

C ICT Research and Development and Patents

The main source of statistical data on ICT research and development (ICT R&D) is the **annual survey** measuring human and financial resources designed for R&D activities (VTR5-01) carried out by the Czech Statistical Office. This survey is fully governed by EU and OECD methodological principles laid down in the **Frascati manual (OECD, Paris 2002)** and Commission Regulation (EC) No. 753/2004 of 22 April 2004.

Reporting units in the R&D survey are all legal and natural persons **conducting R&D in the Czech Republic** as their principal or secondary economic activity, irrespective of the number of personnel, sector or CZ-NACE activity.

The **term research and development is defined** as a systematic creative work undertaken on a systematic basis in order to increase the stock of knowledge, including knowledge of human beings, culture and society, and carried out for the purpose of obtaining or using new knowledge using methods allowing confirmation, widening or refuting of knowledge obtained.

Information on **ICT R&D conducted in the Czech Republic** comes from the special questions on R&D expenditures in this field that are encompassed in the VTR5-01 survey. The Statistical Classification of Products by Activity in the European Economic Community, 2002 version (**CZ-CPA**), is used to define ICT:

- CZ-CPA 30 - Office machinery and computers
- CZ-CPA 32 - Radio, television and communication equip. and app.
- CZ-CPA 642 - Telecommunications services
- CZ-CPA 72 - Computer and related services

Additional data and metadata for R&D statistics are available on the following dedicated website (temporarily only in Czech):

http://www.czso.cz/csu/redakce.nsf/i/statistika_vyzkumu_a_vyvoje

The **Industrial Property Office of the Czech Republic (IPO CR)** is responsible for the administration of industrial rights in the Czech Republic. The patent data are processed by the Czech Statistical Office from data sources of the IPO CR and are classified according to methodology set out in the **OECD Patent Manual (OECD, Paris, 2009)**. The **International Patent Classification (IPC)** makes it possible to classify utility models and granted patents to technological areas including ICT.

The OECD has designed definitions of various technical fields including ICT-related patents using IPC codes. **ICT-related patents** include four main categories:

- Telecommunications
- Consumer electronics
- Computers, office machinery
- Other ICT

The Czech Statistical Office publishes additional information about the **Czech applicants** (entities registered in the Czech Republic) broken down by their **institutional sector** (business enterprise sector, government sector, higher education sector, and natural persons), by region of residence of the patent holder and by specific technological fields including ICT.

The **Patent Cooperation Treaty (PCT)** procedure provides the possibility to seek patent rights in a large number of countries by filing a single international application (PCT application).

Priority date (year): first date (year) of filing of a patent application, anywhere in the world, to protect an invention. It is the earliest and therefore closest to the invention date.

Additional data and metadata for patent statistics are available on the following dedicated website (temporarily only in Czech):

http://www.czso.cz/csu/redakce.nsf/i/patentova_statistika

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Table C1 Total ICT R&D expenditures in the CR

	CZK million		
	2006	2007	2008
Total	5 017	6 170	7 055
ICT equipment	2 758	3 325	3 794
Software	2 258	2 845	3 261
Sector of R&D performance			
Business enterprise	4 528	5 557	6 216
Government	243	161	263
Higher education	234	435	561
Private non-profit	11	18	16

Table C2 ICT R&D expenditures funded by government in CR

	CZK million		
	2006	2007	2008
Total	1 075	1 123	1 315
ICT equipment	850	861	1 018
Software	225	261	297
Sector of R&D performance			
Business enterprise	659	578	609
Government	220	141	225
Higher education	188	388	475
Private non-profit	8	15	5

Figure C1 Total R&D expenditures in ICT

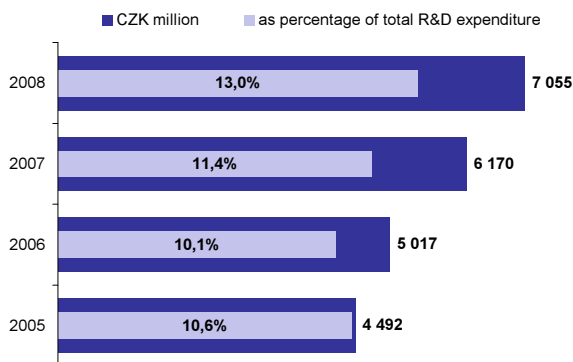
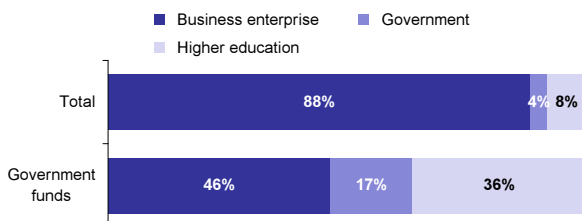


