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The Expected Effects of the EU Accession on the Telecommunications and IT sector in the Czech Republic

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Introduction

The Czech Republic is one of the candidate countries that are supposed to join the European Union in 2004. This historical event is not only expected to have political, but also far-reaching economic consequences. This paper should focus on, and try to analyse those connected with the Czech telecommunications sector.

The effects of EU accession can be divided into two groups. The act of accession will cause part of the effects. These are mainly related to entering the European single market, but a number of criteria have to be met prior to the accession in the course of the negotiation process. Telecommunications can be seen as a typical example of how the accession can accelerate the transformation of a particular sector.

As a comprehensive policy has been adopted for the sector Telecommunications Act amendments have been made. "Telecommunications" was one of the first provisionally closed chapters. The EU assessed the Czech telecommunications sector positively in its first "Opinion" (1997) where it was compared to the other Central and Eastern European Countries. Although the significant progress has been made in telecommunications since that time there are still some problems left. The most essential is the role of regulatory authority.

With help from the European Union, and thanks to the character of telecommunications services, there can be seen a potential in the newly liberalised Czech telecommunications sector. Despite sentiments regarding the current situation the future privatisation of this service can be seen positively.

Current situation overview

The telecommunications sector still remains the most dynamically developing branch of the Czech economy. Today, however, the telecommunications sector is not restricted to mere conventional telecommunications such as voice transmission, as it has alternative forms, such as: mobile communications, data services and the Internet.

The development of telecommunications provides major assistance in advancing the Czech Republic towards the state of an information society.

Market overview

With the value of about EUR 2.1 billion, the Czech telecommunications market is the fourth biggest market among the European Union candidate countries. The structure of the market shows highly a developed mobile market (54% share). Data services are also well developed with a share of 6%. Although the fixed line penetration is relatively high (about 69% households have fixed lines) the share has been gradually decreasing since 1996 when the first digital mobile license was granted. This is mainly because of the dramatic increase of the mobile market (76% penetration as of June 2002).

Mobile services

Today there operate three mobile carriers in the mobile telecommunications market. The first one, Eurotel started to offer mobile services in 1992, becoming the first mobile carrier in the Czech Republic. It was followed by Radiomobil which entered the market in 1996 and finally by Cesky Mobil which began to offer its services in 2000. Mobile services in the Czech Republic are very well developed. These three operators with GSM/DCS licenses compete on the mobile market with revenues of about EUR 1,1 billion in 2001, which is also underlined by the fact that about half of the customers are post-paid. The penetration rate is reaching 76% (in comparison to 68% at the end of 2001), which is the second highest penetration rate among candidate countries and is very close to the EU average.

UMTS is also progressing as licenses were granted to the two biggest operators - Eurotel and Radiomobil. The deadline for launching 3G services is set for the beginning of the year 2005 with relatively weak obligations regarding required coverage.

Fixed line services

The state-owned telecommunication company Cesky Telecom dominates the fixed line market. It provides both voice and data services along with Internet. It also has the obligation to provide Universal Service. Although there has been free entrance for alternative carriers since 2001, competition has not yet fully developed.

Local loop unbundling has been implemented in the last months and its gains will be possible to assess later. Even though there will be nothing institutionally impeding the development of competition on the last mile, the impact is not clear. The experience of the European Union members is not satisfactory in this respect because it is usual that alternative operators are not interested in local loops and competition is not intensified. It could be caused by the revenue ratio of alternative operators. 80% of their revenues come from services offered to companies and only 20% is constituted by the residential market revenues. It is clear that households do not rank on front place in carrier's interest.

The former exclusive provider of broadcasting Ceske Radiokomunikace has already been privatised. The state-owned majority was sold in 2001 and today Ceske Radiokomunikace provides services in three principal areas: 1) telecommunication services (of a multi-functional network connected with transmission of voice, data and other signals), 2) services associated with television broadcasting, and 3) services associated with radio broadcasting (where it has retained its monopoly in the market).

It is worth noting that as Slovenia, Cyprus, Malta and the Czech Republic, the Czech Republic digitalized its fixed networks fully.

Legislation

The new Telecommunications Act¹ has been another milestone in the history of the Czech telecommunications as it has initiated a number of positive changes in the sector. It put an end to the exclusive position of Cesky Telecom on intercity and international commercial telephone market. The company lost its exclusivity on December 31 2000. The Act has also set new rules for the liberalised market.

The new Telecommunications Act defines the rules for the telecommunications equipment approval procedure, specifying the conditions for the entire licensing process. As of July 1 2000, licenses have been required for the installation and operation of public telecommunications services using the land-line or mobile telecommunications network. For other types of telecommunications activities (e.g. data services), only general licenses are needed. A private or corporate person wishing to do business in a trade requiring a general license is only asked to register at the regulatory body. The law specifies rules for the issuing of licenses and general licenses. Basic telephone services for the wider public have been secured by the definition of Universal Service.

Conditions for open access to public telecommunications services, including the conditions for the interconnection of public telecommunications networks, have been newly defined. The law defines the procedure to be followed by applicants for interconnection and for network access. The administration of the frequency spectrum procedure has also been newly specified, as well as the administration of the numbers, names, and network and service addresses. The Act lays down that telecommunications must implement the number portability and carrier pre-selection till the end of 2002 or the middle of 2002. Those requirements were fulfilled on time and the market has thus opened to alternative carriers. The right to regulate prices has been passed on to the regulatory body in accordance with the new Telecommunications Act, that has also set price regulation rules, including regulation of interconnection charges. All of these changes were connected with the harmonization of the Czech legislation with the original regulation framework of the EU.

Except for the parts regarding telecommunication secrecy and right of property access, the Act has also set up a regulatory body, the Czech Telecommunications Office (CTO). The CTO was set up for the purpose of implementing provisions; in the middle of 2000, twelve decrees and one Government regulation were issued in connection with the Act.

Current legislation of the European Community has been used as a basis for drafting Czech laws resulting in the Telecommunications Act, including implementing regulations compatible with the acquis. Although there already exist the new Electronic Communication Act in the EU, the Czech Republic as the one of the candidate countries has not yet started to prepare for the adoption of this very new legislation.

¹ Act No. 151/2000 Coll.

National regulatory authority

The CTO was established as the NRA in the Czech Republic in 1993 as the 6th section of the Ministry of Economy. Its competencies have in 1996 been transferred into the Transport and Communication Ministry. The CTO has in accordance with the Act on Telecommunications and Amendments to other Acts on July 1 2000 been transformed into an independent Regulatory Authority outside of the ministry. The Office chairman is appointed by the government which is in fact in contradiction with the acquis. Like most other NRAs in the EU candidate countries it is now financed from the state budget.

CTO competencies include:

- licensing,
- universal service organization (e.g. costs compensation by alternative carriers = recovery plan application),
- interconnection rules and charges,
- local loop liberalisation (ADSL has been introduced by the incumbent in February 2003),
- performs the management of frequency spectrum,
- number allocation, etc.

CTO has almost 500 employees out of which 16 are in charge of regulatory tasks. The transposition of the acquis communautaire is supposed to be completed by January 1 2004.

Privatisation

The National Property Fund has owned approximately 51 per cent of shares in both Ceske Radiokomunikace and Cesky Telecom.

In its resolutions, the Government declared its intention to sell off its stakes in both companies. The share in Ceske Radiokomunikace has been sold to the consortium of Deutsche bank and Tele Danmark (BIVIDEON) in 2001. With regard to Cesky Telecom, the state has planned to sell its 34% interest, together with another shareholding of 17% owned by TelSource, together a total of 51%. The planned sale attempt to C-tel (Deutsche Bank and TDC) in 2002 was cancelled and the government has decided to postpone another attempt to sell its share until 2004-5. The government has obtained a time for increasing the Cesky Telecom's value and to wait for the recovery of potential investors. This strategy should lead to obtaining a maximum price for the incumbent.

Cesky Telecom owns 51% of the biggest mobile carrier operating on the Czech market – Eurotel and is planning to buy the rest 49% at the moment. Eurotel is considered to be the most attractive part of the incumbent. The Cesky Telecom's privatisation will therefore mean the change of Eurotel's owner as well.

The sale of Cesky Telecom and Ceske Radiokomunikace will virtually finalise the privatisation process and will complete the denationalisation of these two semi-state companies. The two operators dominate their respective parts of the Czech telecommunications market, where Ceske Radiokomunikace offers most of the radio and television broadcasting services and where Cesky Telecom dominates the fixed line market.

