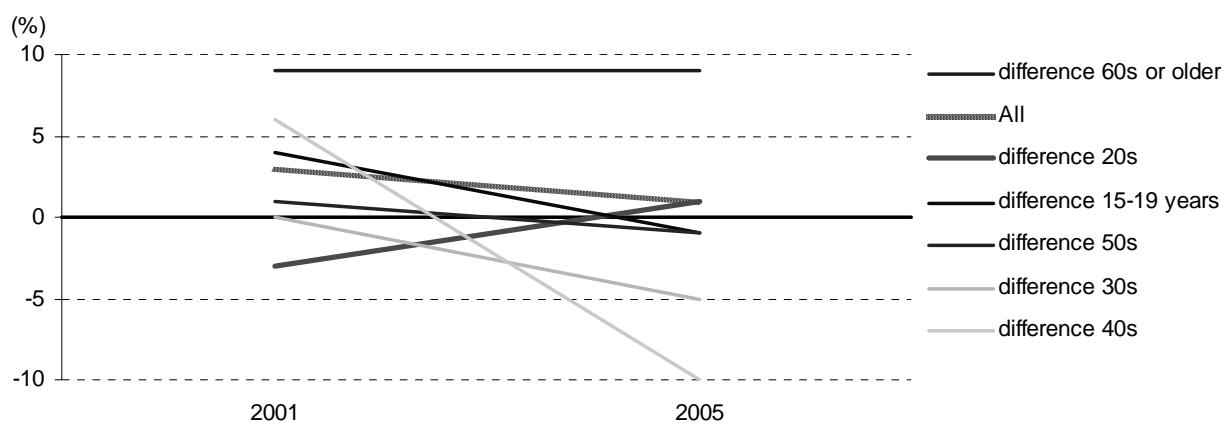
4. Population accessing to Internet, whatever the place.

5. Percentage of Internet users on an average day.

Source: OECD, based on data from National Statistical Offices and Ministry of Information and Communication – NIDA (Korea).

Annex Figure 13a. Individuals' Internet Usage rate in Finland, 2001 and 2005¹

(percentage of individuals aged 15 to 74)

**and gender differences²**

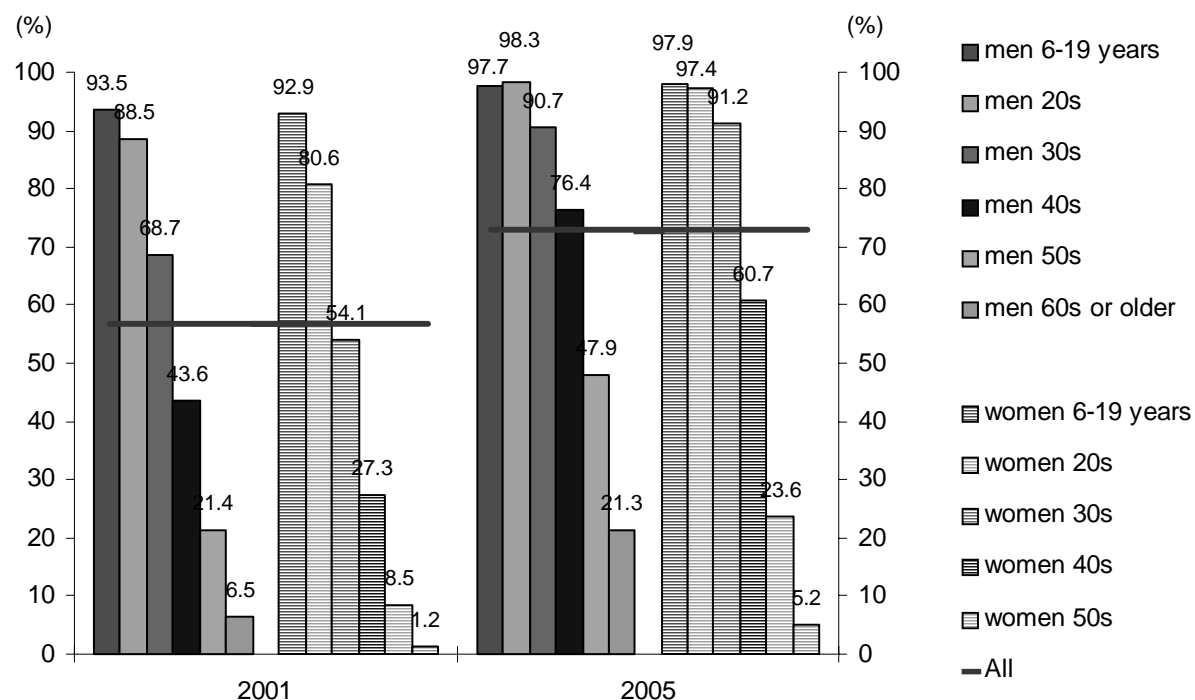
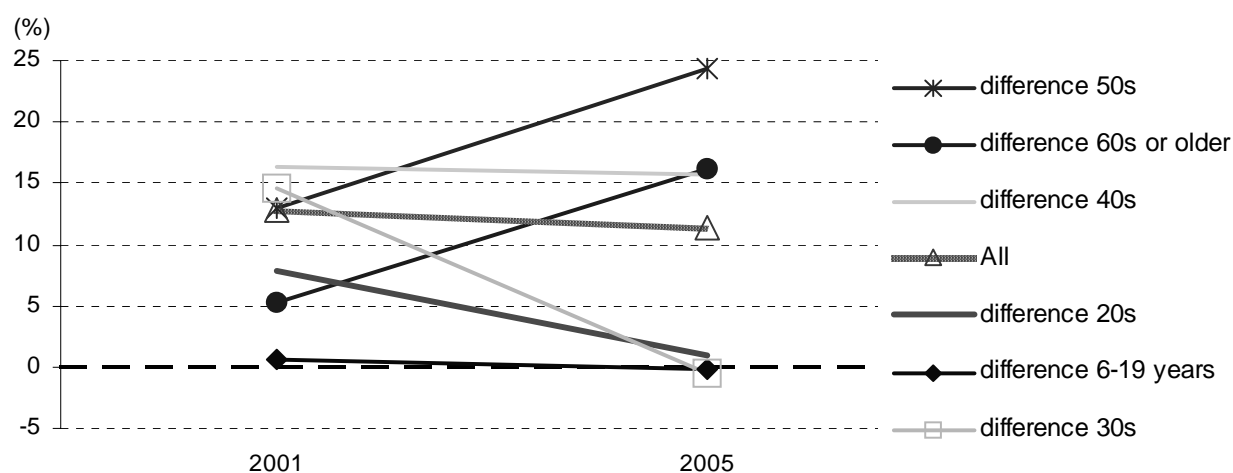
1. Spring of each year.

2. Expressed as men's Internet usage rate minus women's.

Source: Statistics Finland (2006b).

Annex Figure 13b. Individuals' Internet Usage rate in Korea, 2001 and 2005¹

(percentage of individuals aged 15 to 74)

