

A ICT Infrastructure

This chapter examines trends in the available **telecommunication and internet infrastructure** measured by number of telephone and broadband subscriptions. Data used in this chapter has been collected from the telecommunication and internet service providers (supply side) and should be distinguished from data based on ICT users' surveys (demand side).

Reference period: end of the year

Definitions:

- **Fixed telephone subscription** refers to a natural person or legal entity connected to the public switched telephone network (PSTN) including usage of IP telephony (VoIP technology). Number of fixed telephone subscriptions is measured as a number of active **fixed telephone lines (PSTN lines)** and **VoIP fixed line subscriptions (VoIP lines)**.
- **Mobile telephone subscription** refers to a natural person or legal entity connected to a public mobile telephone service that provides access to the PSTN using cellular technology and offering voice communication. Number of mobile telephone subscriptions is measured as a number of active **SIM cards**. Both **postpaid** and active **prepaid** SIM cards which have been used during the last three months are included.
- **Broadband subscription** includes both **fixed** (wired or wireless) and **mobile** access to the Internet with nominal speed 256 kbit/s or more, in one or both directions.
- **Fixed (wired) broadband subscription by technology** includes:
 - **xDSL** line which is a technology using digital subscriber line (DSL) and enabling connectivity over ordinary copper telephone lines. It includes all DSL lines such as ADSL or VDSL.
 - **Cable modem (CATV)** which stands for an internet service using a modem attached to a Hybrid Fiber Coaxial wiring originally developed to carry television signals (cable television network). *Like xDSL, broadband cable provides a continuous connection with an ISP.*
 - **Fibre (FTTx)** which means an optical connections of the type of FTTH (Fibre to the Home), when the optical fibre takes the optical connectivity to the dwelling, and FTTB (Fibre to the Building), when the optical fibre takes the optical connectivity to the building only and indoor the connection is distributed by other means.
- **Fixed (wireless) broadband subscription (FWA)** is a terrestrial internet connection by means of a radio system both in licensed frequency bands (e.g. WiMAX) and in frequency bands with no licence required (Wi-Fi). It is characteristic by placing of the end point device on a fixed location. *It is included only if these services are used as the transport mechanism of the Internet service provider (ISP).*
- **Mobile broadband subscription by technology** includes:
 - **Standard 3G** subscription via **SIM cards** (only active use),
 - **Dedicated data** subscription based on 3G (CDMA or UMTS) or 4G (LTE) standards offered separately from voice services, either as an **add-on data package** to voice service via **SIM cards** or a **standalone service** using **data cards or mobile access sticks** such as USB modems, dongles or keys integrated usually into portable PCs or tablets for continuous connection with an ISP.

Statistical information from the **Czech Telecommunication Office** (<http://www.ctu.eu>) has been used as main data source for the Czech Republic. Data for registered domains has been obtained from www.nic.cz.

International comparison data has been taken from **ITU online database** and **database of the European commission**. More information can be found at: <http://www.itu.int/ITU-D/ict/> and <http://ec.europa.eu/digital-agenda/en/digital-agenda-scoreboard>.

For further information on ICT infrastructure see:

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

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Tab. A1 Fixed telephone network in the Czech Republic

	thous./ mil.		
	2011	2012	2013
Fixed telephone subscriptions - PSTN lines (thous.)	1 683	1 515	1 258
Residential	888	765	649
Business	778	735	596
Public payphones	17	15	13
Fixed telephone subscriptions - VoIP lines (thous.)	579	617	738
Residential	319	354	362
Business	260	263	376
Outgoing telephone traffic - PSTN lines (mil. minutes)	2 148	1 890	1 647
Domestic	2 028	1 786	1 553
International	120	104	94
Outgoing telephone traffic - VoIP lines (mil. minutes)	546	527	.

