F Education and digital skills

Numbers of desktop computers, tablets and laptops both with and without Internet connection calculated per 100 students in different levels of schools have been collected by **Ministry of Education**, **Youth and Sports.** Numbers of schools equipped with school wireless network and school intranet come from the same source. These indicators have been collected from nursery, basic, secondary and higher professional schools every year since 2005 (nursery school since 2014).

Reference period: 30/9 of the reference year

PISA 2015, survey conducted by OECD, have been used for international comparison. Questionnaires targeted on schools and questionnaires targeted on students have been used. Data presented in this chapter come from questionnaire targeted on 15-year-old students and present information on their usage of the Internet at schools.

Further information on PISA survey: http://www.oecd.org/pisa/

Sample Survey on ICT Use in Households and by Individuals has been used as a source for data on **computer skills** of individuals (this survey is described in details in the opening text of chapter C). Eurostat database has been used for international comparison. Data contained in this chapter present mainly information about usage of different kinds of software.

Sample Survey on ICT Use in Households and by Individuals has been also used as a source for data on different activities carried out by students. Eurostat database has been used for international comparison. *Data from this database were extracted in March 2017.*

Comparability of data published by the CZSO and Eurostat: The data for the Czech Republic published by Eurostat slightly differs from the data published by the CZSO. This difference is due to the fact that Eurostat includes solely individuals aged between 16 and 74 years. The CZSO provides as standard data for the whole adult population aged 16 and over. *This is the reason why the tables in this publication give for the Czech Republic dual total values: total of aged 16 and over and total aged 16-74.*

Reference period (data for all individuals and students): last 3 months before the time of answering the questions (unless otherwise stated)

ICT field of education (Computing: ISCED 48) is according to the international classification ISCED 97 divided into two detailed fields: **Computer science** (ISCED 481) and **Use of computers** (ISCED 482). In the Czech Republic tertiary education includes **Higher professional education and University education** which is provided by Universities at Bachelor's or equivalent level (ISCED 6), Master's or equivalent level (ISCED 7) and Doctoral or equivalent level (ISCED 8).

Data on ICT field of education come from the **Ministry of education, youth and sports in the Czech Republic** data sources**.**

ICT professionals (ISCO 25) refer to comprising analysts and software and computer applications developers and specialists in the field of databases and computer networks. ICT professionals are part of ICT specialists which include also ICT technicians (ISCO 35). Data on the **numbers and structure** of ICT professionals come from the **Labour Force Sample Survey (LFS)** of the Czech Statistical Office.

For more information on Eurostat database see:
http://ec.europa.eu/eurostat/web/information-society and

http://ec.europa.eu/eurostat/web/information-society/methodology

Further information on Education and digital skills can be found at:

https://www.czso.cz/csu/czso/informacni_technologie_ve_skolstvi

https://www.czso.cz/csu/czso/digitalni-dovednosti

https://www.czso.cz/csu/czso/lidske_zdroje_pro_informacni_technologie

F Education and digital skills

Tab. F1 Computers available to students in the Czech Republic in the school year 2016/17

Number of devices per 100 students*

	Desktop computer	Portable computer	Tablet
Total	**11,6**	**1,8**	**1,5**
First stage of basic schools	13,4	2,2	2,1
Second stage of basic schools	22,4	3,1	3,5
Secondary schools	20,2	2,5	1,6
Higher professional schools	39,1	3,4	1,1
with Internet access			
First stage of basic schools	13,2	2,2	2,1
Second stage of basic schools	22,3	3,1	3,4
Secondary schools	19,9	2,4	1,6
Higher professional schools	37,7	3,3	1,0

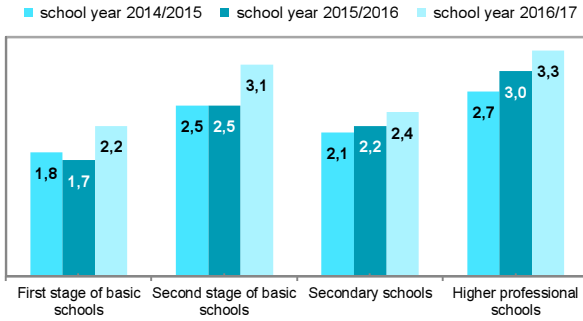
** devices privately owned by students are not included*

Tab. F2 Schools equipped with School wireless network (Wi-Fi) and Intranet during the school year 2016/17

	Number of schools	% of schools*
School wireless network (Wi-fi)		
First stage of basic schools	3 372	81,7
Second stage of basic schools	2 272	83,6
Secondary schools	1 168	89,4
Higher professional schools	169	90,9
School Intranet		
First stage of basic schools	835	20,2
Second stage of basic schools	775	28,5
Secondary schools	744	56,9
Higher professional schools	127	68,3

