

ICT specialists

Almost 8 million ICT specialists employed in the EU in 2014

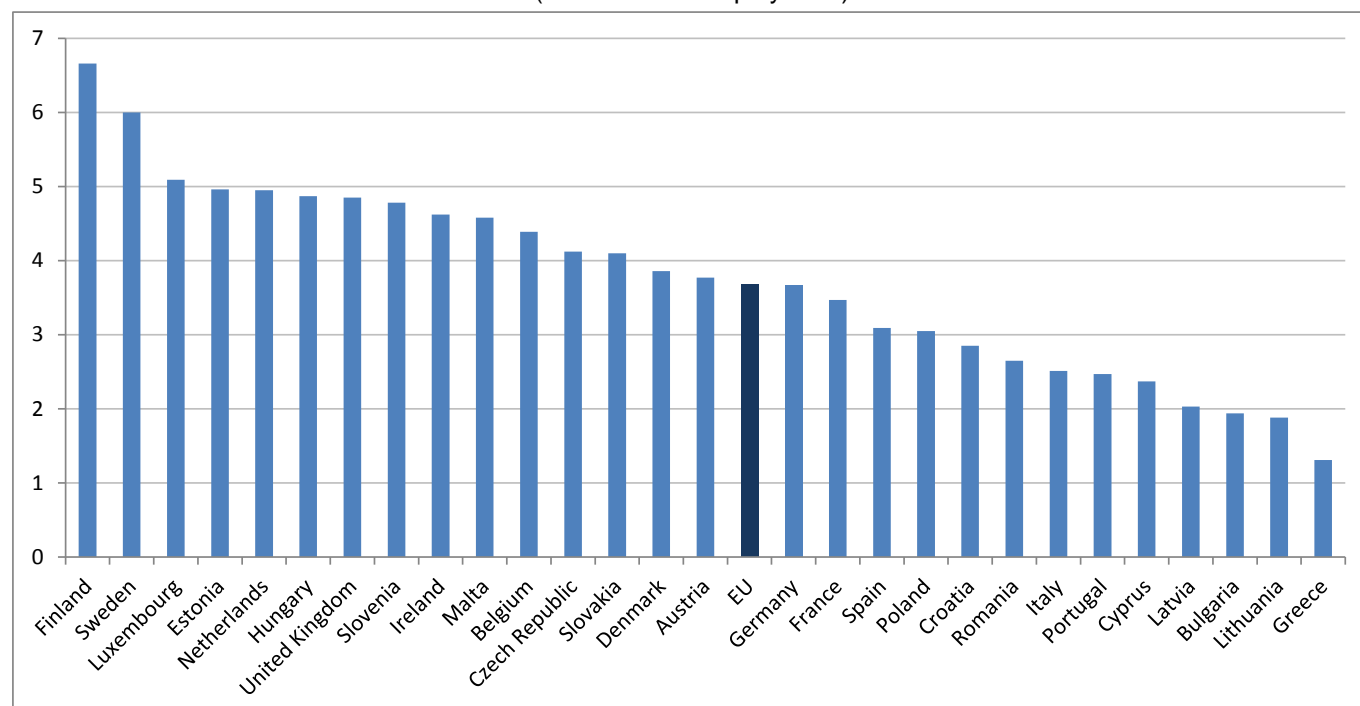
More than 80% are men

In the **European Union (EU)**, nearly 8 million persons were employed in 2014 as Information and Communication Technology (ICT) specialists, representing 3.7% of total employment. Over recent years, both the number and the share of ICT specialists in total employment have continuously increased to better adapt to an ever digitalised world. However, almost 40% of enterprises with at least 10 persons employed which recruited or tried to recruit personnel for jobs requiring ICT specialist skills had hard-to-fill vacancies in 2014.

This profession is largely made up of men, accounting in 2014 for more than 8 ICT specialists out of 10 employed in the **EU** (81.9%). It also employed mainly highly educated people, with more than half (56.5%) of ICT specialists in the **EU** having a tertiary education level.

These data come from a [report](#) issued by **Eurostat, the statistical office of the European Union**, and are used for several EU policies, in particular the Digital Agenda for Europe. The uptake of new information and communication technologies has been a significant driver of changes to both production methods and employment patterns. In light of the competitiveness of the European economy and EU employment strategies, policymakers and researchers feel a natural interest in the employment of ICT professionals, a small but strategically important segment of employment.