Figure C2 R&D expenditures in ICT by sector of performance, 2008



Source: CZSO, R&D survey

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Table C3 Total software R&D expenditures in the CR

CZK million

	2006	2007	2008
Total	2 258	2 845	3 261
Sector of R&D performance			
Business enterprise	2 152	2 701	3 083
Government	14	8	9
Higher education	90	135	169
Private non-profit	2	1	0

Table C4 Software R&D expend. funded by government in CR

CZK million

	2006	2007	2008
Total	225	261	297
Sector of R&D performance			
Business enterprise	138	141	142
Government	13	7	8
Higher education	72	114	146
Private non-profit	2	0	0

Figure C3 Total R&D expenditures in software

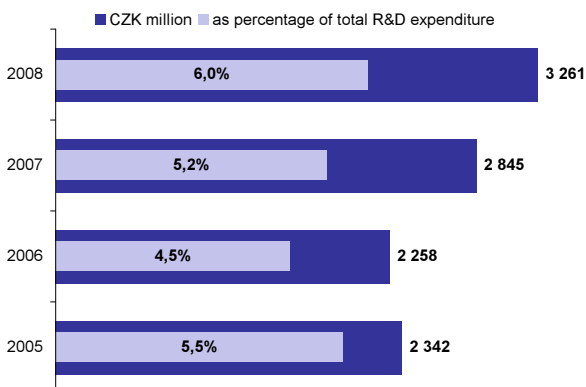
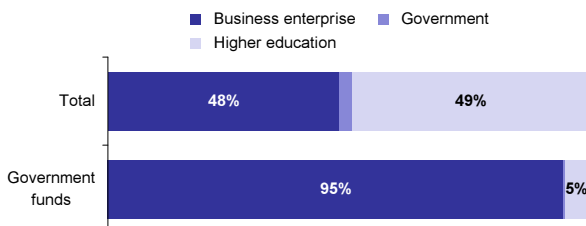


Figure C4 R&D expenditures in software by sector of performance, 2008



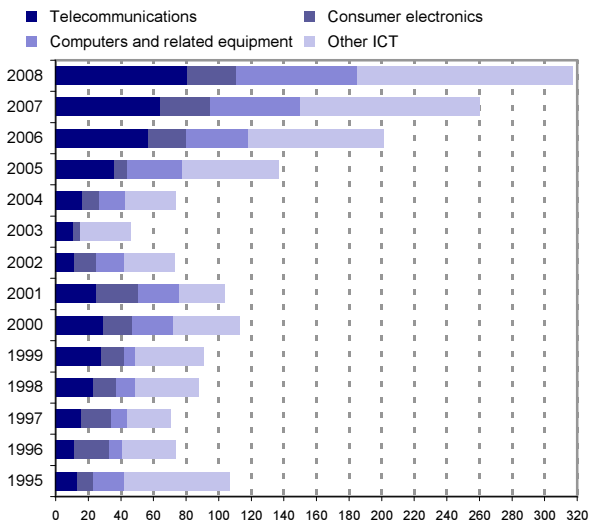
Source: CZSO, R&D survey

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Table C5 ICT patents granted in the CR

	2006	2007	2008
Total	201	260	317
Telecommunications	57	64	81
Consumer electronics	23	31	30
Computers and related equipment	38	55	74
Other ICT	83	110	132
Country of the patent applicant			
Czech applicants	21	25	24
Business enterprise	9	12	12
Government			3
Higher education	5	6	5
Private persons	7	7	5
Foreign applicants	180	236	293
Germany	68	78	95
United states	16	29	41
Netherlands	15	22	13
Switzerland	14	20	21
France	12	11	18
Japan	10	11	18
United Kingdom	7	8	12
Korea	6	6	2
Italy	8	10	16
Sweden	4	10	15
Austria	1	8	3
Finland	2	5	6
Other	17	17	34

