

## Chapter 3

# EMPOWERING SOCIETY

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## 3. EMPOWERING SOCIETY

### 3.1 | Internet users

#### Key findings

Internet usage varies widely across OECD countries and among social groups. In 2013, 90% and more of the adult population were accessing the Internet in Luxembourg, the Netherlands, the Nordic countries and Switzerland, but less than 60% in Greece, Italy, Mexico and Turkey.

Usage rates across the OECD reached almost 80% in 2013, an 18-percentage point increase on 2006. Many lagging countries caught up thanks to recent advances in mobile broadband availability and uptake.

Developments in mobile technology have also enabled people to conduct daily personal computing and communications activities “on the go”. As a result, society is increasingly made up of “nomadic” computer and Internet users: in 2013, more than 40% of adults used a mobile or smartphone to connect to the Internet in the OECD.

For most people, the Internet is now part of everyday life. On average, over three quarters of users connect to the Internet on a daily basis. In Iceland and Italy the share of daily users is very similar to that of total users; in Chile, Japan and Mexico, however, many users do not access the Internet daily.

Differences in Internet uptake are linked primarily to age and educational factors, often intertwined with income levels. In most countries, uptake by young people is nearly universal, but there are wide differences for older generations (notably seniors). More than 75% of 55-74 year-olds in Denmark, Iceland, Luxembourg, the Netherlands and Sweden reported using the Internet in 2013 against less than 10% in Mexico and Turkey.

Education appears to be a much more relevant factor for older people than for younger people. Usage rates for 55-74 year-olds with tertiary education are generally in line with those of the overall population, and in leading countries approach that of 16-24 year-olds. Older people, in particular those with a lower education, are thus a potential focus of strategies to foster digital inclusion. In 2013, the differential between the Internet usage rates of 55-74 year-olds with high and low educational attainment was particularly significant in Hungary, Poland and Spain.

#### DID YOU KNOW?

On average, almost 80% of adults and 95% of 16-24 year-olds in the OECD use the Internet, most of them on a daily basis.

#### Definitions

Users include individuals who accessed the Internet within the last three months prior to surveying. Different recall periods have been used for some countries (see chapter notes). Daily users consist of individuals accessing the Internet approximately every day on a typical week (i.e. excluding holidays, etc.).

Figures on individuals using the Internet via mobile or smartphones also include Wi-Fi networks for countries in the European Statistical System; for other countries see chapter notes.

The *education gap* corresponds to the percentage difference between the shares of Internet users with tertiary education (ISCED level 5 or 6) and those with at most lower secondary education (ISCED levels 0, 1 and 2). The focus is on 55 to 74 year-olds.

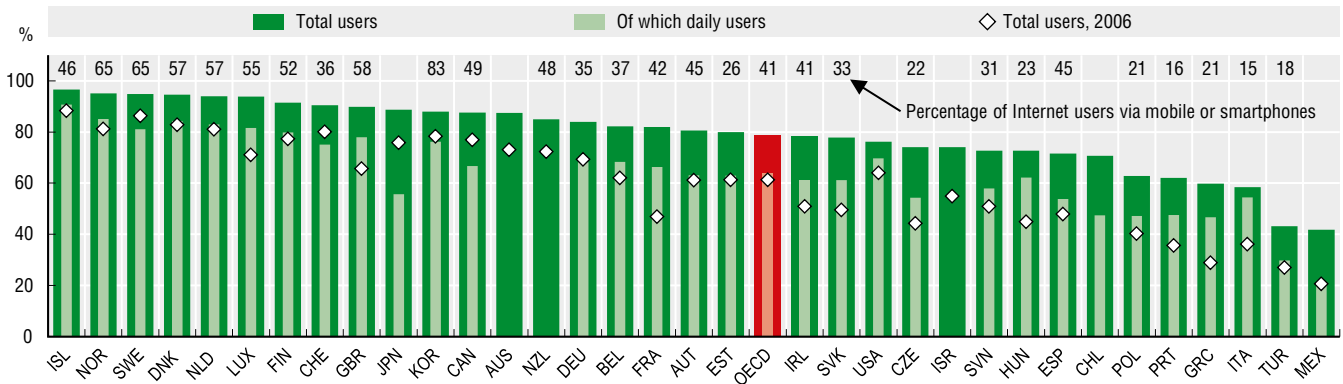
#### Measurability

Not all OECD countries survey ICT usage by households and individuals. Data availability for specific indicators also varies. Surveys in Australia, Canada, Chile, Israel and New Zealand are undertaken on a multi-year or occasional basis, but take place annually in other countries. Even among European countries, where indicators are fully harmonised, data collection practices differ; for example, ICT usage is not always monitored by means of a dedicated survey. In Austria, Belgium, Czech Republic, Estonia and Ireland, data are collected through the Labour Force Survey, while in Italy and the United Kingdom data are gathered through a general survey on living conditions.

Other potential sources of difference include the compulsory or voluntary nature of responses and recall periods (in the European Union the survey is compulsory in only eight countries). Breakdown of indicators by age or educational attainment groups may also raise issues concerning the robustness of information, especially for smaller countries, owing to sample size and survey design.

Total, daily and mobile Internet users, 2006 and 2013

As a percentage of 16-74 year-olds

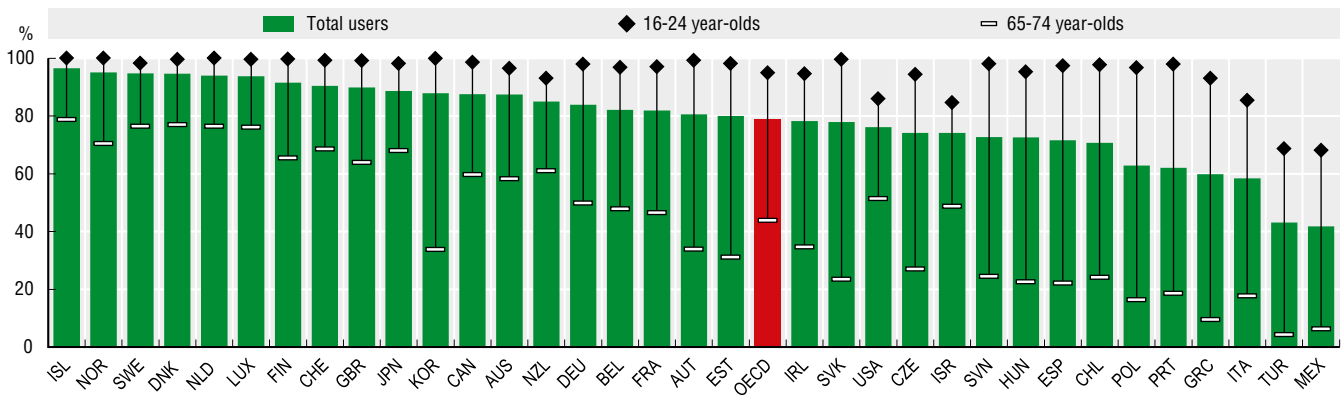


Source: OECD, ICT Database; Eurostat, Information Society Statistics and national sources, May 2014. See chapter notes.

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Internet users by age, 16-24 and 65-74 year-olds, 2013

As a percentage of population in each age group

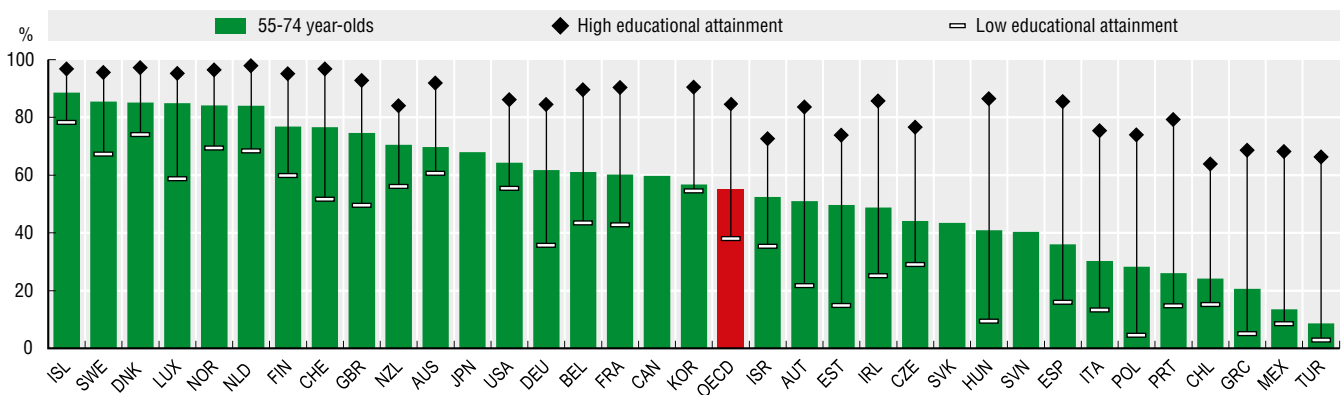


Source: OECD, ICT Database; Eurostat, Information Society Statistics and national sources, May 2014. See chapter notes.

StatLink <http://dx.doi.org/10.1787/888933148208>

Internet users among 55-74 year-olds by educational attainment level, 2013

As a percentage of 55-74 year-olds in each educational attainment group



Source: OECD, ICT Database; Eurostat, Information Society Statistics and national sources, May 2014. See chapter notes.

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## 3. EMPOWERING SOCIETY

### 3.2 | Online activities

#### Key findings

Internet usage to perform specific activities varies widely both according to the type of activity and across countries, as a result of institutional, cultural or economic factors. Comparing diffusion of different online activities among individuals can help to shed light on factors that encourage and discourage their diffusion.

Over 2012-13, on average almost 90% of Internet users reported sending emails, about 80% reported using the Internet to obtain information on goods and products, and 70% reported reading online news. The share of Internet users ordering products online was 57% while only 22% sold products over the Internet.

Activities such as sending emails, searching product information or social networking show little variation across all countries. However, the shares of Internet users performing activities usually associated with a higher level of education, with cultural elements or more sophisticated service infrastructures, tend to present higher inter-country variability. This is the case, for example, for the majority of indicators related to e-government, e-commerce and online banking.

In 2013, the use of online banking varied significantly from over 90% in Estonia, Finland and Norway to less than 20% in Chile and Greece. Overall income and wealth levels contribute to these differences, but are not the sole factors. For example, in Estonia the share of individuals who carried out online banking activities was rather high compared to the relatively low per capita income.

Income-related differentials within countries were also uneven, the highest gap in 2013 being observed in Spain. The gap between the highest and the lowest quartiles was also high for Belgium and Luxembourg, but much lower in countries with comparable online banking rates, such as Austria or France.

Country uptake patterns for sophisticated activities tend to be similar. For example, online banking is positively correlated with the use of e-government services (also requiring trust, familiarity and infrastructural development), software downloading and, to a lesser extent, e-purchases, audio-video streaming and online gaming. Hence, other elements are likely to come into play, including familiarity with online services, trust and skills, together with country-specific elements not considered here (see Measurability).

#### DID YOU KNOW?

Over 2012-13, on average, 60% of OECD Internet users participated in social networks, while less than 30% sent filled forms to public administrations and only 20% sold products online.

#### Definitions

Diffusion indicators by activity are computed as the simple average (i.e. not weighted by population) of country percentage shares, as well as extreme (minimum and maximum) and quartile values of each distribution. This approach shows the variability in uptake of each activity among Internet users across countries, with the lines between the 1st and the 3rd quartile including the central 50% of country values for each indicator.

In the case of *online banking*, the poorest and richest 25% of households are compared.

#### Measurability

Collection of data on ICT usage by individuals is uneven across OECD countries, due to differences in the frequency and nature of surveys (see 3.1).

Collection of data varies as well over time, as surveys commonly shift their focus on a regular basis to ensure that the response burden remains acceptable.

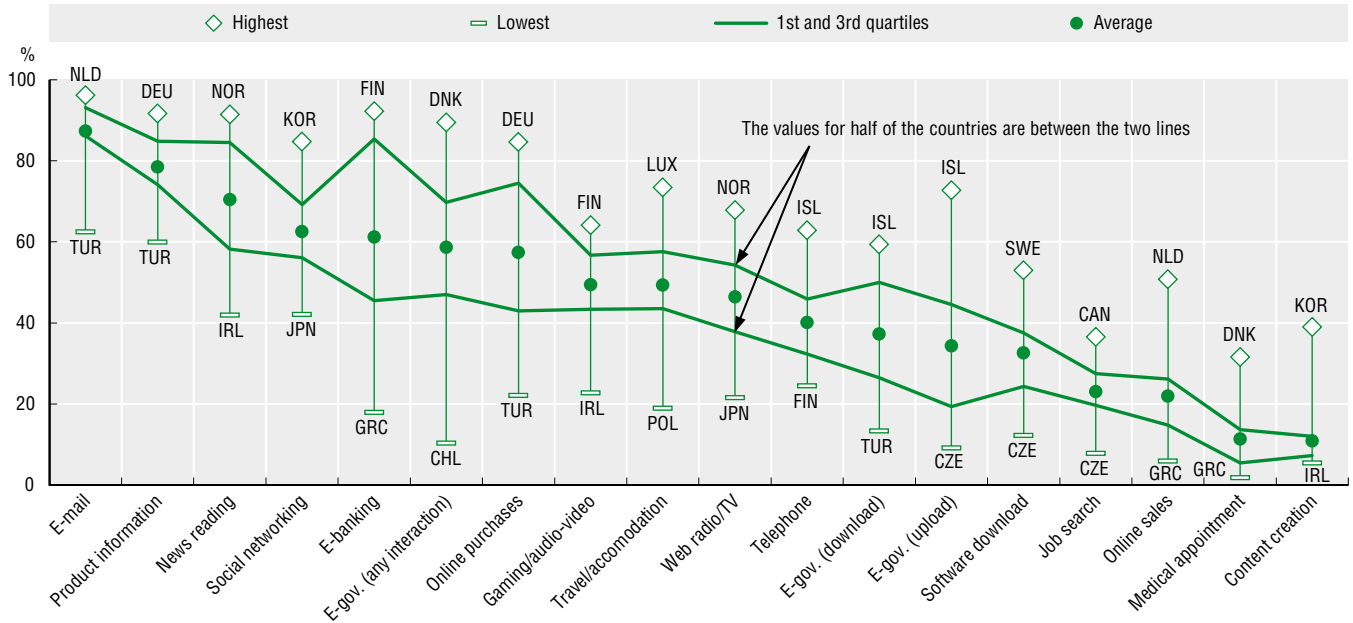
Data might also reflect a variety of country-specific elements, including the diffusion and ease of use of alternative channels to perform certain activities (e.g. local terminals of government offices or ATMs in the case of banking services, as in Portugal and Turkey), as well as institutional aspects. For example, in Korea the amount of money individuals are allowed to transfer via the Internet is subject to limitations on grounds of security.