Figure A1 Fixed telephone subscriptions - PSTN lines

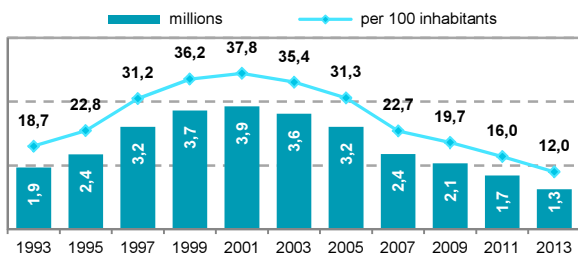


Figure A2 Fixed telephone subscriptions (millions)

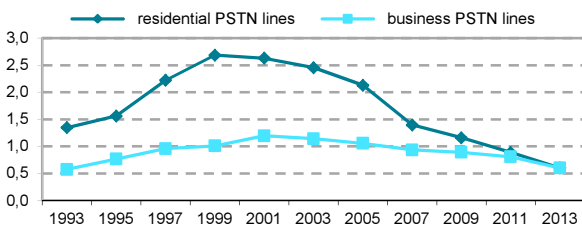
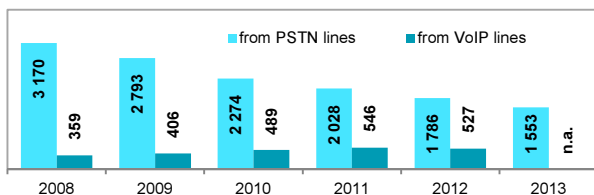


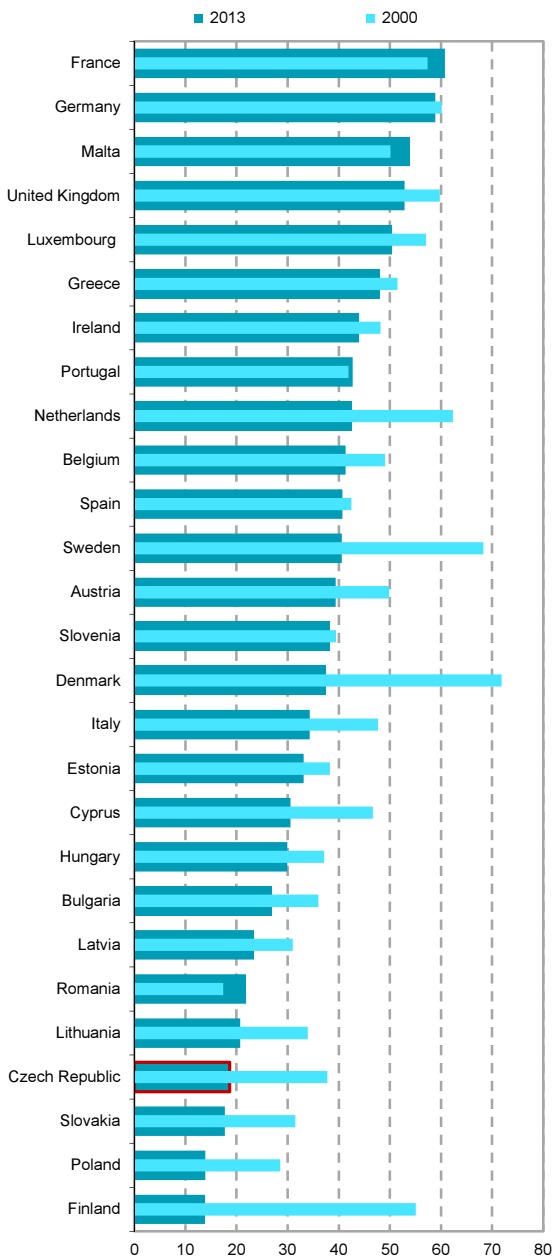
Figure A3 Domestic fixed telephone traffic (mil. minutes)



Source: Czech Telecommunication Office

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Figure A4 Fixed telephone subscriptions per 100 inhabitants



Source: International Telecommunication Union

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Tab. A2 Mobile telephone network in the Czech Republic

thous./ mil.