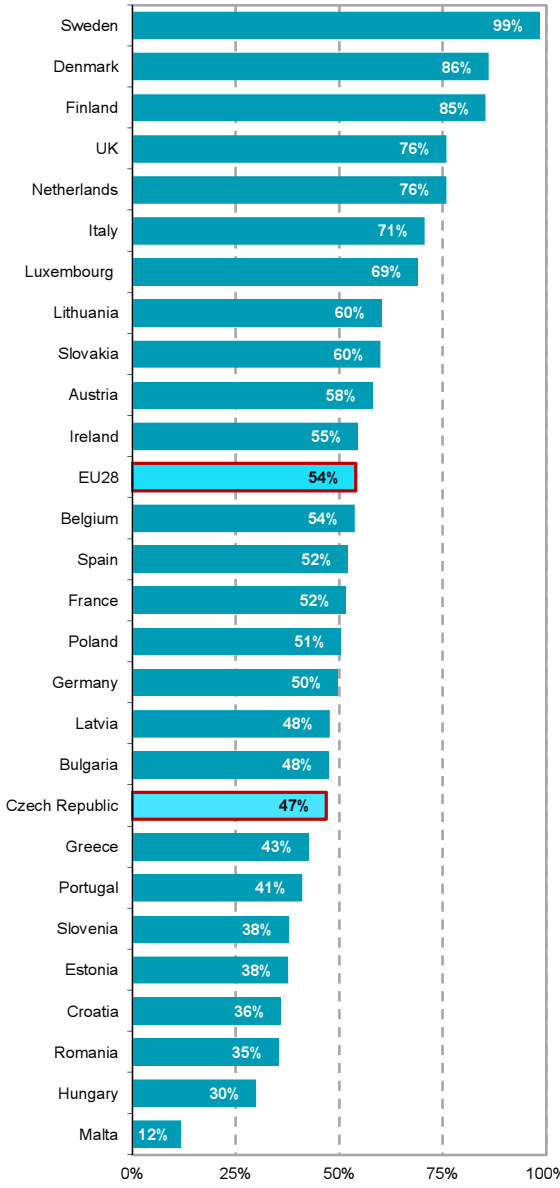
** percentage of all schools of a given type*

Figure F1 The number of portable computers with internet connection (per 100 students) in a given type of schools



Source: Ministry of Education, Youth and Sports of the Czech Republic, 2017

Figure F2 Schools in EU countries equipped with laptops or tablets (devices accesible for 15 years old students); 2015



as a percentage of all schools in a given country where are educated 15 years old students

Source: OECD, survey PISA, 2016

Tab. F3 15 years old students in the Czech Republic who has access to selected ICTs; 2015

%

	at home	at school
Internet	98,7	90,4
Mobile phone	93,1	.
Portable computer	87,5	28,6
Desktop computer	82,9	79,5
Tablet	68,4	22,7
E-book reader	26,2	12,9
MP3/MP4 player	70,8	.
Printer	78,1	.

Figure F3 15 years old students having access to selected ICTs; 2015

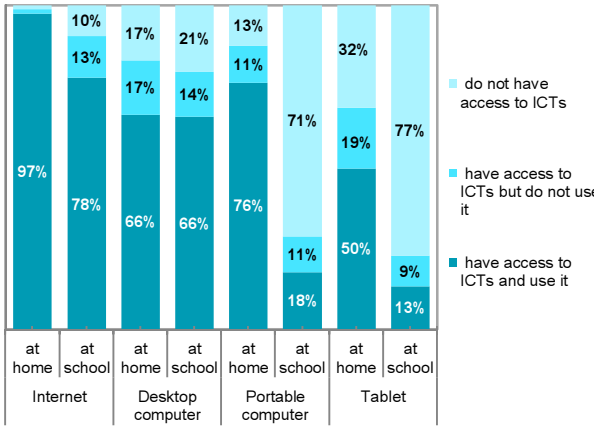
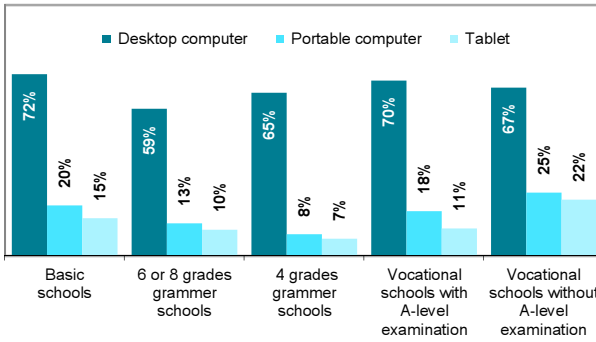


Figure F4 15 years old students using a computer at school by type of school; 2015

