

E-COMMERCE IN THE CZECH REPUBLIC 2000

GENERAL INFORMATION

Area: 78,886 sq.km
Population: 10.3 million
Time zone: GMT+1, summer time GMT+2

Exchange rate:
 1 USD = 41,5 CZK, 1 EURO = 35,4 CZK
 (October 17, 2000, CNB)

Economy	1999	2000 estimate
GDP growth:	0.2%	2.5%
Inflation:	2.1%	3.8%
Unemployment:	9.4%	9.1%
GDP per capita:	USD 5,153	

Research and Development	1998
R&D employees:	51,200
Expenditures on R&D:	CZK 22.8 bill
R&D expenditures/GDP:	1.26 %

E-business-readiness rankings
 (Economist Intelligence Unit, August 2000):
 31 out of 60 countries

Business environment ranking
 (Economist Intelligence Unit, April 2000):
 7.07 – score out of 10 (6.5-8 = good)

Connectivity rating
 (Pyramid Research, August 2000):
 5 out of 10

THE WORKFORCE

Education

The Czech Republic has a well-educated population with a significant percentage of people holding technical degrees. By European standards the wages for these technically skilled workforces are relatively inexpensive.

Structure of labour force by education	1998
Elementary	10%
Secondary	80%
University	10%

Total number of students (1997/98)

matriculated - 162,373
 graduates - 22,934

Students IT (1997/98)

IT-matriculated - 45,642
 IT-graduates - 4,847

There are app. 5,000 IT-graduates every year. About 10% of the population is highly computer literate.

Average monthly wages (2Q2000)

avg. for CR:	13,000 CZK
computer and related activities:	24,000 CZK
financial services:	22,000 CZK
research and development:	21,000 CZK
telecommunication:	19,000 CZK

Source: Ministry of Labour & Social Affairs



INTERNET USERS

How many are there?	1998	1999	May 2000	
	%	%	%	people
Internet users *)	5.0%	8.4%	15.2%	1,237,000
People with internet connection at home	1.1%	2.2%	4.7%	388,000
People with PC at home (**)	12.8%	14.7%	24.9%	2,000,000

Sources: GfK, Czech Internet Monitor, MML-TGI, Median

*) users - population from 15 age old, **) 930,000 households with PC in May 2000

Between 1998-2000, the number of internet users has grown by 239%. Approximately 500,000 people use the internet more than once a week.

Another 750,000 use it no more than once a week. (Deloitte&Touche, Markent, April 2000)

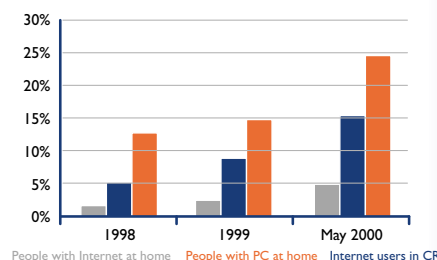
The lower prices and new sales strategies for PCs, especially the introduction last year of installment payment plans for computers with internet access, has led to an increase in the number of home PCs.

A fourth of all Czechs had access to a computer at home by mid-2000, compared to about 15% last year.

A government intends to support this development. An amendment to the income-tax act is in first reading in Parliament now.

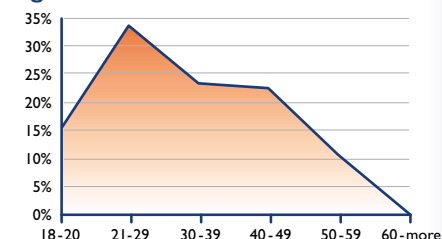
It would allow a personal tax deduction for the purchase of an internet-ready home PC in 2001-2004.

PC ownership, on-line use



Sources: GfK, Czech Internet Monitor, MML-TGI, Median

Age of Czech Internet users



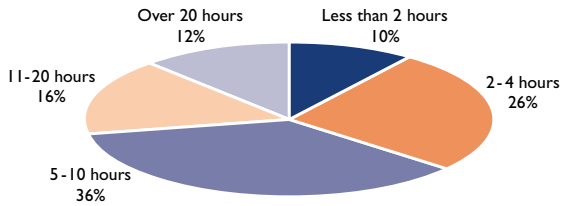
Sources: Deloitte&Touche, Markent (May 2000)

INTERNET USERS

A typical Czech Internet user is a man 21 - 29 years old holding university degree with Internet access at work.