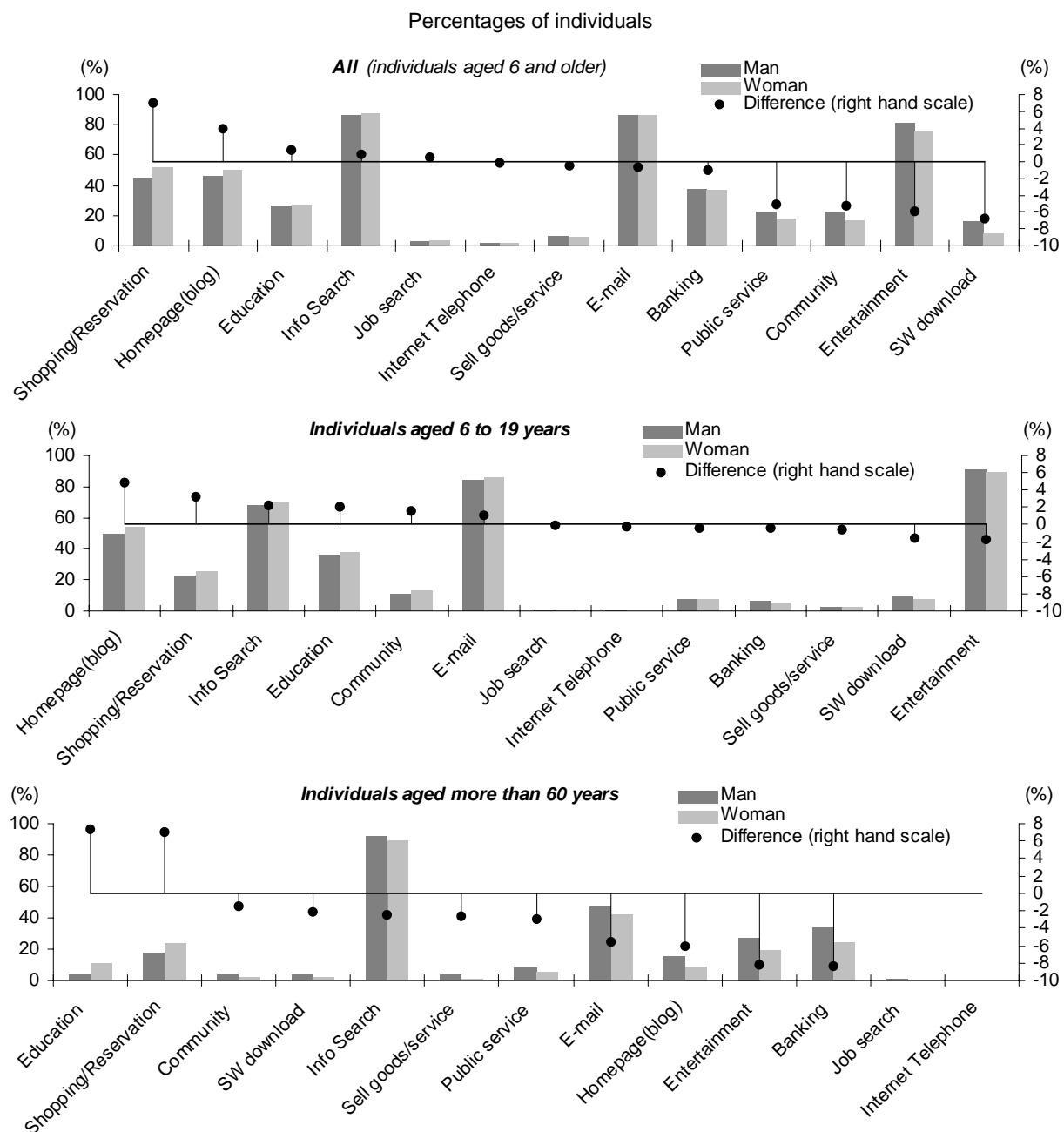
and gender differences²

1. December of each year.

2. Expressed as men's Internet usage rate minus women's.

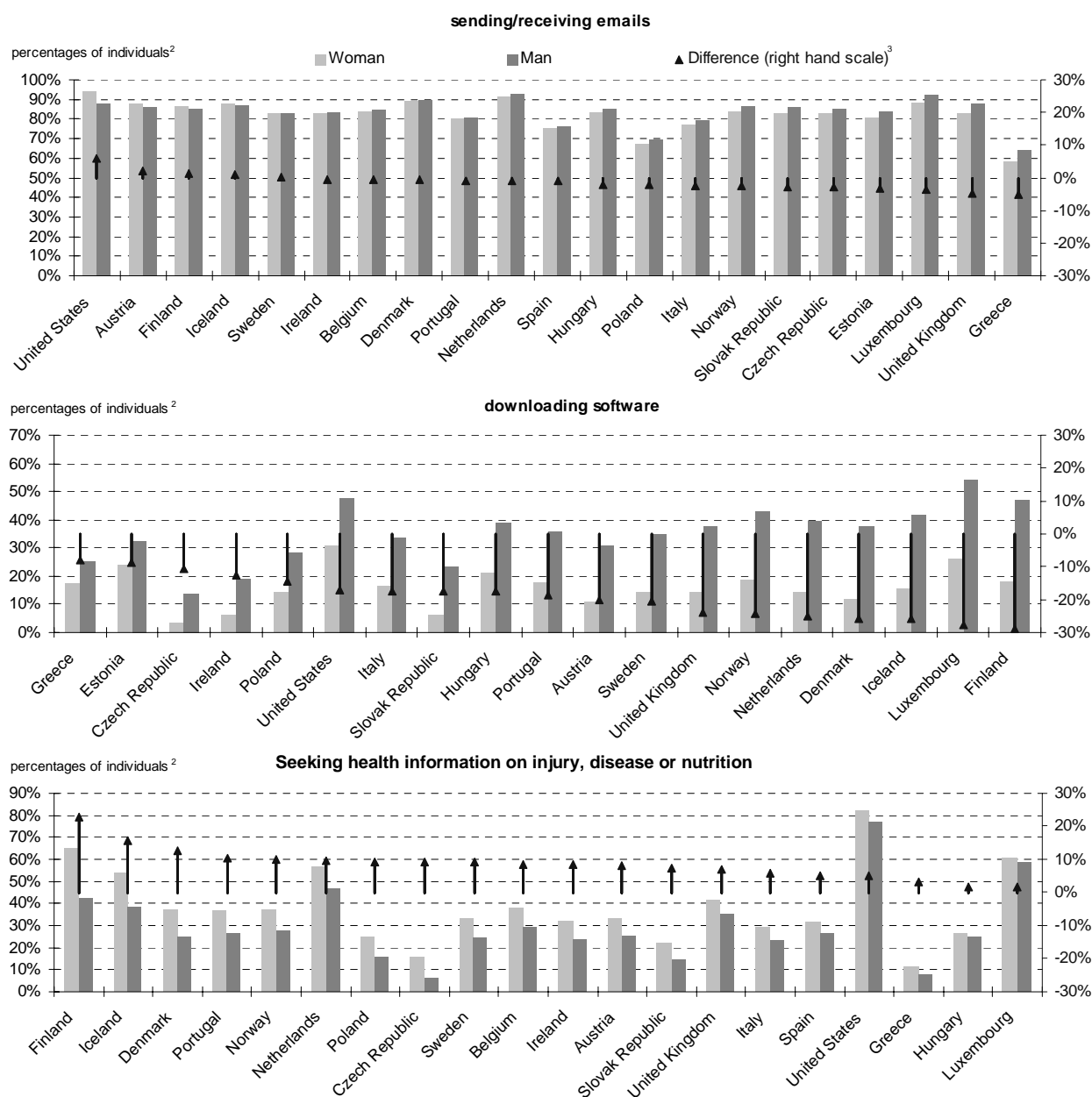
Source: National Internet Development Agency of Korea, 2006. (Available at: http://isis.nic.or.kr/english/sub02/sub02_index.html?flag=2). See also Annex Table 7.

Annex Figure 14. Internet usage pattern by gender and age in Korea, 2005



1. Difference measured as percentages of women minus percentages of men, in percentage points.

Source: Montagnier and Van Welsum (2006), based on data from the National Internet Development Agency of Korea, 2006.
Available at: http://isis.nic.or.kr/english/sub02/sub02_index.html?flag=2

Annex Figure 15. Gender differences for selected Internet activities in selected OECD countries, 2005¹

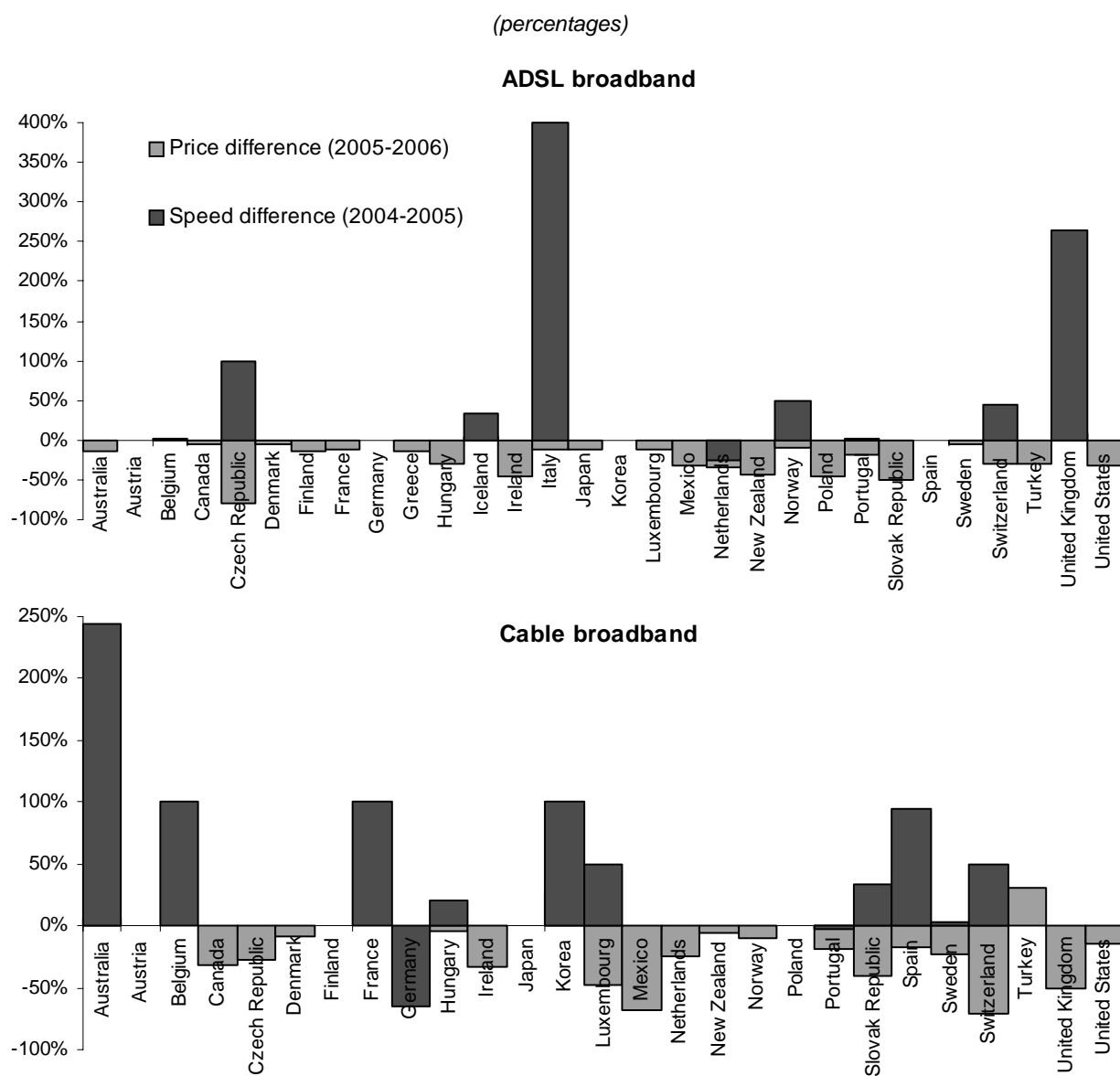
1. 2006 for the United States for "Seeking health information on injury, disease or nutrition".

2. Percentage of individuals aged 16 to 74 or more having used Internet in the last 3 months.

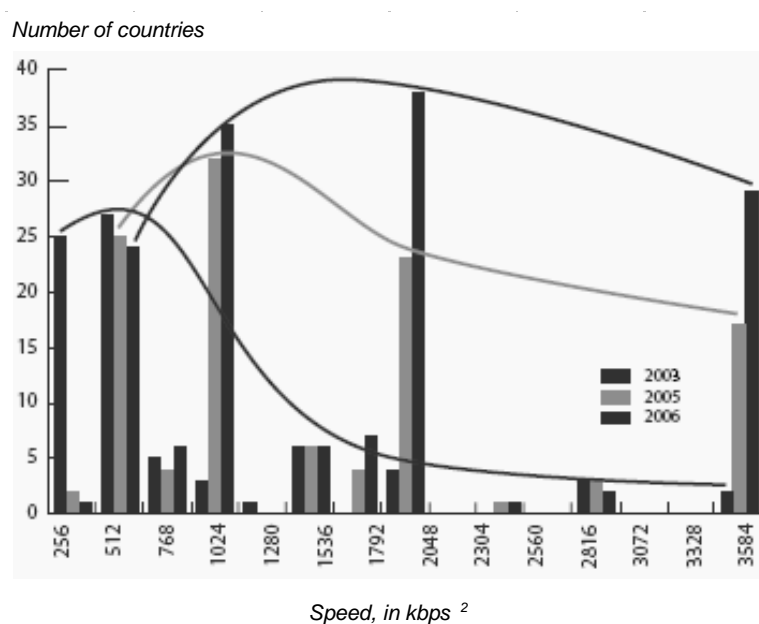
3. Difference measured as percentages of women minus percentages of men, in percentage points.

Source: OECD, based on data from Eurostat, Newcronos database (2006), and data from the PEW Research Center provided in Fallows (2005) and Fox (2006).

Annex Figure 16. Speed and price changes for selected broadband technologies in OECD countries, September 2005 – October 2006



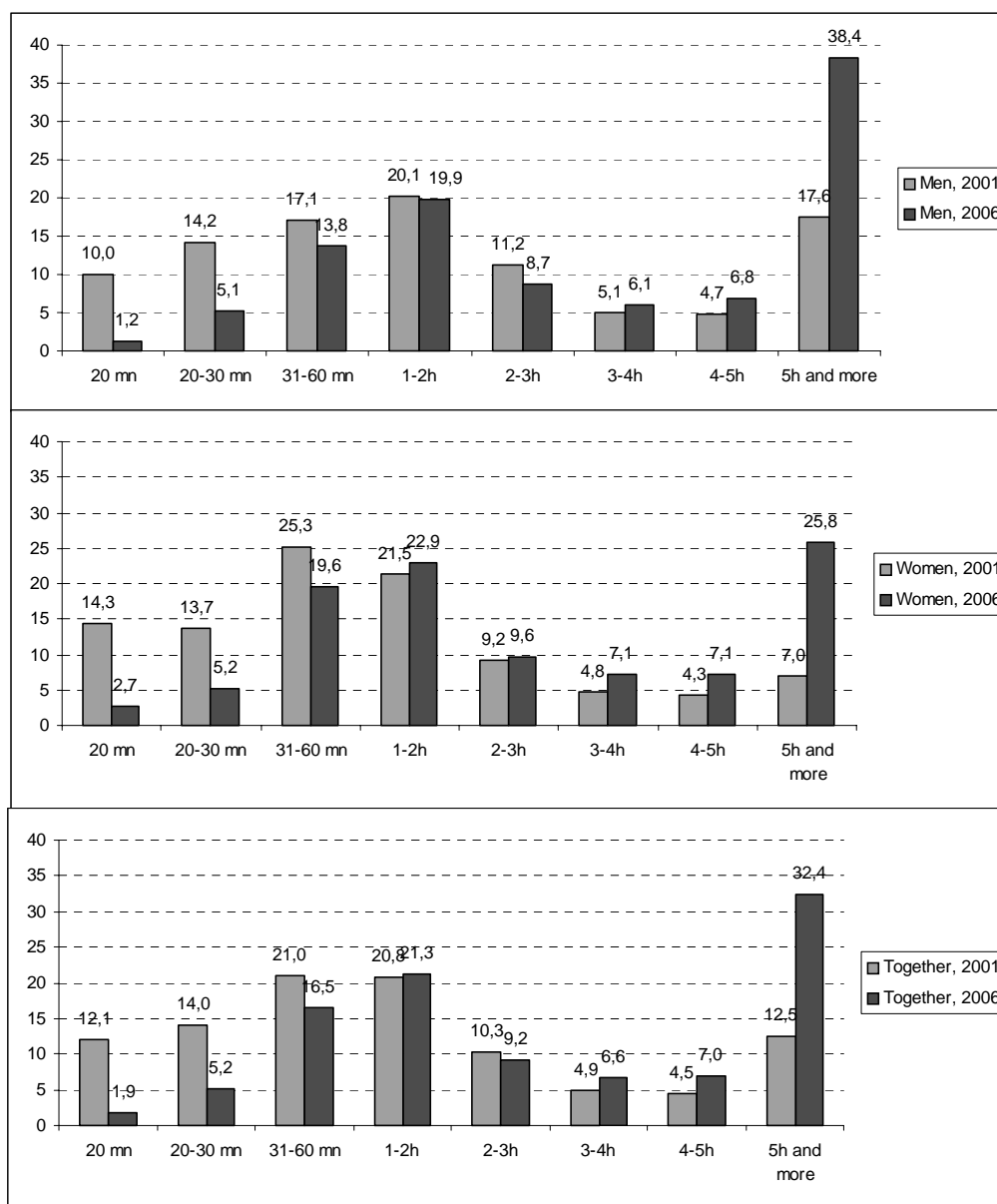
Source: OECD, *Communication Outlook 2007*, forthcoming.