Finally, indicators are not always fully harmonised across countries.

The OECD is actively engaged in work to facilitate the collection of comparable information in this field through its Model Survey on ICT Access and Usage by Households and Individuals, and by encouraging the co-ordinated collection of statistics on usage, in particular, on emerging topics. It is also currently exploring alternative ways to collect information, including the use of Internet-based statistics (see 3.9).

The diffusion of selected online activities among Internet users, 2012-13

Percentage of Internet users performing each activity

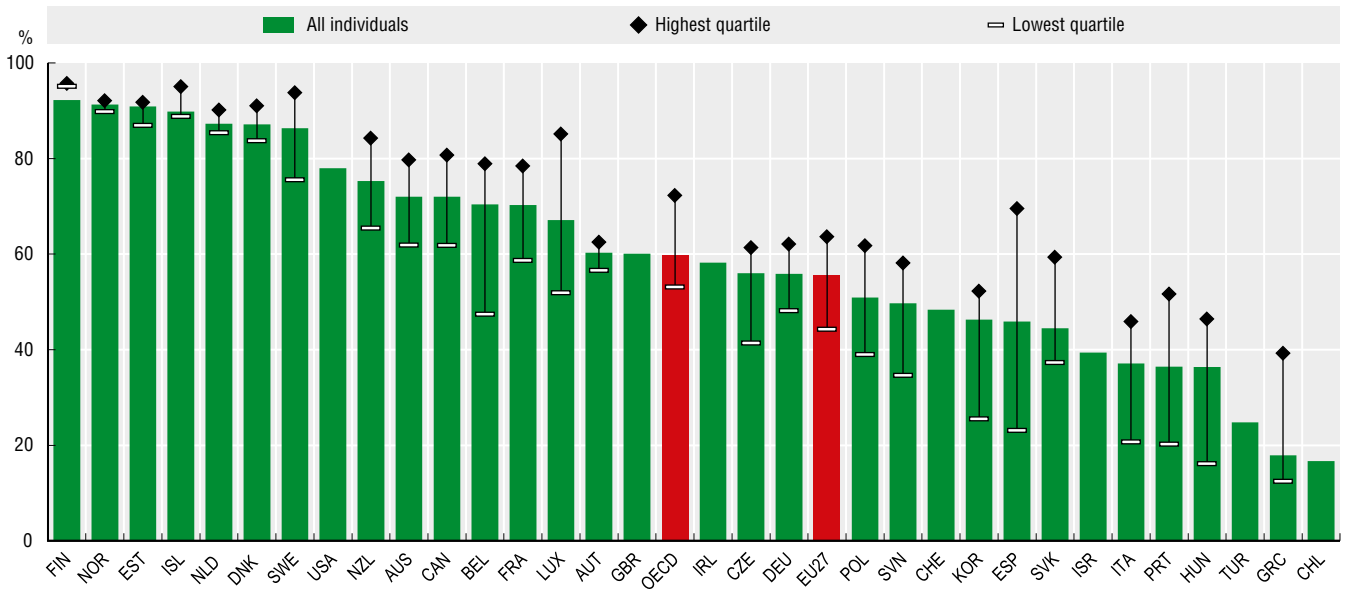


Source: OECD, ICT Database; Eurostat, Information Society Statistics and national sources, July 2014. See chapter notes.

StatLink <http://dx.doi.org/10.1787/888933148228>

The diffusion of Internet banking, 2013

Percentage of Internet users by income quartile of the household



Source: OECD, ICT Database; Eurostat, Information Society Statistics and national sources, May 2014. See chapter notes.

StatLink <http://dx.doi.org/10.1787/888933148231>

## 3. EMPOWERING SOCIETY

### 3.3 | User sophistication

#### Key findings

The breadth of activities performed by each Internet user can be analysed to develop an indicator of user sophistication.

The average number of activities performed by users, for all available countries combined, shows that in 2013 Internet users performed on average 6.3 out of the 12 activities selected, up from 5.4 in 2009 (i.e. from 45% to 51.6% of the listed activities), mirroring a growing maturity of usage.

By country, the averages range from 7.5 to 8 activities per user in the Nordic countries and the Netherlands, to about 5 activities or less in Greece, Italy, Korea, Poland and Turkey. The growth rates between 2009 and 2013 ranged from 6.2% in Spain to 22.9% in Iceland.

The breadth of activities performed by country is, on average, closely related to differences in the level of Internet uptake. This suggests that “experience matters”, as countries leading in uptake also have a proportionally larger share of individuals using the Internet over a longer period of time.

Regardless of the reason, this pattern demonstrates that countries with low levels of uptake benefit less from the Internet than the rate of usage implies, as their users on average are performing fewer activities (i.e. are less “sophisticated” users).

Not controlling for other factors, the education gap is among the most important explanatory factors of the breadth of activities performed on the Internet. While users with tertiary education perform on average 7.3 different activities, those with at most lower secondary education perform only 4.6.

This is not surprising, as some of the activities in the list are either more complex or otherwise indirectly connected to education (e.g. through age or income). Differences by level of education are particularly high for Belgium, Hungary, Ireland, Korea and Turkey. Furthermore, users with low levels of education in countries experiencing a wide education gap perform fewer activities than senior users (defined as individuals between 55 and 74 years old).

#### DID YOU KNOW?

The breadth of activities performed online is related to rates of Internet usage and education levels. Educated users in Italy are engaged in less sophisticated online activities than average users in Northern Europe.

#### Definitions

The average number of *online activities per user* is based on information on the share of users for each activity. The following 12 activities were considered: using e-mail, telephoning or video calling over the Internet, participating in social networks, finding information about goods or services, reading online news, online banking, using services related to travel and accommodation, interacting online with public authorities, selling goods or services, buying physical goods, buying digital content and buying services.

These indicators are derived from individual micro-data made available by Eurostat for countries in the European Statistical System (ESS). For Korea, a special tabulation has been produced by the Korean Internet and Security Agency (KISA).

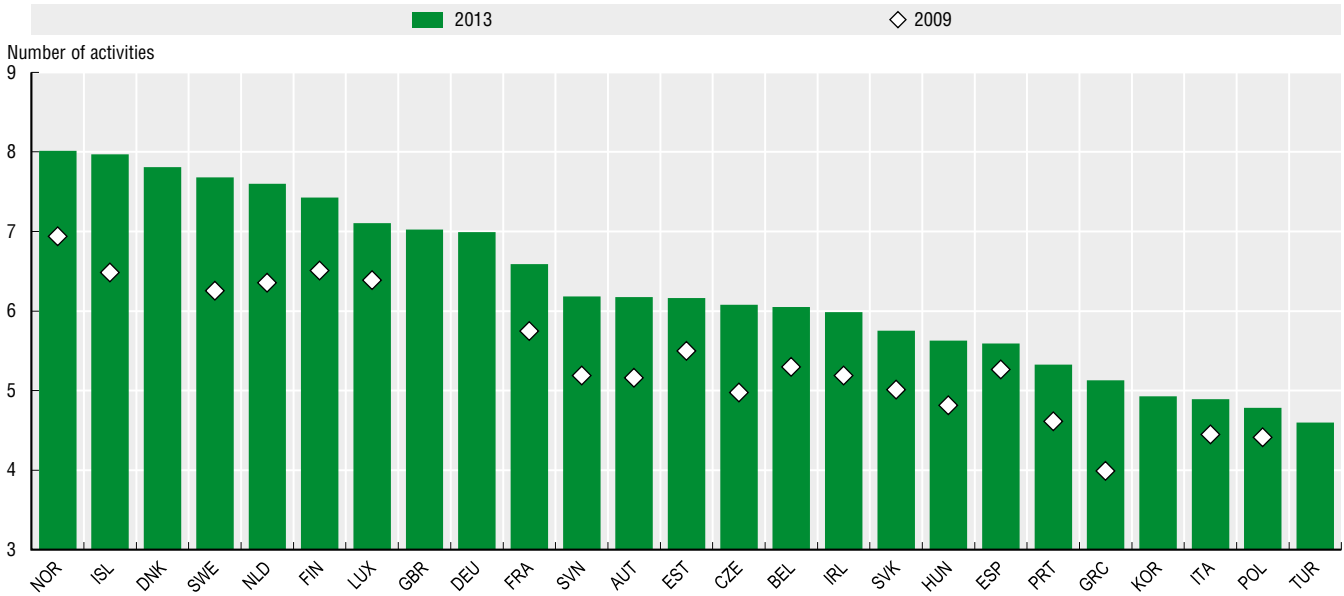
To portray the (gross) relation with Internet uptake, the number of activities per user by country is plotted jointly with the shares of Internet users, showing for convenience a simple (non-linear) regression line and the corresponding variance explained. The average number of activities has also been computed for individuals with tertiary and low or no formal education, and for the subpopulation of individuals aged 55 and above.

#### Measurability

Collection of information on ICT usage by individuals is uneven across OECD countries, due to differences in frequency and the nature of surveys (see 3.1). In particular, data on the type of activities performed – potentially wide and increasing – are often restricted to basic information. For this reason, the comparison is limited to countries participating in the ESS (OECD EU member countries, Iceland, Norway and Turkey). Data for Korea are also presented, although activities do not fully correspond to those listed for the ESS countries, resulting in a possible underestimation of the number of activities performed.

The variety of activities performed online by Internet users, 2009 and 2013

Average number of activities per user

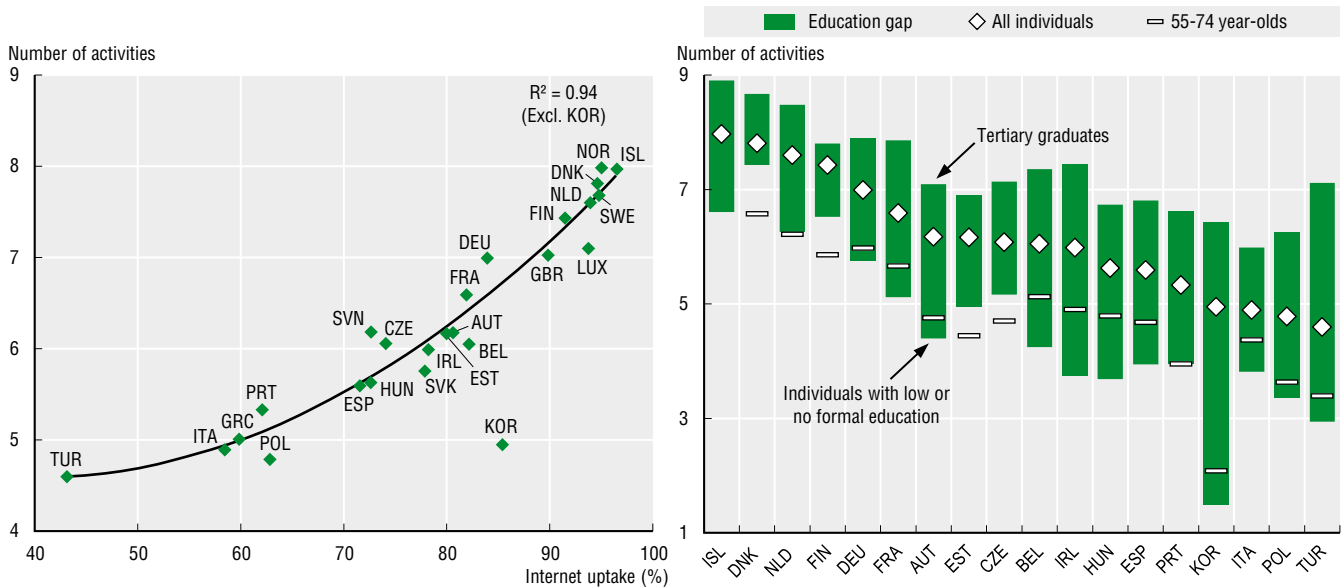


Source: OECD computations based on Eurostat, Information Society Statistics and ad-hoc data tabulation by KISA, May 2014. See chapter notes.

StatLink <http://dx.doi.org/10.1787/888933148245>

Factors influencing the variety of activities per user: Internet uptake, education and age, 2013

Number of activities linked to the percentage of users (left-hand panel) and by education level and age (right-hand panel)



Source: OECD computations based on Eurostat, Information Society Statistics and ad-hoc data tabulation by KISA, May 2014. See chapter notes.

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## 3. EMPOWERING SOCIETY

### 3.4 | Digital natives

#### Key findings

The Internet permeates every aspect of the economy and society, and is also becoming an essential element of children's lives.

According to the results of the 2012 OECD Programme for International Student Assessment (PISA), 90% of students in the OECD first access the Internet before the age of 13. On average, for countries where data are available, less than 0.5% of 15 year-olds reported never having accessed the Internet.

Age of first access to the Internet varies largely across countries. More than one third of students started using the Internet aged 6 or younger in Denmark and the Netherlands. About 80% of students accessed the Internet before age 10 in the Nordic countries, the Netherlands and Estonia, as opposed to 30% in Greece and the Slovak Republic.

Early use of the Internet appears to be correlated with time spent online by 15 year-olds, across countries. In Australia, Denmark and Sweden, the average student spends about 4 hours on the Internet on a typical weekday, whereas students in Korea spend less than 1.5 hours. Students use the Internet mostly outside of school. Time spent online at school is slightly more than half an hour per day in the OECD, with little variation among countries.