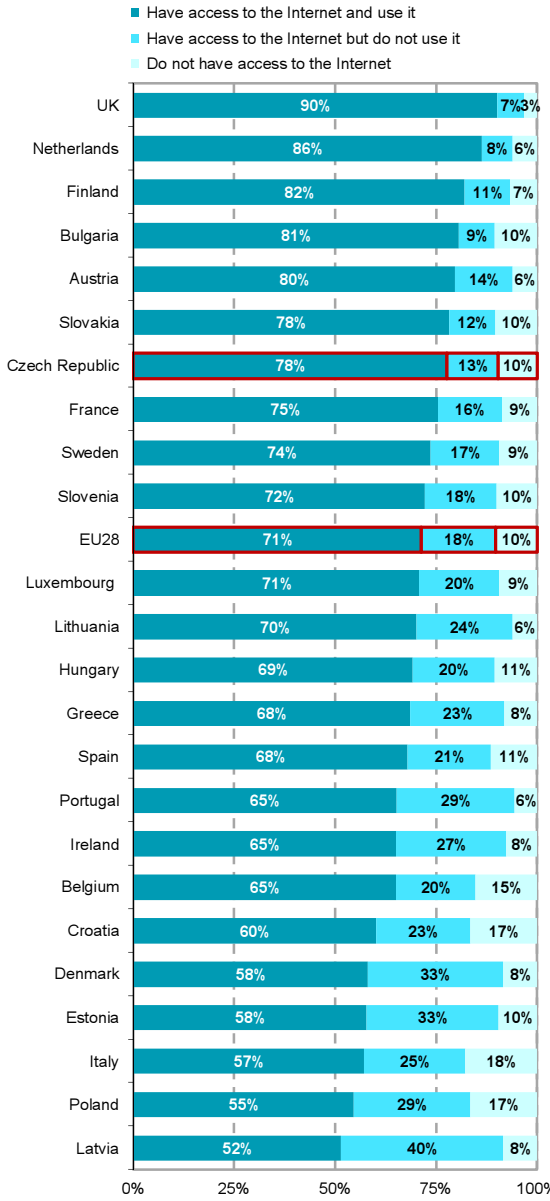


as a percentage of all 15 years old students in the Czech Republic

Source: OECD, survey PISA, 2016

F Education and digital skills

Figure F5 15 years old students in EU countries with the Internet access at school; 2015



as a percentage of all 15 years old students in a given country

Source: OECD, survey PISA, 2016

F Education and digital skills

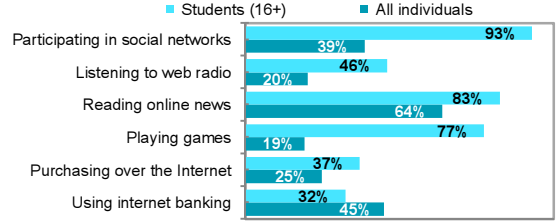
Tab. F4 Students in the Czech Republic aged 16+ using the Internet for selected activities; 2014-2016*

%

	Total	Males	Females
Using the Internet	**99,1**	**98,9**	**99,4**
Using mobile connections	78,3	75,6	77,0
Using the Internet for learning activities:			
On-line course	5,8	4,6	7,1
Using on-line learning material	30,7	26,0	35,5
Communication with instructors or other students	27,1	25,1	29,2
Using the Internet for other activities:			
Participating in social networks	93,0	94,2	93,6
Listening to web radio	45,9	46,5	46,2
Reading online news	82,5	83,9	83,2
Telephoning over the Internet	65,4	65,0	65,2
Playing games	77,4	47,6	62,7
Searching for travel-related information	55,0	65,4	60,1
Watching TV	45,9	44,2	45,1
Purchasing over the Internet	37,0	36,9	36,9
Internet banking	32,4	33,8	33,1

as a percentage of all students aged 16+ in a given group

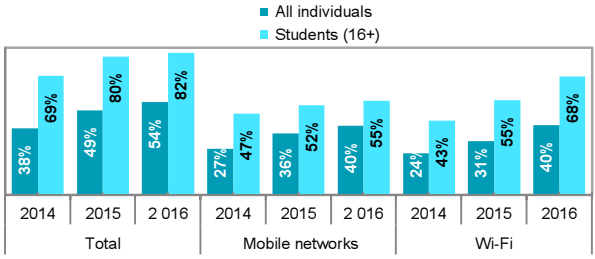
Figure F6 Students and individuals aged 16+ using the Internet for selected activities; 2014-2016*



** numbers are moving average calculated for years 2014-2016*

as a percentage of students and all individuals who have used the Internet in the last 3 months