Annex Figure 17. Growth in the maximum broadband speed available¹

1. Broadband speeds were sampled in August 2004, August 2005 and March 2006.

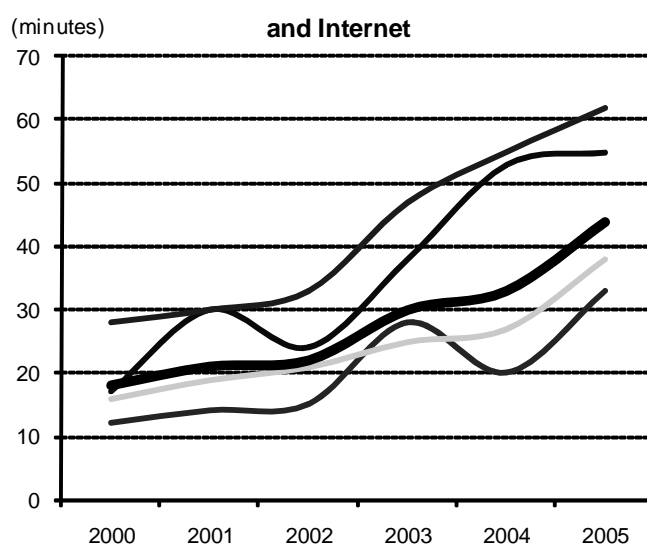
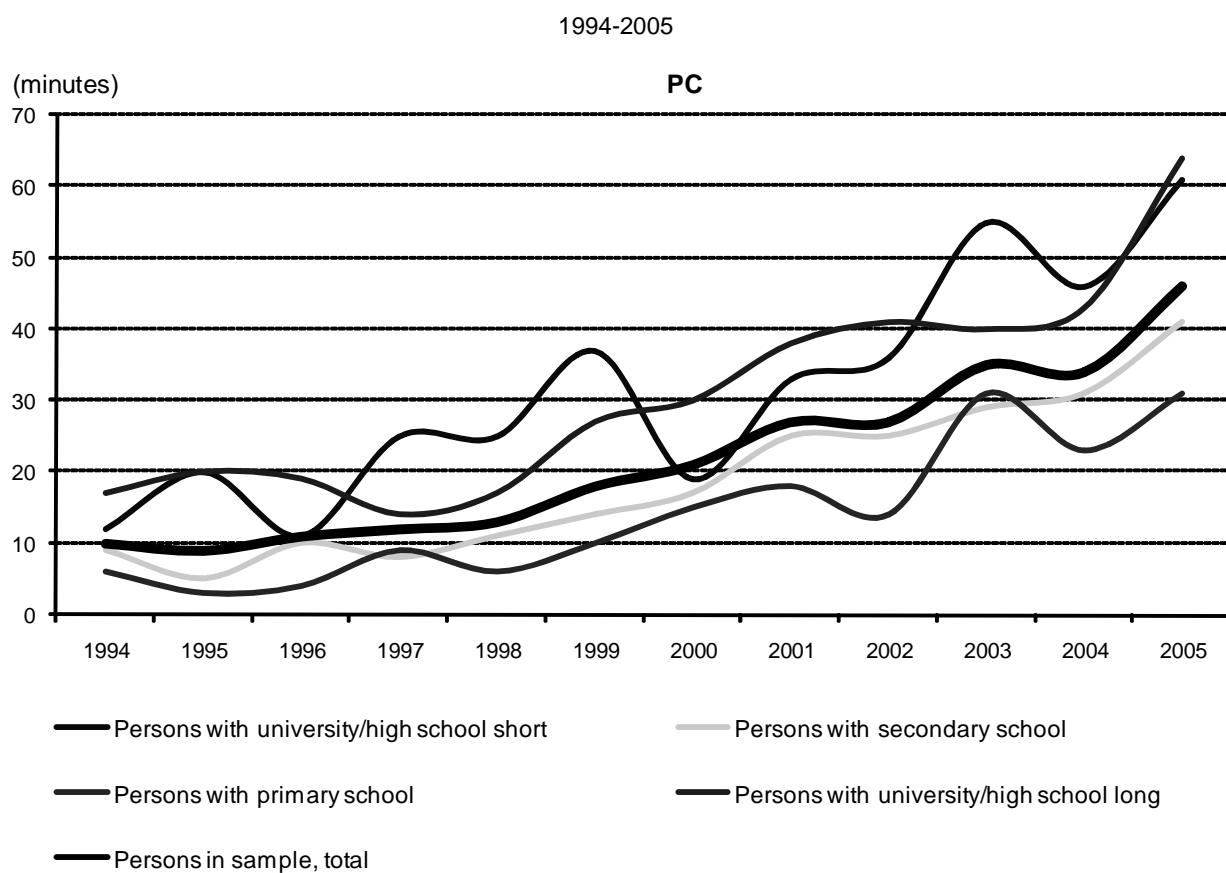
2. kbps: kilobits per second.

Source: ITU/KADO Digital Opportunity Platform, as published in ITU (2006).

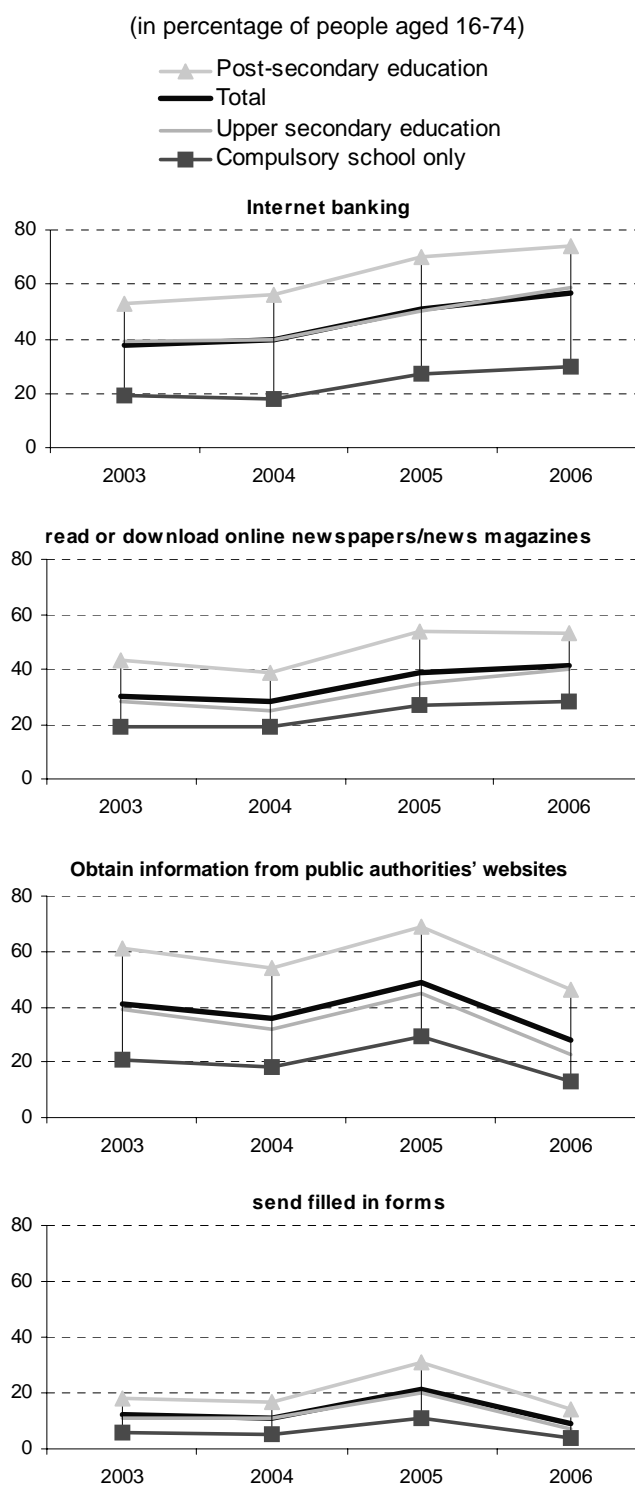
Annex Figure 18. Minutes using the net at home in leisure time per week in Finland, 2001-2006¹

1. November of each year. All people in November 2001, and people aged between 15 and 74 in November 2006.

Source: OECD, based on data from Statistics Finland.

Annex Figure 19. Minutes used in Norway, an average day, by education attainment for PC and Internet

Source: Statistics Norway.

Annex Figure 20. Selected online activities by level of education in Sweden, 2003-2006

Source: Statistics Sweden.

Gini coefficient

The Gini coefficient used to measure inequalities in access to PCs and the Internet was calculated according to the following formula:

$$G = \sum_{i=1}^N 2(X_i - Y_i)\Delta X_i \quad \text{where } X_i \text{ denotes the cumulative share of households -or individuals- in group } i \text{ and below, sorted by increasing income brackets (e.g. } X_1 \text{ denotes the share of households -or individuals- in the lowest income bracket, and } X_N = 1), Y_i \text{ denotes the corresponding share of households -or individuals- with PCs (or those using Internet), } N \text{ denotes the number of income brackets and } \Delta X_i = X_i - X_{i-1} \text{ (} X_0 = 0 \text{).}$$

group i and below, sorted by increasing income brackets (e.g. X_1 denotes the share of households -or individuals- in the lowest income bracket, and $X_N = 1$), Y_i denotes the corresponding share of households -or individuals- with PCs (or those using Internet), N denotes the number of income brackets and $\Delta X_i = X_i - X_{i-1}$ ($X_0 = 0$).

Definition of communication expenditures

Definitions COICOP:

Postal services:

- Payments for the delivery of letters, postcards and parcels.
- Private mail and parcel delivery.

Includes: all purchases of new postage stamps, pre-franked postcards and aerogrammes.

Excludes: purchase of used or cancelled postage stamps (09.3.1); financial services of post offices (12.6.2).

Telephone and fax equipment:

- Purchases of telephones, radio-telephones, telefax machines, telephone-answering machines and telephone loudspeakers.
- Repair of such equipment.

Excludes: telefax and telephone-answering facilities provided by personal computers (09.1.3).

Telephone and telefax services:

- Installation and subscription costs of personal telephone equipment.
- Telephone calls from a private line or from a public line (public telephone box, post office cabin, etc.); telephone calls from hotels, cafés, restaurants and the like.
- Telegraphy, telex and telefax services.
- Information transmission services; Internet connection services.
- Hire of telephones, telefax machines, telephone-answering machines and telephone loudspeakers. Includes: radio-telephony, radio-teleggraphy and radiotelex services.

ANNEX 2: TABLES

Annex Table1. Communication expenditures¹ as a share of disposable income in OECD countries, 1990-2004

	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Australia	1,4	1,6	1,7	1,9	1,9	2,1	2,2	2,3	2,4	2,4	2,8	2,8	2,9	2,8	2,9
Austria	1,8	1,8	1,8	1,8	1,8	1,9	1,9	2,2	2,3	2,4	2,6	2,5	2,5	2,5	2,5
Belgium	..	..	..	..	..	1,5	1,6	1,7	1,8	2,0	2,1	2,2	2,2	2,2	2,3
Canada	1,8	1,8	1,8	1,8	1,8	1,8	1,9	2,0	2,1	2,0	2,1	2,2	2,3	2,3	2,3
Czech Republic	..	..	..	..	..	1,5	1,9	1,9	1,9	1,8	2,0	2,4	3,0	3,4	3,4
Denmark	1,6	1,6	1,8	1,8	1,8	1,8	1,7	1,9	1,8	1,9	2,0	2,0	1,9	2,1	2,1
Finland	1,4	1,4	1,5	1,5	1,6	1,6	1,9	2,2	2,5	3,0	3,1	3,3	3,3	3,2	3,3
France	1,8	1,8	1,8	1,8	1,9	1,9	1,9	1,9	2,0	2,2	2,3	2,5	2,6	2,7	2,7
Germany	..	1,7	1,8	1,9	1,9	2,0	2,0	2,1	2,2	2,3	2,5	2,8	2,8	2,8	2,8
Greece	..	..	..	..	..	1,2	1,4	1,5	1,5	2,2	2,2	2,0	2,1	2,0	1,8
Hungary	..	..	..	..	..	1,9	2,5	2,9	3,3	3,9	4,1	4,4	4,8	4,5	4,3
Iceland	1,4	1,3	1,3	1,3	1,2	1,1	1,1	1,0	1,4	1,9	2,1	2,4	2,7	2,8	2,7
Ireland	..	..	..	..	..	1,8	2,0	2,0	1,9	2,0	2,3	2,5	2,7	3,0	3,4
Italy	1,7	1,8	1,8	1,7	1,8	1,8	2,0	2,1	2,3	2,5	2,7	2,7	2,8	2,8	2,8
Japan	..	..	..	..	..	1,7	1,9	2,3	2,4	2,5	2,5	2,7	2,9	3,2	3,3
Korea	1,5	1,5	1,6	1,7	2,0	2,3	2,7	3,3	4,2	5,0	5,7	5,9	5,9	5,6	5,6
Luxembourg	..	..	..	..	..	1,3	1,5	1,6	1,9	1,8	1,7	1,8	1,8	1,7	1,6
Mexico	1,1	1,3	1,5	1,6	1,7	1,6	1,5	1,5	1,4	1,5	1,6	1,7	1,6	1,7	1,8
Netherlands	..	..	..	..	..	2,2	2,6	2,8	3,2	3,5	3,9	4,2	4,5	4,7	4,7
New Zealand	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Norway	2,1	1,9	1,6	1,8	1,8	1,9	1,9	1,9	2,1	2,6	2,7	2,8	2,8	2,9	2,8
Poland	..	..	..	..	..	2,3	2,2	1,7	2,1	2,7	2,8	3,0	3,1	3,2	3,2
Portugal	..	..	..	..	..	2,1	2,2	2,3	2,2	2,4	2,5	2,9	2,9	2,8	2,8
Slovak Republic	..	..	..	..	..	2,1	2,1	2,1	2,5	3,0	3,2	3,8	3,8	3,9	3,8
Spain	..	..	..	..	..	1,8	1,9	2,0	2,1	2,3	2,4	2,7	2,7	2,6	2,7
Sweden	..	..	..	2,1	2,2	2,3	2,6	2,7	3,0	3,1	3,0	3,3	3,4	3,3	3,2
Switzerland	1,9	2,0	2,1	2,1	2,1	2,2	2,2	2,2	2,2	2,2	2,2	2,2	2,3	2,4	2,5
Turkey	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
United Kingdom	1,9	2,0	2,0	2,0	2,1	2,1	2,0	2,0	2,1	2,1	2,2	2,3	2,2	2,3	2,3
United States	1,8	1,8	1,8	1,8	1,9	1,9	1,9	2,0	2,0	2,0	2,0	2,0	1,9	1,8	1,8
OECD 28	..	..	..	..	..	1,9	2,0	2,1	2,2	2,3	2,3	2,4	2,4	2,4	2,4