Liberalisation

The liberalisation process in the Czech telecommunications has started in 1992 by amending the Telecommunications Act in force since 1964. Many firms emerged immediately after the legislative barrier was lifted. They included both purely domestic firms and companies with foreign participation, positively

affecting the development in the telecommunications sector. In turn, the telecommunications market has influenced the development of other industrial as well as social segments of the market. Intercity and international telecommunications networks were the last non-liberalised part of basic telephone services. The new Telecommunications Act provided for the Czech telecommunications market to be liberalised as of January 1 2001. On that day the exclusivity of the Cesky Telecom in providing fixed line intercity and international services ceased.

The opening of the market was accompanied by the emergence of the characteristic phenomenon of liberalisation in the telecommunications sector – interconnection, mainly in its economic context. In this area too, the new Telecommunications Act provides rules for settling disputes regarding interconnection. Based on this, for example, the CTO has become able to deal with disputes between alternative carriers and the incumbent objectively and transparently.

Local access has been liberalised. The Reference Unbundling Offer is compulsory for the fixed incumbent. The competition in local access was negligible for a long time but it has recovered as operators have started to offer a number of value-added service packages. It is important to note that there are many cable TV operators (with 33% household penetration) out of which the two biggest are reported to be providing voice services to households².

Four wireless local loop licenses have been granted to four carriers but they are not used at this time and no future plans on usage of them are known.

On February 2003 there has been initiated the ADSL by Cesky Telecom and number of alternative carriers. But there have arised a problem regarding prices that are set too high. In accordance to a comparison that was made by Czech Telecommunication Office, the prices of ADSL are on the same level as in the EU, but the connection speed is much lower. Ministry of Informatics has already asked Cesky Telecom to lower prices or speed up the transfer of the datas.

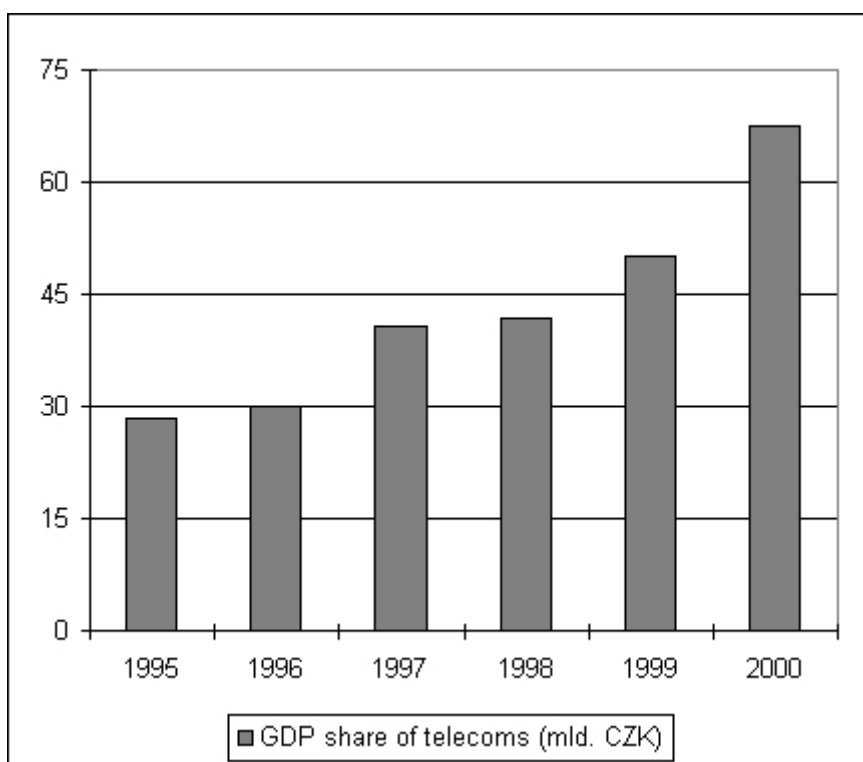
² The number of users is not available.

Growth effect of EU accession

Talking about telecommunications in a transition economy such as the Czech Republic we have to undergo accession processes in a wider context. The expected growth changes are not happening at the precise date of EU-accession and the visible progress has already existed. The number of policy measures and preparation for the European single market are together with the oncoming of the first wave of the EU enlargement the accelerators of transition which not only in the telecommunication sector leads to the harmonisation of legislation. Changes initiated as a result of accession negotiations have been put in place in line with EU-experiences, and this is exactly what has saved time and enabled the Czech Republic to move forward relatively quickly.

The existing results can already be shown by the rapidity of growth in the telecommunications share on the GDP. While it made 1,5% of the GDP in 1995 it has reached 3,4% in 2000.

Graph 3.1 – GDP Share of Czech telecommunications



Source: Hospodarske noviny³ 25.11.2002

Impact on supply and demand

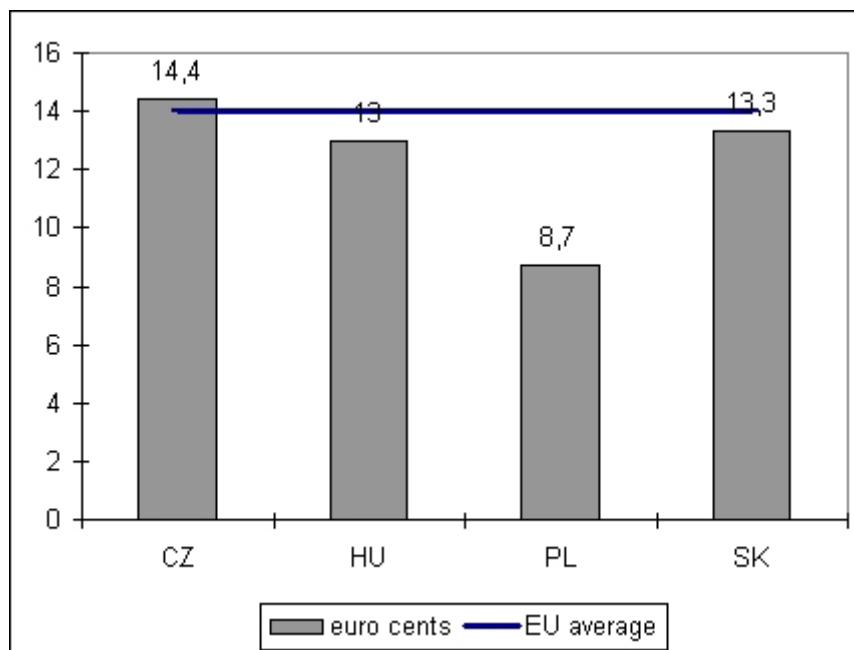
Being a part of a union consisting of more developed countries opens the market to influence of current EU trends. Technological novelties (for example digital data transfer and corresponding services such as tele-banking, distance learning or teleshopping) have caused a widening of the range of services offered, which influences prices and changes the supply of the telecommunications market. New trends demonstrate the fact that network coverage is not the major determinant of revenues and efficiency. Progress in service

³ Czech daily

quality, marketing and awakened consumer demand, means that differentiated services will better satisfy the public needs. Illustration of changing dynamics can be made by providing simple facts. In 2001, the number of cell-phone penetration exceeded 50% and reached 5 million users. In 2003 there is a penetration of 70% and further increases are expected as a result of a wider range of services. Liberalisation and other measures completed within the EU have led to 95% market penetration in some of the cases.

The entry into the single market will multiply all these changes. Competition will toughen, with increased activity of current carriers and potential entry of new alternative ones leading to further improvements and positive developments on the telecommunications market. It is possible to conclude, that the EU-accession will bring an explosion of offered services, an increase of the quality of existing services and lower prices. A competitive market with experienced telecommunications companies will not give another chance to Czech telecommunications providers and that is why they have already started to restructure and adjust in order to succeed in entering the EU.