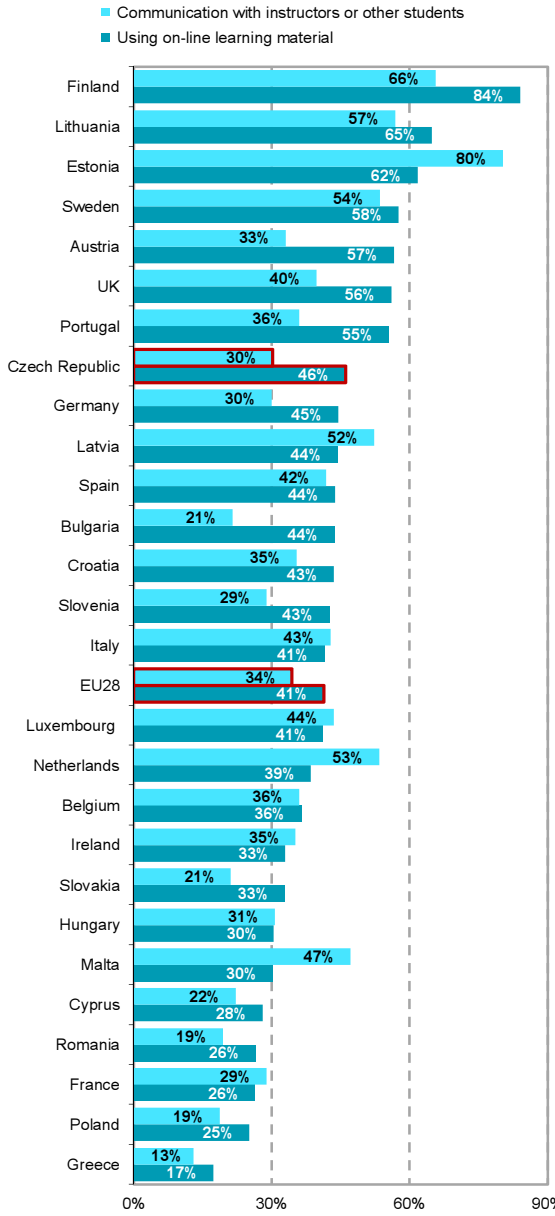
Figure F7 Students and individuals aged 16+ accessing the Internet via mobile phone by type of connection



as a percentage of students and all individuals who have used the Internet in the last 3 months

Source: Czech Statistical Office, ICT use survey in households

Figure F8 Students in EU countries aged 16+ using the Internet for selected activities; 2016



as a percentage of all students (16+) in a given country

Source: Eurostat, 2016

F Education and digital skills

Tab. F5 Individuals in the Czech Republic with selected computer skills; 2016

%

	Copying files	Editing photos*	Program-ming
Total (aged 16+)	**52,8**	**19,3**	**2,9**
Total (aged 16-74)	57,0	21,0	3,2
Gender:			
Males (aged 16+)	55,6	23,8	5,0
Females (aged 16+)	50,1	15,0	0,9
Age group:			
16-24 year-olds	83,1	41,3	5,6
25-34 year-olds	74,2	30,8	5,1
35-44 year-olds	65,6	25,5	3,7
45-54 year-olds	56,3	15,5	3,1
55-64 year-olds	41,4	10,4	1,1
65 year-olds and over	16,0	3,3	0,4
Education attainment level (aged 25+):			
Basic	11,1	2,8	0,3
Secondary without A-level exam.	31,6	8,7	0,6
Secondary with A-level exam. or Higher professional	63,7	21,1	2,5
University	83,6	34,4	8,8
Specific groups:			
Women on maternity leave	68,1	23,8	1,0
Students (aged 16+)	89,3	48,9	6,9
Pensioners	16,7	3,6	0,3