1. See detailed definition of communication expenditures in Annex 1.

Source: OECD, based on SNA database.

Annex Table 2. Index¹ of average relative propensity for communication expenditures² by households in OECD countries, selected years.

	1999		2000		2004	
	rank	index	rank	index	rank	index
Australia	13	1,103	8	1,226	11	1,261
Austria	12	1,104	12	1,147	20	1,076
Belgium	23	0,913	24	0,938	21	1,032
Canada	21	0,948	21	0,974	23	1,021
Czech Republic	27	0,851	25	0,911	5	1,526
Denmark	25	0,872	27	0,866	26	0,891
Finland	4	1,398	4	1,455	7	1,448
France	18	0,978	17	1,035	16	1,185
Germany	16	1,035	15	1,104	10	1,265
Greece	8	1,192	11	1,150	19	1,157
Hungary	2	1,829	2	1,879	2	2,021
Iceland	26	0,865	23	0,938	15	1,198
Ireland	24	0,899	18	1,014	6	1,494
Italy	10	1,134	10	1,174	13	1,236
Japan	11	1,116	13	1,133	18	1,177
Korea	1	2,259	1	2,538	1	2,458
Luxembourg	28	0,828	28	0,773	29	0,688
Mexico	29	0,691	29	0,696	27	0,804
Netherlands	3	1,449	3	1,569	3	1,825
Norway	9	1,171	9	1,192	14	1,217
Poland	7	1,262	7	1,275	8	1,334
Portugal	14	1,078	14	1,116	12	1,239
Slovak Republic	6	1,362	5	1,446	4	1,728
Spain	15	1,056	16	1,046	17	1,180
Sweden	5	1,368	6	1,291	9	1,324
Switzerland	19	0,978	22	0,955	22	1,023
United Kingdom	20	0,959	20	0,991	24	1,014
United States	22	0,923	26	0,891	28	0,759
OECD 28	17	1,000	19	1,000	25	1,000

1. Defined as the share of households' expenditure in communication of the country I, divided by the share of households' expenditures in communication of the 28 OECD countries as a whole.

2. Detailed definition of communication expenditures at the end of Annex 1.

Source: OECD, based on SNA database.

Annex Table 3. Expenditure per household per year, selected commodity and service, Norway, 2002-2005

	2000-2002	2001-2003	2002-2004	2003-2005	
<i>Expenditures (NOK), prices from the last year</i>					CAGR (%)
00 Consumption expenditure	299 252	304 767	308 227	322 998	2,6
08 Communication	6 894	7 564	8 105	8 541	7,4
081 Postal services	382	354	311	326	-5,1
082 Telephone and telefax equipment	435	424	564	744	19,6
083 Telephone and telefax services	6 077	6 786	7 230	7 471	7,1
09 Recreation and culture	38 261	38 365	38 085	39 879	1,4
091 Audio-visual, photographic and information processing equipment	6 415	6 308	6 696	7 312	4,5
0911 Equipment for the reception, recording and reproduction of sound and pictures	2 715	2 728	2 826	3 027	3,7
09111 Equipment for the reception, recording and reproduction of sound	1 214	1 275	1 363	1 469	6,6
09112 Television sets, video-cassette players and recorders	1 501	1 453	1 462	1 559	1,3
0912 Photographic and cinematographic equipment and optical instruments	641	573	567	749	5,3
09121 Photographic and cinematographic equipment	493	500	559	746	14,8
09122 Optical instruments	147	73	8	4	-69,9
0913 Information processing equipment	1 808	1 685	1 847	2 118	5,4
0914 Recording media	1 151	1 246	1 365	1 333	5,0
0915 Repair of audio-visual, photographic and information processing equipment	100	76	91	85	-5,3
092 Other major durables for recreation and culture	3 681	2 978	2 494	2 375	-13,6
0942 Cultural services	4 087	4 343	4 524	4 825	5,7
09421 Cinemas, theatres, concerts	874	954	993	1 106	8,2
09423 Television and radio taxes and hire of equipment	2 148	2 274	2 360	2 604	6,6
095 Newspapers, books and stationery	5 652	5 775	5 889	5 839	1,1
<i>Expenditures (as percentage of the total consumption expenditure of the year)</i>					variation
00 Consumption expenditure	100,0	100,0	100,0	100,0	
08 Communication	2,30	2,48	2,63	2,64	0,34
081 Postal services	0,13	0,12	0,10	0,10	-0,03
082 Telephone and telefax equipment	0,15	0,14	0,18	0,23	0,08
083 Telephone and telefax services	2,03	2,23	2,35	2,31	0,28
09 Recreation and culture	12,79	12,59	12,36	12,35	-0,44
091 Audio-visual, photographic and information processing equipment	2,14	2,07	2,17	2,26	0,12
0911 Equipment for the reception, recording and reproduction of sound and pictures	0,91	0,90	0,92	0,94	0,03
09111 Equipment for the reception, recording and reproduction of sound	0,41	0,42	0,44	0,45	0,05
09112 Television sets, video-cassette players and recorders	0,50	0,48	0,47	0,48	-0,02
0912 Photographic and cinematographic equipment and optical instruments	0,21	0,19	0,18	0,23	0,02
09121 Photographic and cinematographic equipment	0,16	0,16	0,18	0,23	0,07
09122 Optical instruments	0,05	0,02	0,00	0,00	-0,05
0913 Information processing equipment	0,60	0,55	0,60	0,66	0,05
0914 Recording media	0,38	0,41	0,44	0,41	0,03
0915 Repair of audio-visual, photographic and information processing equipment	0,03	0,02	0,03	0,03	-0,01
092 Other major durables for recreation and culture	1,23	0,98	0,81	0,74	-0,49
0942 Cultural services	1,37	1,43	1,47	1,49	0,13
09421 Cinemas, theatres, concerts	0,29	0,31	0,32	0,34	0,05
09423 Television and radio taxes and hire of equipment	0,72	0,75	0,77	0,81	0,09
095 Newspapers, books and stationery	1,89	1,89	1,91	1,81	-0,08

Source: Statistics Norway, Survey on Consumer Expenditures, StatBank, 2006. Available at:

<http://statbank.ssb.no/statistikkbanken/selectvarval/Define.asp?MainTable=UtgHusholdn01&SubjectCode=05&planguage=1&nvl=True&mt=1&nyTmpVar=true>

Annex Table 4. Households and individuals with access to a home computer in selected OECD countries, 1986-2006

	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006
	<i>percentage of households</i>																				
Australia								26.9			33.5		44.0	47.0	53.0	58.0	61.0	66.0		67.0	
Austria															34.0		49.2	50.8	58.6	63.1	66.8
Belgium ¹											28.1	35.6	34.9	45.3	47.3	48.7			65.0		
Canada ²	10.3				16.2	18.5	20.0	23.0	25.0	28.8	31.6	36.4	40.6	50.0	54.9	59.9	63.9	66.8			
Denmark					15.0			27.0	33.0	37.0	45.0	48.0	53.0	60.0	65.0	69.6	72.0	79.0	81.0	84.0	85.0
Finland					8.0			17.0	19.0	23.0	35.0	37.0	43.4	47.0	52.9	54.5	57.4	57.0			
France ³		7.0		8.2			11.0		14.3	15.0	16.0	19.0	23.0	27.0	32.4	36.6	41.0	45.0	50.4		
Germany												39.8	44.9	47.3	53.4	57.2	57.9	62.0	66.0	67.0	
Ireland													18.6		32.5			42.2	46.2	54.9	58.5
Italy															29.4					48.4	51.0
Japan ⁴		11.7	9.7	11.6	10.6	11.5	12.2	11.9	13.9	15.6	17.3	22.1	25.2	29.5	38.6	50.1	57.2	63.3			
Japan ⁵									16.3	22.3	28.8	32.6	37.7	50.5	58.0	71.7	78.2	77.5			
Korea ⁶															71.0	76.9	78.6	77.9	77.8	78.9	79.6
Mexico ⁷											3.1		5.7		10.4	11.6	15.2		18.0	18.4	20.5
Netherlands ⁸		11.0	14.0	18.0	22.0	25.0	29.0	31.0	34.0	39.0	43.0	47.0	55.0	59.0	64.0	69.0					
Netherlands ⁹																	76.0	76.0	80.0	83.0	86.0
New Zealand ³	6.7	8.6	9.6	11.5	11.6	13.3	15.9	17.1	18.6	21.7	24.8	27.6	32.9	37.5	42.8	46.6	52.0	62.0			
Norway ¹⁰																		68.0	72.0	74.0	75.0
Portugal ¹¹									11.0		14.0		21.0	29.4				38.3	41.3	42.5	45.4
Spain ¹¹														30.4				47.1	52.1	54.6	56.9
Sweden ^{11, 12}														56.7	59.9	69.2				79.7	82.5
Switzerland ¹¹																	66.8	68.9			
Turkey ¹³															12.3						
United Kingdom ¹⁴	16.0										26.0		33.0		47.0	52.9	54.5		62.0	65.0	
United States ¹⁵				14.4	15.2			23.0				36.6	42.1		51.0	56.2		61.8			
	<i>percentage of individuals¹⁶</i>																				
Australia															38.0	46.0	53.0	55.3			
Italy																			39.2	39.9	41.4
Netherlands ⁹													60.0	66.0	70.0	74.0	81.0	82.0	85.0	87.0	88.0
Norway		13.0						33.0	39.0	43.0	50.0	57.0	67.0	71.0	75.0	76.0	77.0	79.0	83.0		
Sweden								23.4	27.6	34.3	40.3	52.1	61.4	64.7	67.4	69.7					
Turkey ¹⁷																				17.7	

1. INS, *Direction générale Statistique et Information économique - Enquête sur les budgets des ménages*.

2. Until 1996, May of each year. Household Facilities and Equipment Survey. 1997 and onwards, Survey of Household Spending.

3. June of each year, except October for 2005.

4. Fiscal year ending in March. Consumer Survey, Economic and Social Research Institute, Cabinet Office.

5. Fiscal year ending in March. Information and Communications Policy Bureau, Ministry of Public Management, Home Affairs, Posts and Telecommunications. Communication Trends Survey.

6. From NIDA. December of each year, except June for 2003.

7. December for 2001 and 2002. June for 2004 and 2005. April preliminary data for 2005 and 2006.

8. From CBS, *Sociaal-economisch panelonderzoek* (SEP).

9. CBS, POLS Survey up to 2004. ICT-*gebruik huishoudens en personen* survey for 2005–2006.

10. Second quarter of each year from 2004 onwards.

11. From 2002 onwards, Eurostat Newcronos database.

12. Survey on living conditions until 2001.

13. For 2000, Households in urban areas only.

14. March 2001–April 2002 (financial year) instead of 2001. For 2004, 2004/2005 and 2005, 2005/2006, Expenditure and Food Survey, Office for National Statistics.