While access to information via the Internet may bring considerable benefits for children's education, it also exposes them to online risks such as access to inappropriate content, harmful interactions with other children or adults, and exposure to aggressive marketing practices. Children online may also put at risk the computers they use and inadvertently disseminate their own personal data.

Parental control software is the most common technological solution for enhancing child safety online. There are notable differences across countries in terms of individual use of such tools. In 2010, the share of individuals using parental control or web-filtering software varied from 22.5% in Slovenia to 2% in the Slovak Republic. Recent data from Japan show an increase in usage from about 20% in 2010 to 26% in 2012.

Protection of children online is an important public policy concern in many countries. The 2012 OECD *Recommendation of the Council on the Protection of Children Online* offers guidelines for all stakeholders (businesses, civil society and the online technical community) involved in making the Internet a safer environment for children.

#### DID YOU KNOW?

On average, 15-year-olds in the OECD spend about 3 hours a day on the Internet on a typical weekday.

#### Definitions

Students assessed by PISA are between the ages of 15 years 3 months and 16 years 2 months. They must be enrolled in school and have completed at least 6 years of formal schooling, regardless of the type of institution, the programme followed, or whether the education is full-time or part-time.

The average number of *hours* spent online is computed by taking the midpoint of each category available in the questionnaire, except for the first category (no time), which is recoded as zero minutes, and the last category (more than six hours per day), which is recoded as six hours.

All PISA shares are reported as a percentage of respondents.

A *parental control* or a *web filtering software* is designed to control the content viewed and restrict the material delivered over the Internet. Parents may use this software to limit the sites that children may view on computers at home.

#### Measurability

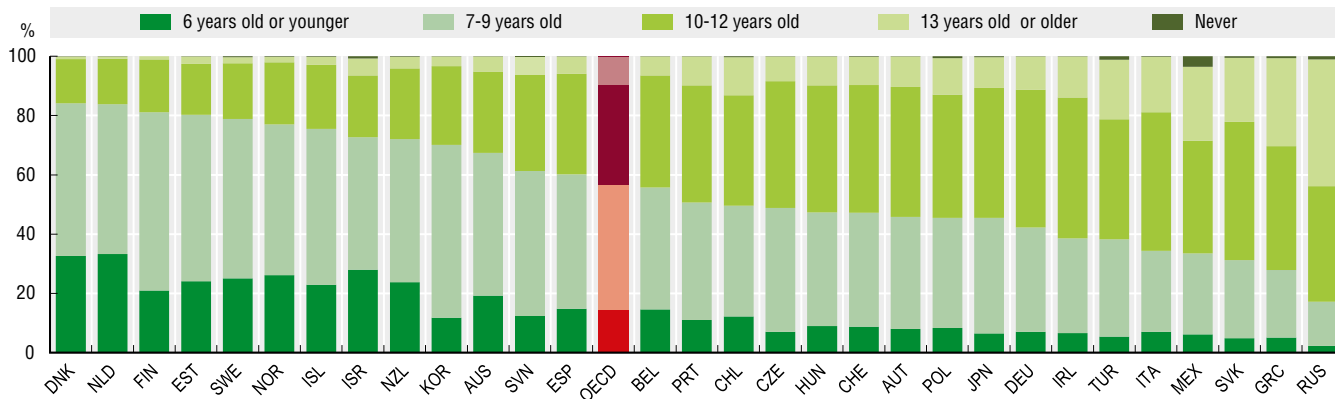
PISA 2012 assessed the skills of 15 year-olds in 65 economies. Around 510 000 students between the ages of 15 years 3 months and 16 years 2 months participated, representing 28 million 15 year-olds globally.

The ICT familiarity questionnaire is an optional module and consists of questions on the availability of ICTs at home and school, the frequency of use of different devices and technologies, and student's attitudes towards computers. In 2012, 43 out of 65 economies participating in PISA ran this specific module on an overall student population of 310 000. Despite the valuable information gained as a result of implementation, the ICT questionnaire is not administered in several countries, including Canada, France, the United Kingdom and the United States, due to the high costs generated by the inclusion of these additional questions in the survey.

The information on use of parental control and web-filtering software for all countries, excluding Japan, originates from the special module on Internet security of the 2010 Community Survey on ICT Usage in Households and by Individuals. This type of data has not been collected subsequently.



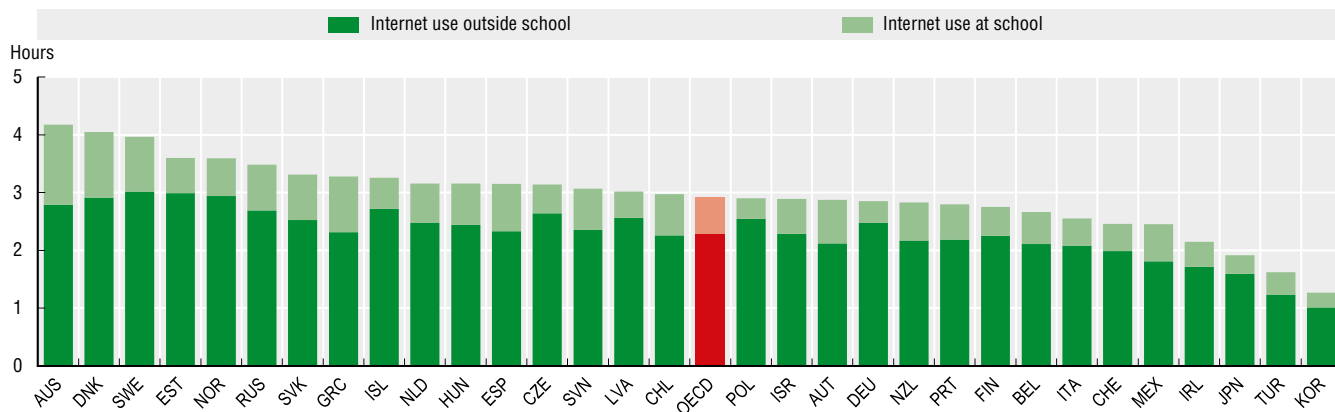
**Age of first access to the Internet, 2012**  
As a percentage of all students



Source: OECD, PISA 2012 Database, May 2014.

StatLink <http://dx.doi.org/10.1787/888933148262>

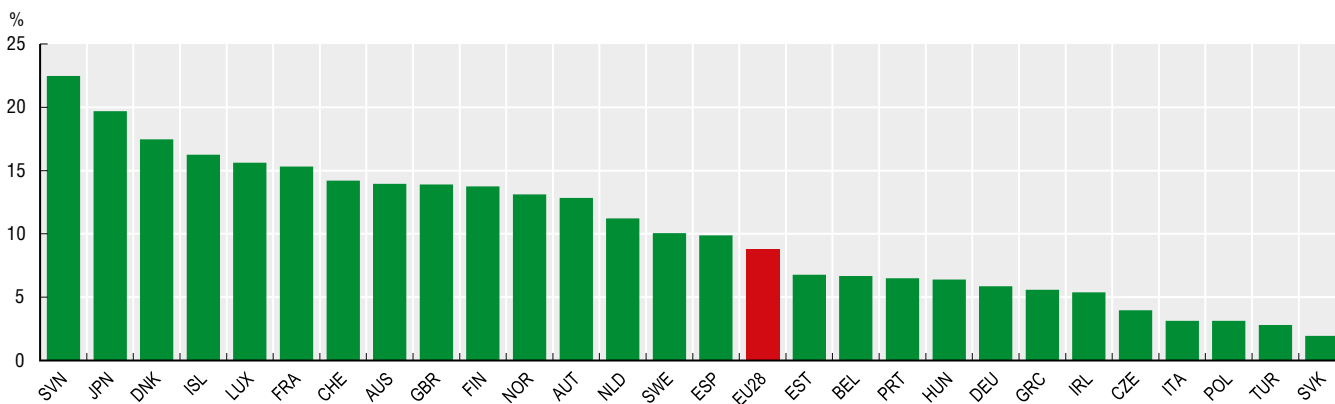
**Internet use of 15 year-old students at school and outside school, 2012**  
Average number of hours spent on the Internet during a typical weekday



Source: OECD, PISA 2012 Database, May 2014.

StatLink <http://dx.doi.org/10.1787/888933148275>

**Individuals using a parental control or web-filtering software, 2010**  
As a percentage of all individuals having used the Internet in the last 12 months



Source: OECD, ICT Database and Eurostat, Information Society Statistics, May 2014.

StatLink <http://dx.doi.org/10.1787/888933148282>

#### Why do we need indicators?

In 2012, about 55% of 15 year-olds in the OECD reported having accessed the Internet for the first time before the age of 10, and spending on average 3 hours per day online (see 3.4). The Internet is becoming an essential component of children's lives, but carries a spectrum of risks to which children are more vulnerable than adults. Addressing risks faced by children online is becoming a policy priority for an increasing number of governments. However, a number of measurement gaps need to be filled to improve comparable assessments across countries of the contexts in which children make use of different ICT tools, and the broader impacts of their activities online.

Indicators of children's online activity can be derived from official statistics, if the age range in the population scope of the ICT usage surveys permits, as in the case for Japan and Korea. Alternatively, countries may choose to add a specific module (e.g. Poland) to the main ICT survey or run separate surveys (e.g. Australia, Brazil, Egypt, the United Kingdom) to collect additional information on usage patterns and issues related to child protection online.

The lack of harmonisation in the coverage, concepts and definitions used in different ICT surveys often hinders sound international assessments (see 3.1) and does not allow information on children online to be fully captured in an internationally comparable fashion. For example, age coverage in surveys varies considerably with some countries assessing from age 5 upwards as in the Ofcom surveys on Children's Media Literacy (United Kingdom) or in the specific module of the 2013 survey on ICT usage by households in Poland. Some others (e.g. ICT Kids Online survey, Brazil) cover children from age 9 upwards. A broader age range in the population scope, such as found in Korea, would permit better understanding of the determinants of online activities and the role played by early childhood institutions in framing the use of different online technologies.

Data needs remain important in the field of child protection online, especially with regard to children's exposure to online incidents, their behaviour while facing different risks, and the roles played by parents, teachers and different IT protection tools in terms of risk prevention. Finally, too little is known about how children reap the benefits of online activity and the impacts of this activity on school performance, personal development, and health and well-being in the short and long term.

#### What are the challenges?

There are a number of challenges to better assessment of children's online activities and protection, the most significant of which relates to the administrative burden on national statistical offices. Some countries introduce specific questions on children's ICT use into ICT usage surveys, thereby obtaining valuable information, however many others are discouraged by the high costs involved.

In parallel, more targeted surveys allow a deeper investigation of the opportunities and risks associated with Internet use by children. However, the collection of such data often remains ad-hoc and does not allow for timely international comparisons in a context characterised by rapid change.

In the case of household surveys, it should be noted that questions related to children online are sometimes addressed both to parents and children with responses not necessarily being identical. Therefore, the identification of the respondent has an impact on the reliability of the information collected.

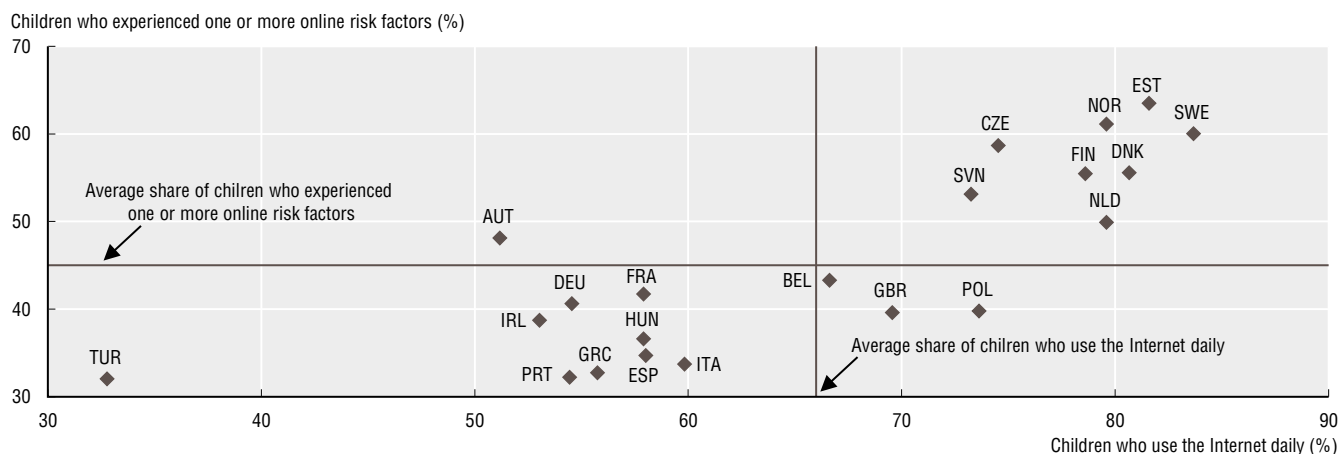
Finally, as in the case of all subjective assessments, robust data collection – on awareness and knowledge of online threats, concerns and attitudes towards online risks, preventive measures and the perception of harm – remains difficult from both an national and international perspective.

#### Options for international action

An attempt in 2010 by the EU Kids Online research network to collect internationally comparable data on children's online activity surveyed 1 000 individuals aged between 9-16 years old across 25 countries (Livingstone et al., 2011). The results showed that the percentage of children who reported experiencing one or more risks online increased with daily use of Internet.

### Internet use and online risk experience of 9-16 year-olds, 2010

Percentage of children who use the Internet daily linked to those who experienced one or more online risk factors



Source: Livingstone et al. (2011).

StatLink  <http://dx.doi.org/10.1787/888933148299>

Despite the relatively small size of the sample, the EU Kids Online survey sheds light on children's online experiences from Internet use (length, devices, location), their online activities (opportunities, skills, risky practices), the risks encountered online and the experienced outcomes (whether harmful or not, how children cope).