** using software to edit photos, video or audio files*

as a percentage of all individuals in a given socio-demographic group

Figure F9 Photo editing software use by sex and age; 2016

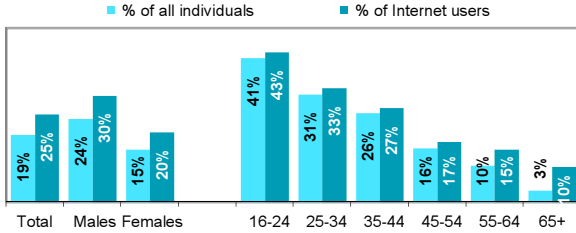
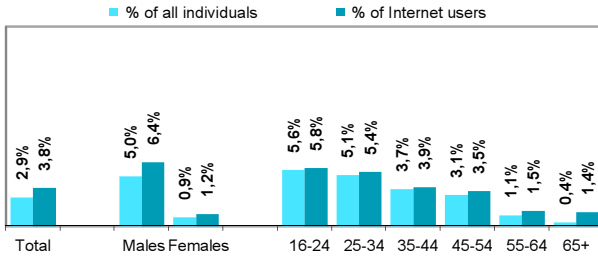
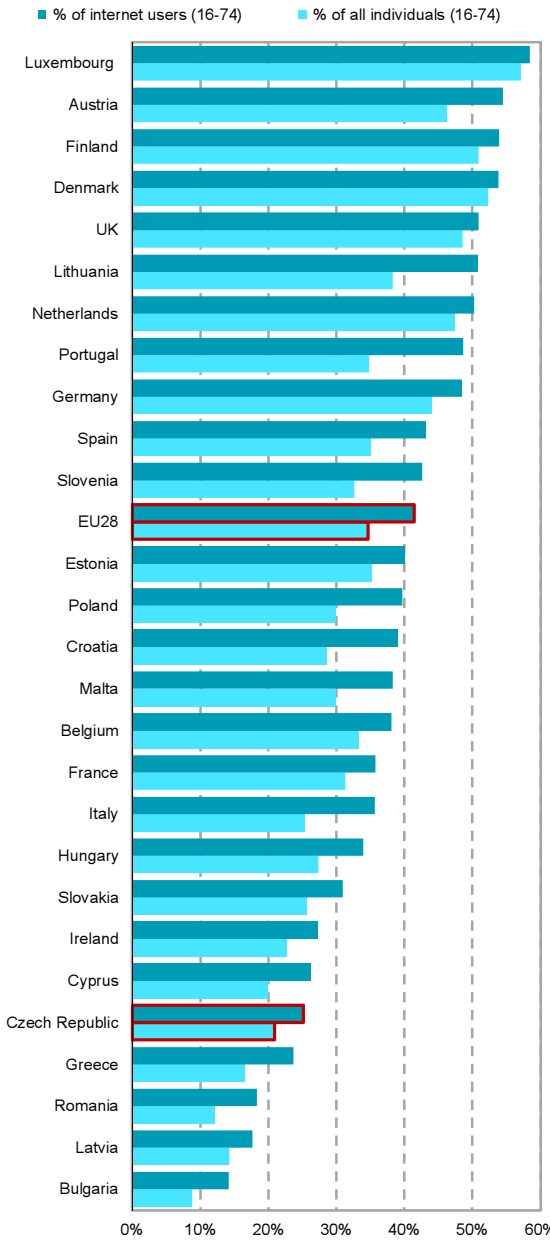


Figure F10 Programming by sex and age; 2016



Source: Czech Statistical Office, ICT use survey in households

Figure F11 Individuals in EU countries, who used specialised software to edit photos, video or audio files; 2016



Source: Eurostat, 2016

F Education and digital skills

Tab. F6 Individuals in the Czech Republic who declared they used selected Office software; 2016

%

	Word process. software	Spread sheet software	Presentation software
Total (aged 16+)	**48,3**	**36,2**	**23,8**
Total (aged 16-74)	52,2	39,1	25,8
Gender:			
Males (aged 16+)	49,8	38,6	26,4
Females (aged 16+)	46,9	33,8	21,2
Age group:			
16-24 year-olds	78,6	67,8	59,8
25-34 year-olds	66,8	49,6	35,5
35-44 year-olds	61,2	45,9	27,3
45-54 year-olds	51,5	37,9	21,3
55-64 year-olds	37,4	26,0	13,7
65 year-olds and over	13,7	7,7	3,1
Education attainment level (aged 25+):			
Basic	7,7	3,8	1,2
Secondary without A-level exam.	26,2	14,8	6,3
Secondary with A-level exam. or Higher professional	59,3	43,3	23,4
University	80,5	68,2	52,7
Specific groups:			
Women on maternity leave	58,2	38,4	23,0
Students (aged 16+)	87,1	79,5	71,9
Pensioners	13,7	7,1	2,6