Share of ICT specialists in the EU Member States, 2014
(as % of total employment)



Share of ICT specialists in employment highest in Finland, lowest in Greece

In 2014, ICT specialists in the EU were mainly employed in the **United Kingdom** (1.49 million persons), **Germany** (1.47 million) and **France** (0.91 million). These three Member States accounted for almost half of all ICT specialists employed in the **EU** in 2014.

In relative terms, the highest shares in 2014 of ICT specialists in total employment were recorded in **Finland** (6.7%) and **Sweden** (6.0%), followed by **Luxembourg** (5.1%), **Estonia** and the **Netherlands** (both 5.0%). At the opposite end of the scale, **Greece** (1.3%), **Bulgaria** and **Lithuania** (both 1.9%) and **Latvia** (2.0%) registered the lowest proportions.

Compared with 2011, both the absolute number and the share of ICT specialists in total employment increased in nearly all Member States by 2014, notably in **Portugal, Germany, Belgium, Finland, France** and **Luxembourg**. At **EU** level, the number of ICT specialists rose by almost 1.2 million persons between 2011 and 2014, and their share in total employment grew from 3.2% to 3.7%.

ICT specialists in the EU Member States, 2011 and 2014

	In 1000 persons		As percentage of total employment (%)	
	2011	2014	2011	2014
EU	6 847.9	7 997.0	3.2	3.7
Belgium	159.4	199.7	3.5	4.4
Bulgaria	54.2	56.1	1.8	1.9
Czech Republic	192.0	205.1	3.9	4.1
Denmark	99.5	104.8	3.7	3.9
Germany	1 002.8	1 469.6	2.6	3.7
Estonia	28.3	30.9	4.7	5.0
Ireland	82.5	88.5	4.5	4.6
Greece	50.7	46.2	1.3	1.3
Spain	489.9	535.6	2.7	3.1
France	720.2	914.0	2.8	3.5
Croatia	41.7	44.7	2.6	2.9
Italy	526.0	558.5	2.3	2.5
Cyprus	8.0	8.6	2.0	2.4
Latvia	17.7	17.9	2.1	2.0
Lithuania	24.5	25.6	2.0	1.9
Luxembourg	10.0	12.7	4.5	5.1
Hungary	165.2	198.9	4.4	4.9
Malta	7.5	8.3	4.5	4.6
Netherlands	374.0	408.4	4.5	5.0
Austria	150.7	155.0	3.7	3.8
Poland	441.4	484.2	2.8	3.0
Portugal	66.2	111.3	1.4	2.5
Romania	185.7	228.6	2.2	2.7
Slovenia	42.1	43.8	4.5	4.8
Slovakia	99.7	96.9	4.3	4.1
Finland	144.7	163.1	5.9	6.7
Sweden	268.9	286.2	5.8	6.0
United Kingdom	1 394.2	1 494.1	4.8	4.9
Iceland	5.4	6.5	3.3	3.7
Norway	114.4	127.2	4.5	4.8
Switzerland	189.7	215.7	4.3	4.8
Turkey	185.5	240.1	0.8	0.9

The source dataset can be found [here](#).

Highest share of male ICT specialists in Luxembourg...

In 2014, an overwhelming majority (81.9%) of ICT specialists employed in the **EU** were men. This was the case in every EU Member State, albeit in different proportions. The highest shares of male ICT specialists were observed in **Luxembourg** (89.2%), **Cyprus** (88.1%), the **Netherlands** (87.4%), **Portugal** (86.4%) and **Italy** (86.3%), while **Bulgaria** (68.2%), **Estonia** (70.4%) and **Romania** (71.1%) recorded the lowest.

The above figures show that women are under-represented among ICT specialists in all EU Member States, most particularly in **Cyprus**, **Portugal**, **Luxembourg**, the **Netherlands**, **Austria**, **France**, **Denmark** and **Belgium**, a striking contrast with total employment, where the genders are broadly balanced.

... of ICT specialists with tertiary education in Spain...

In the **EU** in 2014, more than half (56.5%) of ICT specialists had a tertiary education level. This was also the case in a majority of Member States. The highest proportion was registered in **Spain** (77.4% of ICT specialists had a tertiary education level in 2014), ahead of **Belgium** (72.9%), **Bulgaria** and **Cyprus** (both 72.3%), **Ireland** (71.4%), **Luxembourg** (71.0%) and **Lithuania** (70.2%). At the opposite end of the scale, the lowest proportions of ICT specialists having completed tertiary education were recorded in **Italy** (31.7%), **Malta** (38.5%), **Slovenia** (40.6%), **Slovakia** (41.8%) and **Romania** (42.2%).