ITU (2010) provides a statistical framework for the measurement of child online protection within the Global Cybersecurity Agenda framework with the specific aim of establishing measures suitable for international comparisons. The report also recommends a list of main indicators related to measuring child online protection along with their definitions and suggestions for data collection.

The 2014 revision of the OECD Model Survey on ICT Access and Usage by Households and Individuals also contains a specific module on children online. It aims to better identify and assess different incidents faced by children online such as cyber bullying, child solicitation, grooming or exposure to a medium that might foster harmful behaviour on the part of children.

Protection of children online remains today an important public policy concern in many countries. The 2012 OECD *Recommendation of the Council on the Protection of Children Online* offers guidelines for all stakeholders (businesses, civil society and the online technical community) involved in making the Internet a safer environment for children. In particular, it underlines the need for governments to share information about national policy approaches to protect children online and develop the empirical foundations for quantitative and qualitative international comparative policy analysis. The Internet Literacy Assessment indicator for Students (ILAS) developed by Japan is an insightful example of follow-up to the Recommendation. The results of the project were presented at the OECD Working Party on Information Security and Privacy in 2013 and illustrate specific policy issues, including the role played by parents and the negative impact of excessive restriction on the use of the Internet.

#### References

ITU (2010), *Child Online Protection: Statistical Framework and Indicators*, Geneva, ITU.

Livingstone, S., L. Haddon, A. Görzig, and K. Ólafsson (2011), *Risks and Safety on the Internet: The Perspective of European Children. Full Findings and Policy Implications from the EU Kids Online Survey of 9-16 Year-olds and Their Parents in 25 Countries*, EU Kids Online Deliverable D4, EU Kids Online Network, London, [eprints.lse.ac.uk/33731](http://eprints.lse.ac.uk/33731).

OECD (2012), *Recommendation of the Council on the Protection of Children Online*, [acts.oecd.org/Instruments/ShowInstrumentView.aspx?InstrumentID=272](http://acts.oecd.org/Instruments/ShowInstrumentView.aspx?InstrumentID=272).

## 3. EMPOWERING SOCIETY

### 3.6 | ICTs in education

#### Key findings

Students are at the forefront of ICT uptake across all OECD countries. Differences in the use of ICTs persist, however, even among young people; and schools play a crucial role in reducing this digital gap.

The results of the 2012 OECD Programme for International Student Assessment (PISA) show that about 70% of students in the OECD use the Internet at school. This share ranges from 97% in Denmark to about 40% in Turkey. More than 40% of 15-year-olds in Korea reported that Internet access was available at school, but that they did not use it. About 30% of students in Japan and Mexico stated that Internet access was unavailable in school compared with an OECD average of 10%.

ICTs are used at school for various purposes such as communication, playing games, homework assignments, searching for information, and practising and drilling, including for foreign language learning or mathematics. According to the 2012 PISA results, there are significant differences across countries in terms of activities carried out on computers at school. In Norway, about 70% of 15-year-olds reported using a computer for practising and drilling, a percentage that dropped to 27% in Ireland and less than 10% in Korea and Japan.

In some countries such as Israel, Italy, Mexico and Turkey, the use of computers at school for practising and drilling appears to be rather diffused compared to the relatively low level of Internet connection availability at school. This variation across countries is related to differences in the education systems, policy priorities and school policies in terms of student access to and use of ICTs.

Regarding frequency of use, in most countries the majority of students use computers for practising and drilling only once or twice a month. The percentage of students using computers for this purpose on a daily basis remains low, standing at 12% in Denmark, 10% in Norway and around 2% in Finland and Germany.

Over the last few years, ICTs have contributed increasingly to a wider array of learning opportunities and education programmes through the development of online courses, in particular, the massive open online courses (MOOCs).

In 2013, 7.8% of Internet users in the EU followed an online course against 4.7% in 2007. This increase was generalised across countries, and shares more than doubled in some of them. On average, for the 30 OECD countries for which data are available, 9.4% of Internet users followed an online course in 2013. This percentage varied from 40% in Korea and 33% in Canada, to less than 4% in Austria, the Czech Republic, Japan and Poland.

#### DID YOU KNOW?

More than 70% of 15-year-olds across the OECD use the Internet at school.

#### Definitions

Students assessed by PISA are between the ages of 15 years 3 months and 16 years 2 months. They must be enrolled in school and have completed at least 6 years of formal schooling, regardless of the type of institution, the programme followed, or whether the education is full-time or part-time.

All PISA shares are reported as a percentage of respondents.

The Internet is considered as *available* even if student access is limited to certain times or to certain activities.

An *online course* reflects learning courses distant from the location of education and training organisations or employer where courses can be attended in person (often, but not necessarily done at home). Interaction with teachers, trainers and/or learning material is effected via the Internet. Often, individuals use e-learning software programmes. Data also include individuals who take a course only partially delivered online.

#### Measurability

PISA 2012 assessed the skills of 15 year-olds in 65 economies. Around 510 000 students between the ages of 15 years 3 months and 16 years 2 months participated, representing 28 million 15 year-olds globally.

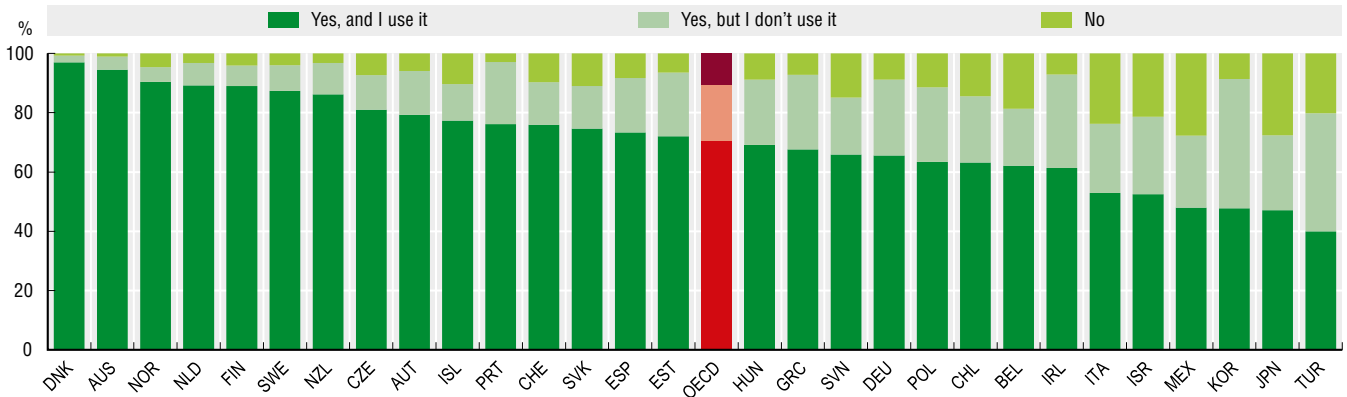
The ICT familiarity questionnaire is an optional module administered to an overall student population of 310 000 across 43 countries and economies. It provides information on the availability of ICTs at home and school, the frequency of use of different devices and technologies, and student's attitudes towards computers.

There is still an important lack of internationally comparable data over time in terms of ICT uptake, use and impact, especially at the higher education level and in vocational education. For example, as regards online courses, more detailed cross-country information on the type of courses offered, attendance frequency and participants' characteristics would allow for a better understanding of ICT use in education today.

The OECD's Innovation Strategy for Education and Training is leading to a measurement agenda in line with the increasingly important role played by ICTs for education as enablers of pedagogical innovation.

Internet connection availability at school, 2012

Percentage breakdown of all students

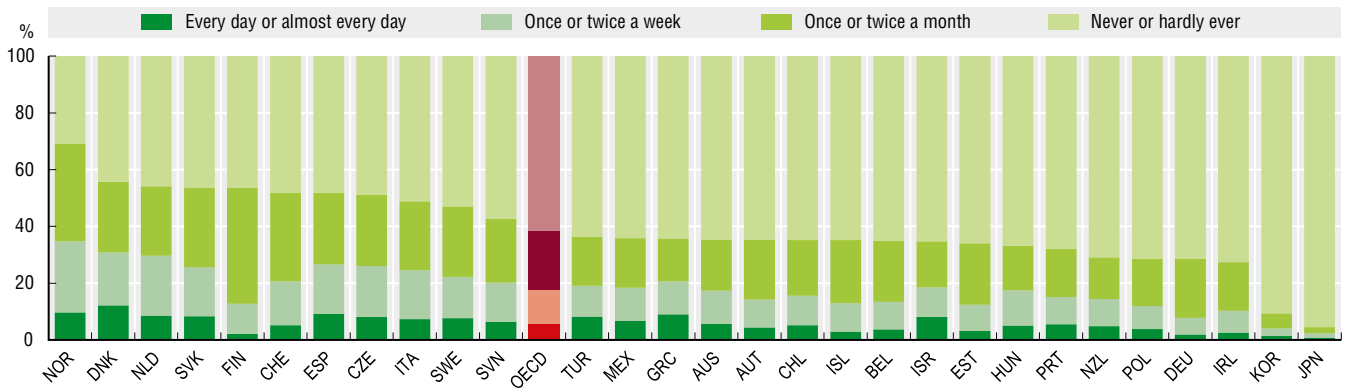


Source: OECD, PISA 2012 Database, May 2014.

StatLink <http://dx.doi.org/10.1787/888933148307>

Computer use at school for practising and drilling, such as for foreign language learning or mathematics, 2012

Percentage breakdown of all students

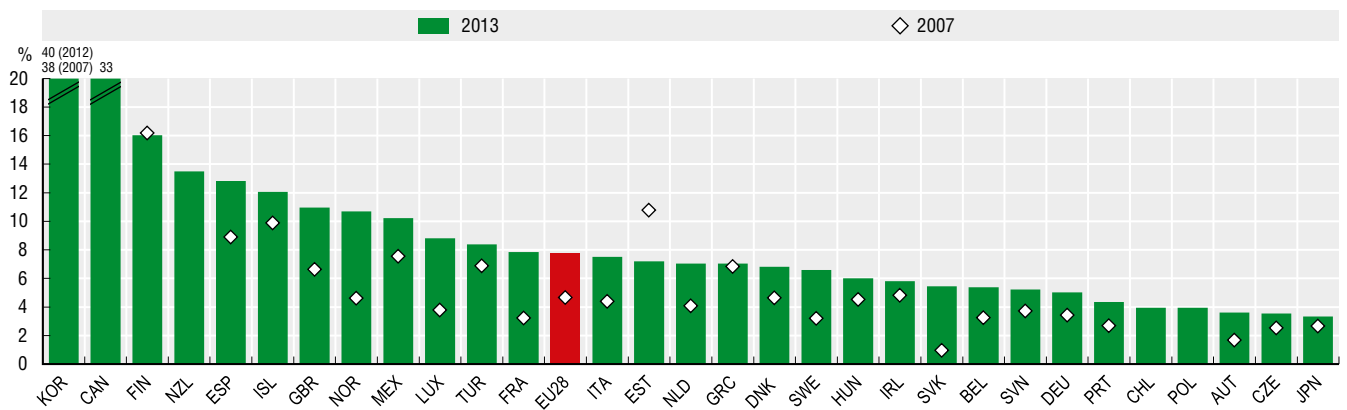


Source: OECD, PISA 2012 Database, May 2014.

StatLink <http://dx.doi.org/10.1787/888933148314>

Individuals who attended an online course, 2007 and 2013

As a percentage of individuals who used the Internet in the last three months



Source: OECD, ICT Database and Eurostat, Information Society Statistics, May 2014. See chapter notes.

StatLink <http://dx.doi.org/10.1787/888933148328>

## 3. EMPOWERING SOCIETY

### 3.7 | ICT skills in the workplace

#### Key findings

Intensification of ICT use in the home and the workplace has strongly affected the set of skills needed to participate fully in and benefit from connected societies and increasingly knowledge-based economies.

The results from the first OECD Programme for the International Assessment of Adult Competencies (PIAAC) show important differences across countries in terms of computer use at work. In 2012, about 80% of individuals at work reported having experience with a computer in the Nordic countries, as opposed to about 50% in Italy and 45% in the Russian Federation. However, a significant majority of individuals in all countries reported their computer use in the workplace as being straightforward or moderate. The share of individuals experiencing complex computer use varied between 8% of all individuals at work in Denmark and 3% in the Russian Federation.

In 2012, on average, 54% of workers reported using word processors, while 46% used spreadsheets and about 10% carried out programming tasks. Despite the relatively generalised use of word processors and spreadsheets across countries, the share of individuals with programming skills remains low varying between 17% in Korea and 6% in Italy.

While such cross-country variation in the type of ICT skills used at work may reflect differences in the labour market structure, it also provides an indication of the skill base and its characteristics. For instance, workers in countries that report relatively high ICT skills use at work, such as the Netherlands and Norway, also cite higher confidence in their computer skills should they change jobs.

Job mobility is an important driver of knowledge transfer and spillovers, which in turn foster innovation and growth in the digital economy. However, in 2013 only 39% of individuals in the EU labour force judged their computer skills to be sufficient to look for a job or change job within a year. Among the European countries, this percentage varied between 60% in the Netherlands and 25% in Greece. In all countries, individuals with a higher level of formal education report higher confidence in their computer skills, as compared to those with no or low formal education. The gap between these two groups exceeds 60 percentage points in Poland and Turkey.

Education and labour policies play a crucial role in the acquisition of ICT skills, their use at work and also their obsolescence if they remain unused. Governments need to craft policies that sustain a skilled labour force, are able to meet current labour market needs and easily adapt to changing skills demands over time.

#### DID YOU KNOW?

In 2013, more than 60% of the EU labour force reported their computer skills as being insufficient to apply for a new job.

#### Definitions

*Straightforward* computer use includes basic routines such as data entry or sending and receiving e-mails. *Moderate* computer use refers to word-processing, use of spreadsheets or database management. *Complex* computer use encompasses developing software or modifying computer games, programming using languages like Java, SQL, PHP or Perl, or maintaining a computer network.

