

## Chapter D: ICT research and development

**Research and experimental development (R&D)** comprise creative and systematic work undertaken in order to increase the stock of knowledge – including knowledge of humankind, culture and society – and to devise new applications of available knowledge (OECD 2015, Frascati manual).

### ICT R&D expenditure

This sub-chapter presents data on financial resources devoted to researching and development of ICT equipment and software (hereafter **ICT R&D expenditure**) regardless of the main economic activity and sector of R&D performers. ICT is **classified** here into two main categories according to the groups of **the Classification of Products by Activity (CZ-CPA)** as follows:

- **ICT equipment includes:** 26.1 Electronic components and boards; 26.2 Computers and peripheral equipment; 26.3 Communication equipment; 26.4 Consumer electronics and 26.8 Magnetic and optical media.
- **ICT services, applications, data and software (hereafter software) include:** 58.2 Software publishing; 61 Telecommunications services; 62 Computer programming, consultancy & related services and 63.1 Data processing, hosting & related services; web portals.

Detailed explanations of individual items in the CZ-CPA classification are available here: <https://ec.europa.eu/eurostat/web/cpa>

Data in this sub-chapter are based on the results of **the special module** on R&D expenditures in selected **technological areas** that is included in the Czech annual questionnaire on R&D. ICT R&D expenditure figures **are available** by sectors of R&D performance and industry (CZ-NACE) classification. **International comparison is not available** for this data set. For more information see: <https://csu.gov.cz/research-and-development-rad>

### R&D expenditures and personnel in the ICT sector industries

This sub-chapter focuses on R&D expenditures and R&D personnel in enterprises with the main economic activity that belongs to the **ICT sector**. In general, the term ICT sector includes both: **ICT manufacturing** and **ICT services** which are associated with the production and/or distribution of information and communication technologies (ICT) and provision of related services.

Industries of ICT sector include all enterprises with the prevailing economic activity according to the codes of the Classification of Economic Activities (**CZ-NACE**) that fulfill the official OECD definition of ICT sector. For more information, see **Chapter G**.

Data for the **international comparisons** come from the **Eurostat database** and refer to the reported or nearest available year.

*Note: Data on R&D expenditure in the ICT sector has less predictive value than the figures for the total ICT R&D expenditure included in first sub-chapter. Enterprises within the ICT sector can perform their R&D activities in areas other than ICT and vice versa enterprises outside the ICT sector can exercise their R&D activities in the ICT field.*

For detailed data and information for the ICT sector see:

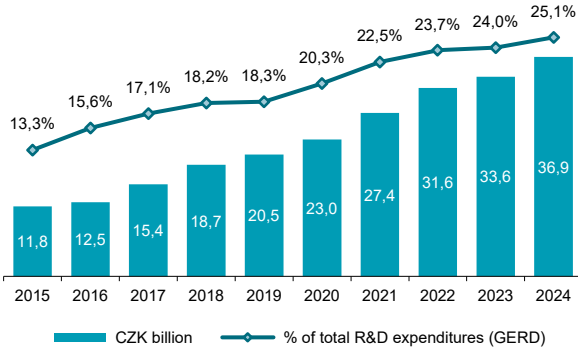
<https://csu.gov.cz/ict-sector>

## Chapter D: ICT research and development

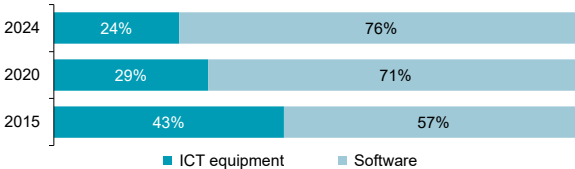
**Table D.1 Research and development expenditures related to ICT in Czechia - Total ICT R&D expenditures**