	2011	2012	2013
Mobile telephone subscriptions (thous. active SIM cards)	13 521	13 506	13 979
Prepaid cards	5 408	5 358	5 763
Postpaid cards	8 113	8 148	8 216
Outgoing mobile phone traffic (mil. minutes)	15 541	16 169	18 066
Domestic	15 209	15 862	17 704
International	332	307	362

Figure A5 Mobile telephone subscriptions

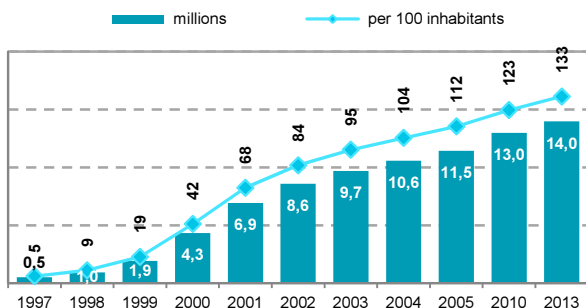
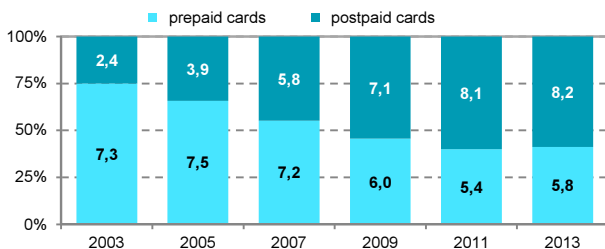
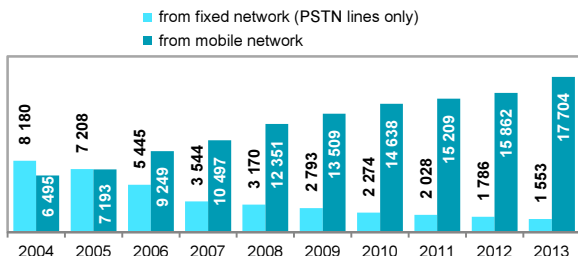


Figure A6 Postpaid and Prepaid SIM cards (millions, %)



*Since the year 2009 only prepaid cards generating any revenue in the last 3 months are included - before it was in the last 13 months.

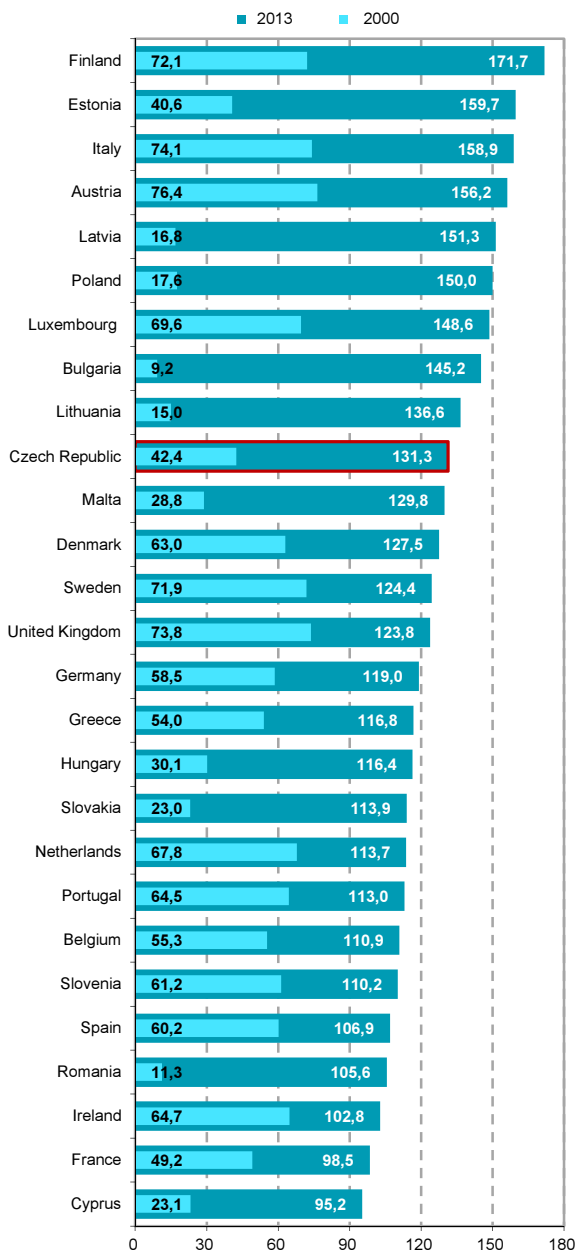
Figure A7 Domestic outgoing telephone traffic (mil. minutes)