All PIAAC shares are reported as a percentage of respondents.

Potential *job change* does not necessarily mean a change of employer and can concern change of functions within the same organisation. This variable provides general information on perceived skills sufficiency or gaps in relation to labour market requirements. The data refer to skills sufficient for performing a job that requires computer or Internet skills or professional ICT skills for individuals employed in ICT occupations.

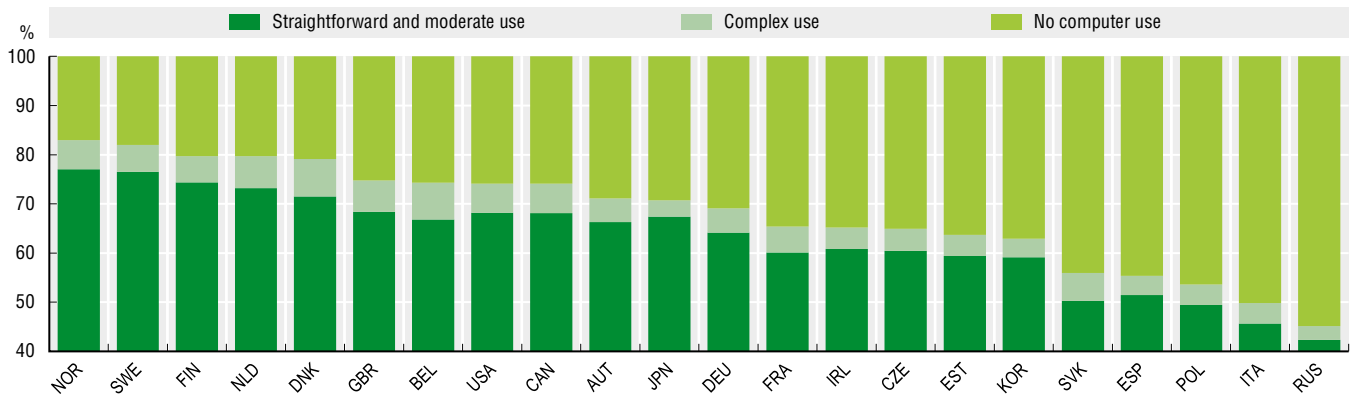
#### Measurability

PIAAC surveyed around 166 000 adults aged 16-65 in 24 countries and sub-national regions. These included 22 OECD countries (Australia, Austria, Belgium (Flanders), Canada, the Czech Republic, Denmark, Estonia, Finland, France, Germany, Ireland, Italy, Japan, Korea, the Netherlands, Norway, Poland, the Slovak Republic, Spain, Sweden, the United Kingdom (England and Northern Ireland), and the United States; and two partner countries (Cyprus and the Russian Federation).

PIAAC provides information on how skills are used at home, in the workplace and in the community; how these skills are developed, maintained and lost over a lifetime; and how they are linked to labour market participation, income, health, and social and political engagement. With this information, the Survey of Adult Skills helps policy makers to: (i) examine the impact of reading, numeracy and problem-solving skills on a range of economic and social outcomes; (ii) assess the performance of education and training systems, workplace practices and social policies in developing the skills required by the labour market and by society in general; and (iii) identify policy levers to reduce deficiencies in key competencies.



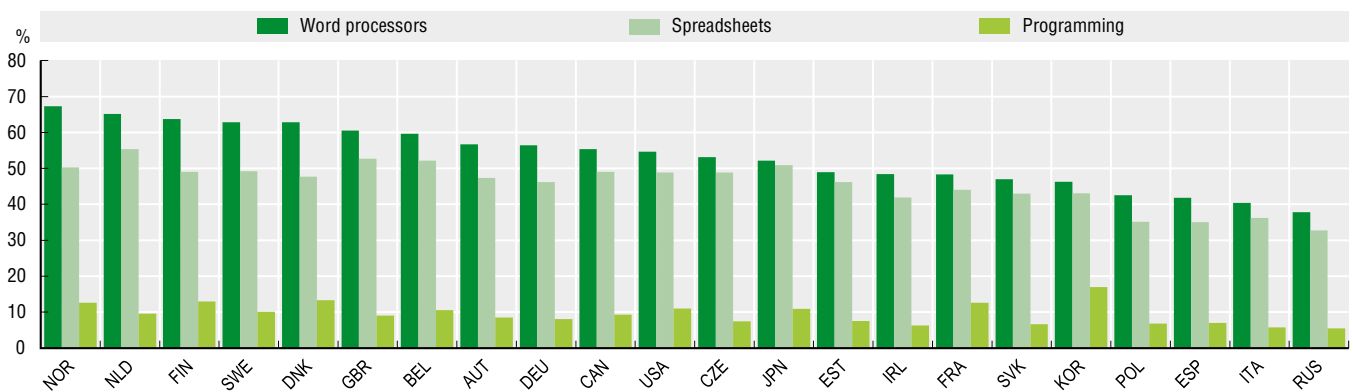
Computer use at work, 2012  
Percentage shares of all workers



Source: OECD, PIAAC Database, May 2014. See chapter notes.

StatLink <http://dx.doi.org/10.1787/888933148332>

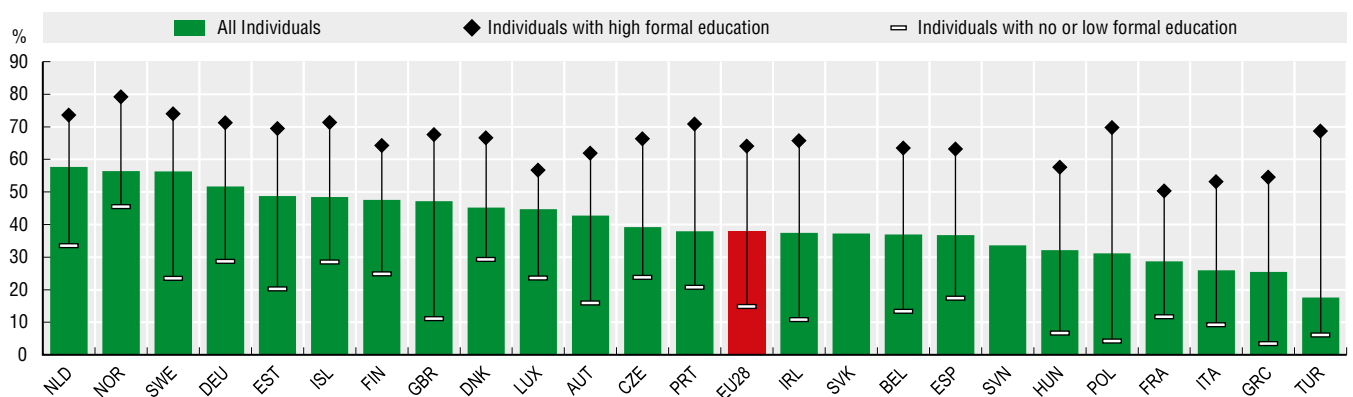
ICT skills use at work, 2012  
Percentage shares of all workers



Source: OECD, PIAAC Database, May 2014. See chapter notes.

StatLink <http://dx.doi.org/10.1787/888933148347>

Individuals who judge their computer skills to be sufficient if they were to apply for a new job within a year, 2013  
As a percentage of all individuals



Source: OECD computations based on Eurostat, Information Society Statistics, May 2014.

StatLink <http://dx.doi.org/10.1787/888933148354>

#### Key findings

E-commerce can substantially widen choices and convenience for consumers.

On average, 47% of individuals in OECD countries now buy products online, up from 30% in 2007. This trend is bound to continue in the coming years and has already disrupted traditional distribution channels for some categories of products.

The rapid diffusion of smart mobile devices has resulted in a growing number of individuals who make purchases on the go. The share of mobile purchases varies widely across countries as well as across different product categories, with age, education, income and experience all playing a role in determining the uptake of e-commerce by individuals.

In Denmark and the United Kingdom, more than 75% of adults purchase online. This percentage is between 10% and 20% in Chile, Italy and Turkey and below 5% in Mexico.

When considering the population of Internet users these shares increase and differences between leading and lagging countries are overall narrower. About 80% or more of Internet users in Denmark, Germany and the United Kingdom make purchases online, against less than 30% in Chile, Estonia or Turkey and below 10% in Mexico. In addition, it is possible to discern a substantial increase in the diffusion of online purchases with respect to 2007 in most countries, particularly in Belgium, Israel, New Zealand, the Slovak Republic and Switzerland.

The influence of income on e-commerce uptake is reflected in the high shares observed for 25-44 year-olds and in the comparatively high diffusion among 65-74 year-old users in many countries (in particular, Chile, the United Kingdom and the United States), when compared to the age gap observed for Internet usage (see 3.1).

The most common items purchased online are travel and holiday services (about half of online shoppers on average), tickets for events, digital products and books. However, other categories are growing such as food and grocery products.

The diffusion of different categories of products via online purchase might depend on income as well as other factors, including consumer habits and supply-side elements, such as the availability of e-commerce channels by local providers and their associated pricing decisions.

#### DID YOU KNOW?

About half of individuals in OECD countries purchase goods and services online, and almost 20% in Denmark, Korea, Sweden and the United Kingdom use a mobile device to do so.

#### Definitions

*Online purchases* are a component of electronic commerce (e-commerce).

This includes transactions of goods and services “conducted over computer networks by methods specifically designed for the purpose of receiving or placing orders” (OECD *Guide to Measuring the Information Society* 2011). For individuals, whether sellers or purchasers, such transactions typically occur over the Internet.

Online purchases are measured with respect to a 12-month recall period, taking into consideration that this is not always a high-frequency activity.

The main indicator of Internet purchases (including with handheld devices) is computed with reference to the total adult population (16-74 year-olds with a few exceptions as detailed in the chapter notes).

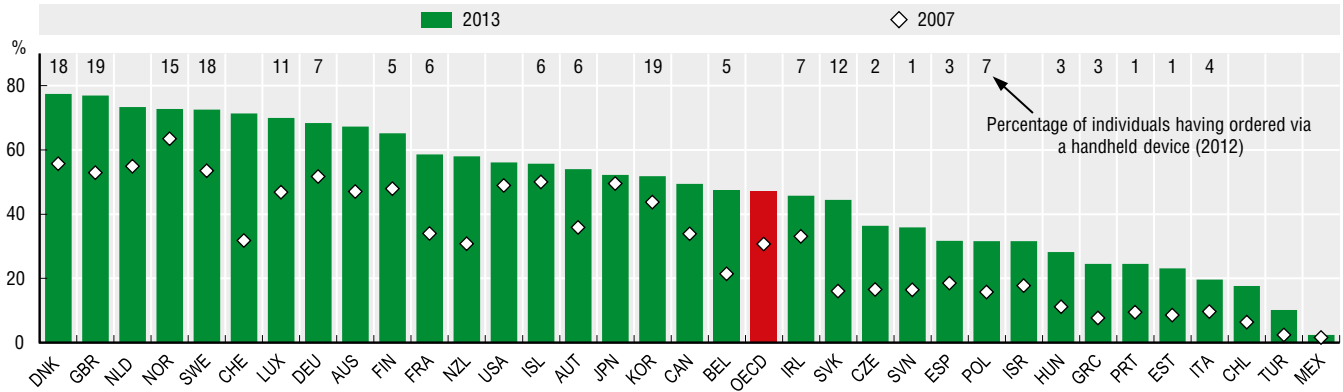
#### Measurability

The collection of information on ICT usage by individuals is uneven across OECD countries, due to differences in the frequency and nature of surveys (see 3.1).

For online purchases, issues of comparability might be linked to several factors. These include differences in *age limits* (for Japan and the United States, data refer to all individuals aged 6 and over instead of 16-74 year-olds, and this might reduce overall rates); in *reference periods* (for Israel, the period is 3 months instead of 12, while no recall period is specified for the United States and Chile); in *the definition itself* (for New Zealand only e-purchases accompanied by an online payment are considered); and in *survey methodology* (techniques, time of year, etc.).

Finally, differences in the typology of items considered in the surveys run by the OECD countries participating in the European Statistical System, and by other member countries, limit the comparability of types of products purchased online.

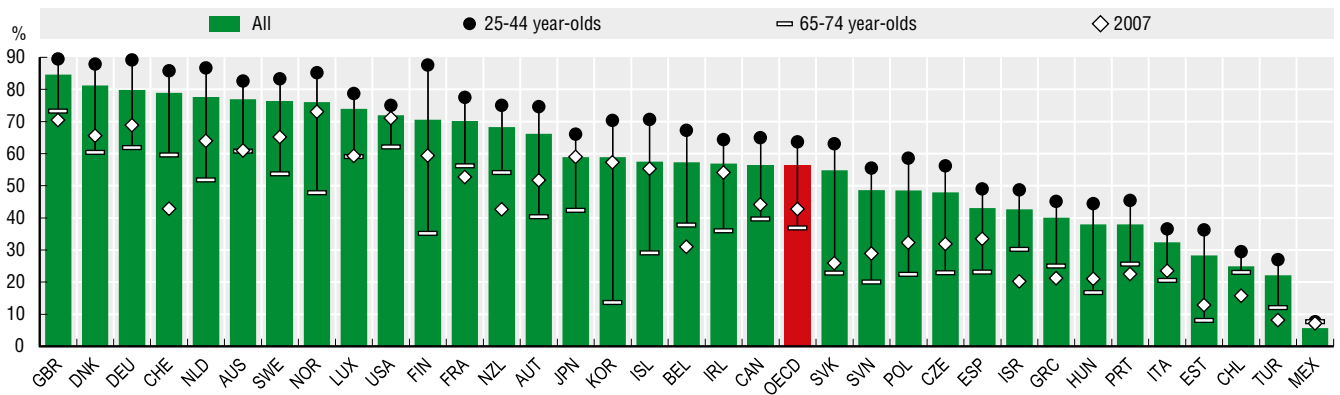
Diffusion of online purchases, including via handheld devices, 2007 and 2013  
Individuals having ordered goods or services online as a percentage of all individuals



Source: OECD, ICT Database; Eurostat, Information Society Statistics and national sources, May 2014. See chapter notes.