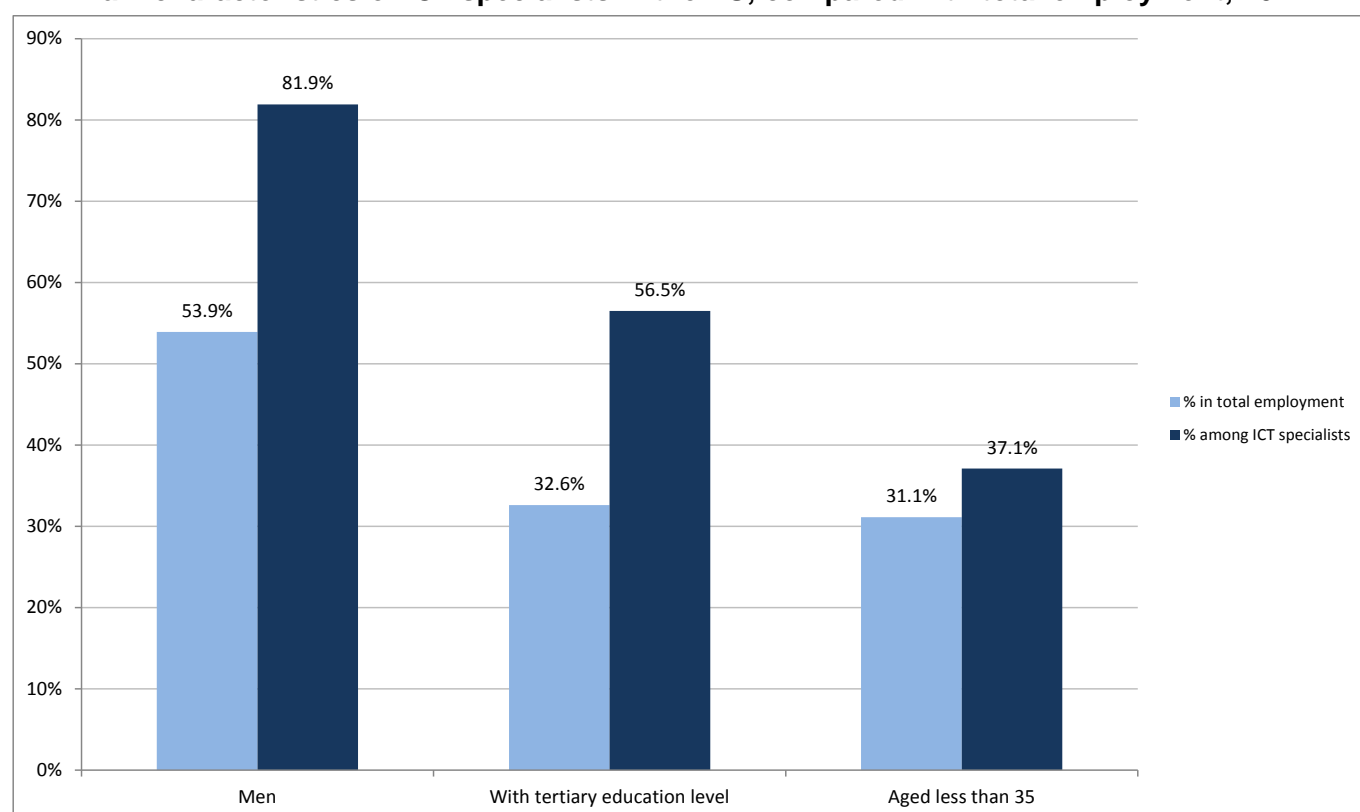
Persons with a tertiary education level had a higher share in 2014 among ICT specialists than in total employment in all EU Member States, notably in **Bulgaria**, **Spain**, **Croatia**, **Greece** and **France**.

... and of ICT specialists aged less than 35 in Malta, Latvia and Lithuania

In 2014, more than 1 ICT specialist out of 3 (37.1%) was aged less than 35 in the **EU**. Across Member States, more than half of all ICT specialists employed were aged less than 35 in **Malta** (59.8%), **Latvia** (56.3%) and **Lithuania** (52.0%). By contrast, persons aged less than 35 accounted for fewer than a third of all ICT specialists employed in **Italy** (27.0%), **Denmark** (27.7%), **Sweden** (30.8%), **Finland** (31.0%) and **Luxembourg** (32.0%).

In 2014, there were proportionally more persons younger than 35 among ICT specialists than in total employment in a majority of Member States, with the only exceptions being **Denmark**, **Sweden**, the **Netherlands**, **Finland**, the **United Kingdom**, **Luxembourg** and **Ireland**.