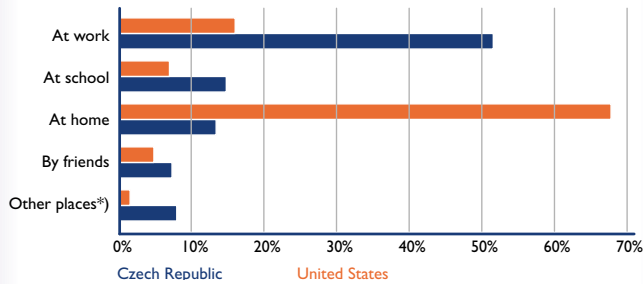
Source: Deloitte&Touche, Markent, May 2000

Time spent on Internet (weekly average)



Source: FAST VUT, Direct Net Consulting (Oct 1998)

Access to Internet



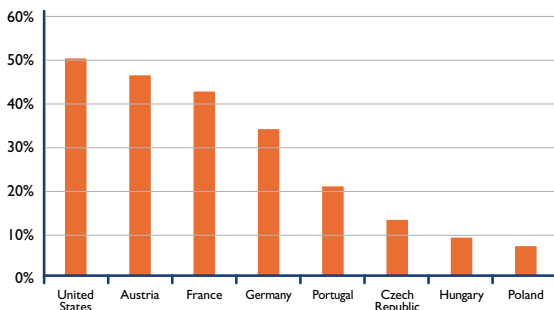
Source: Markent, AC Nielsen (April 2000)

*) library, Internet cafe

Only 15% of Czech Internet users have access to the Internet at home, in comparison to 69% of users in the USA. The access charges are still too high and the majority of Czech households still don't have PC's. Households connected to the Internet have monthly earnings higher than 50,000 CZK.

Source: Deloitte&Touche, Markent, May 2000

Households with PC (%)



Sources: Euromedia (May 2000)

Business Internet Users

Czech companies regard e-business as very important:

- * 88% of the 100 biggest Czech companies have a web site
- * 86% of Czech CEOs consider expanding e-business important to remain competitive
- * 76% of Czech companies use Internet primarily as a marketing tool, they have not revenues from e-business

Source: Pricewaterhouse Coopers (January 2000)

Medium- and large sized companies on the Internet market in CR

- * 61% of companies have web site
- * 40% of Czech employees have access to e-mail
- * 37% of employees have web access
- * 30% of companies with an Internet connection use a leased line

Source: IDC (July 1999)

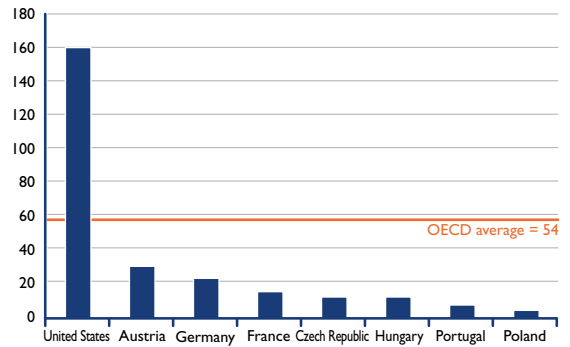
International Internet bandwidth (Mbps)

United States	28 308
Germany	11 612
France	9 687
Austria	979
Ireland	239
Czech Republic	177

Source: OECD (March 2000)

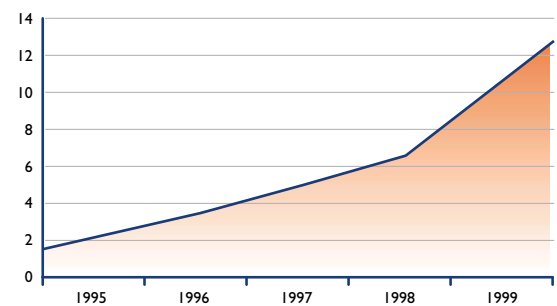
INTERNET INFRASTRUCTURE

Internet hosts per thousand inhabitants



Source: OECD (September 1999)

Internet hosts per thousand inhabitants in the CR



Source: OECD (March 2000)