StatLink <http://dx.doi.org/10.1787/888933148361>

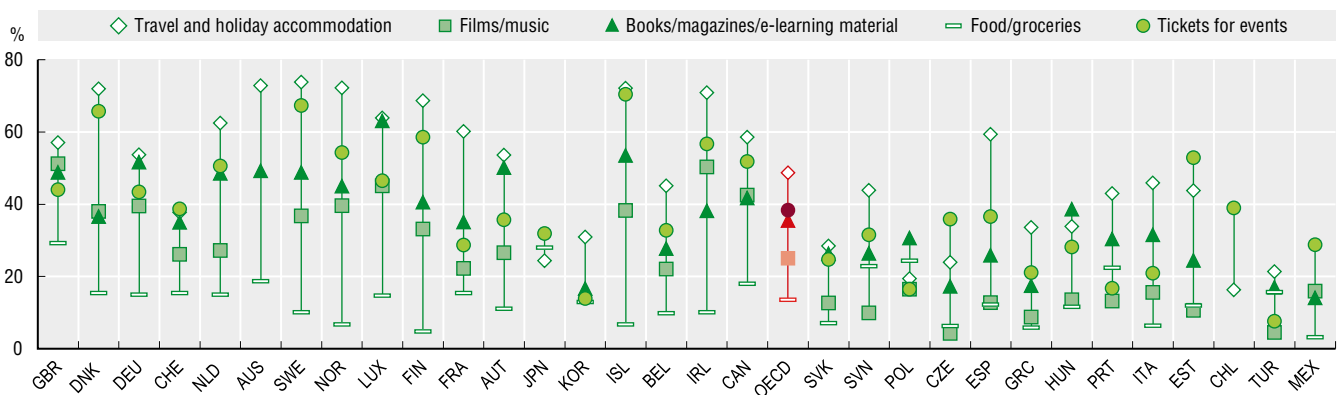
Individuals who purchased online in the last 12 months, by age class, 2013  
As a percentage of Internet users



Source: OECD, ICT Database; Eurostat, Information Society Statistics and national sources, May 2014. See chapter notes.

StatLink <http://dx.doi.org/10.1787/888933148373>

Online purchasers by selected types of products, 2013  
As a percentage of Internet users having purchased online



Source: OECD, ICT Database; Eurostat, Information Society Statistics and national sources, May 2014. See chapter notes.

StatLink <http://dx.doi.org/10.1787/888933148386>

## 3. EMPOWERING SOCIETY

### 3.9 | Content without borders

#### Key findings

The borderless nature of the Internet combined with recent technological developments have led to the emergence of multi-language international platforms, whose success is rooted in the similarity of needs, interests and behaviours of individuals across countries. These platforms encompass online search, social networking, information sources and entertainment, and often build on user-created content.

Wikipedia – currently the 6th or 7th most-visited website globally and the most-visited not-for-profit site – exemplifies the way in which the Internet can favour the diffusion of information and culture across countries and languages, based on the contributions of users.

Across the OECD, each Internet user visits on average more than nine Wikipedia pages (articles) per month, with about 1.6 monthly contributions (edits) per thousand Internet users. Page-views per Internet user vary from 14 or above in Estonia, Finland and Iceland, to 6 or less in Japan and Korea (depending on the existence of alternate sources of a similar nature), and in Chile, Mexico, Slovak Republic and Turkey.

In most countries about 10% to 12% of visits to Wikipedia point to a different language than that currently spoken in the country, highlighting the cross-border and cross-language nature of websites such as Wikipedia. Rates are much higher where local languages have few speakers or multiple languages coexist, and are very low for English-speaking countries. In addition, automated translation tools favour the re-production of information in less diffused languages, contributing to their survival.

The number of YouTube views reveals that, for most of OECD and partner countries, content uploaded domestically accounts for less than half of total views. Views of domestic content are more common in large, non-English speaking countries such as Brazil, Japan and Turkey, than in smaller countries, as well as those where most people speak English.

The most-visited websites across all OECD countries are the same: Google, Facebook and YouTube, with Yahoo! at some distance. These companies have developed an entire ecosystem starting from their initial business of offering a compass (and a map) to surf the Web, keeping in touch with friends or accessing self-created audio and video contents.

The development of ecosystems with an increasing number of available services creates numerous advantages for users. The high level of concentration on these digital markets, however, also raises issues of competition, privacy and security, as well as the risk of limitations in content offers.

#### DID YOU KNOW?

People have very similar online interests. Google, Facebook, YouTube are the top 3 visited sites in OECD. Wikipedia ranks 6th or 7th in most countries.

#### Definitions

The indicators proposed here follow the established practice in website-related statistics. The diffusion of websites among the public is assessed in terms of the *number of unique visitors*. This means that visits from the same IP address (machine or router) are counted only once. Websites are usually automatically grouped under the first-level entry (e.g. oecd.org). A further manual aggregation is performed for websites with multiple top-level domains (such as .com and .fr).

The number of *page views* looks at how much content has been viewed, irrespective of the number of people viewing the material. The number of *edits* refers to the modifications to existing pages (articles) done by users, regardless of their breadth. For the case of Wikipedia, these data are netted for visits and edits by *bots* (machines), and have been normalised on the number of Internet users and on resident population.

Data on *YouTube views* refer to content files. The indicator targets the incidence of local content – proxied by domestic uploads – in each country's total views.

#### Measurability

Statistics presented on this page are drawn from selected Internet services. They are based on a full count directly provided by the owner for Wikipedia (stats.wikimedia.org/) and YouTube (courtesy of Google Inc.), while the ranking of websites can only be assessed based on specialised providers' partial counts, which differ from one another and often offer a point-in-time only estimate.

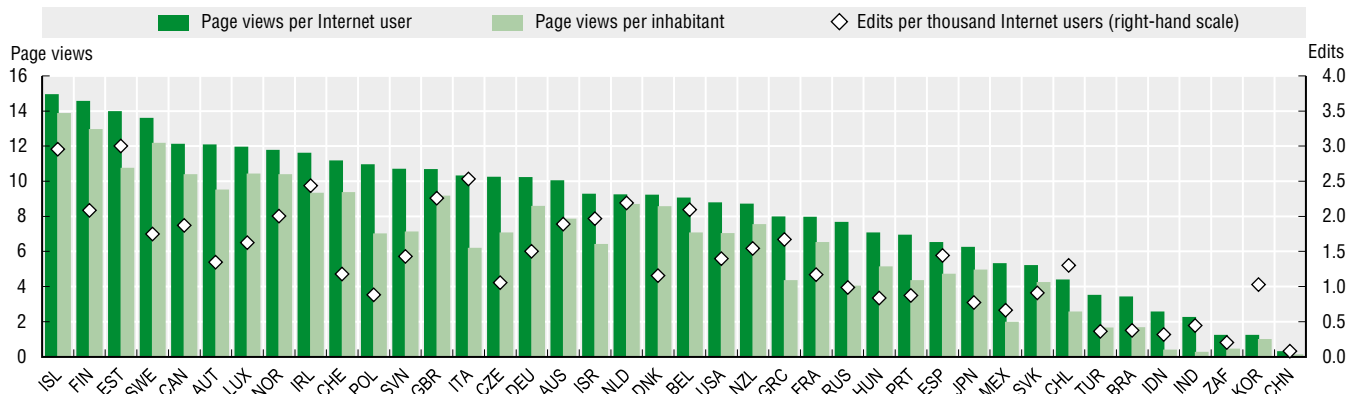
Information on individual websites is not always freely accessible. Furthermore, it is sometimes hard to disentangle the action of *bots* accessing websites from that of humans.

Finally, web-visit statistics offer a limited view on what users do: numbers often distort the real quantity they aim at portraying, let aside the quality. Indeed, visitors might visit a website because they are led there by a search engine or by direct solicitations, raising the count of visits without any underlying real activity.

Eurostat and the OECD are currently working to develop methodologies and algorithms to derive new reliable indicators directly from the Internet and other digital footprints (e.g. GPS).

### Wikipedia monthly page views and edits, 2014 Q1

Per Internet user, per inhabitant

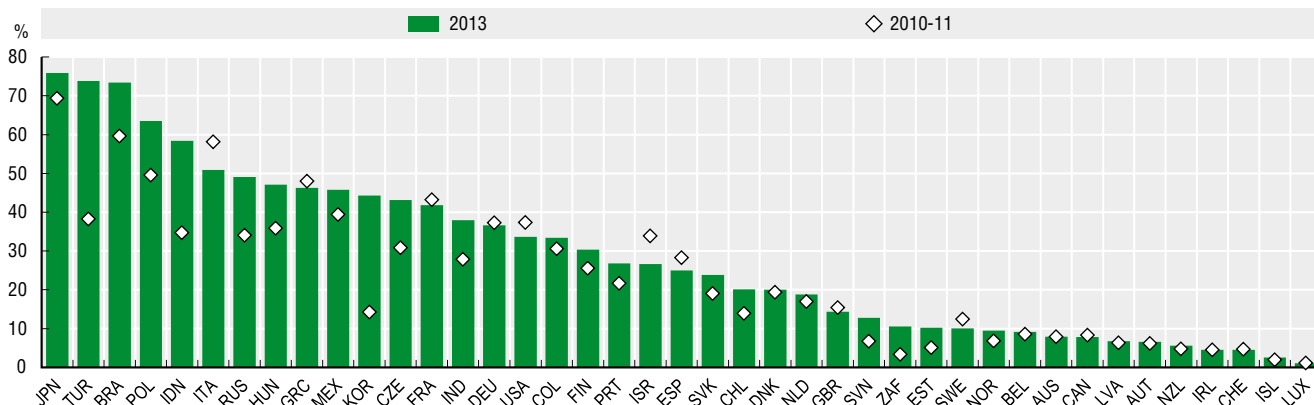


Source: OECD computations based on Wikimedia, May 2014.

StatLink <http://dx.doi.org/10.1787/888933148392>

### YouTube views of contents uploaded domestically, 2010-11 and 2013

As a percentage of views in each country

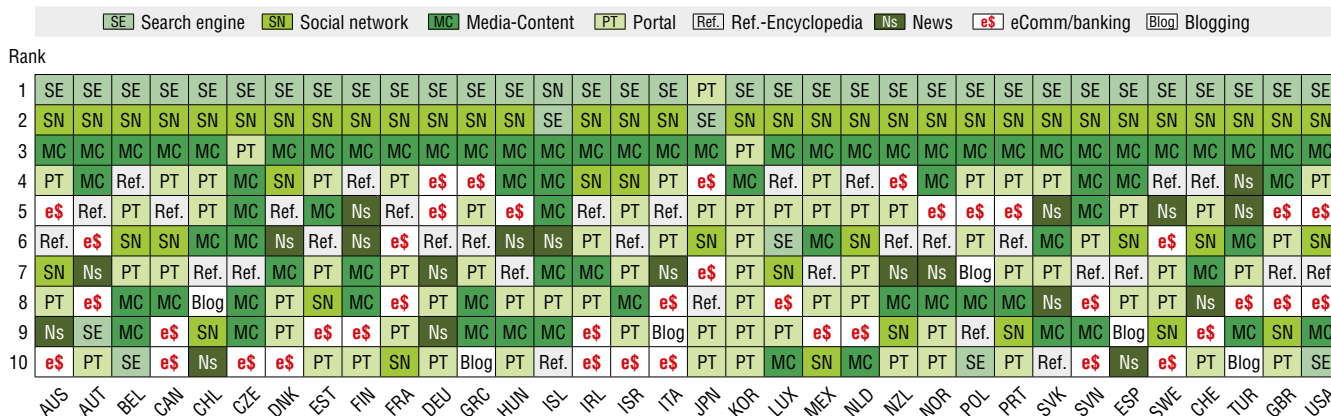


Source: OECD computations based on an ad-hoc data tabulation by Google, June 2014.

StatLink <http://dx.doi.org/10.1787/888933148402>

### Top 10 websites by type of service, April 2014

Ranked number of unique visitors



Source: OECD based on Alexa, www.alexa.com, visited on 20 April 2014.

StatLink <http://dx.doi.org/10.1787/888933148891>

## 3. EMPOWERING SOCIETY

### 3.10 | E-government use

#### Key findings

ICTs can play a considerable role in simplifying interactions with public authorities, while simultaneously saving taxpayer resources, thanks to the digitisation and automation of many processes. For both individuals and businesses, online interactions can include simple document browsing, downloading of forms, and the completion of administrative procedures.

The overall share of individuals using the Internet to perform administrative procedures has increased in recent years, but remains widely dispersed across countries – from 70% in Iceland to less than 10% in Chile, the Czech Republic and Turkey. This might reflect issues of data comparability, as well as differences in Internet usage rates (see 3.1) and the propensity of users to start performing administrative procedures online. The Nordic countries, Korea and the Netherlands rank high on both dimensions, while countries such as Germany and the United Kingdom, despite relatively high Internet usage rates, are characterised by a relatively low propensity to use online government services.

Explanations for these differences range from existing infrastructure and supply of e-services by the public authorities, to structural issues linked to institutional, cultural or economic factors. The perception and utility of services provided by public authority websites and their coherence with individual user needs, which are influenced by age and life cycle factors, are also key elements. Ease of access and use of a website appear to be strategic factors to foster usage and user satisfaction.

Online interactions between businesses and public authorities are more developed than for individuals, because Internet usage is generalised and enterprises are required to undertake more frequent administrative procedures, and also because the use of online tools in some cases is imposed by law. In 2012, more than 95% of businesses in Ireland interacted online with public authorities against 58% in Italy. This share has increased by almost 20 percentage points since 2010 in the Czech Republic and Italy, and by more than 10 percentage points in Ireland, New Zealand and Norway.

In general, differences between countries are less pronounced when simpler interactions are considered (e.g. obtaining information or downloading forms), and are performed on average by 83% of enterprises. This suggests that service availability might be a key obstacle to more complex interactions in some lagging countries.