Main characteristics of ICT specialists in the EU, compared with total employment, 2014



ICT specialists in the EU Member States, by gender, age and education level, 2014
(as % of all persons employed)

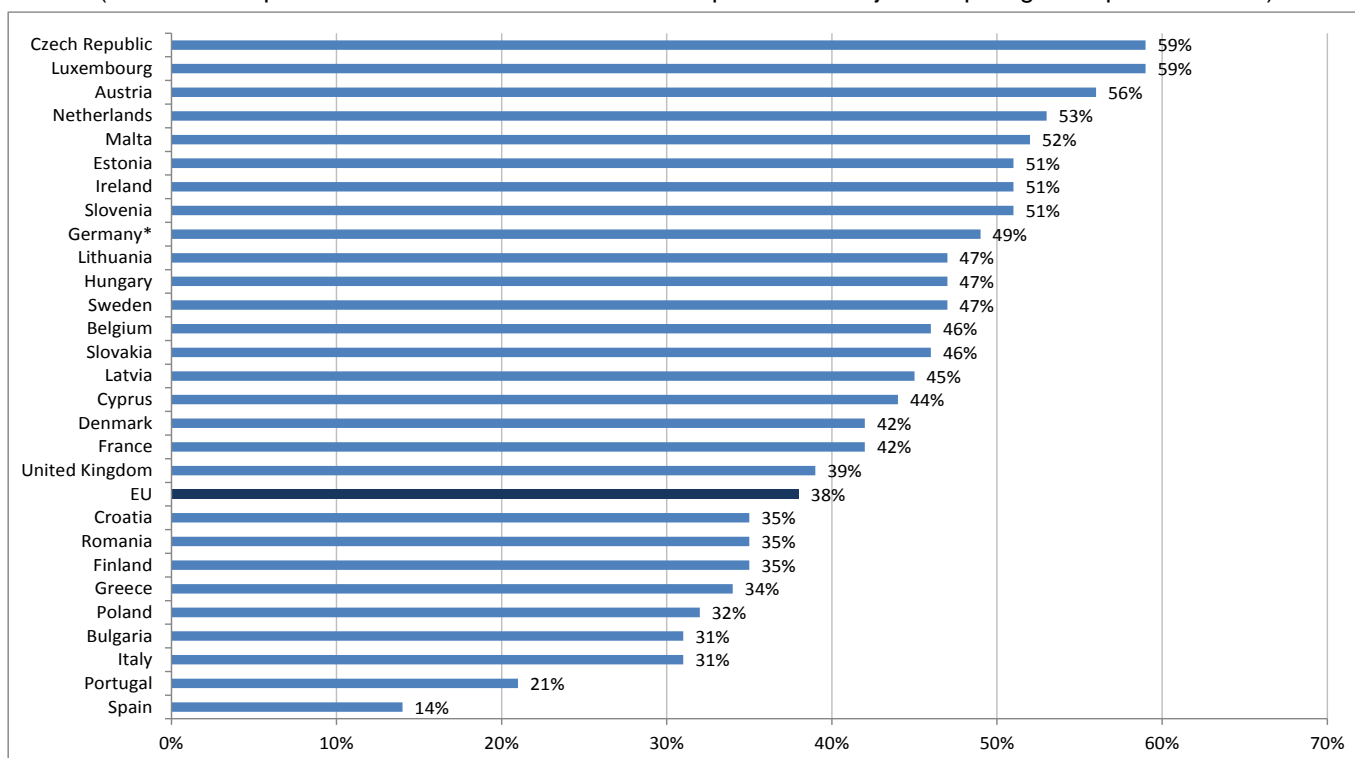
	Men		With tertiary education level		Aged less than 35	
	In total employment	Among ICT specialists	In total employment	Among ICT specialists	In total employment	Among ICT specialists
EU	53.9	81.9	32.6	56.5	31.1	37.1
Belgium	53.4	83.6	43.2	72.9	31.8	35.7
Bulgaria	52.7	68.2	31.6	72.3	28.1	47.9
Czech Republic	56.6	80.4	22.8	45.2	28.9	36.1
Denmark	52.4	83.4	34.1	50.9	33.7	27.7
Germany	53.2	82.2	27.6	45.5	30.6	35.8
Estonia	51.5	70.4	39.0	50.5	32.3	48.9
Ireland	53.7	79.0	45.1	71.4	34.4	35.0
Greece	58.0	82.9	33.7	66.5	27.4	45.7
Spain	54.4	82.1	42.0	77.4	27.2	40.5
France	51.8	83.4	37.7	68.1	31.1	36.7
Croatia	54.2	82.5	26.6	59.7	31.6	47.2
Italy	57.7	86.3	20.3	31.7	23.1	27.0
Cyprus	50.6	88.1	45.3	72.3	37.7	43.9
Latvia	49.7	76.6	33.8	55.9	33.0	56.3
Lithuania	49.0	77.4	42.3	70.2	31.7	52.0
Luxembourg	55.2	89.2	48.7	71.0	31.7	32.0
Hungary	54.1	74.9	26.5	47.5	29.5	40.0
Malta	61.1	72.6	25.0	38.5	42.2	59.8
Netherlands	53.6	87.4	34.9	57.4	36.0	33.6
Austria	52.7	85.0	32.1	57.5	35.3	42.3
Poland	55.2	79.2	32.4	60.8	34.8	49.7
Portugal	50.9	86.4	25.0	48.2	28.0	43.2
Romania	56.7	71.1	19.1	42.2	31.4	48.2
Slovenia	54.4	72.3	32.2	40.6	30.6	38.0
Slovakia	55.7	74.6	22.4	41.8	31.8	46.3
Finland	50.9	77.1	42.0	62.7	32.7	31.0
Sweden	52.0	80.3	38.2	50.5	33.4	30.8
United Kingdom	53.0	82.8	41.5	63.6	36.3	35.4
Iceland	51.8	78.7	33.0	53.9	37.4	36.7
Norway	52.3	83.3	42.4	60.3	35.1	30.9
Switzerland	53.4	86.3	38.0	58.3	34.8	38.1
Turkey	70.3	86.9	20.0	53.6	45.8	70.0

