INTERNET OPERATORS IN CZECH REPUBLIC

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1. Introduction

The Czech Republic is among those countries where Internet development is quite quick and
dynamic. The Czech Republic works under the domain .cz. A technical operator of the
domain .cz is the company Eunet Czechia, a limited liability company (LTD.).
The domain administrator is the association CZ.NIC, (“CZ.NIC”). The association is allowed
to register all domain names. There are many companies offering Internet services in the
Czech Republic.

2. Internet Operators in Czech Republic

  AT&T Global Network

This company operates a network with a capacity of 1Mb/s to 6 Mb/s. It also uses shared
network of the National Telecommunication Network. Peering with other networks is made
through NIX line 5.5 Mb/s. The international connection is secured by AT&T Ehningen and
V AT&T Portsmount at 6 Mb/s or 4 Mb/s. Majority of network knots allow the ISDN
connection.

  Bohemia.Net

Bohemia.Net belongs to slower network providers. It provides connections mainly in the
south part of the Czech Republic. The International connection is made with 2 Mb/s and
1 Mb/s lines using Global One and Ebone operators in Prague and Brno. The peering is
provided by NIX at the speed of 4 Mb/s. Majority of lines has a capacity 64-256 Kb/s.
Brno-Prague line works at 1 Mb/s.
Cesnet

Cesnet belongs to the biggest and the best maintained providers in the Czech Republic. It operates the commercial network Cesnet and the academic network TEN-155. The Cesnet works with the ATM technology that allows to get a high transfer speed. Majority of connections run at the speed of 1 Mb/s or higher. The main connection between Prague and Brno is ATM 16 Mb/s. The peering is provided through NIX at the speed of 100 Mb/s and Unet at 10 Mb/s. The International connection is provided at the speed of 16 Mb/s by Ebone. You can see the commercial network coverage at the picture bellow. The coverage of the Czech republic has a high density.

TEN-155 CZ

The network TEN-155 was launched on 11th of December 1998. It replaced the former network TEN-34. It is expected that the network will operate until December 2001. During this period transfer speeds will be increasing. It is also counted with speeding up of main lines up to 622 Mb/s. It is a part of an European network TEN-155. This network is operated by Cesnet in the Czech Republic. The Peering is provided through NIX at the speed of 100 Mb/s, the International connection is located in Prague and made by the Ebone line at 16 Mb/s. The connection to Frankfurt is 21 Mb/s and to New York 24 Mb/s. The main line has a capacity of
155 Mb/s. Majority of transfers go through lines at 24 Mb/s and up. It is an academic network. The Trans-European TEN-155 (Trans-European Network Interconnect at 155 Mbps) is a main scientific and research European network. It interconnects 16 national and 1 regional scientific and research networks.

The network is the result of the project Quantum, a part of the Fourth General Program of the European Union. The company DANTE is an official operator and provider (Francis House, 112 Hills Road, Cambridge, UK). Its partners consist of many providers of national scientific and research networks as listed below:

<table>
<thead>
<tr>
<th>Country</th>
<th>Partner</th>
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<tr>
<td>Austria</td>
<td>ACONET</td>
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<td>Slovenia</td>
<td>ARNES</td>
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<td>Belgium</td>
<td>BELNET</td>
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<td>Czech Republic</td>
<td>CESNET</td>
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<td>Germany</td>
<td>DFN</td>
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<td>Portugal</td>
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<td>Greece</td>
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<td>Ireland</td>
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<td>Hungary</td>
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<td>Italy</td>
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<td>Denmark, Finland, Island, Norway, Sweden</td>
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<td>Spain</td>
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<td>France</td>
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<td>United Kingdom</td>
<td>UKERNA</td>
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From a technical point of view TEN-155 is based on the technology ATM. That is why a high quality service and up standard services (such as video conferences) can be offered.

figure 5: Topology of European TEN-155
Contactel

Contactel does not belong to providers with a high density coverage, but due to the ATM technology it has lines at 34 Mb/s. Lines that do not work under the ATM technology run at 2 Mb/s. The International connection is ensured by Tele Danmark International at capacity of 3 x 2 Mb/s. Peering is made by the company Dattel at 2 Mb/s. An International connection is made by Ebone at 2 Mb/s in Prague.