as a percentage of all individuals in a given socio-demographic group

Figure F12 Word processing software use by sex and age; 2016

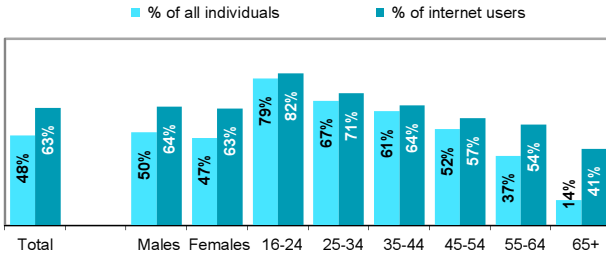
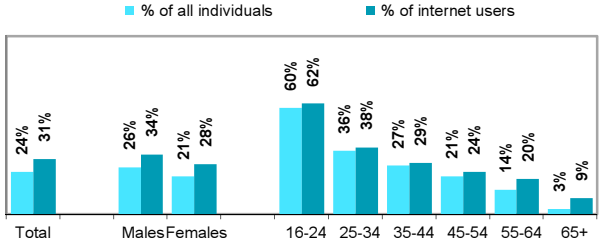
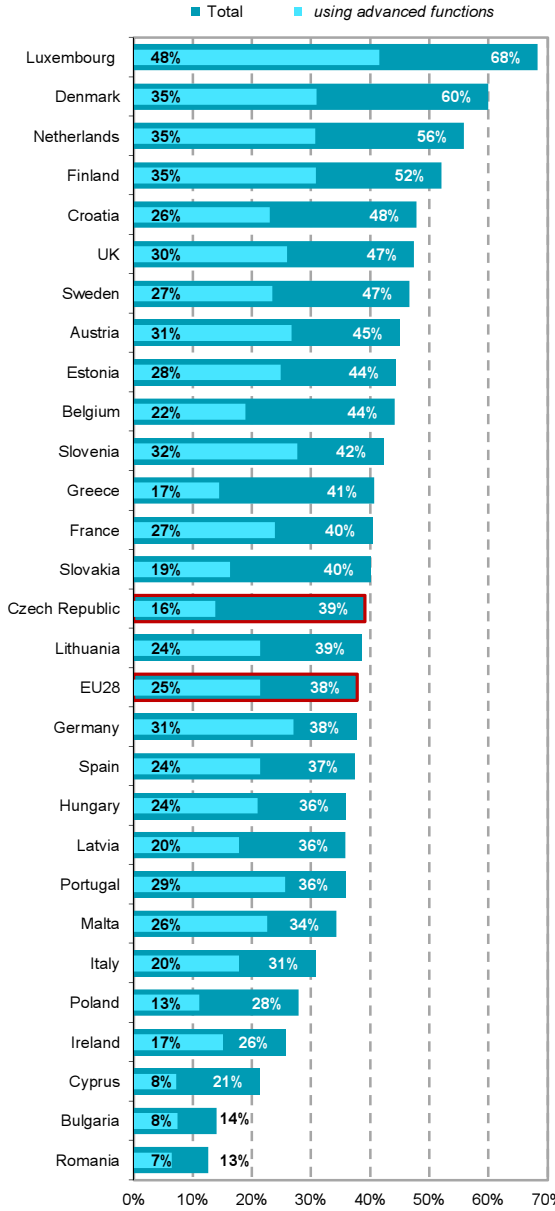


Figure F13 Presentation software use by sex and age; 2016



Source: Czech Statistical Office, ICT use survey in households

Figure F14 Individuals in EU countries who used spread sheet software (e.g. Excel); 2016



as a percentage of all individuals aged 16 to 74 in a given country

Source: Eurostat, 2016

F Education and digital skills

Tab. F7 Tertiary education students in the field of ICT (Computing) in the Czech Republic

number of students

	2013	2014	2015
Total	**23 897**	**22 899**	**21 935**
Women	3 913	3 982	3 830
Field of education			
Computer science	18 416	17 770	17 122
Computers usage	5 521	5 159	4 832
Education level			
Higher professional	1 260	1 173	1 000
Bachelor programmes	15 876	14 976	14 295
Master programmes	5 681	5 683	5 576
Doctoral programmes	1 096	1 081	1 077
Nationality of students			
Czech Republic	20 042	18 803	17 559
Foreign	3 855	4 096	4 376