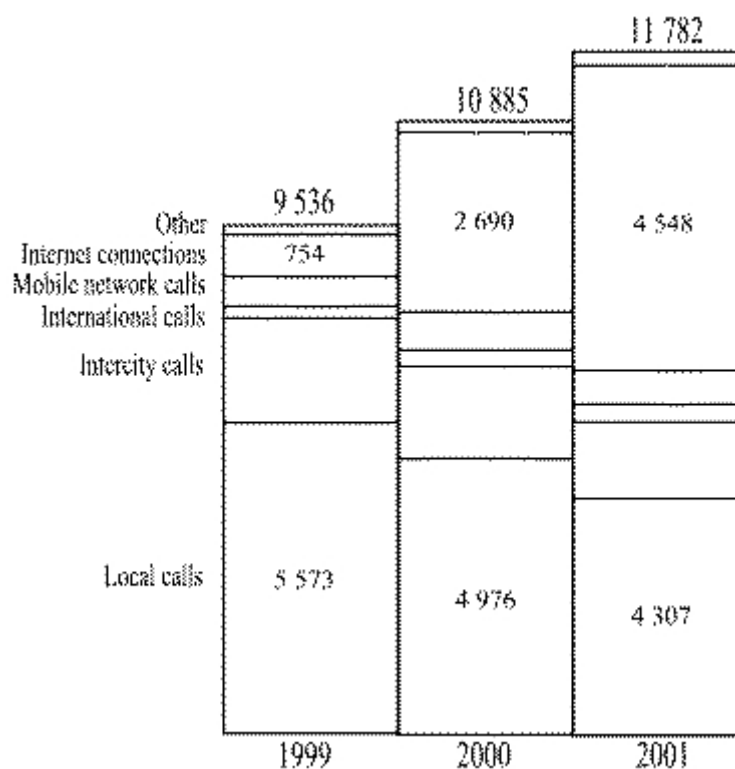
Graph 3.2 – Local call charge, 3 minutes (E-cents)



Source: 2nd Report on Monitoring of EU Candidate Countries (Telecommunication Services Sector), IBM, December 2002

The most visible changes have been made in Cesky Telecom, an incumbent monopoly fixed line carrier. The industry has experienced a boom of cellular communication, Internet and data services, which force Telecom to adjust to present and future changes. Cesky Telecom will no longer be able to rely on growth in fixed-line voice telephony to sustain high returns. Even today, the highest amount of revenues already comes from Internet services (0,5 million registered users) and data services. The dramatic increase in their share on Cesky Telecom's revenues from 38% to 47% in 2002, is a good argument to constitute them as a basis for future growth of the company.

Table 3.1 – Fixed line operation (in mil. of minutes)



Source: Cesky Telecom Annual Report 2001

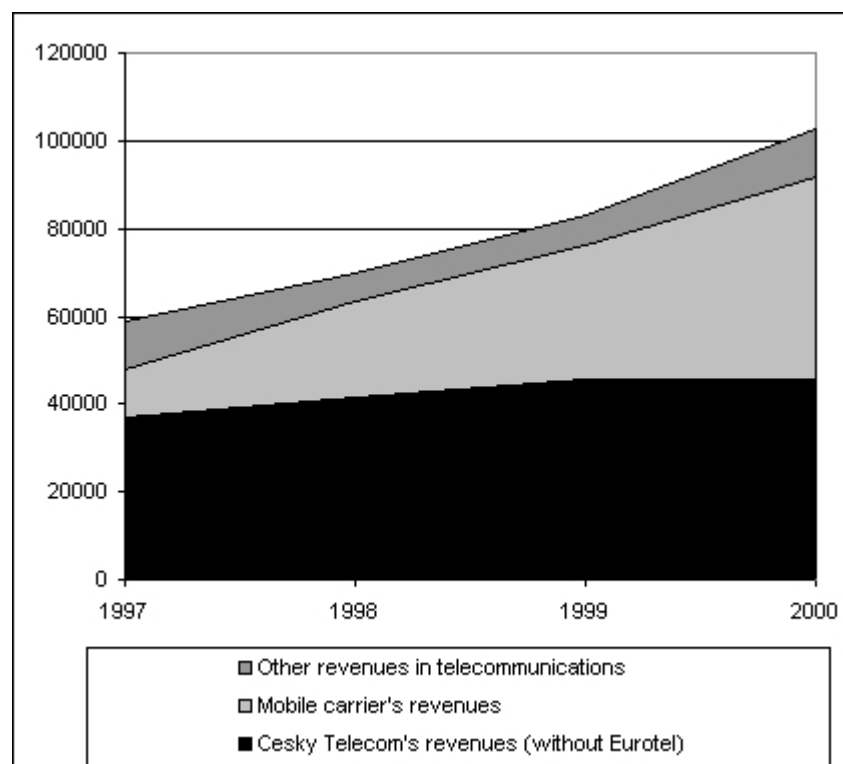
The incumbent is being pushed to fulfill consumer's wishes and to satisfy their needs, change prices, introduce new services and start offering solutions designed for specific groups of customers. All of this requires an increase in network operations (call centers, dispatching centers, frontline technicians), sales forces and retail-distribution network efficiency and improvements in back-office support. The former monopoly pushes all this forward.

Cesky Telecom has already carried out changes in the management model. The Business management model is designed to fulfill the requirements of a liberalised market, the needs of new technology development and last but not least the Telecommunications Act. Such effective models clearly constitute a pre-requisite for a company's success on the liberalised market within the Union. It has created a system of branch offices and offered a wider spectrum of services.

The same conclusions apply for the other carriers that will decide to operate on the Czech telecommunications market. They will also be forced to attain the highest possible efficiency and assure that the right decisions are made in order to do well on the enlarged market of the Union.

It is worth noting that focusing on mobile communication market, that there has already existed a competitive environment. Mobile carriers are, as a result of the current trend, experiencing increasing revenues (see graph 3.2). This will probably continue and even intensify on the enlarged market with higher number of mobile carriers. It seems that the sum of all Czech cell-phone users is quite large and the mobile carriers need to ask whether it is more beneficial to try to enlarge the sum or to take the largest percentage of the existing market.

Graph 3.3 – Evolution of telecommunication revenues in the CR



Source: Hospodarske noviny, 25.11.2002

It is also worth looking at the competition between trendy forms of telecommunication and traditional fixed lines. Cesky Telecom competes with mobile carriers that have caused a massive abatement of subscriber lines. In the case of Cesky Telecom the number of fixed lines decreased by 4% in 2002 and the revenues from voice services decreased an even more significant 15%. This is not usual in the EU where people have used their cellular phones but have not cancelled their fixed lines. The cause can be seen in a change of Cesky Telecom's tariffs and insufficiently developed Internet services. In western countries, fixed lines are, apart from voice communication, widely used for Internet access. Comparison shows that this market is underdeveloped in the Czech Republic and the future development depends especially on its prices. One could argue that the fall in fixed line revenues is highly correlated with the onset of mobile services.

Table 3.2 – Mobile carriers operational revenues in the CR (millions CZK)

| | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 |
|----------------------|------|-------|-------|-------|-------|-------|
| Eurotel ⁴ | 4994 | 10404 | 14650 | 19958 | 27197 | 30063 |
| T-Mobile | 478 | 2981 | 6468 | 10931 | 17756 | 21082 |
| Cesky Mobil | x | X | x | x | 1359 | 5462 |

Source: Web pages, Annual Reports

⁴ Eurotel's numbers represent total revenues

Thus, voice services unlike data services do not represent a future for the incumbent. The expansion of data services reflects also the growing demand for alternative carriers' services. Alternative carriers focus mainly on data services and hope for increasing revenues as a continued trend to let them survive in a strong competitive environment. With the local loop unbundling some of them have also successfully started to offer voice services and competed to Cesky Telecom. After years in the red they have already started to make profits even though Cesky Telecom still controls the major market share.

The other side of the market – demand - will also undergo changes resulting from the EU-accession but they will not be as substantial as on the supply side. Today the demand side seems to be stabilised but following the overall trend it will focus on new technologies and services some of which are already developed in the EU countries. The growth in demand for Internet services and flexible client - tailored services will be the major feature on demand side. The size of the demand will most likely grow as a consequence of increased efficiency and service quality of telecommunication services.

The change in demand for international calls arising from the free movement of people will show after real accession when the commuters and travellers will become one of the important target groups. This is also expected to affect the prices of international calls.

Impact on investment

All of the expected changes connected to EU-accession require relatively large investments. Fully liberalised competitive markets will force telecommunication companies to prepare for changes in order to succeed. "Now or never" could be the motto of all these companies waiting for enlargement. The most investment has been needed for the transformation of the state monopoly because the former structure was completely unsuitable. The EU-accession has already caused increased investment into the development of services, because, as it has been mentioned above, the quality and individuality of services will become the main revenue drivers.