World Online

World Online held people interest by offering free Internet connection through phone lines. It provides unlimited access to the Internet network, a free personal page up 10 MB, a free 10 MB e-mail account with a POP-3 account. This led the company into a group of ten most visited servers in the Czech Republic. Main lines provide transfers at 1, 2 and 4 Mb/s, local connections at 28.8 - 512 kb/s. The International connection is made by Ebone at 2 Mb/s in Prague. Peering is again made through NIX 10 Mb/s, Cesnet at 2 Mb/s and TEN-34 at 2 Mb/s. The direct International connection is assured by World Online at 2 Mb/s in Frankfurt.

Internet On Line

Internet On Line is run by the company SPT Telecom which is an exclusive provider of phone line services in the Czech Republic.

The main network is carried out by Internet Backbone ATM at 155 Mb/s. Peering is made by Eunet and Global One at 2 and 4 Mb/s. The Global One also provides an International connection at 6 Mb/s in Prague.

Other Companies

Some other companies are also effective in the Czech territory. They are: CZECH-NET, KPNQWesty, GIN, GTS INEC, INWay, IpNet, PVTNet, Nextra, Video On Line, Global One and other local providers without the International connection. Most of these networks has a capacity from 64 kb/s to 4 Mb/s. The company CzechBone does not run just an Internet network but a data network where optic, microwave and cable transfers are combined. This hybrid network is able to offer video, audio and data services.
3. Connection of Users

Because a density of Internet providers is high and there is a big competition in the Czech market it is relatively easy to connect to Internet through any provider. Prices depend on time of a connection or a capacity of data transfer. It costs from CZK 100-1000 for a connection through undirected lines or ISDN and CZK100-200 for an e-mail box. Because these possibilities of private connections are the most accessible they are used by a majority of people. There are many classical modems at 33.6 or 56.6 kb/s available in the Czech market. The technology ISDN is becoming more popular due to its higher transfer speed. As a result of SPT Telecom monopoly other forms of connections are being offered. These connections include radio connection, infra transfer and town networks. A transfer by electric lines is in a research process.

Higher competition brought new services for customers. Some companies offer free Internet connection without time or capacity limitations and a free e-mail box. The main problem is paradoxically not a price of Internet but a price of a connection to your Internet provider in the Czech Republic.

4. Internet on OPF

OPF SLU is connected to Internet by means of the company CESNET (CONTACTEL). There are two forms of the interface in using. Commercial way, using CESNET for services for foreign subjects. Second way is academic net, based on the ATM and that operates by means of TEN-155. Karvina is linked with those nets by means of Technical University Ostrava.

Internet can use each of students and staff on the OPF. Students study familiarization with postal prospectuses, with possibility access on Internet and fundamental technical condition operation. The tutorial scope is oriented on the preparing WWW pages, basis electronic publications; ethics problems linked with publicize. Students are introduced with fundamental using of the Internet in traffic, banking, tourists, etc. The knowledge of the Internet is complemented with Intranet using. In this case is using intent on WWW access to data servers, for example tutorial GIS.

5. Conclusion

All these factors influence positively a development and a usage of Internet in the Czech Republic. Internet is a part of life mainly for a university-educated population. An Internet trading is in a promising development. Many Czech banks offer extensive bank services through Internet. Computer labs are not only at all universities but also at majority of secondary schools. In the meantime Internet is introducing at basic schools. Most state and municipal institutions, libraries and cultural institutions have an access to Internet. That is why Internet is no longer just a source of entertainment but also an effective tool of education.

Literature