Source: Czech Telecommunication Office

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Figure A8 Mobile phone subscriptions per 100 inhabitants



Source: International Telecommunication Union

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Tab. A3 Top-level domains in th Czech Republic

	thous.		
	2011	2012	2013
Total number of registered domains .cz	881	1 010	1 100
of which with a security extension (DNSSEC)	300	381	408
by IP protocol			
IPv4 domains	786	843	870
IPv4+IPv6; IPv6 domains	95	167	230

*DNSSEC is a security extension of common Domain Name Systym. See: http://en.wikipedia.org/wiki/Domain_Name_System_Security_Extensions
Internet protocol version 4 (IPv4) and Internet protocol version 6 (IPv6):
<http://en.wikipedia.org/wiki/IPv4> and <http://en.wikipedia.org/wiki/IPv6>*

Figure A9 Registered domains .cz

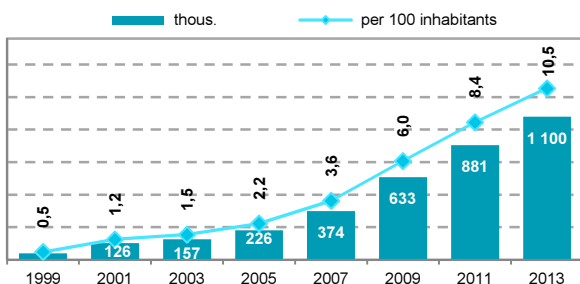


Figure A10 Changes in number of domains .cz (thous.)

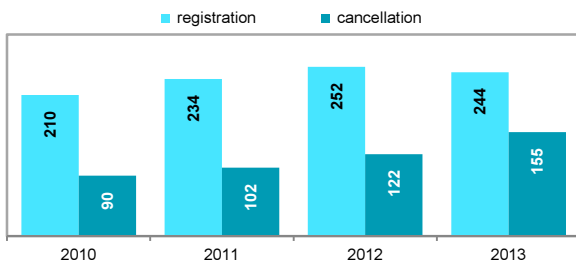
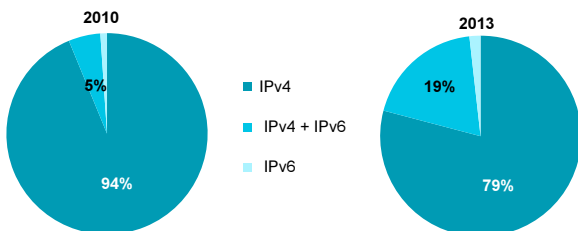