Mobile carriers have already started to widen their range of services. Their investments have been used to increase and retain client numbers. For mobile companies (especially on the saturated Czech market) the focus has been shifting from a building market share to maximising value through reducing costs and developing a growth strategy for voice and data transmission after accession. Even before the onset of UMTS there are additional growth opportunities using GPRS or other services such as SMS and MMS over the current network. Services offered today do not only constitute means of voice communication but include also entertainment and news features. Investment earmarked for diversification of services and their development will continue to constitute a substantial part of total carriers' investment. Investments in network quality constitute the biggest part of the mobile carriers' total expenditures in 2002. Their vision is to attain the transfer quality equal to voice services provided by fixed operators. Another big part of mobile carriers' investment has been the purchase of UMTS licences. In spite of the unsure future of this new technology, two of Czech mobile carriers (Eurotel and T-mobile) have bought these licenses to be up to date with current trends. The first set price was about CZK 7 billion but has aroused protests from the mobile carriers. The final price was set on CZK 3,5 billion in the end.

Cesky Telecom has oriented its investments on company restructuring and modernising the network that has in the process become comparable with networks in EU member states. Its future investments will be oriented on the development of services fully utilising this modern digitalised network to be able to provide fast data transmission to customers.

Providers of alternative networks have focused their investments on enlargement of intra-company networks and new service development. So far their services were oriented especially on firms but with the need of diversification of their activities and utilization of liberalisation they are trying to enter the

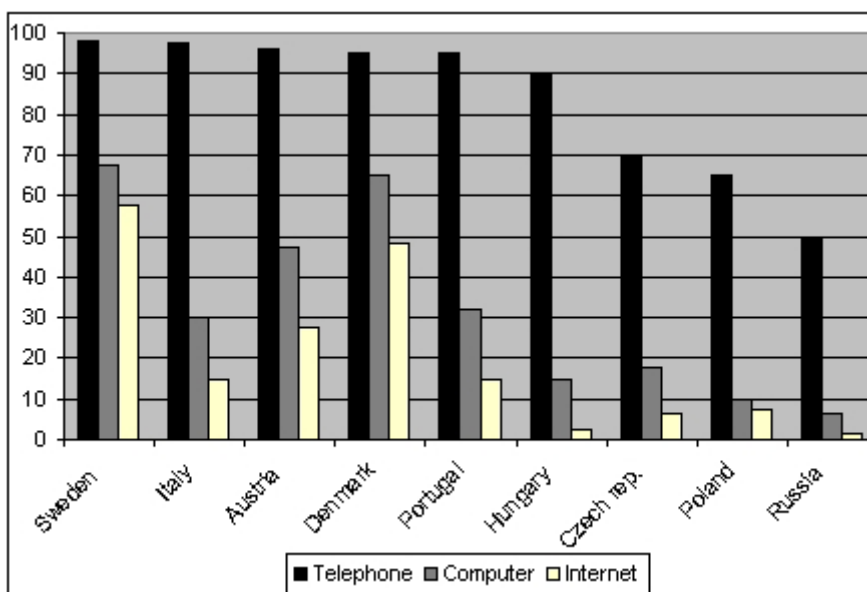
residential market, too. That is why they have increased investment into marketing. Before, 35% of Czech firms that don't make use of alternative operator's services claimed lack of information as the reason. Alternative carriers would not definitely succeed in the enlarged market with the low level of advertising and promotion and that is why they have to set aside the amount of resources earmarked for marketing.

Because the state of the information society has become one of the EU's main objectives it has earmarked resources from Structural funds for its development. Then the EU enlargement will mean that some of the investment within the public sphere could be co-financed from the Funds, especially those involved in Action plan eEurope that aims at new technologies development across Europe. The accession to the EU will have very positive effects on the IT development and diffusion in the Czech Republic and will simplify the access to new technologies that will contribute to modernisation of the whole economy.

Effect on consumption

The households' and firms' nominal expenditures have been growing year by year in the Czech Republic. The origins could be seen in higher living standards, increase in prices and diversification of services that have diffused into all activities. Although expenditures are on the rise their nominal value still has not reached those in the Union. As in other post-Communist countries there exist barriers in the Czech Republic that hinder full development of telecommunications. These include lower standards of living, that cause the differences in household equipment such as computers, fixed line and Internet connections (see graph 2.2). The EU accession, as a path to higher standards of living will then increase the households' spending on telecommunications and IT.

Graph 3.4 – Households' equipment (year 2000)



Source: Hospodarske noviny, 25.11.2002

On the other hand the threat to demand is posed by the VAT increase from 5 to 22 percent connected with harmonisation with the acquis. It is expected to increase prices by 17%, which will negatively influence the demand, especially households.

As far as businesses in general are concerned, the expenditures on telecommunications and IT are expected to grow as well, and telecommunications as a mean of efficient and quick data and information transfer will account for increasing part of their expenditures. Tough competition will force companies to exert greater

efforts to equal and overtake their competitors which is not possible without effective communication both within the particular company and within the particular field sector.

| STRENGTHS | WEAKNESSES |
|--|--|
| <ul style="list-style-type: none"> • Growing penetration of the mobile communication • Growing economy | <ul style="list-style-type: none"> • Relatively low standard of living • Service quality gap between Western and Czech companies • High prices of computers and Internet connection |
| OPPORTUNITIES | THREATS |
| <ul style="list-style-type: none"> • Market entry of alternative carriers | <ul style="list-style-type: none"> • VAT increase⁵ |

⁵ VAT change discussed in chapter 8

Accession effect on foreign direct investment

The Czech market has been very open to foreign investors, who invested heavily in the sector which absorbed some of the single largest FDIs. The newly liberalised telecommunications market and the credibility obtained by EU accession has an effect of luring other foreign investors. The only major entry of foreign investor is expected in the case of Cesky Telecom that is to be privatised after EU-accession. Generally, in all of the market participants there has already been foreign participation (see Table 4.1).

Table 4.1 – Foreign strategic investors in fixed and mobile operators

| Investor | Percentage and company operating in CR |
|----------------------------|---|
| Deutsche Telecom | • 41,4% in Radiomobil (N) ⁶ |
| T-Mobile | • 10,7% in Radiomobil (N) |
| KPN | • 20,27% in Cesky Telecom (Y) |
| Swisscom | • 13,23% in Cesky Telecom (N) |
| Tele Danmark | • 41,4% in Radiomobil (N) • 51% in Ceske Radiokomunikace (Y) |
| Telesystems Int'l Wireless | • 51% in Cesky Mobil (Y) |
| Verzion + AT&T | • 49% in Eurotel (N) |

Source: Cullen International

Alternative carriers are owned by foreign companies that have tried to break into the Czech market. But the market structure where Cesky Telecom has retained its dominant position has meant losses for the alternative carriers for a long time. At the moment, as a consequence of liberalisation and local loop unbundling they have had more possibilities to diversify their services and utilise new technologies. Liberalisation and unbundling have already helped some of them to get out of the red but their future will depend on the ability to survive on the open market and ability to increase the amount of resources obtained from their foreign owners.

Despite the newly liberalised telecommunications market and the credibility obtained by EU accession, the Czech Republic could be expected to lure more foreign investors, but the reality seems to be different. The problem is the worldwide situation in telecommunications that has affected potential foreign investors. High prices paid for the UMTS licenses and obligations connected with the acquisition have depleted big telecom companies' funds that could otherwise be used for investments in Central and Eastern Europe. Their indebtedness seems to make investment in the Czech market nearly impossible. Furthermore, the withdrawal of a number of foreign companies from the region has become a reality. Independent of EU

⁶ "Y" or "N" indicates whether the investor has a controlling interest in the company or not.

membership, some foreign players are reconsidering their involvement in the region due to their sharply worsened debt position or due to strategic re-positioning.

Thus, foreign direct investments could more likely be expected from the smaller telecommunication companies that do not suffer from such indebtedness. Their market entry will depend on the amount of free resources that could be invested in the Czech Republic; the investment incentives will play their role too. The credibility could increase their investment compared to that in non-member countries. Although the legislative framework has been transparent in past years, the harmonisation with the acquis and the familiar conditions make companies more willing to make specific investments.

| STRENGTHS | WEAKNESSES |
|--|---|
| <ul style="list-style-type: none"> • Harmonised legislation • Newly liberalised market with unutilized opportunities • Qualified labour force | <ul style="list-style-type: none"> • Insufficient investment incentives |
| OPPORTUNITIES | THREATS |
| <ul style="list-style-type: none"> • Increased credibility • Foreign investor could bring modern methods and contribute to competitive environment | <ul style="list-style-type: none"> • Outflow of foreign direct investment because of companies' indebtedness |

Effects on labour market

As a consequence of the environmental change on telecommunication market, and because of the fact that information technologies and communications constitute a key sector for economic development a rapid increase of demand for IT specialists in the Czech Republic is expected. It has been estimated that the Czech IT market will need approximately 50 000 specialists. The current Czech IT market can offer skilled and qualified IT workers. Top specialists are being trained at Czech technical universities who are knowledgeable in their field, some of whom have already implemented new technologies in practice.