Figure F15 Tertiary education students of Computing

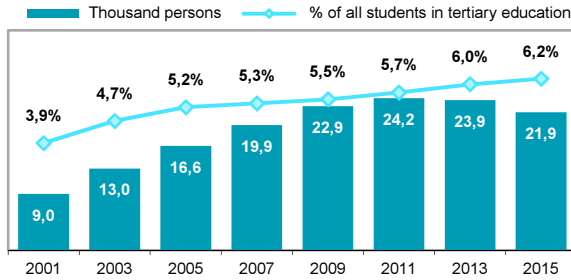


Figure F16 Tertiary students of Computing by education level

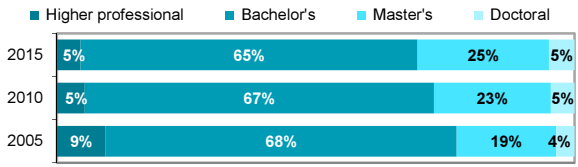
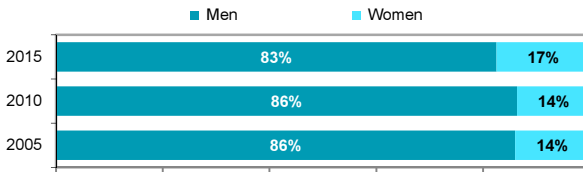
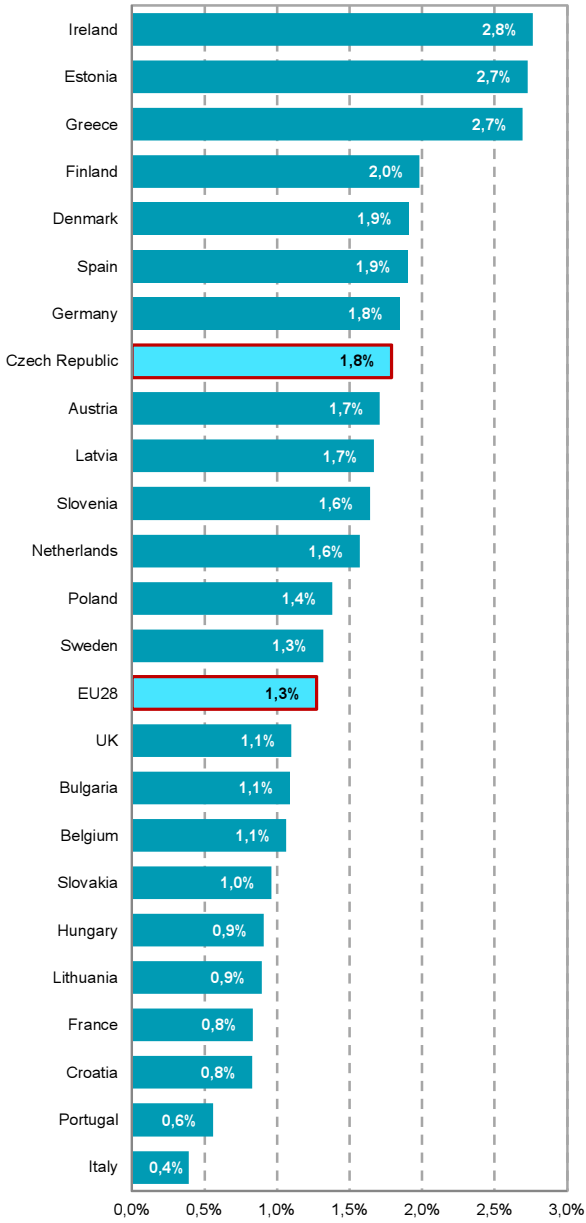


Figure F17 Tertiary students of Computing by sex



Source: The Ministry of Education, Youth and Sports in the Czech Rep., 2016

Figure F18 Tertiary education students of Computing in EU countries; 2014



as a percentage of total population aged 20 to 29 years in a given country

Source: Eurostat, 2015

Tab. F8 ICT professionals in the Czech Republic

thousand of persons

	2014	2015	2016
Total	**63,3**	**66,3**	**71,8**
Women	6,8	6,7	6,5
Occupation			
Software and apps developers and analysts	44,9	44,9	46,6
Database and network professionals	18,4	21,4	25,2
Age group:			
20-29 years	14,5	15,8	15,3
30-39 years	25,4	25,5	28,2
40-49 years	12,1	15,3	17,7
50+ years	11,6	10,0	10,4
Highest level of education attainment			
Secondary with A-level examination	10,0	10,6	11,2
Bachelor's and Higher professional	11,1	9,9	10,3
Master's and Doctoral	42,2	45,7	50,3