	CZK million		
	2022	2023	2024
<b>Total</b>	<b>31 643</b>	<b>33 556</b>	<b>36 863</b>
financed from the government funds	1 668	1 810	2 229
<b>Product of R&amp;D activity</b>			
ICT equipment	8 164	9 278	8 737
ICT services, apps or software (software)	23 479	24 278	28 126
<b>R&amp;D performer (sector)</b>			
<b>Enterprises (BES), total</b>	<b>30 469</b>	<b>31 651</b>	<b>34 599</b>
Domestic-controlled enterprises	9 822	9 511	10 741
Foreign-controlled enterprises	20 647	22 140	23 858
<b>Universities (HES)</b>	<b>1 049</b>	<b>885</b>	<b>1 477</b>
<b>Other R&amp;D performers</b>	<b>126</b>	<b>1 020</b>	<b>787</b>

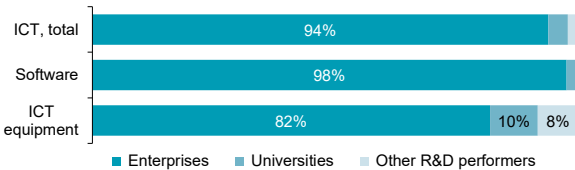
**Chart D.1 Total ICT related R&D expenditures in Czechia**



**Chart D.2 ICT R&D expenditures in Czechia by product of R&D**



**Chart D.3 ICT R&D expenditures in Czechia by performer in 2022.**



Source: The Czech Statistical Office, Annual R&D survey

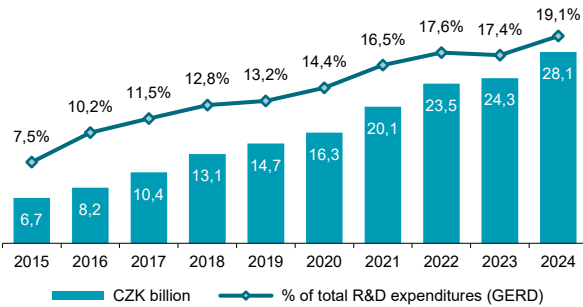
## Chapter D: ICT research and development

**Table D.2 R&D expenditures related to software and data development in Czechia - Software R&D expenditures**

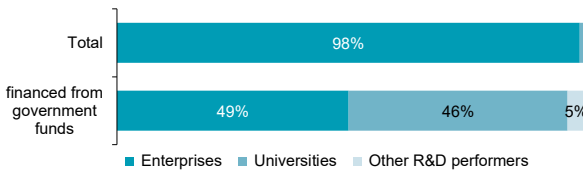
CZK million

	2022	2023	2024
<b>Total</b>	<b>23 479</b>	<b>24 278</b>	<b>28 126</b>
financed from the government funds	581	551	823
<b>R&amp;D performer (sector)</b>			
<b>Enterprises (BES), total</b>	<b>23 108</b>	<b>23 978</b>	<b>27 451</b>
Domestic-controlled enterprises	7 331	7 872	9 059
Foreign-controlled enterprises	15 777	16 107	18 392
<b>Universities (HES)</b>	<b>298</b>	<b>231</b>	<b>615</b>
<b>Other R&amp;D performers</b>	<b>73</b>	<b>69</b>	<b>61</b>

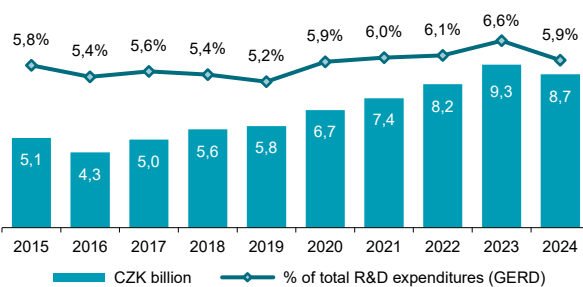
**Chart D.4 Software related R&D expenditures in Czechia**



**Chart D.5 Software R&D expenditures by performer in 2024**



**Chart D.6 ICT equipment related R&D expenditures in Czechia**



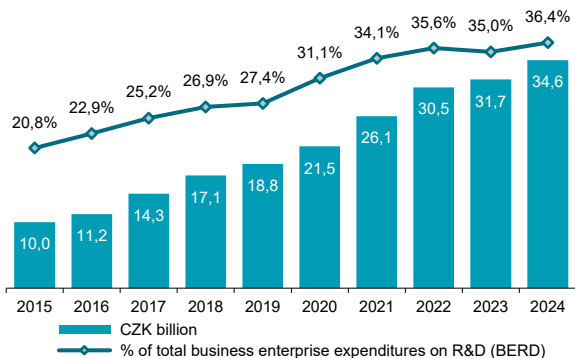
Source: The Czech Statistical Office, Annual R&D survey