Many graduates, who go abroad and come back for some reason after acquiring some experience, bring knowledge and skills obtained to Czech firms. These people prefer more of a private environment where they work and share their own firm culture together with their peers. Big companies with complicated structures therefore tend not to be attractive for such specialists. For this reason support for small and medium enterprises (where these people usually head to) plays a substantial role.

Work on interesting projects and access to cutting edge technologies have become known to be better motivation for the true IT specialists than possible higher salaries in foreign firms in many cases.

Salaries of top managers are approximately on the same level in the Czech Republic as in the EU. In the field of human resources, demand currently exceeds supply on the newly liberalised telecommunications market. Looking at how the announced deregulation of the telecommunications market has attracted a whole lot of telecommunications companies, and despite the fact that there are already three well established mobile carriers and Cesky Telecom in a local market it can be generally argued that the labour market demands experts in this field, rather than there being too many. Specialists qualified in new technologies such as GPRS or UMTS and their implementation are among the most demanded. Even though Czech technical universities educate good experts they cannot fully adjust to dynamics of the changing telecommunications market and the relatively limited current workforce is divided between wide range of companies. Qualified professionals need not be afraid of unemployment. This situation is no different in the Czech Republic but is a worldwide trend that is expected to persist in the course of recovery of the sector. This means that liberalisation brings advantages not only to consumers but effects employment positively, too.

The Czech specialists have also been demanded by foreign telecommunications companies. It has been proved difficult not only to attract but also retain telecommunications experts, especially in middle management. Generally, the top professionals' salaries are comparable to those in EU and the existing differences have not been big enough to cause the outflow of such workers. But the situation is rather different in middle management where salaries are two to three times higher in the EU. Thus it can be expected that the EU accession will in the long run bring the equalisation of salaries in the Czech Republic and EU countries.

Although the EU accession will mean free movement of Czech citizens in the European labour market, the "brain drain" is not expected. The option of working in IT abroad has already existed in the form of "Green cards" offered by Germany and also Austria, Belgium and Finland. This is a good example of the practicing of a very liberal approach to issuing work permits. According to recent data the share of successful applicants for work permits exceeds 90% (it is 94% in case of Germany, 96% for Austria, 91% for Belgium and 100% in Finland).

Although Germany is one of the states that has advocated a transitional period regarding the transfer of workers, it doesn't plan to abolish these Green cards, meaning that the people willing to move for a job to Germany will not lose the option with the EU accession. An increase in interest is not expected in the short

run according to existing experience. New generations on the other hand that grown up with possibilities to study abroad and learn languages will be more likely to stay and work abroad.

| STRENGTHS | WEAKNESSES |
|--|--|
| <ul style="list-style-type: none"> • Qualified labour force • Excellent technical education system • Innovative and creative labour force | <ul style="list-style-type: none"> • Deficient number of experts • Unwillingness to travel |
| OPPORTUNITIES | THREATS |
| <ul style="list-style-type: none"> • Increase in middle management salaries • Technological development causing the ability to retain experts | <ul style="list-style-type: none"> • Escape of Czech experts to other member countries |

Regulatory framework

The new telecommunications regulatory package of the EU has come into force in January 2002. A further milestone was placed in harmonising and updating the regulatory requirements for the sector within the EU to establish, wherever possible, the competitive market. But the EU rules have already helped to create current regulatory framework in the Czech Republic.

The transition from a monopoly telecommunications market framework to a competitive one requires governmental changes to its institutional structure, legal framework, and to implement a number of new regulations to safeguard the process of creating competition. The regulatory framework has been adopted in line with the EU's rules that reflect the EU experience in the effort to find the most effective way of market regulation and have saved time in the process of creating a new form of regulatory framework in the Czech Republic.

The Czech Telecommunications Office has been established as the Regulator of the telecommunication market and has been given powers similar to those practiced in the EU. The problem here is that the regulator has not yet complied with the *acquis*. Considerable powers remain in the hands of Ministry of Informatics (where they has been transferred from the Ministry of Transport and Communications). The two authorities have not as yet responded to the European Commission's repeatedly expressed view that Ministry appointees in management structures of the incumbent are incompatible with the *acquis*. This constitutes a problem because of the Ministry's involvement in the enactment of legislation, e.g. in relation to universal services. A clear separation of operational and regulatory functions needs to be secured and maintained.

It is noticeable how much the Czech regulatory framework will benefit from EU-accession. The precise requirements that are to be fulfilled move Czech regulations forward and increase the speed of equitable environment creation. As a consequence of the harmonisation of legislation with the *acquis* it should be possible to refer to a breach of the rules by the Telecommunications Act as without any doubts there is a conflict of interests on the side of the state that enters the Regulator as well as the incumbent. Especially alternative carriers that are supposed to be Cesky Telecom's competitors will benefit because it will secure them equal market conditions. Cesky Telecom can at the moment object to court rulings regarding competition and until such objections are dealt with, the rulings need not be secured. The Czech judiciary is very inefficient and slow which lengthens the time before Cesky Telecom is forced to behave according to a given ruling.

The experience shows that the current form of the Telecommunications Act that set the function of CTO will not be optimal for regulation of rapidly expanding of telecomms market. It is absolutely necessary to lay a new legislative framework for electronic communications that would address even future changes of participant behavior. The Telecommunications Act is inaccurate in some of its parts causing obstacles for CTU's functioning. For example, the lack of powers to define the negotiation and procedural rules on contracting not included in the law complicates the work of CTO in the area of network interconnection between different operators. These deficiencies cause a prolonging of the whole process of discussing and contracting between carriers. As a result there is expensive interconnection of telecommunications networks.

Where does the greatest deficiency of the Telecommunications Act lay and where is it on the same level as the *acquis*? No precise interconnection criteria are set. On one hand, there is an obligation to introduce new services intensifying the liberalisation imposed but on the other hand, there does not exist any sanction for the case of non-acceptance of this obligation. Afterwhich, the CTO is not deputed to issue necessary directives. But this represents only a narrowed assessment of some problems included in effective law.

Generally speaking, the Czech Telecommunications Act has been created in accordance to European directives and is similar to EU-laws which is very positive. Current European law is being transformed significantly. The Czech Republic will become involved in those changes after EU-accession which will improve the legislative efficiency and deepening of competition.

The EU's strategy focuses especially on new regulation and price correction. The EU intends to increase regulatory activities of the NRO in connection with interconnection charges. This is expected to result in greater competition and attractiveness of the market for investors. It should lead to improvements in infrastructure and service quality.

The Union forces the NROs operating in markets with poor competition to influence wholesale prices. The Czech Republic is an example of such a market where interconnecting pricing of mobile carriers is determined by market powers. The Commission prefers to set rules that will lead to the establishment of infrastructure required for Europe-wide competitiveness that will in turn represent a cornerstone for growth of the whole telecom sector.

Following these regulations by the CTO after the accession is expected to support competitiveness on the Czech market that positively influences diffusion of Internet and mobile communications as well as foreign direct investment.

Although the regulatory framework of the Czech Republic has been harmonized with the "old one" (from 1998) practiced in the EU, it has not yet adopted any of the points included in the new Electronic Communication Act. This Act should be adopted by the EU member states in July and its content will be relevant for the Czech Republic after the accession.

In the EU the thought of one common european regulator has not been adopted but the new regulation framework tries to maximise the homogeneity through the consistency of rules and restrictions that are going to be applied in all EU countries. In accordance to the new framework the telecommunications sector should be subject to the general competition rules instead of the sector specific regulation. It would like to decrease the number of the fields which need the sector specific rules for their development. As a result, the competencies are going to be transferred from the CTO on the Office for the Protection of Competition in the Czech Republic.

EU has already chosen 18 relevant markets where the sector specific regulation could be applied. Now, with the help of the deep analysis and following the number of EU requirements, the CTO has to decide, in which of them are competitive enough and do not need any sector specific regulation. Its final decision will be approved by the European Commission. In case of failure the CTO would have the possibility to refer to the European Court of Justice.