Figure F19 ICT professionals

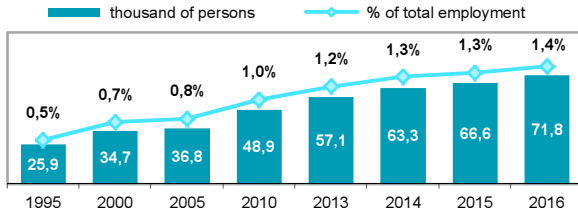


Figure F20 ICT professionals by sex

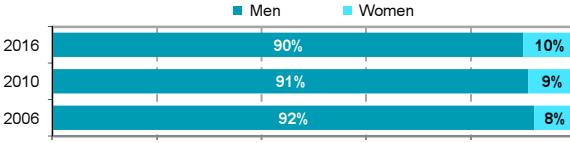


Figure F21 ICT professionals by level of education attainment

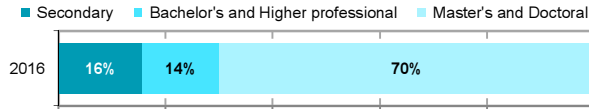
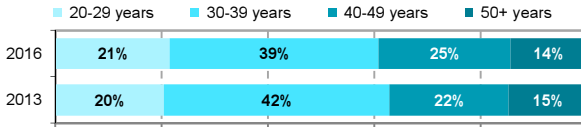
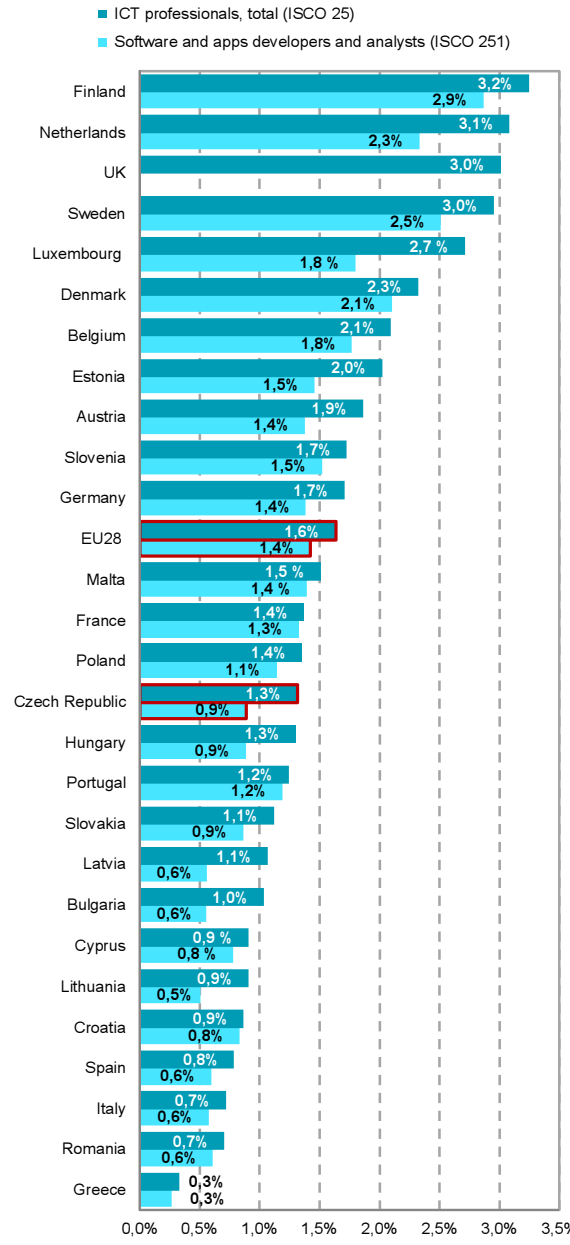


Figure F22 ICT professionals by age



Source: CZSO, Labour Force Survey

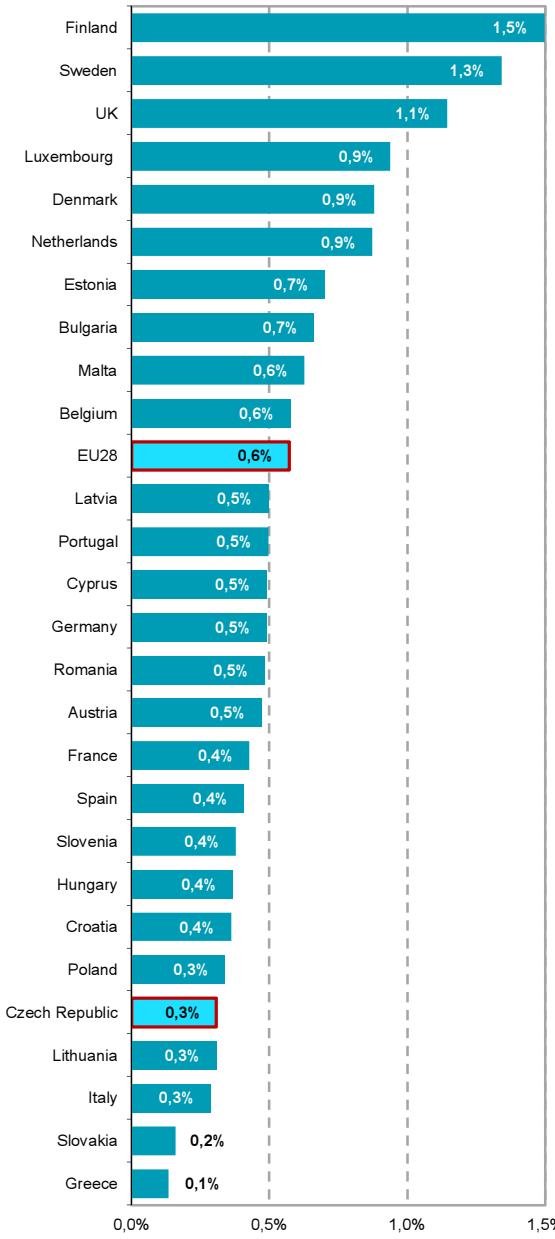
Figure F23 ICT professionals in EU countries; 2015



as a percentage of total employment in a given country

Source: Eurostat, European Labour Force Survey, 2016

Figure F24 Women as ICT professionals in EU countries; 2015



as a percentage of all women employed in a given country

Source: Eurostat, European Labour Force Survey, 2016