Figure C5 ICT patents granted in the CR

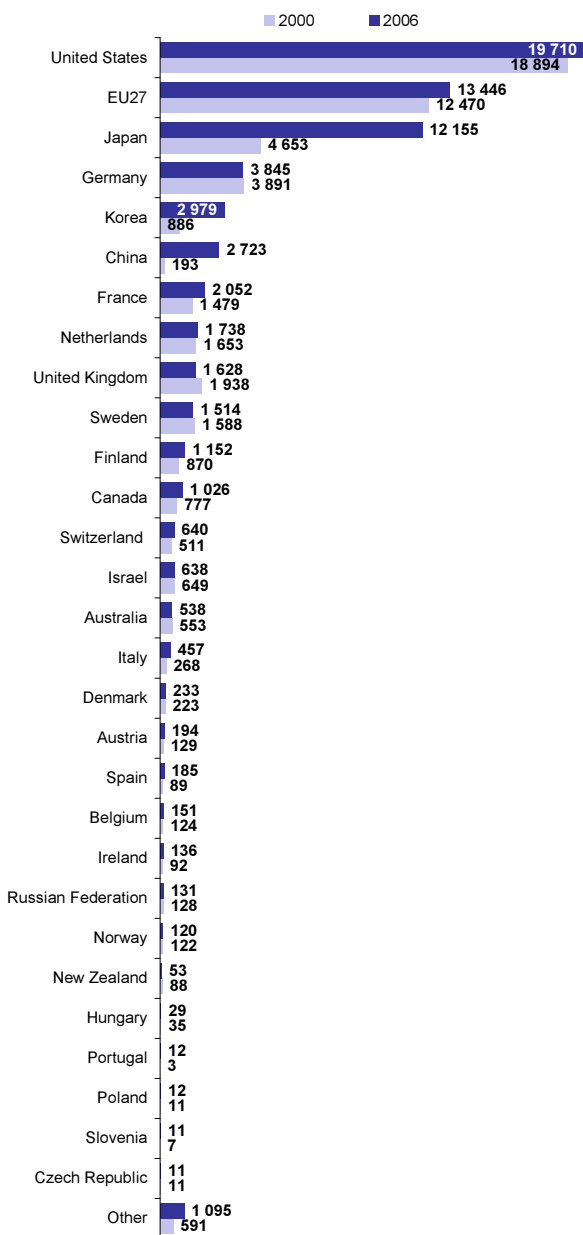


by grant date and country of the applicant

Source: Patent Office of the Czech Republic and CZSO calculations

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Figure C6 ICT patent applications by PCT



by priority date and country of the applicant

Source: OECD

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Table C6 ICT patents valid in the CR, 31.12.2008

	Czech	Foreign	Total
Total	144	970	1 113
Telecommunications	15	267	282
Consumer electronics	4	149	153
Computers and related equipment	24	209	233
Other ICT	101	345	445

Figure C7 ICT patents valid in the CR by category, 31.12.2008

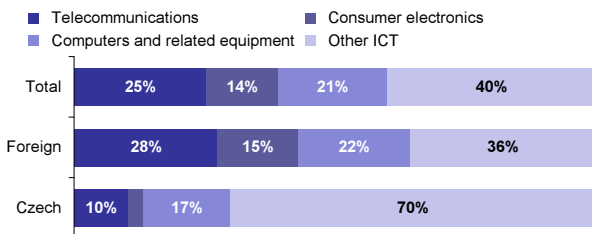
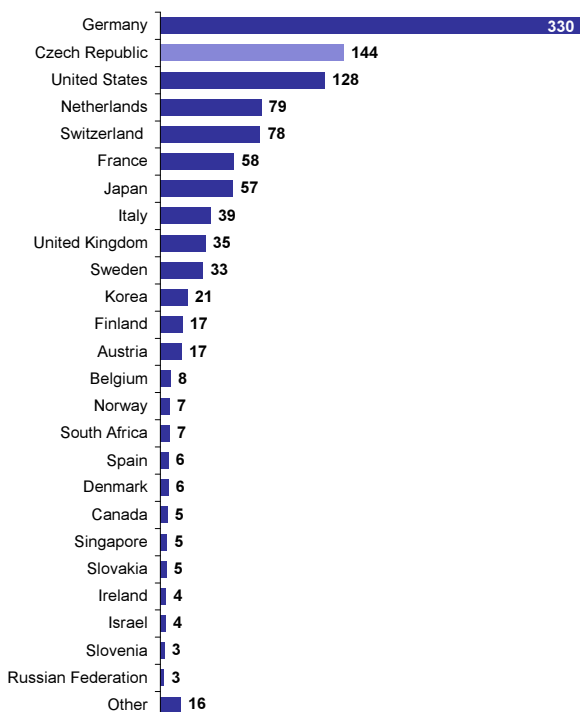


Figure C8 ICT patents valid in the CR by applicant country, 31.12.2009



Source: Patent Office of the Czech Republic and CZSO calculations