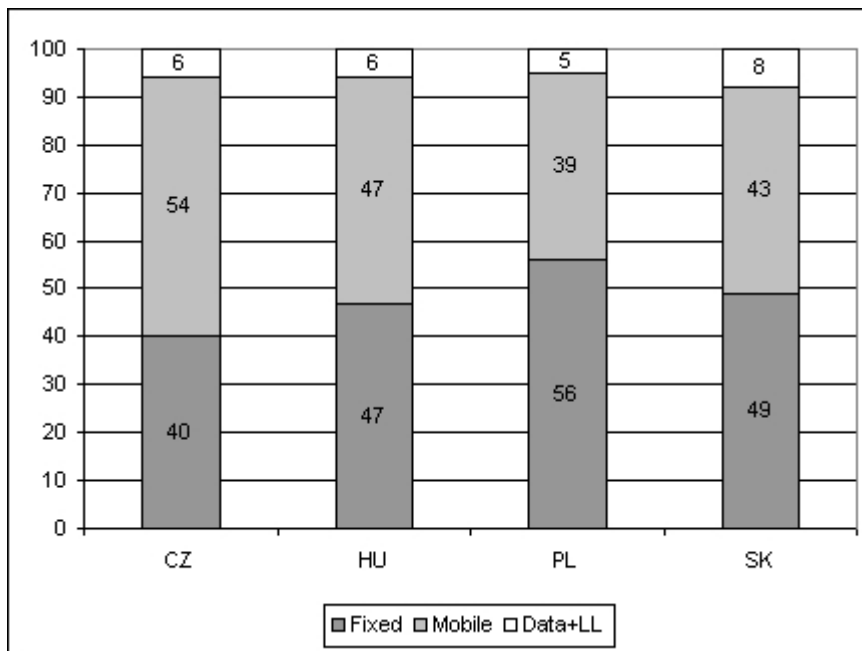
This situation, where the CTO is not the highest instance and when the European Commission has the last word, leads to the uniform solutions in all of the EU countries on one hand, but on the other hand it restricts the CTO's sovereignty and makes it to be only a workplace of the common european regulator. In spite of the fact, the idea of the one common european regulator has been refused. This bottleneck could lead to a change of the structure in the future.

| STRENGTHS | WEAKNESSES |
|--|--|
| <ul style="list-style-type: none"> • Ability of alternative carriers to agree on a score of matters without CTO | <ul style="list-style-type: none"> • Insufficient independence of CTO • Insufficient enforceability of CTO's decisions • Too long time let for setting of CTO's decisions • One single person (CTO head) decides about whole Czech telecommunications market • Inadequate enforcement of laws |
| OPPORTUNITIES | THREATS |
| <ul style="list-style-type: none"> • Harmonised legislation could lure investors • Clearly set rules enable more competitive environment • EU regulations could help Internet and mobile diffusion • EU regulations could cause bigger FDI | <ul style="list-style-type: none"> • Regulation will decrease mobile carrier's revenues • Complicated regulatory process |

Accession effects on market structure

The present market structure has been similar to that in other candidate countries and EU member countries. The former monopoly Cesky Telecom as an incumbent dominates the fixed line market where there exists a relatively high number of alternative carriers as well. Competitive mobile market is formed by three carriers: Eurotel, T-Mobile and Cesky Mobil.

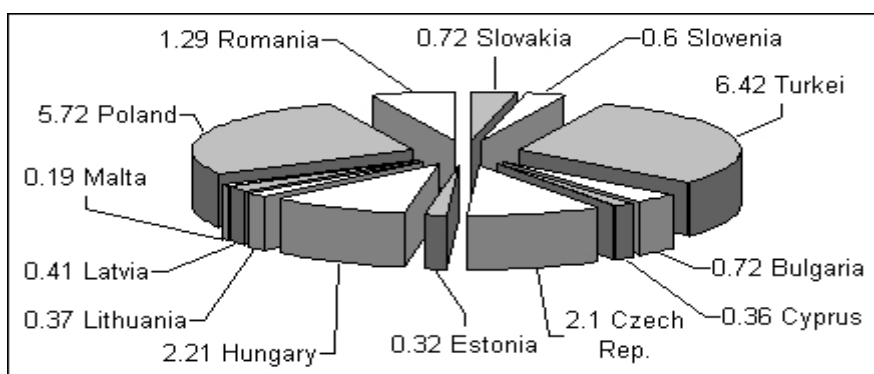
Graph 7.1 – Breakdown of telecommunications market sector (%)



Source: 2nd Report on Monitoring of EU Candidate Countries (Telecommunication Services Sector), IBM, December 2002

The Czech telecommunication market value estimate (2,1 billion, see graph 7.1 which is the comparison among EU candidate and other non-member countries) ranks third among the Visegrad countries, Poland and Hungary have more valuable markets. In market value per capita the Czech Republic is at 33% of the EU. The Czech market value per capita is about EUR 200 while in case of EU it is almost EUR 600. As a consequence of EU accession, easier access to modern technologies and effort to modernise, this value is expected to increase.

Graph 7.2 – Telecommunications market value for year 2001 (billion EUR)



Source: EITO 2002 (data for Cyprus and Malta provided by NRA)

Fixed line market

Effects on market shares

Cesky Telecom has been the only provider of fixed line voice services until the end of 2000. The liberalisation in 2001 has allowed alternative carriers to offer voice services but the costs connected with new network building would very much exceed the revenues obtained by providing services at competitive prices and that is why none of the carriers has utilised this opportunity. Thus, Cesky Telecom still retains about 90% share of the fixed line market and the rest is divided among alternative carriers. The list of market segments where Cesky Telecom has significant market power is described in table 7.2.

The Czech government has amended the Telecommunications Act to help competition and permitted call-by-call carrier selection (from July 2002) which has represented the chance for alternative operators. Some of them have already started to offer their attractive packages involving voice services sometimes bundled with Internet access.

The local loop unbundling (implemented a couple month ago) is expected to open the market even more by allowing the alternative operators to lease the so called "last mile" and offer to consumers some interesting alternatives. So far there have been problems with pricing of these leases, but as a result of joining the European Union the problem should be solved for the Czech Republic. The increased access to customers comprises the opportunity to enter the fixed line market and offer their own service packages to a wider range of consumers. The prices charged to households will depend on lease prices contracted between alternative carriers and Cesky Telecom. The setting of these prices will thus be crucial for profitability and in turn for the development of competitive environment.

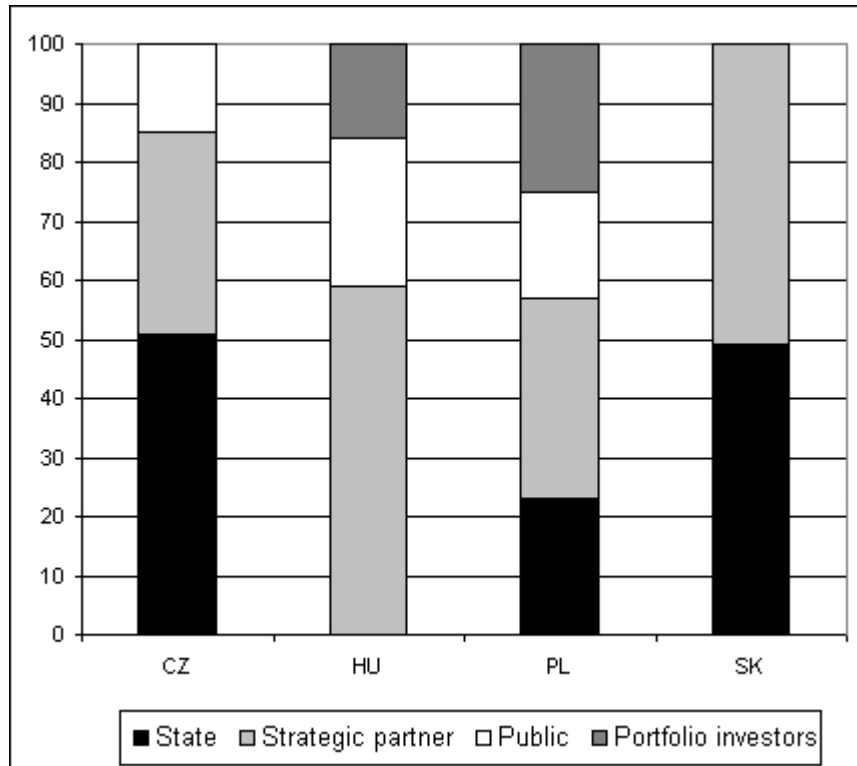
At the moment there exist a relatively high number of alternative carriers on the Czech market. Consequently from their current poor profitability and intensified competition after the EU accession a decrease in numbers is expected and only a few carriers are envisaged to remain on the Czech market. The rest will either exit the market or merge to increase the competitiveness.