Internet hosts under top level domain .cz: 130,000 (October 2000)

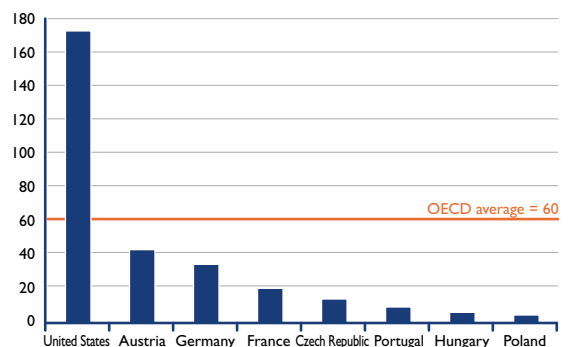
Source: Netsizer

Internet hosts per thousand access lines

	Sept 1997	Sept 1998	Sept 1999
Czech Republic	14.6	20.1	28.9
OECD average	45.3	69.9	116.6
USA	93.0	146.3	247.4

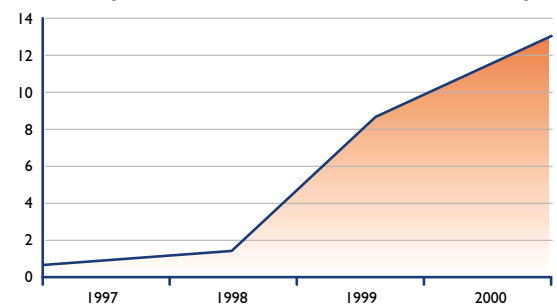
Source: OECD (2000)

Secure servers per million inhabitants



Source: OECD (March 2000)

Secure servers per million inhabitants in the Czech Republic



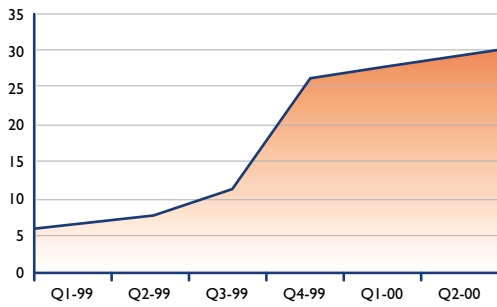
Source: OECD (March 2000)

Secure servers in the Czech republic (March 2000): 133

Secure servers per million inhabitants: 13

E-COMMERCE

On-line sales (CZK million)



Source: Deloitte&Touche

On-line revenues increased four-times in the year 1998 and six-times in the year 1999. Revenues of on-line shops reached CZK 57.4 million in the first half of 2000, an year-on-year increase of 512%.

The on-line shopping revenues in the chart are from 15 biggest "pure" on-line shops. Their main sales channel is the Internet and are targeted exclusively at CR-based customers. The published revenues of Czech pure-play e-shops are a low range estimate of this sector.

The annual turnover of hybrid e-tailers exceeds the pure e-shops by more than 10-times. (e.g. Skoda Auto, Compaq...)

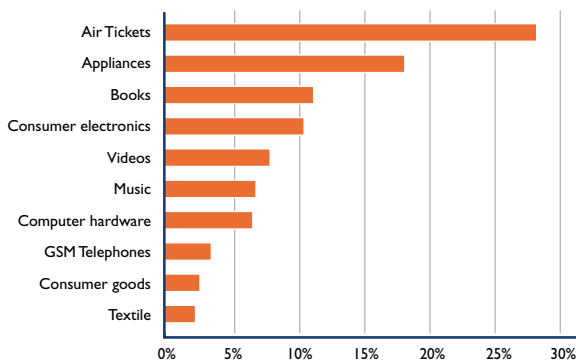
Revenues of on-line shops (CZK million)	1999	2000 est.
Pure on-line shops *)	46.2	237
e-shop **)	300	600

Source: *) Deloitte&Touche, **) GfK agency

CS First Boston predicts that the e-commerce market in the Czech Republic will grow in value from USD 6 million (CZK 210 million) in 1999 to USD 3 billion (CZK 100 billion) by 2005, with biggest growth expected in 2001-2.

