

Development of High Speed Internet services in the Czech Republic

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Annotation

High-speed Internet (broadband) access is one of the strategic objectives for building an information and knowledge society. The state of development of high-speed Internet services in the Czech Republic is in many ways different compared to other developed countries and, in spite of the recent significant acceleration of development, it ranked among the bottom figures in some published statistics. This contribution deals with the current state and possibilities of broadband development in the Czech Republic in 2006.

Key words

Broadband, ADSL, CATV, WiMAX, WiFi

Introduction

The Dial-up is so far the most widespread type of Internet access and at the same time the slowest possible option. The speed is technically limited to maximum of 56 kb/s (and only in direction to the user). ISDN is not the solution either. This is now generally unsatisfactory, not only for companies but in the overwhelming majority of cases also for individual users. With such a speed one can carry out e-mail communication without large attachments, or eventually look at website presentations. Regarding the current development with size and volume of communication constantly increasing, so called **broadband**, or high-speed Internet, is gaining more significance.

High-speed Internet, more precisely high-speed access – broadband, can be defined in several ways. The commonly used definition derives from a certain minimal speed stated in kb/s and supplemented with other parameters. However, an important question is „What should this speed be enough for?“. Broadband is most often mentioned in relation to connecting a household to the Internet, nevertheless, it is also significant for companies, particularly for SMEs. In case of households there is an increasing demand for a satisfactory size in order to view movies, videoclips and music, besides mail and website. In case of companies a focus is placed rather on effective transmission depending on the number of users and also reliability. Given this fact, broadband can be generally defined as a connection, which does not restrict users by its parameters (effective transmission speed, economic convenience, reliability) in the way of using the Internet.

High Speed Internet

The National policy for high-speed access (Broadband strategy of the Czech Republic) follows the document [1] which was conceived on the basis of so called Lisbon process within EU with target horizon by 2010. This strategy was being elaborated on in 2004 and issued in the beginning of 2005, including estimations of the development for the current year. This corresponds to the initial evaluation and comparison of the situation in the Czech Republic and other EU countries. A very dynamic development of technologies in general as well as the current state of actual implementation of high-speed Internet in our country mean new opportunities, in most cases a different situation and last but not least a necessity to upgrade this strategy.

The nominal transmission speed of connection wires and transmission speed actually reached (so called effective transmission speed) belong to the key and currently discussed quantitative parameters of high-speed access. In 2006 the strategy regards the speed of 256 kb/s (as long as the effective speed is not lower than 80 % of nominal speed in the long run average) as the minimal limit of high-speed access.

With regards to the current situation in the ICT development, broadband, in wider context, above all involves the following technologies:

- ADSL,
- cable connection (cable TV),
- wireless connection,
- mobil (cellphone) connection.

Accessibility of technologies within the high-speed connection (including the cellphone) has recently been increasing. There is a very fast development (due to the competition and accessibility of technologies, prices of services are falling down and their performance is, on the contrary, increasing, often simultaneously). From February 2006 there are new prices at a number of ADSL providers, also in case of the cable Internet provided by UPC as well as Karneval Media. Moreover, there are many promotions which are trying to attract new users through the „convenient offer“ or maintain the current customers. The offer merit is, however, balanced by for example length of compulsory use of services etc.

When choosing a particular service one should always learn about the concrete and current offer:

- always different speed (download/upload) – download is crucial,
- level of activation charge,
- price for the modem (eventually other device),
- monthly flat price and general extent of included services,
- size of data limit which is free of charge (eventually unlimited data),
- possibility of additional purchase of data limit if needed etc.

As it has already been mentioned, in theory there are several kinds of high-speed access. Availability of a particular service is, however, limited in many cases, the service is perhaps even totally inaccessible. For instance the cable TV is operated only in certain areas, ADSL is not available in most municipalities, or there is a problem with accessible speed. These technologies remain practically unusable in rural areas, thus leading to the so called digital gap. This situation is being solved through a very fast development of wireless nets WiFi. Given this fact, the Czech Republic holds a unique position within EU.

While broadband is represented mainly by DSL and CATV worldwide, it is the wireless connection (WiFi) that has a very unique position in our country thanks to already mentioned reasons. Nowadays it is available in more than 3,600 municipalities, which means more than a half of towns and villages in the Czech Republic. It is clearly becoming more and more popular. The connection is provided by almost 600 companies. It is above all the inaccessibility of standard fast Internet (technological and economical in particular) together with the maturity of a number of those who are interested in high-speed access (individuals, communities, companies) that led to the current development of WiFi in our country. Nevertheless, the overwhelming majority of users has a connection of minimum of 256 or 512 kb/s.

WiFi and broadband are often discussed issues. According to some statistics there is more than a half of WiFi connection lines in the Czech Republic within the whole EU, which also means this technology is not monitored on its own but it is included in the „other“ item (the Czech Republic is completely unique in this sense). There is also a discussion whether WiFi can be involved in broadband technologies. The so far valid definition of the Ministry of Informatics of the Czech Republic, see [1], states that WiFi certainly belongs to this part and the Ministry of Informatics CZ has even allocated subsidies into this field in 2006 (it is also planned for the forthcoming years).