## Chapter D: ICT research and development

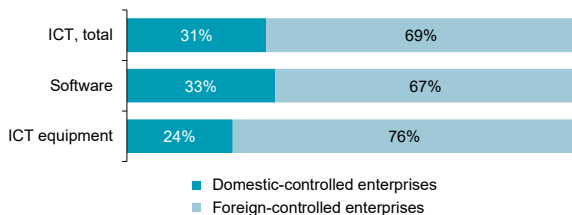
**Table D.3 ICT R&D expenditures in the Czech business enterprise sector - ICT R&D expenditures in enterprises**

	CZK million		
	2022	2023	2024
<b>Total</b>	<b>30 469</b>	<b>31 651</b>	<b>34 599</b>
financed from government funds	849	545	584
<b>Product of R&amp;D activity</b>			
ICT equipment	7 361	7 673	7 149
ICT services, apps or software (software)	23 108	23 978	27 451
<b>Size group of enterprises (employees)</b>			
Small enterprises (0-49)	3 436	3 810	4 172
Medium enterprises (50-249)	4 819	5 133	5 788
Large enterprises (250+)	22 214	22 708	24 639
<b>Ownership of enterprises</b>			
Domestic-controlled enterprises	9 822	9 511	10 741
Foreign-controlled enterprises	20 647	22 140	23 858
<b>Industry (CZ-NACE) of enterprises</b>			
<b>ICT sector industries, total</b>	<b>21 895</b>	<b>22 233</b>	<b>24 285</b>
ICT manufacturing	484	530	654
ICT services	21 412	21 703	23 632
<b>Other industries</b>	<b>8 574</b>	<b>9 418</b>	<b>10 314</b>

**Chart D.7 ICT R&D expenditures in enterprises in Czechia**



**Chart D.8 ICT R&D expenditures in Czechia by product of R&D activity and ownership of enterprises in 2024**



Source: The Czech Statistical Office, Annual R&D survey

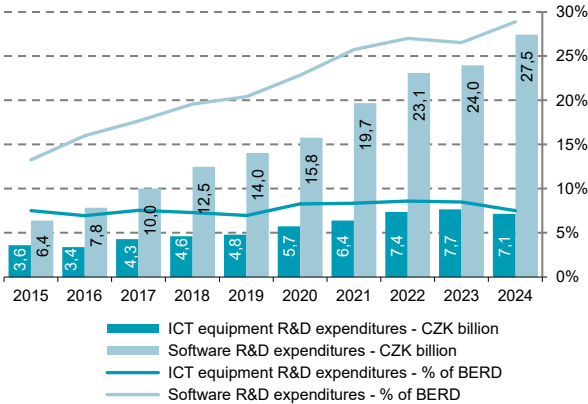
## Chapter D: ICT research and development

**Table D.3 ICT R&D expenditures in enterprises in Czechia by product of R&D activity in 2024**

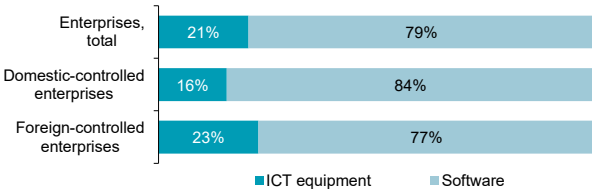
CZK million

	Total	ICT equipment	Software
<b>Total</b>	<b>34 599</b>	<b>7 149</b>	<b>27 451</b>
financed from government funds	584	182	402
<b>Size group of enterprises (employees)</b>			
Small enterprises (0-49)	4 172	758	3 414
Medium enterprises (50-249)	5 788	1 340	4 448
Large enterprises (250+)	24 639	5 050	19 589
<b>Ownership of enterprises</b>			
Domestic-controlled enterprises	10 741	1 682	9 059
Foreign-controlled enterprises	23 858	5 466	18 392
<b>Industry (CZ-NACE) of enterprises</b>			
<b>ICT sector industries, total</b>	<b>24 285</b>	<b>1 637</b>	<b>22 649</b>
ICT manufacturing	654	424	229
ICT services	23 632	1 212	22 419
<b>Other industries</b>	<b>10 314</b>	<b>5 512</b>	<b>4 802</b>