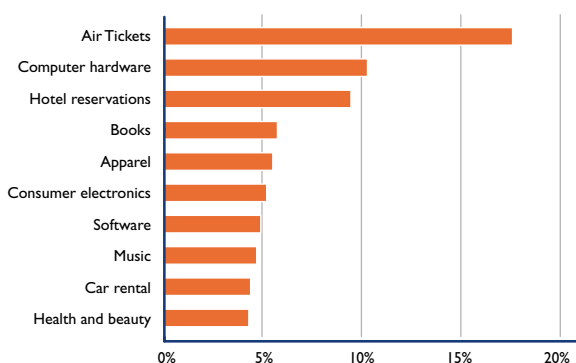
Top commodities sold on-line in the Czech Republic

The first half of 2000 marked the first time a service (the sale of airline tickets) topped the sales chart.



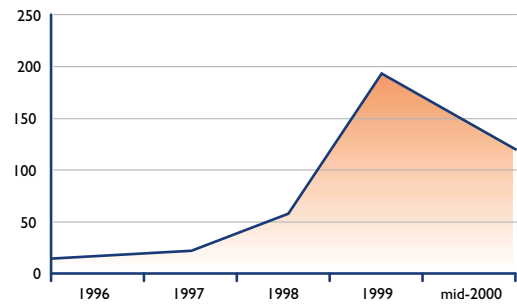
Source: Deloitte&Touche (1st half of 2000)

Top commodities sold on-line in the United States



Source: National Retail Federation (1st half of 2000)

Number of new on-line shops



Source: GfK, Incoma

Number of on-line shops by June 2000 (GfK, Incoma): 420

Advertising on the Internet

77% of advertising agencies buy on-line ads for their customers. (Arbitron Information Services)

	1998	1999	2000 est.
Expenditures for internet advertising (mil CZK)	30	55	100

Source: IP Praha

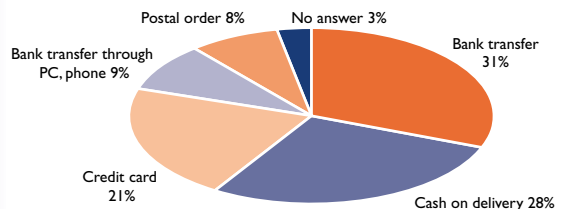
Expenditures for Internet advertising were 0.4% of total advertising budget in the CR and 2.6% in USA in 1999. (Internet Advertising Bureau)

Most important factors for choosing on-line shop

	% of users
Guarantee service	73%
Prices of products	66%
Good experience	65%
Well-designed, easy to use site	64%
Interactivity	58%
Delivery time	51%
Variety of products	50%

Source: GfK, Incoma (June 2000)

Payment for on-line shopping



Source: GfK, Incoma Research (June 2000)

The barrier against widespread trade over the Internet is a lack of secure electronic payment systems. The most common ways of payment for e-shopping are bank transfer or cash on delivery. The second reason is a low number of credit cards. About 35% adults (above 15 years) have some kind of payment card, 10% have international credit cards.

Portals

1) Seznam (www.seznam.cz)

The most popular directory Seznam and search engine Kompas, news, on-line maps. Lycos Europe has a 30% stake in Seznam.

2) Atlas (msn.atlas.cz)

Local operator of the Microsoft Network (MSN) in the Czech Republic. Atlas announced investment from EPIC Holding.

3) Centrum (www.centrum.cz)

NetCentrum operating Centrum announced investment from Baring Communications Equity Emerging Europe and Intel Capital.

Popular e-shops:

www.cybex.cz	letenky.extrem.cz	www.patro.cz
www.dvdexpress.cz	www.musicabona.com	www.shop.cz
www.flowers.cz	obchod.stranky.cz	www.shop.culture.cz
www.istore.cz	www.obchodni.dum.cz	www.spotrebak.cz
www.kosmas.cz	www.pameti.cz	www.vltava.cz

ELECTRONIC BANKING

The expansion of the direct banking services - allowing consumer access to his account without visiting the bank - is a significant trend in the Czech Republic. An estimated 293,600 consumers used direct banking services in 1999, a number four times greater than that of the previous year. Most banks operating in the country either have or intend in the near future to launch electronic banking services.