#### DID YOU KNOW?

E-government services are used on average by 35% of individuals, and by more than 80% of businesses in OECD countries.

#### Definitions

Indicators presented here portray the *diffusion of selected types of online interaction with public authorities* among Internet users and businesses.

Interactions range from the simple collection of information from browsing government websites to interactive procedures where completed forms are sent via the Internet, excluding any interaction via e-mail (for businesses) or manually typed e-mail (for individuals). For businesses, simple interactions include here obtaining information and downloading forms; the indicator shows the highest value on the basis of data availability.

*Problems encountered in using government websites* are shown for countries in the European Statistical System and include technical issues, lack of clear and updated information, lack of (off and onsite) support and other unspecified problems. The variable reporting the share of users encountering at least one problem refers to the list above. This is matched with the share of users satisfied with respect to the information obtained.

*Public authorities* refer to both public services and administration activities, for example, tax, customs, business registration, social security, public health, environment or municipal administrations. These authorities can be at local, regional or national level.

#### Measurability

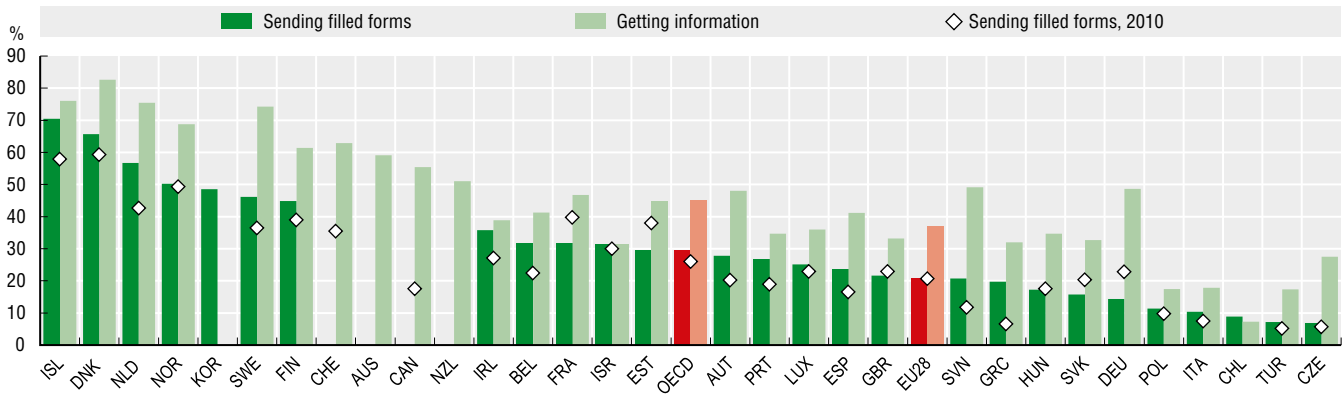
The collection of information on e-government service usage by individuals and businesses is uneven across OECD countries, due to differences in the frequency and nature of surveys (see 3.1). The Governmental and Public Authorities delineation varies across countries, as does the variety and sophistication of services delivered to citizens and businesses.

The OECD is actively engaged in the collection of comparable and more detailed information in this field, by means of its Model Surveys on ICT usage by households/individuals and by businesses. Other complementary ways to collect information are also being explored, including the ongoing Digital Government Performance Survey carried out by the OECD Directorate for Public Governance and Territorial Development, including by means of information on public administration web-portals.



Individuals using e-government services, 2010 and 2013

Percentage of individuals obtaining information and sending completed forms on government websites in the last 12 months

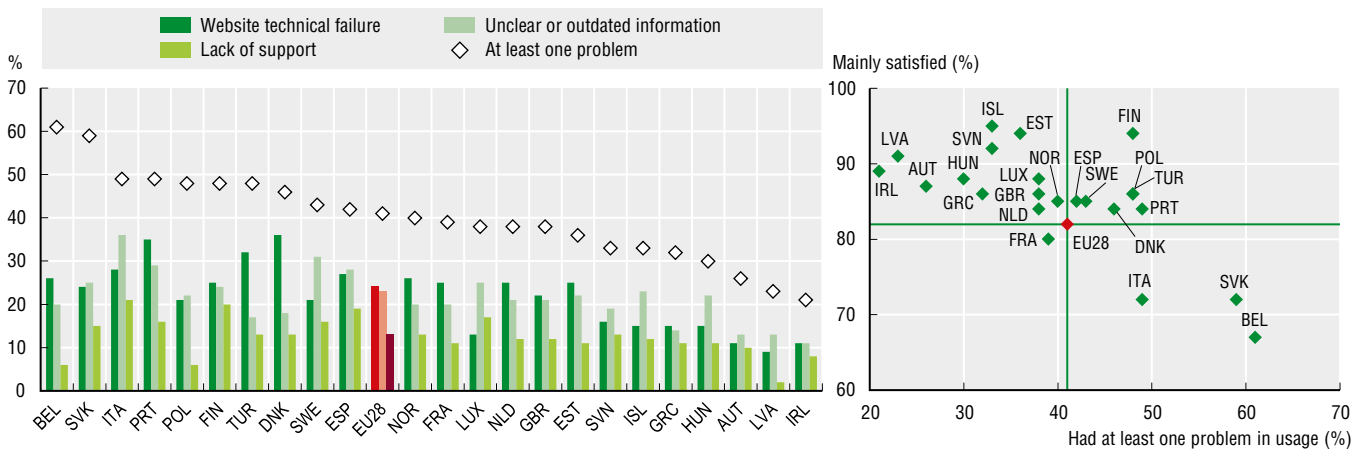


Source: OECD, ICT Database and Eurostat, Information Society Statistics, May 2014. See chapter notes.

StatLink <http://dx.doi.org/10.1787/888933148419>

Problems in using e-government services (left-hand panel) and satisfaction (right-hand panel), 2013

Percentage of individuals having used e-government services in the last 12 months

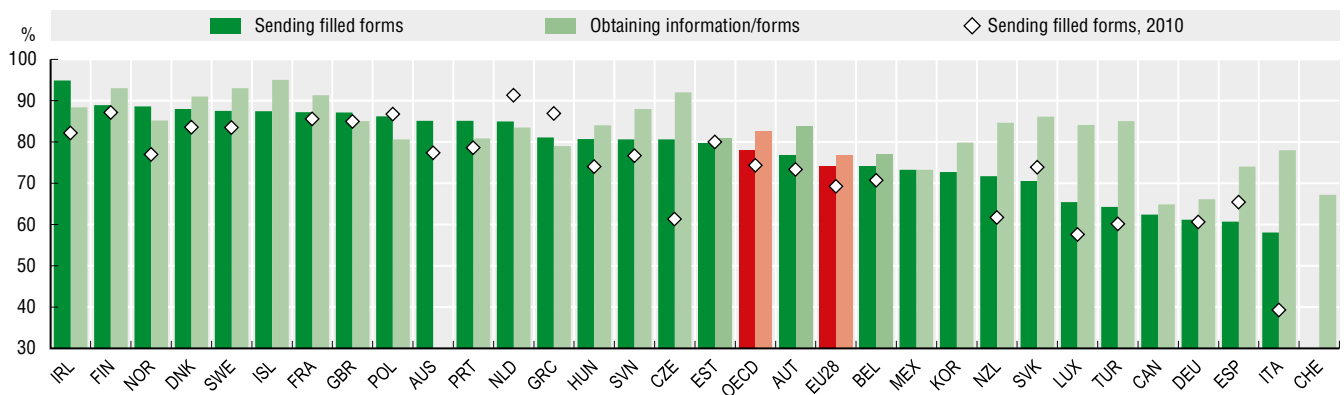


Source: OECD based on Eurostat, Information Society Statistics, May 2014. See chapter notes.

StatLink <http://dx.doi.org/10.1787/888933148425>

Businesses using e-government services, 2010 and 2012

Percentage of enterprises with ten or more persons employed



Source: OECD, ICT Database; Eurostat, Information Society Statistics and national sources, May 2014. See chapter notes.

StatLink <http://dx.doi.org/10.1787/888933148431>

### Why do we need indicators?

Governments today have recognised the large-scale changes that are made possible by health ICTs and in response they are developing approaches to leverage these technologies to pursue a range of health system reforms, such as primary care renewal and results-based financing. While the potential gains from greater use of these technologies have been apparent for years, most countries are still facing major implementation and adoption challenges. This highlights the large gap between what is possible and where we are now, with little known about how to fully leverage ICTs to improve the health and wellness of the population. Data on successful adoption and use across countries is therefore an essential learning tool for policy development in this area.

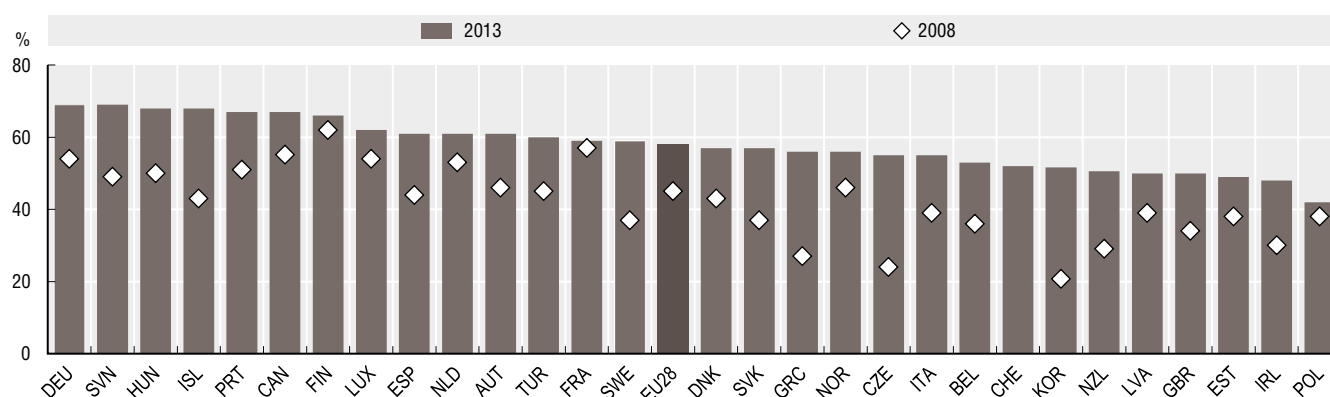
### What are the challenges?

Many countries are looking to learn from others' successes and failures to inform their own policy development. This requires a shared understanding of ICT definitions in health systems as well as common approaches to measuring adoption and impact that take into account inter-country difference in their pace of ICT deployment. Over the past decade, there has been a rising interest across countries to monitor ICT adoption in health systems which led to a proliferation of surveys of varying quality and utility. These surveys were sometimes conducted by official government statistical agencies, and more often by academic entities and private-sector collection agencies funded by government health departments (OECD, 2010). Most surveys were run as standalone surveys, on an ad-hoc basis and with a main focus on the ICT adoption in the primary care sector.

National statistical offices typically limit the collection of data on the use of ICTs for health purposes to their surveys of ICT use by households and individuals. The available data show an upward trend in individuals' health-related ICT use in almost all countries over the recent period.

**Individuals who searched for health-related information online, 2008 and 2013**

*As a percentage of individuals who used the Internet in the last three months*



Source: OECD, ICT Database and Eurostat, Information Society Statistics. See chapter notes.

StatLink <http://dx.doi.org/10.1787/888933148446>

While the collection of such data is rather straightforward, current surveys remain limited in terms of the types of health-related online activities undertaken by individuals and on the wider adoption and use of ICTs by health systems. The OECD has undertaken two initiatives to address this limitation.

The OECD Model Survey on ICT Access and Usage by Households and Individuals has been revised in 2014 and now contains specific questions on various health-related activities carried out online (e.g. participating in social networks on health and wellness, asking medical advice, buying medicine etc.) including via apps.

Additionally, in 2008, the OECD launched a multi-stakeholder initiative to develop a robust measurement framework and comparable cross-national measures on ICT adoption and use in health systems. Three critical conclusions emerged from this work. First, one of the key challenges in achieving comparable international measures is the need to accommodate countries that are at different levels of ICT diffusion and progress towards achieving their broader e-health goals. In particular, advanced countries are unlikely to devote substantial resources to collecting data on the availability of ICTs if their policy needs are focused on effective use for better health outcomes. Organising measures along a continuum, starting from ICT availability, moving next towards effective use,

and ending with measuring outcomes and impact on population health allows all countries to participate in the benchmarking process (Adler-Milstein et al., 2013; Ronchi et al., 2013).

Second, OECD experience with measurement of ICT usage indicates that model surveys that comprise separate, self-contained modules are more flexible and adaptable to rapidly changing technological and policy environments. The use of core modules (as an add-on to existing national surveys or as a standalone survey) allows measurement on an internationally comparable basis. Additional modules and new measures can be added to respond to evolving or country-specific policy needs in this area.

Third, a key challenge to a model survey is to ensure that the terminology has comparable meaning across different countries, and that when individual countries make changes, they are done in ways that preserve this comparability. To this end, the OECD focused on developing indicators using a functionality-based approach (i.e. on core types of clinical and other activities that are supported by electronic systems).

### Options for international action

The effort of developing a framework for comparable cross-national measures was accomplished in 2014 with the publication of the *OECD Guide to Measuring ICTs in the Health Sector* (OECD, 2014) which has two primary components. The first is a model survey in which each module shows sample questions with an accompanying glossary containing explanations of key terms. The second component is a methodological guide to aid implementation and promote validity and comparability of resulting benchmark measures. The initial set of benchmark measures included in the Guide is at present focused on four areas related to current policy demand across countries:

- **Provider-centric electronic records systems:** These systems are used by healthcare professionals to store and manage patient health information and data, and include functionalities that support the care delivery process. Examples include electronic medical records, EHRs and electronic patient records.
- **Patient-centric electronic records systems:** These systems are used mostly by patients and their families to access and manage their health information and organise their healthcare. Examples include personal health records, patient portals and other patient-centric electronic records.
- **Health information exchange:** This area entails the process of electronically transferring (or aggregating and enabling access to) patient health information and data across provider organisations. Examples include the e-transfer of patient data between ambulatory care providers or the transmission of prescriptions from the provider to a pharmacy.
- **Telehealth:** This programme encompasses the broad set of technologies that support care between patients and providers, or among providers, who are not co-located. Examples include video-mediated consultations between physicians and patients, remote home monitoring of patients and teleradiology.