15. November of each year, except August for 2000 and September for 2001.

16. Age-cut-off: Australia (18+), Netherlands (12+), Norway (9–79), Sweden (16–84). Norwegian media barometer for Norway.

17. Share of the population having used a PC in the last 3 months.

Source: OECD, ICCP, compiled from National Statistical Offices, Eurostat Newcronos database, or other National Official Statistical sources.

Annex Table 5. Households with access to Internet¹ in selected OECD countries, 1996-2006

	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006
<i>percentage of households</i>											
Australia ²	4.4		16.0	22.0	32.0	42.0	46.0	53.0		56.0	
Austria					19.0		33.5	37.4	44.6	46.7	52.3
Belgium ³			4.8	13.5	24.1	29.2			45.5	50.2	54.0
Canada		16.0	22.6	28.7	40.1	48.7	51.4	54.5			
Denmark	5.0	10.0	22.0	33.0	46.0	55.0	59.0	66.0	71.0	73.0	80.0
Finland			12.0	24.7	30.0	36.0	41.0	45.0	50.0	57.0	64.0
France ⁴				6.5	11.9	18.1	23.0	28.0	30.7	36.5	
Germany			10.7	16.4	27.3	36.0	43.0	51.0	57.0	58.0	
Ireland			5.0		20.5			33.5	38.2	45.1	48.7
Italy				7.7	18.8					34.5	35.6
Japan ⁵					34.0	35.1	48.8	53.6	55.8	57.0	60.5
Japan ⁶	3.3	6.4	11.0	19.1	34.0	60.5	81.4				
Korea ⁷						49.8	63.2	70.2	68.8	72.2	74.8
Mexico ⁸						6.2	7.4		8.7	9.0	10.1
Netherlands ⁹							63.0	65.0	71.0	78.0	80.0
New Zealand ¹⁰						37.4					60.5
Norway								55.0	60.0	64.0	69.0
Portugal				5.0	9.0	13.0		21.7	26.2	31.5	35.2
Sweden ¹¹				42.3	48.2	53.3				72.5	77.4
Turkey ¹²					6.9						
United Kingdom ¹³			9.0	14.0	27.0	38.0	44.0	48.0			
Great Britain ¹⁴							46.0	50.0	51.0	55.0	57.0
United States ¹⁵			26.2		41.5	50.5		54.6			
<i>percentage of individuals with access at home¹⁶</i>											
Canada ¹⁷										60.9	
Netherlands ¹⁸			16.0	26.0	45.0	56.0	64.0				
Netherlands							68.0	71.0	76.0	82.0	85.0
Norway		13.0	22.0	36.0	52.0	60.0	63.0	64.0	66.0	74.0	
Sweden			30.7	46.3	53.3	58.2	63.5	66.4	69.2		

1. For Denmark, Ireland, the Netherlands and before 1999 for the United Kingdom, access to the Internet via a home computer; for the other countries access to the Internet through any device (e.g. computer, phone, TV, etc.). Age cut-offs vary across countries.

2. 2004-2005 instead of 2005.

3. INS, *Direction générale Statistique et Information économique - Enquête sur les budgets des ménages*, until 2004. Eurostat Newcronos database for 2005 and 2006.

4. June of each year, except October for 2005. Before 2005, Internet access from PC. For 2005, Internet access from any device.

5. Survey of Household Economy. Device that can access the Internet.

6. MPHPT, *Communications Usage Trend Survey*. End of the calendar year. Ratio of households using the Internet. Access devices include PCs, cellular phones, PDAs, Internet-capable video game consoles, TVs, etc.

7. Internet access at home. From NIDA. December of each year, except June for 2003.

8. December for 2001 and 2002. June for 2004 and 2005. April preliminary data for 2005 and 2006.

9. CBS, POLS Survey up to 2004. *ICT-gebruik huishoudens en personen* survey for 2005 – 2006.

10. July 2000-June 2001 for 2001. The information is based on households in private occupied dwellings with access to the Internet. Visitor-only dwellings, such as hotels, are excluded. For 2006, QuickStats National Highlights of the 2006 Census.

11. Survey on living conditions. Eurostat Newcronos database for 2005-2006.

12. Households in urban areas only.

13. April-June quarter.

14. National Statistics Omnibus Survey.

15. November of each year, except August for 2000.

16. Age cut-offs may vary across countries. For instance, 12-74 for the Netherlands and 16-84 in Sweden.

17. Canadian Internet use survey.

18. Autumn of each year. POLS Survey.

Source: OECD, ICCP, compiled from National Statistical Offices, Eurostat Newcronos database, or other National Official Statistical sources.

Annex Table 6. Households and individuals with access to Broadband Internet from home in selected OECD countries, 2000-2006

	2000	2001	2002	2003	2004	2005	2006
<i>Households¹</i>							
Australia ²					28.0		
Austria ³				10.3	15.9	23.1	33.1
Austria ⁴				27.4	35.7	49.6	63.3
Belgium						40.6	48.0
Canada		20.5	27.2	35.0	43.0	50.0	
Denmark				25.1	35.8	51.2	63.3
Finland				12.4	21.3	36.1	53.0
France ⁵						27.0	
France ³						30.3	
Germany				9.3	18.0	23.2	33.5
Iceland					45.4	63.5	72.1
Ireland				0.6	2.9	7.4	13.0
Italy ⁶						11.6	14.4
Italy ³						12.9	16.2
Korea	30.3	57.7	68.4	67.0	70.5	74.0	78.1
Netherlands			15.0	22.0	34.0	54.0	66.0
Norway				22.9	30.0	41.4	57.1
Poland					8.3	15.6	21.6
Portugal				7.9	12.3	19.7	24.0
Sweden						40.2	51.0
United Kingdom ⁷							40.0
United Kingdom ³				10.7	15.8	31.5	43.9
<i>Individuals¹</i>							
Australia ²					31.0		
Netherlands			17.0	26.0	39.0	59.0	71.0
United States ⁸	3.0	8.7	13.6	19.0	27.0	36.0	45.0

1. Age cut-offs vary across countries.

2. 2004-2005.

3. Eurostat. Age cut-offs 16-74.

4. Statistics Austria.

5. INSEE.

6. ISTAT.

7. National Statistics Omnibus Survey.

9. PEW Research Center.

Source: OECD, ICCP, compiled from National Statistical Offices, Eurostat Newcronos database, and PEW Research Center.

Annex Table 7. Individuals Internet Usage rate in Korea by age and gender, 2000-2006

	2000	2001	2002	2003	2004	2005	2006
women 6-19 years	74.4	92.9	91.4	94.4	96.4	97.9	97.8
women 20s	68	80.6	87.3	93	94.8	97.4	97.7
women 30s	35.2	54.1	63.2	75.7	85.2	91.2	90.0
women 40s	14	27.3	30.8	42.2	53.5	60.7	63.1
women 50s	6.5	8.5	11.6	13.4	20.9	23.6	26.5
women 60s or older	0.6	1.2	0.8	2	6.4	5.2	9.3
men 6-19 years	73.9	93.5	91.4	95.2	96	97.7	98.3
men 20s	80.9	88.5	92.3	96	95.8	98.3	98.4
men 30s	51.6	68.7	75.4	85.4	90.9	90.7	93.2
men 40s	30.9	43.6	47.5	60.7	71.1	76.4	78.7
men 50s	13.5	21.4	24.3	32.2	41.3	47.9	48.5
men 60s or older	4	6.5	4.5	9.7	15.3	21.3	23.4
All women	38.6	50.2	53.6	59.2	64.6	67.2	67.6
All men	50.8	63	65.2	71.7	75.9	78.5	79.3
All	44.7	56.6	59.4	65.5	70.2	72.8	73.5
All 6-19	74.1	93.2	91.4	94.8	96.2	97.8	98.1
All 20s	74.6	84.6	89.9	94.5	95.3	97.9	98.1
All 30s	43.6	61.6	69.4	80.7	88.1	91	91.6
All 40s	22.7	35.6	39.3	51.6	62.5	68.7	71.0
All 50s	10	14.9	17.9	22.8	31.1	35.7	37.5
All 60s and older	2	3.4	2.3	5.2	10.1	11.9	15.2

Source: Ministry of Information and Communication, National Internet Development Agency of Korea.

Annex Table 8. Places where Internet has been used¹ by women and men², 2005

	at home		at work		at place of education ³		other people's house	
	Women	Men	Women	Men	Women	Men	Women	Men
Australia	50.0	53.0	28.0	31.0	9.0	8.0	20.0	18.0
Austria	73.6	75.2	41.4	47.7	9.4	8.3	1.9	3.8
Belgium	79.4	83.0	29.7	31.4	9.2	7.5	4.8	5.7
Canada	60.3	61.5	25.2	27.4	11.3	12.0	..	..
Czech Republic	59.9	62.9	43.2	43.8	23.2	19.7	6.5	7.0
Denmark	92.7	93.3	47.7	48.7	14.9	13.7	..	..
Finland	74.1	80.8	53.3	50.8	..	..	5.5	9.1
Germany	86.1	89.0	27.7	34.0	12.9	14.6	6.3	10.0
Greece	60.9	65.9	40.4	46.5	18.9	14.8	10.0	13.1
Hungary	52.8	59.0	43.9	46.5	18.9	19.8	15.5	15.3
Iceland	87.5	91.5	52.3	56.1	19.7	20.0	11.5	15.5
Ireland	66.8	71.1	44.4	47.2	10.9	9.7	6.3	9.2
Italy	68.9	74.1	44.8	49.1	13.5	9.9	9.3	12.1
Korea	98.0	97.5	13.5	32.5	8.9	8.6	7.7	7.2
Luxembourg	92.3	94.5	28.3	45.4	14.9	13.1	3.1	4.9
Netherlands	93.4	93.1	40.1	50.9	10.3	11.0	3.6	3.9
Norway	83.0	85.7	54.0	62.3	17.9	13.3	7.0	11.0
Poland	56.5	59.5	34.2	29.3	28.1	28.7	15.4	18.9
Portugal	58.4	63.2	47.0	49.3	28.6	20.7	13.8	15.5
Slovak Republic	34.0	45.4	56.2	51.8	23.7	20.3	22.1	24.5
Spain	60.7	65.9	44.2	47.2	19.9	17.5	23.3	24.1
Sweden	84.8	88.7	47.7	49.7	16.8	12.5	5.1	7.2
United Kingdom	83.0	83.2	44.9	48.3	17.5	14.1	21.0	26.9

1. Used in the last month in Korea, last three months for EU countries, past 12 months for Australia and Canada.

2. People aged 16 to 74 for EU countries, 6 and older for Korea, and 18 and older for Australia and Canada.

3. Technical and further education or tertiary institution for Australia, school for Canada and Korea.

Source: OECD, based on data from the Australian Bureau of Statistics, Eurostat, Statistics Canada, and the Ministry of Information and Communication, National Internet Development Agency of Korea.

Annex Table 9. Marginal effect of broadband on selected activities in Canada, 2005

	High speed ¹	Low speed ²	<i>Difference ³ for Internet users</i>
E-mail	93.0	88.6	4.5
Participating in chat groups or using a messenger	40.8	27.2	13.6
Searching for information on Canadian municipal, provincial or federal government	54.6	45.0	9.6
Communicating with Canadian municipal, provincial or federal government	23.8	19.5	4.3
Searching for medical or health related information	60.6	50.8	9.8
Education, training or school work	46.2	31.8	14.5
Travel information or making travel arrangements	66.7	51.6	15.1
Paying bills	59.4	41.3	18.1
Electronic banking	62.5	43.3	19.2
Researching investments	28.6	18.9	9.6
Playing games	41.5	27.9	13.6
Obtaining or saving music	41.1	18.9	22.2
Obtaining or saving software	34.8	22.6	12.1
Viewing the news or sports	65.8	47.8	18.1
Obtaining weather reports or road conditions	69.9	57.4	12.5
Listening to the radio over the Internet	29.9	12.2	17.7
Downloading or watching television	10.2	2.0 ⁴	8.1
Downloading or watching a movie	9.8	1.9 ⁴	7.8
Researching community events	45.6	32.4	13.2
General browsing (surfing)	86.1	78.0	8.1

1. "High speed" includes all respondents who identified that they access the Internet at home using cable or satellite, and all respondents accessing the Internet using a telephone connection or other connection (e.g. television, wireless (cellular phone or PDA), other) that they identified was a high-speed connection.

2. "Low speed" includes all respondents accessing the Internet at home through a telephone or other connection (e.g. television, wireless (cellular phone or PDA), other) that they identified was not a high-speed connection.

3. Difference, in percentage point, between home Internet users having high-speed connections and those having low-speed connections. Internet users at home are individuals who answered they used the Internet from home in the past 12 months.

4. Use with caution – coefficient of variation between 16.6% to 33.3%.

Source: Statistics Canada, Canadian Internet Use Survey 2005.