Direct banking services in the Czech Republic as of December 1999

Service	Year of launch	Number of banks	Banks intending to introduce the service
Call-banking	1996	12	5
Home-banking	1990	27	2
GSM banking	1998	3	9
Internet banking	1998	3	17

Source: CNB

Call-banking is the simplest form of direct banking close to electronic banking. It involves the consumer communicating by phone with a bank employee.

Home-banking involves phone or leased line between the consumer's PC and the bank and allows selected operations to be performed without the assistance of the bank's employees.

Internet banking and GSM banking involve the client becoming a part of the bank's system through a PC or mobile phone connected to the Internet or the GSM network.

Special project on promotion of e-commerce & e-banking

Expandia Bank launched the project eCity in September 1998. eCity, a first virtual city in the CR, attracted 80,000 visitors to play a game teaching them e-commerce principles.

By October 1999, the virtual e-city has become a real shopping place, where the clients can buy goods through their account in the Expandia bank.

Shopping in the eCity is safe thanks to the guaranteed commercial zone. The ordered goods are distributed from the eCity central warehouse, within 2 working days.

A three-day period for checking (and possible return) of goods follows and only then the money transfer of the customer's money to the seller's account takes place. (www.ecity.cz)

Payment cards

Payment cards of the two international payment systems Europay/MasterCard and Visa are the most common in the Czech Republic. They are issued by most of banks and are accepted of most restaurants, hotels and shops.

	1997	1998	1999
Payment cards, total	1,484,484	1,852,765	2,791,024
of which:			
International credit cards	115,990	202,549	858,937
electronic purses	2,892	21,215	236,089
cards using PIN only	580,545	523,019	481,404

Source: CNB

In the Czech Republic is an integrated network of ATM's. Banks operated 1,447 ATMs in 1999.

There were a total of 65.7 million cash withdrawals from ATMs. The number of direct payments is only about 6% of the number of ATM withdrawals.

Domestic courier services for e-commerce

Courier services are provided in the country by the following companies:

Ceska posta	www.cpost.cz
Cesky kuryr	www.ceskykuryr.cz
Deutsche Post	www.deutschepost.cz
Direct Parcel Distribution	www.dpd.cz
DHL International	www.dhl.cz
FedEx	www.fedex.cz
Globus Car	www.globuscar.cz
Professional Parcel Logistic	www.pppl.cz
United Parcel Service	www.ups.com

Average time of delivery is 24 hours (or next working day).

INTERNET SERVICE PROVIDERS

There are 19 ISPs with international connectivity, which cover majority of the market. Another 350 regional sub-ISPs, which resell services of large ISPs, are on the market. These provide internet access for local calls.

There are 164 cities with Internet dial-up access in the Czech Republic (as of August 2000). (www.profit.cz/mestasp)

Local Peering

The association of Internet Service Providers NIX.CZ has constructed a Neutral Internet Exchange node called NIX.CZ in the Czech Republic, which interconnects the Internet networks of the individual Czech providers. Contacts on leading ISPs is available on www.nix.cz (members of NIX.CZ)

Prices

Providers get special calculated commission from a monopoly operator Cesky Telecom between 5 – 25% of the amount, which the end users pay in their phone bills for the connection. Internet users can use preferential tariffs of Czech Telecom for dial-up (Internet 2000) but it brings some savings only for longer calls and calls out of peak time.

Dial-up Internet-access

The price is composed of ISP charge and PSTN charge

ISP charge for Internet connection: average CZK 500/month. Internet On Line (Cesky Telecom) offers price for internet access of CZK 490 per month for 64 kb/s. Three of ISPs (Czech On Line, Contactel and World Online) provide free Internet connection for dial-up account.

PSTN charge = call costs according to tariffs of Cesky Telecom (Internet 2000 - preferential tariffs - price for 60 minutes in peak time CZK 55 in off-peak time CZK 16).

Czech Telecom announced that the price of Internet connection as of next year will be a flat rate or the price will be based on volume of data transferred.

Cable access

Internet services provide also cable TV operators. Dattelkabel and GTS are offering unlimited Internet access for CZK 500 per month for 64 kb/s, CZK 3,000 for 128 kb/s and CZK 5,000 for 256 kb/s.