The Czech Telecommunication Authority is now reassessing its approach to WiFi and when evaluating the wholesale market with broadband (relevant market no.12) the WiFi connection lines are no longer included (it allegedly does not concern a substitute for ADSL). Other statistics such as those elaborated by EU or OECD, however, still consider WiFi as the broadband (because of the specific situation in the Czech Republic). If WiFi was not included in statistics, the situation in the Czech Republic would be evaluated far less favourable.

State of high-speed Internet in the Czech Republic - broadband connection lines: total of 723,000

(source: Czech Telecom, January 2006):

38,7% ADSL	(approximately 280 000 connection lines)
34,6% Wi-Fi	(approximately 250 000 connection lines)
16,6% cable TV	(approximately 120 000 connection lines)
9% CDMA	(approximately 65 000 connection lines)
1,1% other	(approximately 8 000 connection lines)

At the moment there is a significant increase in the number of ADSL connection lines, in addition to the WiFi development, when Telecom weekly installs 10,000 connection lines (thus, ADSL has already the total of 350,000 connection lines).

ADSL connection

- today there is a very wide selection of services offered by different providers (after the initial delay compared to most European countries),
- at the moment about 130 services are offered (8 large providers),
- the service is not always available (practically not at all in rural areas),
- two ADSL options:
 - ✓ via wireless local loop of Czech Telecom (so called connection via LLU) – more convenient but less accessible,
 - ✓ common ADSL distributed by Telecom – more accessible and less convenient,
- you can select parameters of services if needed (speed, data credit)

- selected parameters of services then correspond to use of options,
- cheap options have low monthly data credit,
- speed from 512/128 kb/s up to 4096/256 kb/s,
- some options use FUP (Fair User Policy).

Cable connection (cable TV)

- relatively limited access due to the situation in our country,
- usage corresponds with ADSL, eventually provides better possibilities,
- generally at least a double data credit and higher, in some cases with no limits,
- speed more or less comparable to ADSL (however, UPC offers e.g. over 10 Mb/s),
- some options use FUP.

Wireless connection

- can be a very convenient solution in some localities (rural areas, some municipal parts),
- local character (visibility requirement at the current technologies),
- transmission speed can fluctuate between a few dozens of kbit/s up to a few or dozens of Mbit/s,
- various technologies – WiFi is the most widespread,
- relatively low costs for establishment and particularly operation,
- possibility of negative influence on maintaining more nets (unlicensed zone).

Mobile connection

- suitable for those who often travel and need to be online,
- in theory it provides a full connectivity from practically anywhere,
- a different quality in relation to the current availability of the service,
- generally lower and unguaranteed speed (e.g. 237/118 kb/s),
- 4G up to 1 Mb/s on nets,
- it generally depends on technologies (GPRS, CDMA, EDGE, UMTS) and support of particular operator (Eurotel, T-Mobile, Vodafone),
- so far suitable mainly for answering emails, chat, browsing websites,
- data limits and FUP in case of most services restrict transmission of larger data volumes.

Conclusion

Compared to previous years the Czech Republic is currently showing a relatively slow pace of development of high-speed access to the Internet. Its composition is, however, different to other countries (EU, developed countries); there is also a limited offer to a great extent and there are problems to meet the demand in places where some kind of broadband is already

available. Accessibility of fast Internet in rural space in general is very unsatisfactory (there is a so called digital gap).

The year of 2006 is supposed to bring improvement in so far not a very good position of the Czech Republic, which the country holds according to some published statistics. It is above all the competition of forthcoming technologies (incl. mobile technologies) such as WiMAX, HSDPA, eventually Motorola CANOPY that should contribute to this enhancement. Czech Telecom is likely to respond to the above mentioned situation by investing into ADSL infrastructure in rural areas.

The fact that Czech Telecom has increased the monthly fee for in-home phone lines, leading to the more expensive Internet through ADSL that is necessary for the in-home phone line, is probably a step against the ADSL development. No provider in the Czech Republic offers so called Naked ADSL (NADSL), which is ADSL without voice tariff. Furthermore, the fee was raised in time when the number of ADSL installations and non-excluded applicants for installation, thus also the number of users of in-home phone lines (more precisely – current users do not cancel in-home phone line thanks to ADSL installation, leading to a reduction in the long-term decline in number of in-home phone lines) has greatly risen thanks to relatively convenient conditions.

Literature

- [1] <http://www.micr.cz/files/2060/NBBS.pdf>
- [2] <http://www.lupa.cz/clanky/stalo-se-patri-wifi-do-broadbandu/>
- [3] http://www.telecom.cz/web/cz/infocentrum/tiskove_centrum/tiskove_zpravy/ct_pripojil_k_internetu_350tis_zakazniku.html