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Annex Table 10. Marginal effect of broadband¹ on selected activities in EU countries, 2006

Activities												
Countries	sending/ receiving emails	using services related to travel and accommodation	telephoning over the Internet, videoconferencing	finding information about goods and services	listening to web radios / watching TV	playing / downloading games and music	downloading software	reading / downloading online newspapers / newsmagazines	seeking health information on injury, disease or nutrition	purchasing / ordering goods or services (exclud. shares or financial services) ²	selling goods and services (e.g. via auctions)	Internet banking
Austria	2.4	2.9	7.2	2.9	4.6	8.6	7.2	6.6	3.6	8.2	4.1	3.1
Belgium	4.0	12.7	6.9	8.4	11.6	13.3	11.0	11.1	12.0	..	6.5	12.6
Czech Republic ²	2.4	12.4	4.4	2.9	1.6	-2.4	1.9	2.4	4.5	..	..	11.2
Denmark	14.7	9.2	12.5	8.6	25.3	18.6	20.5	21.9	7.2	17.1	8.8	12.6
Greece	6.5	8.1	15.1	8.3	16.9	13.9	23.9	18.1	10.1	9.4	0.9	12.3
Spain	8.7	1.7	8.6	1.3	11.9	20.1	..	..	3.5	5.8	1.6	4.9
Finland	7.3	9.5	16.6	6.5	17.8	25.2	16.2	15.9	12.3	20.2	4.8	2.2
France ²	11.9	6.6	15.7	14.3	19.3	15.3	14.0	10.9	11.6	..	..	13.8
Hungary	12.5	11.9	14.3	4.9	10.7	10.7	13.3	10.3	7.2	11.1	4.1	8.2
Ireland	8.8	10.9	17.1	2.9	19.6	18.3	16.3	9.5	7.9	..	7.1	19.9
Iceland	8.8	11.9	8.6	10.6	27.8	13.3	9.4	13.8	16.3	14.4	1.4	18.1
Italy	6.3	5.1	6.4	7.4	6.0	8.3	8.6	10.4	6.2	7.3	1.7	6.9
Luxembourg	12.5	5.4	18.8	2.3	20.3	20.4	16.6	11.6	4.4	13.9	4.5	12.1
Netherlands	5.2	11.8	8.8	7.3	23.0	30.2	17.9	13.2	12.2	13.3	10.0	13.7
Norway	16.9	16.5	16.1	9.8	31.0	20.0	25.7	25.4	14.8	10.6	5.8	14.0
Poland	6.6	7.2	3.2	6.5	8.3	4.7	4.9	5.0	5.8	10.4	4.2	4.9
Portugal	10.1	14.2	21.1	4.3	10.9	0.6	11.3	12.2	13.4	4.6	2.8	14.6
Sweden	12.6	7.2	6.5	10.7	24.7	27.0	21.7	16.7	11.1	13.7	6.7	13.0
Slovak Republic	6.3	11.5	15.3	8.1	12.3	7.5	12.9	14.5	13.4	6.7	3.3	14.3
United Kingdom	10.1	9.2	14.3	9.5	22.7	28.5	17.5	12.9	6.0	14.3	11.6	21.2

1. Differences, in percentages, among individuals who have been using Internet in the last 3 months, for the specific activity, between individuals who live in a household with broadband access and those who live in a household with Internet access but with no broadband access.

2. 2005 instead of 2006.

Source: OECD, based on data from EUROSTAT, Newcronos database.

Annex Table 10 (Cont'd). Marginal effect of broadband¹ on selected activities in EU countries, 2006

Activities Countries	In the last 3 months, I accessed the Internet, on average, every day or almost every day	In the last 3 months, I accessed the Internet, on average, at least once a week (but not every day)	In the last 3 months, I accessed the Internet, on average, at least once a month (but not every week)	Yes, I already use the Internet to replace some of my personal contacts with or visits to public services or administrations	In the last 3 months, I have received unsolicited e-mail that I would regard as junk mail or spam	I have used Internet, in the last 3 months, for training and education	I have used Internet, in the last 3 months, for formalised educational activities (school, university, etc.)	I have used Internet, in the last 3 months, for other educational courses related specifically to employment	I ordered goods or services, over the Internet, for private use, in the last 3 months
Austria	11.4	-8.2	-2.9	5.5	5.6	1.8	-0.7	0.1	-0.3
Belgium	14.2	-9.1	-3.7	7.1	4.6	2.8	6.3	4.6	0.9
Czech Republic ²	14.9	-9.9	-5.1	..	..	1.9	-1.0	-2.9	-1.9
Denmark	21.4	-16.2	-3.8	19.8	15.3	5.3	10.4	7.6	4.6
Greece	21.8	-10.5	-8.6	8.1	23.7	1.5	-1.2	-3.8	2.9
Spain	16.0	-7.3	-6.8	..	4.0	..	0.3	1.5	-0.7
Finland	23.1	-15.5	-5.1	6.0	15.4	13.3	18.1	17.9	1.6
France ²	28.3	-20.3	-8.1	..	6.0	6.4	0.0	0.0	0.0
Hungary	17.5	-12.2	-3.6	2.7	13.8	4.6	-0.5	1.8	-3.6
Ireland	30.2	-21.2	-8.5	14.0	9.3	7.5	6.2	7.1	1.2
Iceland	24.3	-14.6	-8.0	12.9	6.6	7.5	5.3	1.7	0.7
Italy	8.3	-2.8	-4.6	5.3	6.4	0.1	1.3	1.2	0.8
Luxembourg	18.6	-12.3	-5.3	5.4	3.2	0.5	5.8	3.9	0.9
Netherlands	22.0	-13.2	-7.0	13.1	13.0	5.7	12.1	10.9	3.5
Norway	27.4	-17.6	-5.7	18.2	15.7	12.1	7.2	5.0	2.8
Poland	15.8	-10.6	-4.2	0.9	6.3	3.4	2.1	1.6	0.0
Portugal	23.0	-14.3	-6.8	14.1	22.5	1.4	4.7	5.7	0.0
Sweden	27.9	-19.1	-7.9	18.8	11.7	6.9	1.0	1.3	0.9
Slovak Republic	16.5	-12.4	-2.7	-1.1	12.8	4.0	-3.3	1.6	-4.0
United Kingdom	30.4	-16.4	-10.6	13.6	12.5	8.2	9.7	4.4	6.4

1. Differences, in percentages, among individuals who have been using Internet in the last 3 months, for the specific activity, between individuals who live in a household with broadband access and those who live in a household with Internet access but with no broadband access.

2. 2005 instead of 2006.

Source: OECD, based on data from EUROSTAT, Newcronos database.

Annex Table 11. Selected Internet broadband activities¹ in EU countries, 2006

Activities Countries	sending/ receiving emails	using services related to travel and accommodation	telephoning over the Internet, videoconferencing	finding information about goods and services	listening to web radios / watching TV	playing / downloading games and music	downloading software	reading / downloading online newspapers / newsmagazines	seeking health information on injury, disease or nutrition	purchasing / ordering goods or services (exclud. shares or financial services) ²	selling goods and services (e.g. via auctions)	Internet banking
Austria	90.0	45.5	16.2	81.1	13.7	30.7	32.4	47.8	43.7	43.3	15.2	50.0
Belgium	91.5	52.6	14.7	84.7	20.2	35.9	24.2	28.0	39.7	..	12.5	51.7
Czech Republic ²	90.6	49.7	23.3	70.0	12.8	29.7	12.8	42.3	16.2	..	..	29.0
Denmark	88.2	57.0	18.8	84.5	38.1	35.8	35.7	60.9	35.5	36.8	23.0	74.5
Greece	92.8	53.4	20.4	87.5	37.0	55.5	49.6	66.7	30.3	13.5	2.7	21.3
Spain	92.7	38.1	16.9	82.5	..	57.0	..	..	45.1	30.1	6.9	37.7
Finland	85.1	72.1	22.4	89.7	30.4	49.5	41.1	64.1	59.7	55.2	20.3	83.5
France ²	91.9	38.1	15.7	86.1	29.4	26.2	33.7	24.8	32.9	..	..	49.3
Hungary	85.0	55.4	26.2	83.9	34.7	55.6	39.0	63.4	44.5	27.1	8.1	24.0
Ireland	92.9	83.2	24.9	88.1	33.1	35.7	31.5	22.6	22.4	..	13.3	59.4
Iceland	95.3	72.3	22.5	88.1	52.3	40.5	34.6	77.6	47.9	36.7	10.1	79.3
Italy	89.6	47.1	13.2	69.4	18.5	35.8	32.0	42.2	38.7	17.0	8.8	29.5
Luxembourg	85.4	70.8	30.2	91.3	38.3	45.3	46.6	45.1	39.5	54.9	9.5	63.9
Netherlands	95.9	55.5	14.2	92.0	38.4	57.0	35.6	47.2	58.0	47.9	25.0	76.1
Norway	92.7	66.5	19.3	92.6	47.9	49.7	43.7	84.6	44.9	49.3	13.2	86.1
Poland	80.1	35.2	27.2	70.7	32.3	44.4	37.2	47.6	34.7	24.6	17.8	30.7
Portugal	87.8	42.9	21.1	88.1	36.1	48.1	32.4	50.8	45.5	15.8	2.8	35.0
Sweden	91.8	56.8	12.8	91.0	42.6	49.5	36.6	54.6	37.7	52.7	19.7	72.8
Slovak Republic	94.4	57.0	33.0	80.0	31.5	50.7	38.7	67.9	41.2	14.4	6.6	43.3
United Kingdom	87.8	77.6	14.3	89.8	31.4	47.3	30.1	41.2	30.8	67.1	22.4	51.8

1. Percentages of individuals who have been using Internet in the last 3 months and undertaken the selected activities, and who live in a household with broadband access.

2. 2005 instead of 2006.

Source: OECD, based on data from EUROSTAT, Newcronos database.

Annex Table 11. (Cont'd) Selected Internet broadband activities¹ in EU countries, 2006

Activities Countries	In the last 3 months, I accessed the Internet, on average, every day or almost every day	In the last 3 months, I accessed the Internet, on average, at least once a week (but not every day)	In the last 3 months, I accessed the Internet, on average, at least once a month (but not every week)	Yes, I already use the Internet to replace some of my personal contacts with or visits to public services or administrations	In the last 3 months, I have received unsolicited e-mail that I would regard as junk mail or spam	I have used Internet, in the last 3 months, for looking for a job or sending a job application	I have used Internet, in the last 3 months, for training and education	I have used Internet, in the last 3 months, for formalised educational activities (school, university, etc.)	I have used Internet, in the last 3 months, for other educational courses related specifically to employment	I ordered goods or services, over the Internet, for private use, in the last 3 months
Austria	72.1	21.8	4.4	40.2	63.5	15.0	23.0	18.5	2.8	43.9
Belgium	77.4	19.5	2.4	23.5	63.6	14.3	24.9	20.5	3.8	25.0
Czech Republic ²	46.6	43.7	8.7	..	..	9.2	5.3	0.0	0.0	15.4
Denmark	85.6	11.8	2.5	63.0	57.0	25.3	25.8	18.9	8.7	41.3
Greece	69.4	25.0	4.5	30.1	69.7	18.3	33.5	24.9	10.3	26.3
Spain	62.9	28.2	6.7	..	68.8	..	17.7	10.1	5.5	26.7
Finland	80.3	15.8	3.2	27.1	58.6	35.5	37.9	34.5	5.3	42.5
France ²	69.8	22.0	8.1	..	56.9	15.7	0.0	0.0	0.0	49.3
Hungary	80.6	18.1	1.2	22.8	62.5	28.9	29.8	24.0	7.6	15.9
Ireland	73.4	19.6	4.2	49.9	70.4	15.7	28.8	21.4	10.3	60.9
Iceland	84.4	12.5	2.5	81.3	76.7	20.4	17.7	10.1	7.0	37.9
Italy	87.2	2.7	9.0	24.8	53.7	17.4	33.3	20.4	16.6	19.4
Luxembourg	73.0	21.8	4.2	28.0	64.8	14.9	32.4	19.3	18.6	57.5
Netherlands	79.7	16.9	2.7	56.2	70.0	23.5	30.3	21.9	10.4	47.9
Norway	77.5	19.1	3.4	46.6	67.6	28.7	9.7	6.8	4.5	61.6
Poland	73.4	20.6	4.8	18.0	68.6	20.2	11.7	9.5	1.2	29.4
Portugal	74.4	18.0	5.4	48.3	59.9	14.3	22.3	19.8	0.0	17.4
Sweden	82.8	13.9	2.9	40.0	60.0	30.3	9.1	6.5	2.9	52.6
Slovak Republic	80.1	17.7	2.0	20.9	63.3	25.5	15.7	10.5	7.9	22.8
United Kingdom	71.1	22.6	4.6	35.1	72.4	27.4	54.0	28.6	35.0	67.5

1. Percentages of individuals who have been using Internet in the last 3 months and undertaken the selected activities, and who live in a household with broadband access.