Cable TV companies are likely to become important market players, as observed in other European countries. This competition is already evident even though the information about the number of customers using voice telephony over cable TV is of yet unavailable. The potential for competition can be demonstrated using the percentage of households connected (households with access to the cable infrastructure regardless of the fact whether the service is actually provided or not) to cable TV: 33% of households have access in the CR which is much less than in other Visegrad countries (Hungary 63%, Poland 55%, Slovakia 63%) and therefore this number is expected to increase after EU accession.

Effect on ownership structure

The important piece of information connected to competition on fixed markets is the identity of the decision maker within the fixed incumbent. This is indicated by the ownership structure. The majority (51%) of Cesky Telecom is still owned by the state. 34% is owned by strategic partner Dutch – Swiss consortium (TelSource) and the remaining 15% is owned by minor shareholders. Despite the minority holding the strategic partner has managerial control over the Cesky Telecom due to the form of the privatisation contract.

Graph 7.3 – The fixed incumbent operator ownership structure (%)



Source: 2nd Report on Monitoring of EU Candidate Countries (Telecommunication Services Sector), IBM, December 2002

The need to privatise Cesky Telecom is a part of the EU's accession prerequisites. After the entrance of a strategic investor, Cesky Telecom could become a part of an international network of fixed-line providers that would likely influence its business. Contracts made between international telecommunications and multinational companies have begun to ignore national borders. This occurs as the companies infrastructure are being designed for the whole European Union, and not only for one country. The international networks of telecom companies (including the likelihood of Cesky Telecom being bought out by a larger international company) will than be in advantage regarding services offered to international firms. This situation will force telecommunications from the Czech market to conclude contracts with other telecommunications from EU member countries in order to be able to offer services across the EU countries.

The mobile market

Effects on market share

Mobile communication services are provided by three mobile carriers: Eurotel, Radiomobil (T-Mobile) and Cesky Mobil. Because of the current competition within the Czech mobile market the EU accession is not expected to have any substantial consequences. The entry of foreign telecommunications companies depends on the situation in the telecommunications sector overall. After the recovery of the sector, it may well happen that the number of mobile carriers in the Czech market will increase as the demand for mobile communication grows.

Effects on ownership structure

The current ownership structure of mobile operators is described in Table 7.1. The only expected change is connected with Cesky Telecom's privatization, and this is the change of Eurotel's owner. Eurotel would become part of an international mobile company in the case of Cesky Telecom being sold to a larger telecommunication company. Eurotel could be also sold later by the future owner of Cesky Telecom. In the end, there will not be any Czech-owned participant on the telecommunications market.

Table 7.1 – Ownership structure of mobile operators in CR

| | State share | Strategic partner share | Strategic partner's name |
|-------------|-------------|-------------------------|--|
| Eurotel | 51% | 49% | Atlantic West B.V.(49%)-Verzion Communications (NYSE:VZ,24,5%) and AT&T Wireless Services(NYSE:AWE, 24,5%) |
| T-Mobile | 0% | 100% | 39,2% - Ceske Radiokomunikace, 60,8% - CMobil B.V. (T-Mobile Deutschland) |
| Cesky Mobil | 0% | 100% | TIW |

Source: 2nd Report on Monitoring of EU Candidate Countries

Table 7.2 - Operators designated as having significant market power (SMP)

| Legal text defining SMP and Legal text designating the organisations with SMP | Fixed network/leased lines operators with SMP | Mobile network operators with SMP ("Yes" indicates that a mobile operator is deemed to have SMP on the overall market for interconnection) | Other markets |
|---|---|--|---|
| Telecom. Act, Art.2/18; CTO Provision No.OU-1/S/2001 and its first Addendum on | <ul style="list-style-type: none"> Cesky Telecom (SMP on fixed public telephone networks and public telephone service provided through fixed public networks – 98,97%) | <ul style="list-style-type: none"> Eurotel (Yes) (SMP on public mobile telephone networks – 60,25%) | <ul style="list-style-type: none"> Cesky Telecom (SMP on public telecommunications services provided through |

| | | | |
|---|---|---|---|
| <p>Designation of SMP operators for different markets</p> | <ul style="list-style-type: none"> • Cesky Telecom (SMP on public telephone services provided through public networks – 49,96%) • Eurotel (SMP on public telephone services provided through public networks – 30,98%) • Cesky Telecom on leased market line – 54,07%) • Ceske Radiokomunikace on leased lines market – 27,26%) | <ul style="list-style-type: none"> • Radiomobil (Yes) (SMP on public mobile telephone networks – 37,46%) | <p>ISDN networks – 98,96%)</p> <ul style="list-style-type: none"> • Cesky Telecom on public telecommu nications services provided through public data networks – 73,26%) |
|---|---|---|---|

Source: Cullen International

| STRENGTHS | WEAKNESSES |
|--|--|
| <ul style="list-style-type: none"> • Competitive mobile market • Non-privatised incumbent controls the mobile carrier | <ul style="list-style-type: none"> • Last mile inaccessibility so far |
| OPPORTUNITIES | THREATS |
| <ul style="list-style-type: none"> • Enforcement of a competitive environment • Formation of larger telecom companies by the merging of the current alternative carriers | <ul style="list-style-type: none"> • Incumbent will retain its dominant position • Insufficient competition • Exit of some alternative carriers |

Policy measures

On the general level, policy measures are defined by the political strategic documents of the Czech government and the European Union. On the pragmatic level, there are several areas identified in the above analysis calling for short to medium term policy actions. Both types of policy aims and measures are described in the following sections.

Towards an Information Society

The Czech Republic has recently experienced an acceleration on its path towards an Information Society. The changes are apparent both from the governments approach and the entire private sector, as well. Examples of these changes include the interest and activities of the general public and the business community. This is documented by a number of Cabinet measures, the three-fold growth in the number of citizens connected to the Internet (418 448 users in 2000 and 1 256 664 users in 2001), the increasing number of electronic commercial transactions and the formation of electronic department stores and certification authorities. Municipalities compete with one another for the best web pages, many municipal offices, and even some health care facilities, for example, have begun to establish information contact points etc.

Almost all important measures from the recent period adopted by the Lower House for the support of the Information Society follow from the administration's basic strategic document entitled "The State Information Policy – The Road Towards an Information Society". This document specifies the long-term strategic objective of the Czech Republic as follows: To build and to develop an Information Society and thereby to establish the pre-conditions for improving the quality of life of individual citizens, for making the state administration and regional self government more effective and to improve the quality of support for business activity. In greater detail, the document sets the following eight basic priorities:

1. To achieve information literacy for all citizens.
2. To put into practice the citizen's right of direct access to information.
3. Using information technologies to improve the services provided by the public administration.
4. To build a communication infrastructure as a pre-requisite for the development of an Information Society.
5. To ensure trust, security and order in the specific conditions of the Information Society, with the use of electronic identifiers and the provision of personal data protection.
6. To foster the conditions for the development of e-commerce in the Czech Republic, as a necessary pre-condition for its integration into the global economy.
7. To foster a transparent business environment and to subject the management of public funds to public control.
8. To ensure the stability and security in the Information Society.

The Information Society should open up new possibilities for the public. This requires the utilization of their qualifications and for the harnessing of their creative abilities. It will give them new capabilities for access to information and for their education, and will foster the conditions for a higher quality of life. The Information Society will also open up new paths and opportunities in the Czech Republic for companies. The development of e-commerce will bring with it new opportunities for business activities in the globalised market, and may be one of the instruments for improving the competitiveness of the Czech enterprises and the economy as a whole. So far, there is lack of confidence regarding e-commerce in the Czech market.

The government's vision of course, also includes references to certain pitfalls of the Information Society. On one hand, this will bring new opportunities for the development of the economy and for highly qualified employees, while on the other hand it will worsen the chances of employment for the less qualified. Attention needs to be paid to these issues as well, with education playing the key role.

International cooperation leading to the gradual integration of the Czech Republic in the global process of the emerging Information Society is an integral part of the concept of national information policy and its application. The first priority is cooperation with the EU, NATO and OECD.