**Chart D.9 ICT R&D expenditures in enterprises in Czechia by product of R&D activity**



**Chart D.10 ICT R&D expenditures in Czechia by ownership of enterprises and product of R&D activity**



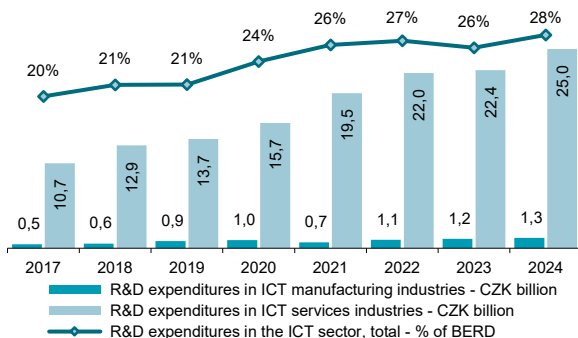
Source: The Czech Statistical Office, Annual R&D survey

## Chapter D: ICT research and development

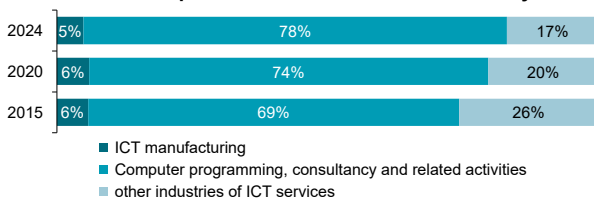
**Table D.5 R&D expenditures in the Czech business enterprise ICT sector - R&D expenditures in ICT sector**

	CZK million		
	2022	2023	2024
<b>Total</b>	<b>23 035</b>	<b>23 530</b>	<b>26 301</b>
financed from government funds	802	486	502
<b>Product of R&amp;D activity</b>			
ICT equipment	1 789	1 322	1 637
ICT services, apps or software (software)	20 107	20 911	22 649
Other non ICT related products	1 140	1 298	2 016
<b>Size group of enterprises (employees)</b>			
Small enterprises (0-49)	2 918	3 643	3 736
Medium enterprises (50-249)	3 959	3 948	4 633
Large enterprises (250+)	16 159	15 939	17 932
<b>Ownership of enterprises</b>			
Domestic-controlled enterprises	8 134	7 688	8 899
Foreign-controlled enterprises	14 901	15 842	17 402
<b>Subsectors of the ICT sector</b>			
<b>ICT manufacturing, total</b>	<b>1 054</b>	<b>1 172</b>	<b>1 293</b>
Manufacture of electronic components	498	569	573
Manufacture of ICT equipments	556	603	721
<b>ICT services, total</b>	<b>21 982</b>	<b>22 359</b>	<b>25 008</b>
Computer programming, consultancy and related activities	17 624	18 644	20 583
Other industries of ICT services	4 358	3 714	4 425

**Chart D.11 R&D expenditures in the ICT sector in Czechia**



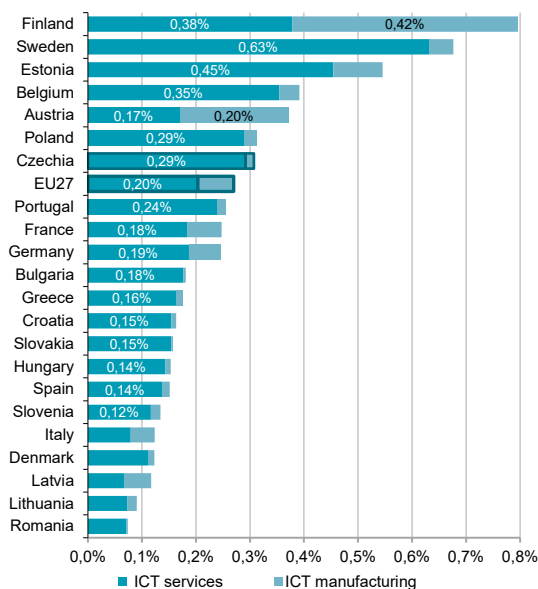
**Chart D.12 R&D expenditure in ICT sector in Czechia by industry**