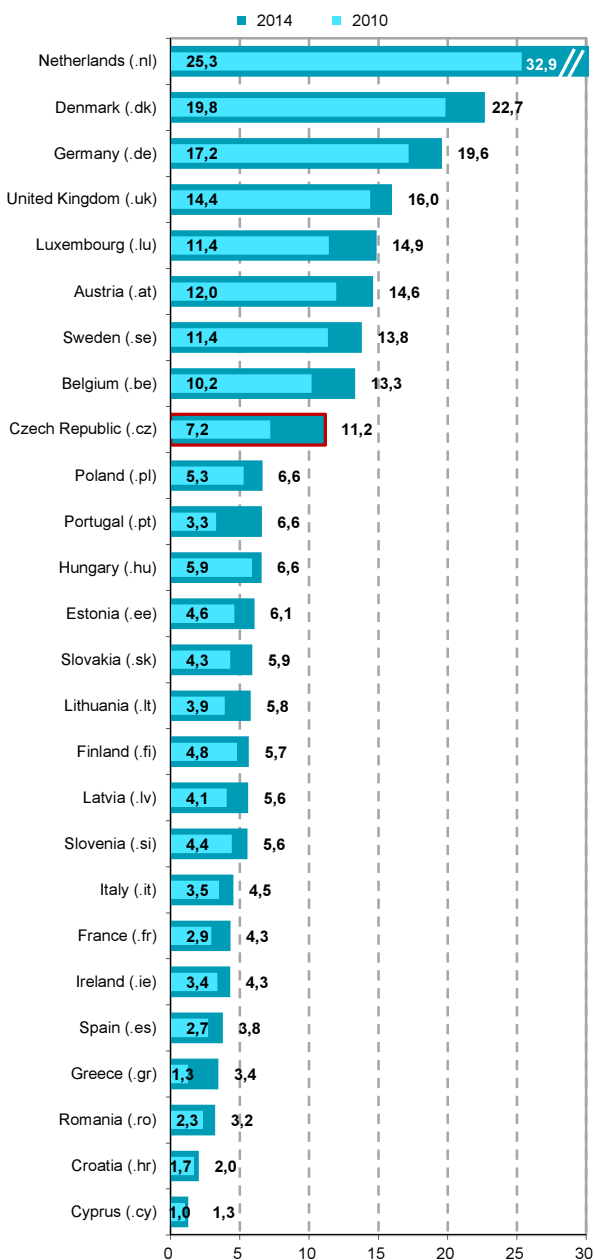
Figure A11 Domains .cz by IP protocol



Source: CZ.NIC

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Figure A12 Country code top-level domains (ccTLD) per 100 inhabitants



Source: CENTR.org and national administrators of ccTLD

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Tab. A4 Broadband internet network in the Czech Republic

	2011	2012	2013
	thous.		
Fixed broadband subscriptions, total	2 885	2 776	2 885
xDSL line	918	952	953
Cable (CATV)	516	524	518
Fibre (FTTx)	235	299	368
Fixed wireless access (WiFi)	847	1 001	1 046
Mobile broadband subscriptions, total	4 569	4 643	5 601
Dedicated data subscription*	1 931	2 780	4 149
Standard mobile subscription**	2 638	1 863	1 452

* Subscriptions to dedicated data services over a mobile network which are purchased separately from voice services either as a stand-alone service (modem/dongle) or as an add-on data package to voice services which requires an additional subscription.

** It is typical voice subscription via SIM cards which also provide access to the Internet but is not purchased separately - only active use.

Figure A13 Fixed broadband subscriptions

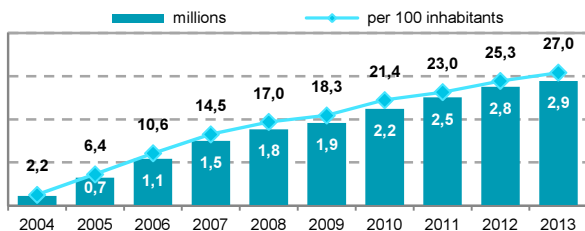


Figure A14 Fixed broadband subscriptions by speed

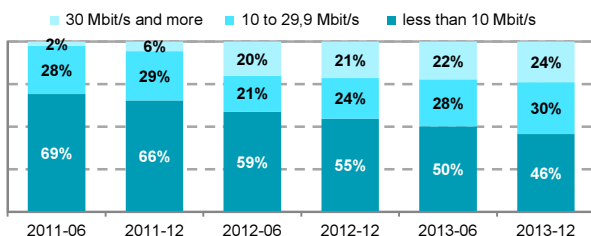
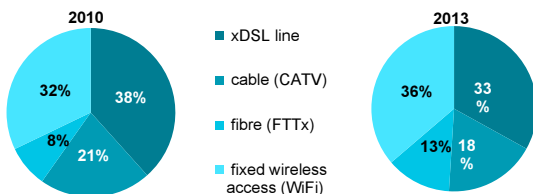