The source dataset can be found [here](#) for data by gender, [here](#) for data by age group and [here](#) for data by level of education.

Vacancies for ICT specialists most difficult to fill in the Czech Republic and Luxembourg

In 2014, more than 1 enterprise out of 3 which recruited or tried to recruit personnel for jobs requiring ICT specialist skills had hard-to-fill vacancies in every EU Member State, except **Spain** (14% of enterprises), **Portugal** (21%), **Bulgaria** and **Italy** (both 31%) and **Poland** (32%). The highest percentage of enterprises which had difficulties in recruiting ICT specialists was recorded in the **Czech Republic** and **Luxembourg** (both with 59%), followed by **Austria** (56%), the **Netherlands** (53%), **Malta** (52%), **Estonia**, **Ireland** and **Slovenia** (all 51%).

Share of enterprises which had hard-to-fill vacancies for jobs requiring ICT specialist skills, 2014 (as % of enterprises which recruited / tried to recruit personnel for jobs requiring ICT specialist skills)



* Germany: 2013 data instead of 2014

The source dataset can be found [here](#), where dimension "Time" refers to the survey year.

Methods and definitions

The data used in this article mainly come from the secondary statistics on ICT specialists, which are derived from the EU-Labour Force Survey (LFS) data on employment. ICT specialists' data covers all sectors of economic activity. The aggregates for ICT specialists are constructed based on the OECD-Eurostat statistical definition, given in terms of International Standard Classification of Occupations (ISCO). Data are available starting from 2004. However, due to a change in classification which occurred in 2011, data prior to 2011 are not fully comparable with the most recent ones.

Data on hard-to-fill vacancies come from the Community survey on ICT usage and e-commerce in enterprises.

ICT specialists are defined as those who have the ability to develop, operate and maintain ICT systems and for whom ICTs constitute the main part of their job (see [OECD Information Technology Outlook, 2004](#)).

Timetable

A news release on the occasion of the Safer Internet Day is planned for 8 February 2016.

For more information

Eurostat [website section](#) on information society statistics.

Eurostat [database](#) on information society statistics.

Eurostat [Statistics Explained article](#) on ICT specialists in employment.

Eurostat [Statistics Explained article](#) on hard-to-fill vacancies in enterprises for ICT specialists.

Eurostat news release [215/2015](#) of 9 December 2015 on e-commerce in EU enterprises.

European Commission Digital Agenda [scoreboard](#).

Issued by: **Eurostat Press Office**

Vincent BOURGEAIS
Tel: +352-4301-33 444
eurostat-pressoffice@ec.europa.eu

ec.europa.eu/eurostat

Production of data:

Anna SABADASH
Tel: +352-4301-31 463
anna.sabadash@ec.europa.eu

[@EU Eurostat](#)

Media requests: Eurostat media support / Tel: +352-4301-33 408 / eurostat-mediasupport@ec.europa.eu