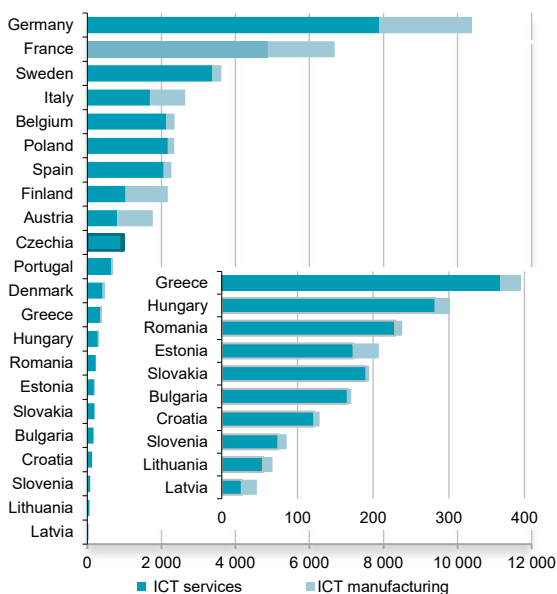
Source: The Czech Statistical Office, Annual R&D survey

## Chapter D: ICT research and development

**Chart D.13 R&D expenditures in the ICT sector in 2023**  
(% of GDP)



**Chart D.14 R&D expenditures in the ICT sector in 2023**  
(EUR million)



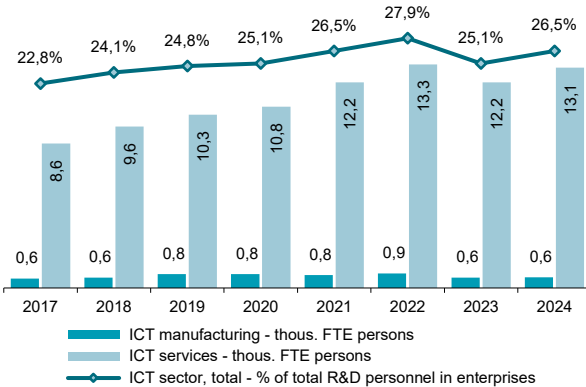
Source: Eurostat R&D Database and Czech Statistical Office own calculations

## Chapter D: ICT research and development

**Table D.6 R&D personnel in the Czech business enterprise ICT sector - R&D personnel in the ICT sector**

	Full Time Equivalent Numbers (FTE)		
	2022	2023	2024
<b>Total</b>	<b>14 132</b>	<b>12 826</b>	<b>13 702</b>
men	11 911	10 912	11 613
women	2 221	1 914	2 089
<b>Size group of enterprises (employees)</b>			
Small enterprises (0-49)	2 588	2 672	2 527
Medium enterprises (50-249)	2 779	2 574	2 814
Large enterprises (250+)	8 765	7 580	8 361
<b>Ownership of enterprises</b>			
Domestic-controlled enterprises	6 070	5 056	5 631
Foreign-controlled enterprises	8 062	7 770	8 071
<b>Subsectors of the ICT sector</b>			
<b>ICT manufacturing, total</b>	<b>857</b>	<b>620</b>	<b>630</b>
Manufacture of electronic components	350	154	177
Manufacture of ICT equipments	506	466	453
<b>ICT services, total</b>	<b>13 276</b>	<b>12 206</b>	<b>13 072</b>
and related activities	10 947	10 327	10 849
Other industries of ICT services	2 329	1 879	2 224

**Chart D.15 R&D personnel in ICT sector in Czechia**



**Chart D.16 R&D personnel in ICT sector in Czechia by industry**