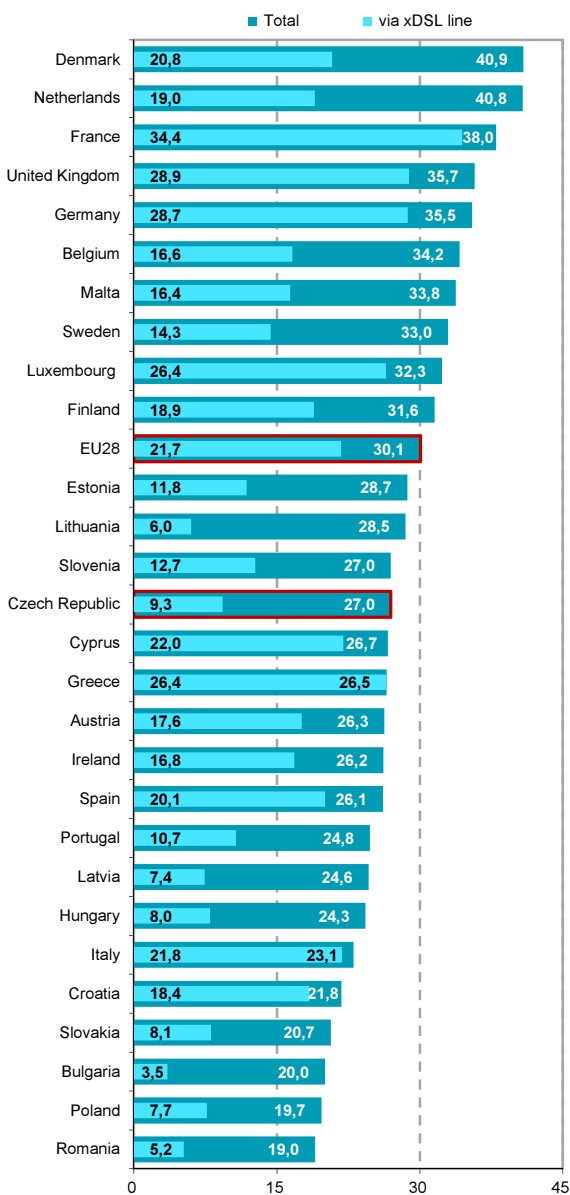
Figure A15 Fixed broadband subscriptions by technology



Source: Czech Telecommunication Office

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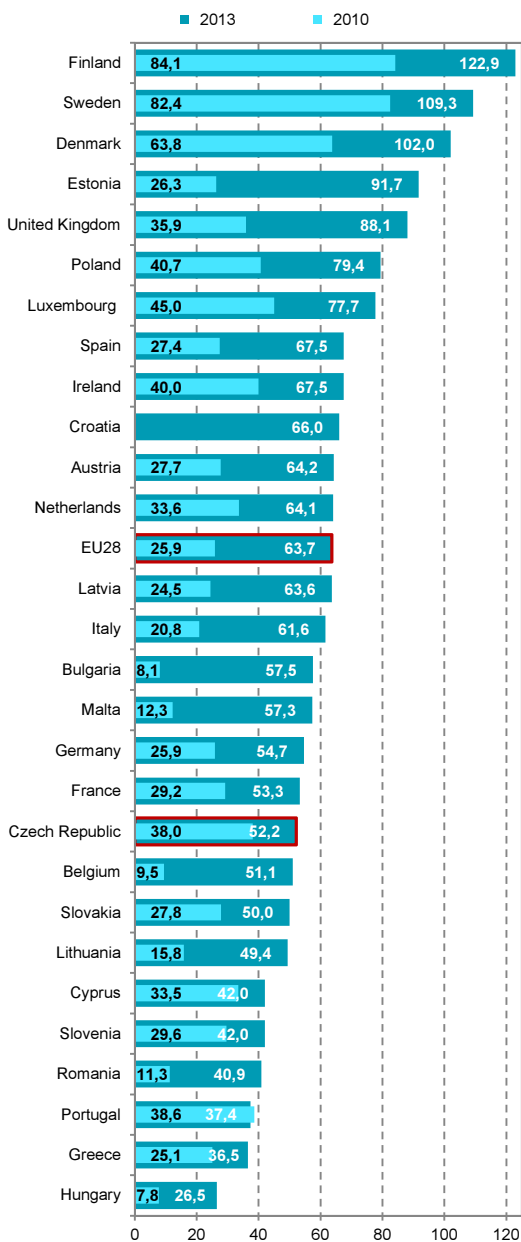
**Figure A16 Fixed broadband subscriptions*
per 100 inhabitants; 2013**



* It includes also terrestrial fixed wireless connection via radio lines based on WiFi technology.

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Figure A17 Mobile broadband subscriptions per 100 inhabitants



Source: European Commission