2. 2005 instead of 2006.

Source: OECD, based on data from EUROSTAT, Newcronos database.

Annex Table 12. Marginal effect of broadband on selected Internet activities in the United States, 2006¹

	<i>Difference² for Internet users</i>	
	who have ever done the corresponding activity	who have yesterday done the corresponding activity
1. Go online for no particular reason, just for fun or to pass the time	12	14
2. Send instant messages to someone who is online at the same time	8	10
3. Log onto the Internet using a wireless device	30	20
4. Download music files to your computer so you can play them at any time you want	16	4
5. Pay to access or download digital content online, such as music, video, or newspaper articles	12	5
6. Download video files to your computer so you can play them at any time you want	14	5
7. Download a podcast so you can listen to it or view it at a later time	3	1
8. Send or read email	5	23
9. Use an online search engine to help you find information on the web	10	30
10. Get news online	23	22
11. Rate a product, service, or person using an online rating system	14	2
12. Buy a product online such as books, music, toys, or clothing	20	6
13. Visit a local, state, or federal government website	6	8
14. Buy or make a reservation online for a travel service, such as airline tickets, hotel room, or rent-a-car	15	2
15. Get sports scores and information	18	15
16. Get financial information online such as stock quotes or mortgage interest rates	6	5
17. Participate in an online discussion, a listserv or other online group or forum	7	3
18. Looked for health information online	11	
19. Create or work on your own online journal or blog	7	
20. Create or work on your own webpage	6	
21. Create or work on webpages or blogs for others including friends, group you belong to, or work	7	
22. Share something online that you created yourself, such as your own artwork, photos, stories or video	12	
23. Done at least one of the content activities (items 19 to 22).	15	

1. Survey of April 2006 for items 1 to 7, December 2006 for items 8 to 11, August 2006 for items 12 to 18, and December 2005 for the others.

2. Difference, in percentage point, between home broadband Internet users and home dial-up users.

Source: Pew Internet and American Life Project.

Annex Table 13. Selected Internet activities in the United States, Broadband and narrow band¹, 2006²

	<i>Home Broadband Internet users</i>		<i>Home dial-up users</i>	
	<i>who have ever done the corresponding activity</i>	<i>who have yesterday done the corresponding activity</i>	<i>who have ever done the corresponding activity</i>	<i>who have yesterday done the corresponding activity</i>
1. Go online for no particular reason, just for fun or to pass the time	69	33	57	19
2. Send instant messages to someone who is online at the same time	42	17	34	7
3. Log onto the Internet using a wireless device	43	24	13	4
4. Download music files to your computer so you can play them at any time you want	35	6	19	2
5. Pay to access or download digital content online, such as music, video, or newspaper articles	27	6	15	1
6. Download video files to your computer so you can play them at any time you want	26	6	12	1
7. Download a podcast so you can listen to it or view it at a later time	9	1	6	0
8. Send or read email	96	65	91	42
9. Use an online search engine to help you find information on the web	95	52	85	22
10. Get news online	76	40	53	18
11. Rate a product, service, or person using an online rating system	38	4	24	2
12. Buy a product online such as books, music, toys, or clothing	81	8	61	2
13. Visit a local, state, or federal government website	72	17	66	9
14. Buy or make a reservation online for a travel service, such as airline tickets, hotel room, or rent-a-car	70	4	55	2
15. Get sports scores and information	52	21	34	6
16. Get financial information online such as stock quotes or mortgage interest rates	45	11	39	6
17. Participate in an online discussion, a listserv or other online group or forum	15	4	8	1
18. Looked for health information online	86		75	
19. Create or work on your own online journal or blog	11		4	
20. Create or work on your own webpage	17		11	
21. Create or work on webpages or blogs for others including friends, group you belong to, or work	16		9	
22. Share something online that you created yourself, such as your own artwork, photos, stories or videos	32		20	
23. Done at least one of the content activities (items 19 to 22).	42		27	

1. Narrow band is home dial-up.

2. Survey of April 2006 for items 1 to 7, December 2006 for items 8 to 11, August 2006 for items 12 to 18, and December 2005 for the others.

Source: Pew Internet and American Life Project.

Annex Table 14. Proportion of persons with Internet access at home, in France, 2005
(reference probability equal to 69%)

		number of individuals	share of individuals having access to Internet ¹	estimated coefficient	Deviation from reference probability
	Constant of the model			0.80 ***	69.0
<i>Gender</i>	Men	2479	45.4	<i>reference</i>	<i>reference</i>
	Women	3124	40.2	-0.35 ***	-7.9
<i>Age</i>	15-19 years	293	61.7	0.23 ns	ns
	20-29 years	694	57.4	-0.22 *	-5.0
	30-39 years	957	53.6	-0.34 ***	-7.7
	40-49 years	876	55.1	<i>reference</i>	<i>reference</i>
	50-59 years	973	42.2	-0.71 ***	-16.8
	60-69 years	750	20.5	-1.66 ***	-39.3
	70-79 years	693	9.2	-2.35 ***	-51.5
	80 years and over	330	3.8	-3.41 ***	-62.2
<i>Profession</i>	Farmers	66	46.6	0.52 *	9.8
	Artisan, with own business	153	56.5	0.47 **	9.1
	Managers	441	77.3	0.35 **	6.9
	Intermediate professions	732	66.5	0.18 ns	ns
	Non-manual workers	979	44.4	<i>reference</i>	<i>reference</i>
	Manual workers	676	33.9	-0.28 **	-6.4
	Pensioners	1785	15.4	-0.02 ns	ns
	Other non-active	769	55.5	0.36 *	7.2
<i>Employment status</i>	Employed	2673	53.3	<i>reference</i>	<i>reference</i>
	Unemployed	335	41.4	0.12 ns	ns
	Retired	1698	14.7	0.05 ns	ns
	Other	897	53.1	0.22 ns	ns
<i>Educational level</i>	Higher education	1284	73.3	0.38 ***	7.5
	General secondary school diploma	419	60.9	<i>reference</i>	<i>reference</i>
	Technical secondary school diploma	191	57.9	-0.23 ns	ns
	Professional secondary school diploma	178	43.8	-0.80 ***	-19.0
	educational	2601	34.4	-0.76 ***	-17.9
	No degree	930	19.9	-1.35 ***	-32.3
<i>Household living standard</i>	1st quartile	1398	25.6	-0.65 ***	-15.2
	2nd quartile	1403	36.7	<i>reference</i>	<i>reference</i>
	3rd quartile	1401	47.9	0.31 ***	6.1
	4th quartile	1401	62.3	0.65 ***	12.1
<i>Geographical location</i>	Paris	851	58.2	0.45 ***	8.8
	Urban area	2435	41.6	<i>reference</i>	<i>reference</i>
	Peri-urban area	1262	44.2	0.00 ns	ns
	Non isolated rural	345	34.6	-0.30 **	-6.8
	Isolated rural	710	27.9	-0.46 ***	-10.6

1. Access to Internet from home. Results of a qualitative regression using the table's seven variables.

2. The third column shows the estimated regression coefficients and their degree of significance. *** signifies that the coefficient is significant at the 1% threshold, ** at the 5% threshold and * at the 10% threshold, and "ns" signifies that the coefficient is not significant.

3. The fourth column presents, for each variable, the percentage-point differential as compared with the reference probability, "all else being equal". For example, the fact that an individual is between 60 and 69 years of age reduces the probability of home access to the Internet by 39 percentage points as compared with someone between 40 and 49 years of age, all other characteristics being those of the reference situation.

4. Coverage: population aged 15 years or older.

Source: Frydel (2006). Data from the INSEE survey "Enquête Technologies de l'information et de la communication", October 2005. Table available at: <http://www.insee.fr/fr/ffc/ipweb/ip1076/ip1076.xls>.

Annex Table 15. Proportion of persons, among those with Internet access at home, having a broadband connection, in France, 2005

(reference probability equal to 79.7%)

		number of individuals	share of individuals having access to Internet ¹	estimated coefficient	Deviation from reference probability
	Constant of the model			1.3677	79.7%
<i>Gender</i>	Men	2479	45.4	<i>reference</i>	<i>reference</i>
	Women	3124	40.2	-0.007 ns	ns
<i>Age</i>	15-19 years	293	61.7	-0.477 *	-8.80%
	20-29 years	694	57.4	0.3148 ns	ns
	30-39 years	957	53.6	-0.17 ns	ns
	40-49 years	876	55.1	<i>reference</i>	<i>reference</i>
	50-59 years	973	42.2	-0.197 ns	ns
	60-69 years	750	20.5	-0.814 **	-16.2%
	70 years and over	1023	9.2	-0.808 *	-16.1%
<i>Profession</i>	Farmers	66	46.6	-1.33 ***	-29.0%
	Artisan, with own business	153	56.5	0.2856 ns	ns
	Managers	441	77.3	-0.293 ns	ns
	Intermediate professions	732	66.5	-0.079 ns	ns
	Non-manual workers	979	44.4	<i>reference</i>	<i>reference</i>
	Manual workers	676	33.9	-0.134 ns	ns
	Pensioners	1785	15.4	-0.239 ns	ns
	Other non-active	769	55.5	0.2218 ns	ns
<i>Employment status</i>	Employed	2673	53.3	<i>reference</i>	<i>reference</i>
	Unemployed	335	41.4	0.212 ns	ns
	Retired	1698	14.7	0.1688 ns	ns
	Other	897	53.1	0.4101 ns	ns
<i>Educational level</i>	Higher education	1284	73.3	0.063 ns	ns
	General secondary school diploma	419	60.9	<i>reference</i>	<i>reference</i>
	Technical secondary school diploma	191	57.9	0.0963 ns	ns
	Professional secondary school diploma	178	43.8	-0.305 ns	ns
	educational	2601	34.4	0.2899 ns	ns
	No degree	930	19.9	0.091 ns	ns
<i>Household living standard</i>	1st quartile	1398	25.6	-0.115 ns	ns
	2nd quartile	1403	36.7	<i>reference</i>	<i>reference</i>
	3rd quartile	1401	47.9	0.11 ns	ns
	4th quartile	1401	62.3	0.1703 ns	ns
<i>Geographical location</i>	Paris	851	58.2	0.2758 ns	ns
	Urban area	2435	41.6	<i>reference</i>	<i>reference</i>
	Peri-urban area	1262	44.2	-0.859 ns	ns
	Non isolated rural	345	34.6	-0.778 ns	ns
	Isolated rural	710	27.9	-1.527 *	4.1%

1. Access to Internet from home. Results of a qualitative regression using the table's seven variables.

2. The third column shows the estimated regression coefficients and their degree of significance. *** signifies that the coefficient is significant at the 1% threshold, ** at the 5% threshold and * at the 10% threshold, and "ns" signifies that the coefficient is not significant.

3. The proportion of individuals having broadband Internet access at home, for the reference model, is equal to $1/(1+\exp(-1.37))$ or 79.7%. The fourth column presents, for each variable, the percentage-point differential as compared with the reference probability, "all else being equal". For example, the fact that an individual is between 60 and 69 years of age reduces the probability of broadband home access to Internet by 16.2 percentage points as compared with someone between 40 and 49 years of age with home Internet access, all other characteristics being those of the reference situation.

4. Coverage: population aged 15 years or older.

Source: INSEE, *ad hoc* tabulations, based on data from the survey "Enquête Technologies de l'information et de la communication", October 2005.

Annex Table 16. Internet use frequency in France, 2001

	Number of individuals	Daily or almost daily	Not daily but at least 4 times per month (at least once a week)	Once or 3 times a month	Don't know
All	1508	38	35	27	0
Men	793	42	34	24	0
Women	715	34	36	31	0
15-19 years	164	29	38	34	0
20-29 years	407	38	35	26	0
30-39 years	418	43	35	23	0
40-49 years	290	37	31	31	0
50-59 years	176	43	35	22	0
60-69 years	39	45	29	26	0
70 years and over	14	35	54	12	0
Farmers	9	9	67	23	0
Artisan, with own business	50	39	32	29	0
Managers	355	55	31	15	0
Intermediate professions	389	37	35	27	0
Non-manual workers	281	36	33	31	0
Manual workers	103	20	34	46	0
Pensioners	49	42	44	14	0
Other non-active	272	32	38	30	0
Employed	1054	41	33	26	0
Unemployed	90	41	26	33	0
Retired	49	42	44	14	0
Student	268	30	41	29	0
Other	47	29	44	27	0
Higher education	724	49	34	17	0
General secondary school diploma	189	36	32	32	0
Technical secondary school diploma	116	29	35	36	0
Professional secondary school diploma	243	27	37	36	0
Vocational qualifying certificate (BEP, CAP, BEPC)	184	30	38	33	0
No degree	52	37	22	42	0
1st quartile	234	32	40	29	0
2nd quartile	253	32	33	34	0
3rd quartile	382	37	25	29	0
4th quartile	639	47	33	20	0
UU* Paris	356	50	31	19	0
UU pop. > 100 000	500	42	35	24	0
UU pop. 20 000-100 000	169	35	31	34	0
UU pop. < 20 000	204	34	37	30	0
Rural community	279	28	40	33	0

Read: 55% of managers with Internet access used the Internet daily, or almost daily, in the past month.