Connection via leased line and wire-less connection

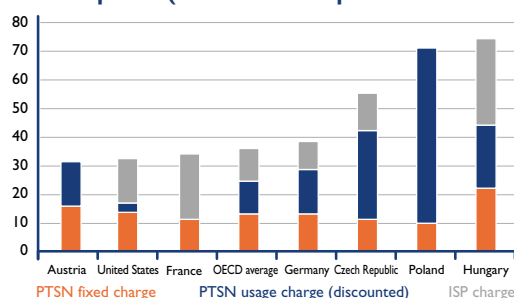
The price vary from types of service and connection speeds.

- * 64 kb/s costs approximately 13-20,000 (USD 350-500).
- * 128 kb/s costs approximately 25-45,000 (USD 625-1,125).
- * 256 kb/s costs approximately 50-70,000 (USD 1,250-1,750).

Domain name .cz

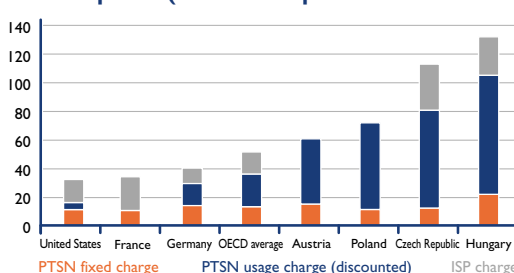
Administrator of second level domain names under the .cz superior level domain is association CZ.NIC (www.nic.cz). The price for establishment and the first registration of the domain name for 1 year is CZK 1,600 and the price for renewal of domain name registration for each additional year is CZK 800.

Internet access prices (20 hours at off-peak times in USD PPP)



Source: OECD (2000)

Internet access prices (20 hours at peak times in USD PPP)



Source: OECD (2000)

CONNECTIVITY INFRASTRUCTURE

LIBERALIZATION OF INFRASTRUCTURES

Public telecommunication network

- for public voice telephony monopoly until 2001
- data and non-public telephony liberalized

Local networks for voice telephony partially liberalized (license is needed)

Leased lines liberalized

Alternative infrastructure

(Highway, railways, electricity utilities) partially liberalized (can be built on private premises only)

Cable TV partially liberalized

(only registration needed)

Satellite communications open, but no connection with

public phone network

FWA - Fixed wireless access (wireless local loop licence)

Czech Telecommunication Office opened a public tender for three licences in the 26 GHz band (FWA) on June 2000. These licences cover the building and operation of countrywide P-MP (point-to-multipoint) access networks. Current operators of countrywide mobile and fixed public voice networks were excluded from this tender. The tender for licence won BroadNet Czech, Gity/Star One and Nextra Wireless.

UMTS licences

Ministry of Transport and Telecommunications set out the plan for awarding future UMTS on June 2000. Three UMTS licences will be awarded to the three current mobile operators for a fixed price, established by the government to cover administrative costs and include a surcharge. A public tender would only be instigated if one of the current operators were not to be willing or able to accept the new licence. The three UMTS licences should be issued as of January 2002.

FIXED LINES

June 2000	Number of phone lines	Number of phone lines per 100 inhabitants
Conventional lines	3,851,000	37
- business	1,172,000	
- residential	2,679,000	
64k ISDN lines	86,000	1

Source: Cesky Telecom

Public pay phones: 30,000 (June 2000) (Cesky Telecom)

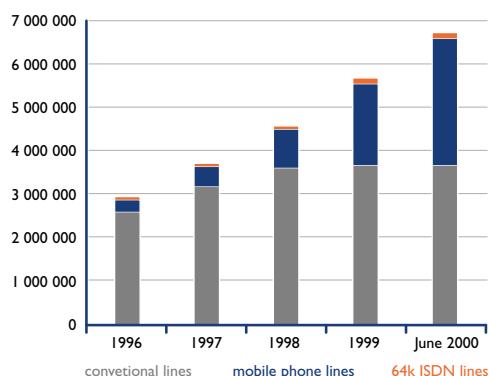
Paging service subscribers: 17,400 (1999) (Pyramid Research)

Penetration of phone lines in households: 72% (June 2000)

Network digitization: 81% (June 2000)

The digitalization of the full wire network is expected to be finished by the end of 2002.