Cooperation with the EU does not only consist of the incorporation of the respective *acquis* into the national legislation, including the contingent practical, and particularly institutional measures, but also a participation in international projects and activities organized or coordinated by the European Commission. For example, the participation of Czech experts at the Information Society Forum, and the active representation of the Government Administration in the Joint High Level Committee. The Czech Information Society Forum, which was established recently by the Czech Republic Government Council for the State Information Policy, will become a new participant in this cooperation. Its first task has included designing the principles of the eEurope initiative and all done in cooperation with the council and the office for the state information system.

eEurope+

The eEurope Action Plan has been the result of the European Council ambition for Europe for the next decade to become "the most competitive and dynamic knowledge-based economy in the world". It recognized the urgent need for Europe to quickly exploit the opportunities of the knowledge-based economy and in particular the Internet. The Czech Republic together with other candidate countries recognized the strategic goal set by the EU-15 and agreed to embrace the challenge set by the EU member countries with eEurope by deciding to launch an "eEurope-like Action Plan" (later called eEurope+) by and for the Candidate Countries as an addition to the EU political commitments in order to try and broaden the base for achieving the ambitions mentioned above. This means that the Czech Republic has adopted the EU's objectives as political commitments already prior to accession and the de-jure integration into the EU in 2004 will only mean the following of the EU objectives in this field. In order to facilitate comparison and exchange of information not only among the Candidate Countries but also with the EU Member States, actions have been clustered around the same three main objectives identified in eEurope and the same indicators selected by the EU-15, have been adopted for monitoring and benchmarking progress.

Candidate Countries have recognized however that, if the full benefits of the actions are to be reaped, a further acceleration in the effective implementation and functioning of the *acquis communautaire* in areas related to Information Society is required. This has resulted in the inclusion of an additional, new objective, not previously found in eEurope, that aims to put in place the fundamental building blocks of the Information Society. Attainment of the eEurope+ objectives can be significantly enhanced and accelerated through cross-border and international collaboration.

The final form of the common objectives accepted also by the Czech Republic has been set as follows:

0. Accelerate establishments of the basic building blocks for the Information Society.

- a) To accelerate the provision of affordable communication services for all.
- b) To transpose and implement the acquis relevant to the Information Society.

1. A cheaper, faster, secure Internet.

- a) Cheaper and faster Internet access.
- b) Faster Internet for researchers and students.
- c) Secure networks and smart cards.

2. Investing in people and skills.

- a) Taking the European youth into the digital age.
- b) Working in the knowledge-based economy.
- c) Participation for all in the knowledge-based economy.

3. To stimulate the use of the Internet.

- a) Accelerating e-commerce.
- b) Government online: electronic access to public services.
- c) Health online.
- d) European digital content for global networks.
- e) Intelligent transport systems.
- f) Environment on-line.

The National Program and eEurope+ do not differ in general, but some differences between them can be found. For example, the National Program emphasizes the government on-line that is only one of many points named in eEurope+. On the other hand, liberalisation, lower prices and full accessibility of telecommunication services are the important parts of eEurope+, but do not appear in the National Program. The Czech Republic has joined the countries pursuing the eEurope+ objectives, and adjusted its aims with those mentioned in eEurope+. As a consequence, the policy measures connected with the telecommunication sector in the Czech Republic will be done in accordance with the above mentioned points to facilitate the effort of being on the level with other EU-members and contributing to Europe-wide Information Society.

The need of comparison will also force the Czech Republic to create effective system of data collection and processing that is not yet developed.

Increase in VAT on telecommunications

The harmonisation of legislation with the acquis also takes into regard value added tax imposed on telecommunications. The exact tax rate is not given by the European Union but it is given that telecommunications cannot be in the reduced-rate group of goods anymore. In the Czech Republic this means telecommunications will be taxed by 22% instead of current 5% which will cause the price-hike of all the telecommunications services. Internet users, especially households are expected to suffer the most. The price-hike will be reduced by lower prices arising from intensified competition in the enlarged European market in a longer term.

The Czech government have decided to increase the tax without any gradual period. The firms were expected to keep those costs as they would be aware of the loss of customers but the reality seems to be different. Many of them are going to increase their prices by about 17% as a consequence of this policy measure. This will negatively effect the development of the Internet in the Czech Republic and decrease the demand for all telecommunication services. Even today, only 17% of the households have the Internet connection, which is 2,5-3 times lower than the European average. And the volume of Internet calls has been stagnating for a couple of month.

The firms are likely to utilise the situation to show to the customers the advantages of post-paid services, although the post-paid services are concurrently six-times profitable than the pre-paid ones. In the mobile market the transfer of the customers from T-Mobile's and Eurotel's to the cheaper Cesky Mobil's tariffs could intensify.

What regards the fixed line market, the movement of the firms to the tariffs with the "free minutes" is expected. At least part of the households is going to look for the way how to keep the amount of money as it is. It is expected that they change their tariffs, operators, length of their phone calls or the time of the calls.

The change in the VAT rate will annually bring approximately 17-20 billion CZK to state's treasury and will likely influence the prices of other goods and services. This change will not contribute to proliferation of information technologies but opposes the aim of supporting the information society from the EU's side.

Short to medium term policy measures

The above analysis has identified several bottlenecks to the further evolution of the telecommunications sector. These have to be provided for by policy action. Namely they are:

- Privatisation of the incumbent telecommunication company Cesky Telecom to facilitate its integration into the multinational telecommunication structures.
- Further strengthening and increasing the transparency and predictability of the regulatory process.
- Appropriate adoption measures to help competition fully develop.
- The creation of investment package incentives for the strategic investors, attracting an increasing number of small scale investments.
- Increased VAT implementation.
- School facilitation of the Internet and intensifying IT education.
- The system of data collection and processing creation.
- The judiciary system reforming and securing effective law enforcement.

| STRENGTH | WEAKNESSES |
|---|--|
| | <ul style="list-style-type: none"> • Insufficient data availability <p>Difficulties with program "Internet to Schools".</p> |
| OPPORTUNITIES | THREATS |
| <ul style="list-style-type: none"> • Opportunity to establish an information society. • Opportunity to become participants on EU projects. • The availability of Structural Funds resources. | <ul style="list-style-type: none"> • Increase in VAT as a cause of price increase. • Unqualified labour force unable to perform in IS. |

Conclusion

Telecommunications has been a very rapidly developing sector, not only in the Czech Republic. Because of this fact, the EU accession is a long-lasting process and there is not expected to be any substantial change connected with EU accession in the following years. Because the European Union telecommunications market reflects the state of the world market, the Czech Republic will be more influenced by the recovery and further development in the world. The FDI and especially Cesky Telecom's privatisation will represent the state of a whole telecommunications sector.

The most visible change is expected to be seen in competition. Although the liberalisation has already contributed to its formation, the entry into a single market will mean increased competition for customers involving the introduction of new services, price lowering and quality improvement. In general, the level of services will become comparable to that of the European Union.

Efficiency regarding Czech Telecommunications Office, acquis implementation is expected to change the fixed-line environment and to create equitable conditions for all operators. Although the fixed-line market has already experienced a number of changes (some of them accelerated by the EU accession) it will still have to be regulated. Interconnection pricing, which is planned to be regulated in the sector constitutes one of the main obstacles to competition.

Increased credibility, and common framework policy settings are leading to improvements within the Information society. This will make the position of the Czech telecommunications sector better and help the diffusion of modern services after EU accession. Moreover, the Czech Republic can offer the European Union a qualified labour force. Czech specialists will continue to be demanded on the European market and their experiences brought back to the country will help to keep the country up to date with other member countries.

Last but not least, the Czech Republic has already accepted the EU partial objectives leading towards an Information Society. The set general framework for the whole EU could positively influence a development in the sector.

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Appendix:

Development of the telecommunications networks and services in the Czech Republic

| Indicator | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 |
|--|-------|-------|-------|-------|-------|--------|--------|--------|
| Number of subscribers in fixed public tlp. Network per 100 inhabitants | 20.89 | 23.24 | 27.34 | 31.78 | 36.29 | 36.96 | 37.67 | 37.51 |
| Average waiting time for MTS establishment (month) | 47.95 | 71.55 | 17.23 | 7.15 | 1.89 | 1.23 | 0.95 | 0.83 |
| Number of residence telephone stations in fixed network per 100 homes | 38.76 | 42.19 | 50.09 | 59.95 | 69.74 | 72.51 | 71.86 | 68.73 |
| Share of fixed network subscribers connected to digital exchanges (%) | 15.06 | 17.89 | 31.7 | 48.49 | 64.02 | 74.43 | 85.72 | 93.85 |
| Number of public pay telephones per 100 inhabitants | 0.18 | 0.2 | 0.26 | 0.28 | 0.29 | 0.29 | 0.29 | 0.28 |
| Total number of ISDN subscribers | x | x | X | 196 | 2753 | 11394 | 26194 | 276010 |
| Number of subscribers in public mobile networks per 100 inhabitants | 0.26 | 0.44 | 1.94 | 5.05 | 9.36 | 18.88 | 42.28 | 68.2 |
| Number of registered Internet domain hosts | 10397 | 21856 | 40846 | 56869 | 86482 | 122253 | 160000 | 215525 |

Source: Transport and Communication Ministry