Note: All uses combined (at home, at work, at school, elsewhere). Use frequency may be slightly underestimated because (for example) respondents saying they used Internet at least once a week at home and at least once a week at work have been left on this table in the category "At least once a week" whereas their combined use may in fact be once a day.

*UU= Urban unit.

Source: INSEE *ad hoc* tabulations, based on data from the survey "Enquête Technologies de l'information et de la communication", 2001.

Annex Table 17. Internet use frequency in France, 2005

	Number of individuals	Daily or almost daily	Not daily but at least 4 times per month (at least once a week)	Once or 3 times a month	Don't know
All	2462	55.6	28.4	16.0	0.0
Men	1202	57.6	26.2	16.1	0.1
Women	1260	53.4	30.7	16.0	0.0
15-19 years	279	46.0	37.5	16.5	0.0
20-29 years	534	58.9	27.6	13.4	0.0
30-39 years	626	60.4	25.6	14.0	0.0
40-49 years	458	56.1	25.7	18.2	0.0
50-59 years	386	53.8	28.1	17.8	0.3
60-69 years	134	54.4	27.0	18.6	0.0
70 years and over	45	51.3	21.8	26.9	0.0
Farmers	22	37.2	48.8	14.0	0.0
Artisan, with own business	84	55.6	22.9	21.6	0.0
Managers	405	71.3	21.0	7.4	0.3
Intermediate professions	591	59.3	28.7	12.0	0.0
Non-manual workers	511	54.1	25.4	20.5	0.0
Manual workers	214	37.6	32.0	30.5	0.0
Pensioners	194	56.5	22.6	20.9	0.0
Other non-active	441	52.4	34.5	13.1	0.0
Employed	1629	57.2	26.7	16.1	0.1
Unemployed	169	51.3	26.0	22.7	0.0
Retired	175	57.7	22.7	19.5	0.0
Student	364	51.8	36.6	11.7	0.0
Other	125	54.6	23.7	21.7	0.0
Higher education	1043	66.3	25.5	8.2	0.0
General secondary school diploma	258	54.7	35.5	9.5	0.4
Technical secondary school diploma	137	53.8	29.2	17.0	0.0
Professional secondary school diploma	102	49.5	28.6	21.8	0.0
Vocational qualifying	784	48.5	28.1	23.4	0.0
No degree	138	43.5	32.2	24.3	0.0
1st quartile	415	40.3	35.1	24.6	0.0
2nd quartile	501	51.3	32.8	15.7	0.2
3rd quartile	682	58.3	25.3	16.4	0.0
4th quartile	864	64.2	24.5	11.4	0.0
UU* Paris	510	66.1	23.7	10.0	0.2
UU pop. > 100 000	758	57.1	26.1	16.8	0.0
UU pop. 20 000-100 000	295	51.6	30.6	17.9	0.0
UU pop. < 20 000	377	52.1	28.5	19.4	0.0
Rural community	522	48.1	34.7	17.1	0.0

Read: 71% of managers with Internet access used the Internet daily, or almost daily, in the past month.

*UU= Urban unit.

Source: INSEE *adhoc* tabulations, based on data from the survey "Enquête Technologies de l'information et de la communication", October 2005.

Annex Table 18. Number of different uses of Internet, all types of connection combined, 2005

	Number of individuals	Number of different Internet use purposes			
		1 to 2	3 to 7	8 to 11	12 and over
All	2462	0	2.9	13.9	83.2
Men	1202	0	4.4	16.2	79.4
Women	1260	0	1.4	11.4	87.2
<i>Men</i>					
15-19 years	128	0	4.4	6.0	89.6
20-29 years	251	0	7.7	25.2	67.1
30-39 years	310	0	7.0	19.4	73.6
40-49 years	230	0	1.7	14.2	84.1
50-59 years	185	0	0.0	11.5	88.5
60-69 years	69	0	4.1	17.9	78.1
70 years and over	29	0	0.0	8.5	91.5
<i>Women</i>					
15-19 years	151	0	0.0	6.7	93.3
20-29 years	283	0	2.6	16.8	80.6
30-39 years	316	0	1.7	11.1	87.2
40-49 years	228	0	0.0	10.0	90.0
50-59 years	201	0	1.3	11.1	87.5
60-69 years	65	0	7.0	11.3	81.7
70 years and over	16	0	0.0	6.5	93.5
<i>All</i>					
15-19 years	279	0	2.1	6.7	91.6
20-29 years	534	0	5.2	21.0	73.8
30-39 years	626	0	4.5	15.5	80.1
40-49 years	458	0	0.9	12.2	86.9
50-59 years	386	0	0.6	11.3	88.1
60-69 years	134	0	5.4	14.8	79.8
70 years and over	45	0	0.0	7.9	92.1
Farmers	22	0	0.0	8.5	91.5
Artisan, with own business	84	0	0.0	13.2	86.8
Managers	405	0	6.0	19.2	74.8
Intermediate professions	591	0	1.8	13.0	85.3
Non-manual workers	511	0	2.0	13.9	84.1
Manual workers	214	0	4.5	12.3	83.2
Pensioners	194	0	1.7	16.0	82.4
Other non-active	441	0	3.3	12.2	84.6
Employed	1629	0	2.7	13.8	83.5
Unemployed	169	0	5.0	19.7	75.4
Retired	175	0	1.8	14.8	83.4
Student	364	0	3.6	12.0	84.5
Other	125	0	0.8	14.0	85.2
Higher education	1043	0	4.1	18.7	77.2
General secondary school diploma	258	0	5.3	13.4	81.3
Technical secondary school diploma	137	0	1.1	17.7	81.3
Professional secondary school diploma	81	0	4.2	10.9	85.0
Vocational qualifying certificate (BEP, CAP, BEPC)	805	0	1.4	10.7	88.0
No degree	138	0	2.5	4.9	92.7
1st quartile	415	0	4.1	11.6	84.4
2nd quartile	501	0	1.1	12.2	86.7
3rd quartile	682	0	2.0	14.7	83.3
4th quartile	864	0	4.3	15.5	80.2
UU* Paris	510	0	3.7	17.6	78.7
UU pop. > 100 000	758	0	4.1	14.7	81.2
UU pop. 20 000-100 000	295	0	2.3	13.2	84.5
UU pop. < 20 000	377	0	2.0	13.7	84.3
Rural community	522	0	1.6	9.5	88.8
Low speed	476	0	1.2	5.2	93.6
High speed	1357	0	4.3	21.3	74.4

Read: 74.8% of managers with Internet access used the Internet for 12 or more different purposes in the past month.

Coverage: population aged 15 years or older having used the Internet in the last month.

Source: INSEE adhoc tabulations, based on data from the survey "Enquête Technologies de l'information et de la communication", October 2005.

Annex Table 19. Purposes of use of the Internet in Finland, Spring 2004

percentage of Internet users	
Sending/receiving e-mail	88
Finding information about goods or services	84
Internet banking	71
Obtaining information from public authorities websites	62
Using services related to travel and accommodation	60
Reading or downloading online papers/news magazines	52
Purchasing/ordering goods or services (excl. shares/financial services)	37
Downloading pictures onto the computer	37
Looking for a job or sending a job application	31
Listening to music on the net or downloading it onto the computer or other device	30
Formalised educational activities at school, university or other educational institution	29
Chatting or writing to discussion forums	25
Playing games on the net	23
Listening to web radios or watching web television	17
Other financial and insurance services (e.g. buying of shares or securities)	16
Downloading of games from the net onto the computer	11
Selling goods or services (e.g. via auctions)	11
Completing post education courses	8
Telephoning over the Internet	5
Completing other educational activities related specially to employment opportunities	4
Video conferencing	4

Source: Sirkiä et al., 2005.

Annex Table 20. Number of activities¹ that home Internet users participated in during the last 12 months, Canada, 2005

	0-2 purposes	3-7 purposes	8-11 purposes	12+ purposes
all home users	5.5	26.7	33.4	34.4
men	5.0	22.4	32.1	40.5
women	6.0	31.0	34.6	28.4
age 18 to 24	20.7 ²		33.6	45.7
age 25 to 34	3.3	18.6	33.0	45.1
age 35 to 44	5.2	26.7	33.6	34.5
age 45 to 54	6.6	30.7	34.6	28.1
age 55 to 64	8.4	38.2	32.6	20.8
age 65 and up	12.8	44.8	30.1	12.4 ³
High speed ⁴	3.9	22.5	33.4	40.2
Low speed ⁵	9.6	40.8	35.0	14.6

1. 21 activities are measured.

2. Due to low reliability of the estimate for the 0-2 purposes category (coefficient of variation exceeds 33.3%), this category has been combined with the 3-7 purposes category for the 18 to 24 age group.

3. Use with caution –coefficient of variation between 16.6% to 33.3%.

4. "High speed" includes all respondents who identified that they access the Internet at home using cable or satellite, and all respondents accessing the Internet using a telephone connection or other connection (e.g. television, wireless (cellular phone or PDA), other) that they identified was a high-speed connection.

5. "Low speed" includes all respondents accessing the Internet at home through a telephone or other connection (e.g. television, wireless (cellular phone or PDA), other) that they identified was not a high-speed connection.

Source: Statistics Canada, *adhoc* tabulation, based on data from the *Canadian Internet use survey 2005*, February 2007.

Annex Table21. Diversity of Internet activities¹ in the Netherlands, 2006

Number of Internet activities	Number of Internet users		Share of Internet users 2006	Average age of Internet users 2006
	2005	2006		
	<i>abs. (x 1 million)</i>		<i>% cumulative</i>	<i>years</i>
1	0.4	0.3	3	49
2	0.6	0.5	7	43
3	1.0	0.7	14	38
4	1.5	1.1	24	39
5	1.6	1.7	41	37
6	1.5	1.7	57	37
7	1.6	1.8	75	36
8	1.2	1.5	90	36
9	0.6	0.8	97	34
10	0.2	0.3	100	32
Total	10.3	10.4		38

1. Persons aged 12–74 years who used the Internet in the 3 months preceding the survey that carried out specific Internet activities.

Source: CBS-Statistics Netherlands, *ICT use by households and individuals, 2005–2006*. As published in *The Digital Economy 2006*, CBS (2007). Available at:

<http://www.cbs.nl/NR/rdonlyres/243639BE-67DA-43D2-933B-583E3C97631E/0/2006p38pub.pdf>

Annex Table 22. PC and Internet penetration rates, differences between top and bottom income bands¹

	1994	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006
<u>Quartiles</u>												
Canada												
Internet	..	..	27	38	43	49	53	53	55	..	..	..
Finland												
Internet	..	..	20	33	41	52	54	49	60	59	47	53
France												
PC	..	18	20	22	28	28	33	32	35	..	34	..
Internet	..	..	..	..	11	20	27	29	35	..	37	..
Sweden												
PC	22	23	25	30	23	18	15	13	15	12	..	..
Internet	..	..	..	29	28	25	21	18	19	17	..	..
<u>Quintiles</u>												
Australia²												
PC											45	
Internet											50	
United Kingdom												
Internet	..	..	..	24	40	61	62	66	68	69	..	..
<u>Deciles</u>												
Canada³												
PC	32	48	..	..	..	65	..	..	..	..	..	..
Internet	..	18	41	47	55	63	..	..	..	..	..	..
Netherlands												
PC	..	..	..	29	38	38	50	..	..	..	..	..
Internet	..	..	..	24	37	41	59	..	..	..	..	..
Sweden												
PC	30	33	42	35	26	23	18	15	17	12	..	..
Internet	..	..	..	37	34	32	25	23	25	18	..	..
United Kingdom⁴												
Internet	..	..	..	29	42	66	70	73	75	71	76	..

1. Difference in the penetration rates between high- and low-income quartiles, quintiles or deciles.

2. 2004-2005 instead of 2005.

3. 1990 instead of 1994.

4. 1998/99 instead of 1998, and similarly for other years.

Source: OECD, based on data from national statistical offices.

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