Telephone lines



Source: Cesky Telecom

MOBILE PHONES

The mobile communications market

was liberalized in 1996. Three network operators are on the market

1. EuroTel - It holds a nation-wide exclusive NMT-450 license for 20 years, issued in late 1990. GSM 900 operation was launched in 1996, GSM 1800 in July 2000.
2. Radiomobil - network trade name "Paegas". GSM 900 operation was launched in 1996, GSM 1800 in July 2000.
3. Český Mobil - network trade name "Oskar". Commercial operations was launched on March 2000, GSM license 1800 was awarded in October 1999.

WAP service

Eurotel and Radiomobil introduced WAP service in July 2000. The service allows customers Internet-access through WAP-mobile phones.

Citibank in cooperation with EuroTel launched the payment system Juice Pay created specifically for online purchases.

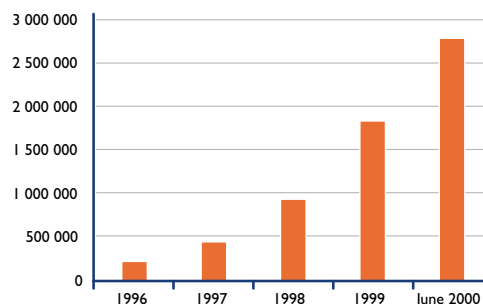
June 2000	Number of mobile lines	Share on market
- Eurotel	1,459,000	52%
- Radiomobil	1,272,000	45%
- Cesky Mobil	100,000	3%
Total number of mobile phone lines	2,831,000	100%

Source: EuroTel, Radiomobil & Cesky Mobil (2000)

Mobile phone lines/100 inhabitant: 27

Mobiles phone lines/total number of lines: 42% (June 2000)

Mobile phone lines



Source: EuroTel, Radiomobil & Cesky Mobil (2000)

CABLE TV

The largest cable operator is Cable Plus (Kabel Plus a.s.) owned by United Pan-Europe Communications (UPC), based in Amsterdam.

In January 2000, Kabel Plus was joined by Kabel Net Holding, also owned by UPC. In March 2000, UPC bought 100% of Datelkabel.

The company is building a broadband cable network. (www.kabelplus.cz)

TV sets (2000): 4,022,000

TV sets/100 inhabitants: 39

Source: Euromedia

Cable TV Subscribers (1999): 923,000

Cable TV Subscribers/100inh.: 9

Source: Pyramid Research

LEGAL FRAMEWORK

Telecommunications

A new Telecommunications Act (151/2000) provides the legislative background for opening the telecommunications market to competition by January 2001 and includes the European Union legislation, with significant exceptions, however. The Act requires the incumbent operator to offer call-by-call carrier selection by mid-2002, and carrier pre-selection by the end of 2002. That means, in practice, that the fixed-line monopoly is prolonged for another two years. Market entrants will have to find other ways for reaching their customers (building wireless local loops, laying new copper, using cable TV etc.) during this period. The full liberalization of the telecommunications market therefore begins in 2003.

Electronic signature

Czech Act on Electronic Signatures (227/2000) came into effect as of October 1, 2000. The Act implements to a great extent EU directive (1999/93), which should be implemented by all EU members no later than July 2001. Czech legislation regard electronic signatures as the legal equivalent to written signatures. Acceptance of e-signatures (based on qualified certificates) allow communication with Czech public authorities via Internet. It will also allow the conclusion of written contracts without paper.

Goods purchased on Internet

A Civil Code amendment requires Internet retailers to provide the name of their company, address, ICO, product information, and the full price. The amendment also make it possible for consumers to return any purchased goods on Internet, catalogue or door-to-door sales, within two weeks for any reason.

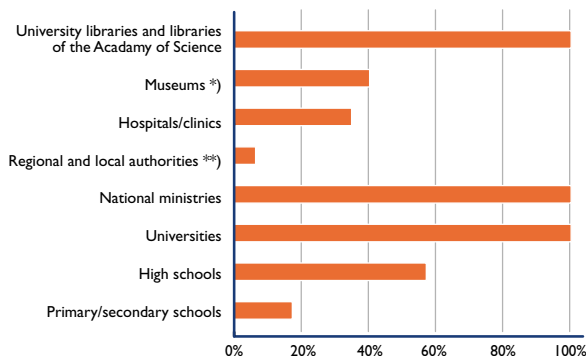
Data Protection, Consumer Protection

- * Personal Data Protection Act and Consumer Protection Act were enacted by June 2000 (101/2000). This new law puts personal data protection in line with the newest EU requirements.
- * Office for the Protection of Personal Data (required by the new Act) was established in June 2000.
- * The Czech Republic has signed and ratified the European Convention for the Protection of Human Rights and Fundamental Freedoms. It has adopted the OECD Guidelines on the Protection of Privacy and Trans-border Flows of Personal Data.
- * Czech Government has signed and ratified the international Agreement on protection of persons with respect to automated processing of personal data ETS No. 108