Ten pilot countries (Brazil, Canada, Finland, Germany, Israel, Korea, the Netherlands, Switzerland, the United Kingdom and the United States) are currently testing the *OECD Guide to Measuring ICTs in the Health Sector* and broad implementation is expected in the near future.

In parallel, the inclusion of detailed questions on individuals' use of ICTs for health purposes in the main ICT usage surveys would shed more light on usage patterns by age, gender or educational attainment. The information collected through official sources can be augmented with the broader use of Internet-based statistics however, the collection and use of such data require the development of international statistical standards, close co-operation between different actors (businesses, Internet intermediaries and national statistical offices), and a regulatory framework to preserve user security and privacy.

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## Notes

### Cyprus

The following note is included at the request of Turkey:

“The information in this document with reference to ‘Cyprus’ relates to the southern part of the Island. There is no single authority representing both Turkish and Greek Cypriot people on the Island. Turkey recognizes the Turkish Republic of Northern Cyprus (TRNC). Until a lasting and equitable solution is found within the context of the United Nations, Turkey shall preserve its position concerning the ‘Cyprus issue’.”

The following note is included at the request of all the European Union Member States of the OECD and the European Union:

“The Republic of Cyprus is recognized by all members of the United Nations with the exception of Turkey. The information in this document relates to the area under the effective control of the Government of the Republic of Cyprus.”

### Israel

“The statistical data for Israel are supplied by and under the responsibility of the relevant Israeli authorities or third party. The use of such data by the OECD is without prejudice to the status of the Golan Heights, East Jerusalem and Israeli settlements in the West Bank under the terms of international law.

### 3.1 Internet users

#### General notes:

Unless otherwise stated, a recall period of three months is used for Internet users. For Australia, Canada, Chile, Japan, Korea, Mexico and New Zealand, the recall period is 12 months. For Switzerland, the recall period is six months. For the United States, no time period is specified.

For Australia, data refer to 2012/13 (fiscal year ending in June 2013) instead of 2013, and 2006/07 (fiscal year ending in June 2007) instead of 2007.

#### Additional notes:

#### Total, daily and mobile Internet users, 2006 and 2013

Notes for data on all users:

For Canada, data refer to 2007 and 2012.

For Chile, Japan and New Zealand, data refer to 2012.

For Israel, data refer to individuals aged 20 or more instead of 16-74 year-olds.

For the United States, data originating from the Census Bureau refer to 2012 and to individuals aged 18 and above.

For Turkey, data refer to 2007 instead of 2006.

Notes for data on all daily users:

“Daily users” relates to Internet users accessing the Internet “at least once a day” for Canada and Japan, and “every day or almost every day” for Chile, Korea, Mexico and Switzerland. For the United States, data relate to the percentage of individuals answering “yes” to the question “Did you use the Internet yesterday?”

For Canada, data originate from the Internet Use Survey and refer to individuals aged 16 and above.

For Japan, data are OECD estimates based on data from the Communication Usage Trend Survey.

For the United States, data originate from the PEW Internet Project.

Notes for data on mobile users:

Unless otherwise stated, mobile Internet users relate to individuals who used a mobile phone (or a smartphone) to access the Internet away from home or away from work.

For Canada, data originate from the Internet Use Survey and relate to the percentage of individuals aged 16 or more using Internet with a wireless handheld device.

For Korea, data originate from the Survey on the Internet Usage and refer to individuals aged 3 and above. Mobile Internet users relate to individuals who have used a mobile phone, smartphone, handheld device or tablet to access the Internet away from home via a wireless broadband connection. The recall period is the last three months.

For New Zealand and Switzerland, the term “mobile Internet users” relates to individuals who have used a mobile phone, smartphone, handheld device or a tablet to access the Internet away from home via a wireless broadband connection. The recall period is the last three months for Switzerland and the last 12 months for New Zealand.

### **Internet users by age, 16-24 and 65-74 year-olds, 2013**

For Australia, data refer to individuals aged 65 and above instead of 65-74 year-olds.

For Canada, Chile, Japan, New Zealand and the United States, data refer to 2012.

For Switzerland, data refer to individuals aged 20-29 instead of 16-24 year-olds, and to individuals aged 70 years old and more instead of 65-74 year-olds.

For Israel, data refer to individuals aged 20 and above instead of 16-74 year-olds, and to individuals aged 20-24 instead of 16-24 year-olds.

For the United States, data originate from the Census Bureau, include all individuals aged 15 and more. The category “16-24 year-olds” refers to individuals aged 18-34 and the category “65-74 year-olds” refers to individuals aged 65 and above.

### **Internet users among 55-74 year-olds by educational attainment level, 2013**

For Australia, data refer to individuals aged 65 and above instead of 65-74 year-olds.

For Canada and Chile, data refer to individuals aged 65-74, and for Japan, to individuals aged 60-69.

For Chile, Japan and New Zealand, data refer to 2012.

For Israel and the United States, data refer to 2011.

For Australia, Israel, Korea and New Zealand, low levels of educational attainment include the middle level of educational attainment.

The breakdown by level of education is not available for Canada and Japan, and corresponds to the OECD estimate for the United States.

## **3.2 Online activities**

### **General notes:**

Unless otherwise stated, a recall period of three months is used for Internet users. For Australia, Canada, Chile, Japan, Korea, Mexico and New Zealand, the recall period is 12 months. For Switzerland, the recall period is six months. For the United States, no time period is specified.

### **Additional notes:**

#### **The diffusion of selected online activities among Internet users, 2012-13**

For countries in the European Statistical System, data refer to 2012 for gaming, movies, audio, web-based radio/television, medical appointments online and content creation. For online purchases and e-government categories, the recall period is 12 months instead of three months and data relate to individuals who used the Internet in the last 12 months instead of three months.

For Australia, Canada, Chile, Japan and New Zealand, data refer to 2012.

For Australia, Chile and New Zealand, values for “Any interaction with public authorities” might be slightly underestimated, as data relate to “obtaining information from public authorities”.

For Japan, data refer to individuals aged 15-69. Data for the e-purchase category correspond to a recall period of 12 months. Social networking includes constructing/updating websites and blogs, viewing/posting to forums and chat sites, and using video posting/sharing sites.

#### **The diffusion of Internet banking, 2013**

For Australia, Internet banking relates to “paying bills or banking online”. Data for highest and lowest quartiles are OECD estimates based on original quintile data.

For Canada, data refer to 2012 and relate to Internet users aged 16 and over conducting electronic banking activities (paying bills, viewing statements, transferring funds between accounts).

For Chile, data refer to 2009.

For Israel, data refer to all individuals aged 20 and over (instead of 16-74 year-olds) using the Internet for paying bills.

For Korea, households in the lowest quartile have an income of less than 2 million wons and those in the highest quartile have an income of more than 4 million wons.

For New Zealand, data refer to 2012.

For Switzerland, data refer to 2010.

For the United States, data originate from the Federal Reserve Board (2013).

Quartiles data are not available for Chile, Ireland, Israel, Switzerland, Turkey, the United Kingdom and the United States.

### **3.3 User sophistication**

#### **General notes:**

Data refer to the following activities: using e-mail, telephoning or video calling over the Internet, participating in social networks, finding information about goods or services, reading online news, online banking, using services related to travel and accommodation, interacting online with public authorities, selling goods or services, buying physical goods, buying digital content and buying services.

For Korea, data originate from special tabulations by KISA and refer to 2012. Due to lack of full correspondence with the list of activities provided in the Community Survey on ICT Usage in Households and by Individuals (Eurostat), the number of activities performed might be underestimated.

### **3.6 ICTs in education**

#### **Individuals who attended an online course, 2007 and 2013**

For Canada, Chile, Japan and Korea, data refer to 2012.

For Canada, data refer to formal education, training or school work.

For Japan, data relate to individuals aged 15-69 (instead of 16-74 year-olds) who used the Internet in the last 12 months.

For New Zealand, data refer to 2006.

For Poland, data refer to 2008 and 2011.

### **3.7 ICT skills in the workplace**

#### **Computer use at work, 2012 and;**

#### **ICT skills use at work, 2012**

GBR data point relates to England only.

### **3.8 E-consumers**

#### **General notes:**

For Australia, data refer to 2012/2013 (fiscal year ending in June 2013) instead of 2013. For 2007, data refer to 2006/2007 (fiscal year ending in June 2007), and to individuals aged 15 and over instead of 16-74 year-olds.



For Canada, data refer to 2012 and relate to individuals who ordered goods or services over the Internet from any location (for personal or household use).

For Chile, data refer to 2009 and 2012.

For Japan, data refer to 2012 and to individuals aged 15-69 instead of 16-74 year-olds.

### **Diffusion of online purchases, including via handheld devices, 2007 and 2013**

For Israel, data refer to all individuals aged 20 and over who used the Internet for purchasing all types of goods or services.

For Korea, the figure shows OECD estimates based on the Survey on the Internet Usage 2012. Data refer to the population aged 12 or more. In 2013, the share of individuals buying via handheld devices reached 35.5%.

For New Zealand, data refer to 2006 and 2012 and relate to individuals who made a purchase through the Internet for personal use, which required an online payment.

For Switzerland, data refer to 2005 instead of 2007.

For the United States, data originate from May 2011 and September 2007 PEW Internet Surveys and cover individuals aged 18 or more.

### **Individuals who purchased online in the last 12 months, by age class, 2013**

For Chile, in 2009, no time period is specified (instead of last 12 months).

For Israel, data relate to online purchases in the last three months and refer to 2006 instead of 2007; data cover all individuals aged 20 and over instead of 16-74 year-olds.

For Japan, data refer to individuals aged 20-39 instead of 25-44 year-olds, and 60-69 instead of 65-74 year-olds.

For New Zealand, data refer to 2006 instead of 2007 and relate to e-purchases for personal use only requiring an online payment.

For Switzerland, data relate to online purchases in the last six months and to 2005 instead of 2007.

For the United States, data originate from May 2011 and August 2006 PEW Internet Surveys and refer to Internet users aged 18 and over who “ever purchased a product online”. The category “16-24 year-olds” refers to individuals aged 18-24 only.

### **Online purchasers by selected types of products, 2013**

For Australia, Chile, Japan, Korea and Mexico, data are not available for some of the selected types of products.

For Australia, data refer to the following categories: Food, groceries or alcohol; CDs, music, DVDs, videos, books or magazines; travel, accommodation, memberships and tickets of any kind.

For Canada, data relate to the following categories: Ordering food or beverages (e.g. specialty foods or wine, pizza delivery); ordering music (e.g. CDs, MP3) or videos or DVDs, tickets for entertainment events (e.g. concerts, movies, sports), books/magazines/newspapers and making travel arrangements (e.g. hotel reservations, travel tickets, rental cars). Data for the category “Books/magazines/newspapers/e-learning material” do not explicitly include e-learning material.

For Japan, Internet users buying online include individuals conducting financial transactions online.

For Switzerland, data refer to 2010.

## **3.10 E-government use**

### **Individuals using e-government services, 2010 and 2013**

Unless otherwise stated, “sending filled forms” relates to “sending filled forms to public authorities or public services over the Internet for private purposes in the last 12 months” for countries in the European Statistical System, and to “completing/lodging filled in forms from government organisations’ websites in the last 12 months” for other countries.

For Australia, data refer to 2012/2013 (fiscal year ending in June 2013) instead of 2013, and to individuals aged 15 and over instead of 16-74 year-olds.

For Canada, data refer to 2012 for obtaining information, and to 2009 for sending filled forms. Obtaining information relates to visits or interactions with Canadian municipal, provincial or federal government websites.

For Chile, Japan, Korea and New Zealand, data refer to 2012.

For Israel, data refer to 2009, and to all individuals aged 20 and over (instead of 16-74) who used the Internet for obtaining services online from government offices, including downloading or completing official forms.

For New Zealand, data refer to individuals who have accessed a New Zealand local or central government website in the last 12 months to download or complete a form.

For Switzerland, data refer to 2010.

#### **Problems in using e-government services (left-hand panel) and satisfaction (right-hand panel), 2013**

“At least one problem” category includes website technical failure, unclear or outdated information, lack of support (online or offline), and other problems (unspecified).

#### **Businesses using e-government services, 2010 and 2012**

Unless otherwise stated, sector coverage consists of all activities in manufacturing and non-financial market services. Only enterprises with ten or more persons employed are considered.

For Australia, Korea, Mexico and New Zealand, data for sending filled forms refer to the proportion of businesses interacting online with government organisations to complete/submit forms electronically (excluding any interaction via e-mails).

For Canada, Korea, Mexico, New Zealand and Switzerland, data for obtaining information/forms refer to the proportion of businesses interacting online with government organisations for obtaining information/downloading forms (excluding any interaction via e-mails).

For Australia, data refer to the fiscal year ending 30 June 2012 (2011/12) instead of 2012, and the fiscal year ending 30 June 2010 (2009/10) instead of 2010. The total includes Agriculture, forestry and fishing.

For Canada, data for returning completed forms refer to enterprises that completed or submitted taxation forms online.

For Mexico, data refer to 2008 and to businesses with 20 or more persons employed.

For Switzerland, data refer to 2011 and to businesses with five or more persons employed.

### **3.11 ICT and health**

#### **Individuals who searched for health-related information online, 2008 and 2013**

For Canada and New Zealand, data refer to individuals who used the Internet in the last 12 months with a recall period of 12 months instead of three months.

For Canada, data refer to 2007 and 2012 and to all individuals aged 16 and over instead of 16-74 year-olds in 2007.

For Korea, data in 2013 refer to a recall period of 12 months instead of three months.

For New Zealand, data refer to 2006 and 2012.

For Switzerland, data refer to 2010.

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