Freedom of expression and information

According to Law on the Right to Information (106/1999) all information possessed by state and local authorities is public except where explicitly stated by other valid legislation (e.g. trade secrets, personal data).

Public institutions on-line (in %)



Source: ESIS (June 2000)

*) The basic information about all museums and galleries are available on www.cz-museums.cz

***) The basic information about all towns and villages are available on www.mesta.obce.cz

GOVERNMENT ORGANIZATIONS

Ministry of Transport and Communications (www.mdcr.cz)

It is responsible for telecommunications policy and regulation, except for the regulation of domestic tariffs. A body within the ministry is Czech Telecommunication Office.

Ministry of Finance (www.mfcr.cz)

It is responsible for approval of domestic tariffs.

Czech Telecommunication Office (www.ctu.cz)

(A part of the Ministry of Transport and Communications) It is the national regulatory authority. The Czech Telecommunication Office is responsible, in particular, for regulation, tariffs and charges, international relations frequency spectrum management, protection of the rights of users and operators of telecommunication networks and services. The Czech Telecommunications Office is expected to become an independent body, responsible for license issuance and tariff policy.

Governmental Council for State Information Policy

The Council developed the State Information Policy program in 1999. This targets, in particular, the development of information systems for public administration, and the promotion of information society and e-commerce. The Council also formed an advisory body named Czech Information Forum. (www.info-forum.cz)

Office for the Protection of Personal Data (www.uouu.cz)

State Information System Office (www.usiscr.cz)

- coordinates the interconnection of all national and regional government data

Industrial Ownership Office (www.upv.cz)

Office for Protection of Economic Competition (www.compet.cz)

Governmental Intention in Education

Governmental Information Society Strategy in the Education was approved in May 2000. The budget (for IT-equipment of schools and training teachers) is CZK 7 billion over a 5-year period: CZK 1.3 billion shall be used next year. Objectives are in accordance with the European Union 'eEurope' initiative:

- * To start connecting schools to the Internet in 2001.
- * Every school should be connected to the Internet by the end of 2003. (Internet should also be available in all libraries and post offices.)
- * Information technologies should be integrated into the education process and multimedia technologies should be widely used in teaching. All students leaving school should be fully IT-literate by the end of 2004.
- * All citizens should be IT-literate by the end of 2005.

On-line activities of governmental organizations

- * Ministry of Finance is publishing on the Internet ARES database (Administrative Register of Economic Subjects), which interconnect several databases: Commercial Register (Ministry of Justice), Register of Economic Subjects (Czech Statistical Office), the Trade License Register and Register of VAT and excise taxes payers. (www.info.mfcr.cz/ares/ares.html)
- * Ministry of Interior has made an interactive Internet application search of motor vehicles publicly accessible. This will allow those purchase a used automobile to check whether the vehicle is listed in the database for vehicular theft (currently with 50,000 entries and covering the last three years) in the territory of the Czech Republic. (www.mvcr.cz)
- * All ministries have their WWW service, Government office is available at www.vlada.cz, Parliament: www.psp.cz and www.senat.cz
- * On line publishing of public tenders and auctions - Two new laws covering public tenders (Act 28/2000 Coll.) and auctions (Act 26/2000 Coll.), enacted on June 2000, require the authors of important documents such as public tenders and auctions to publish them additionally on-line at a single address on the Internet. (www.centralni-adresa.cz)
- * CzechInvest launched a database on the Internet on August 2000 of more than 1,000 Czech companies that want to act as a subcontractors to local manufactures, and also a database of industrial real estate that is available. (www.czechinvest.org)
- * The land register will be available on the Internet by the end of 2000.