PHARE MULTI-COUNTRY PROGRAMME

FOR TELECOMMUNICATIONS AND POSTS

TELECOMMUNICATIONS STATUS STUDY

Final Report, March 21, 1997

**Facultés Universitaires Notre-Dame de la Paix -
Centre de Recherches Informatique et Droit**

in association with
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PHARE MULTI-COUNTRY PROGRAMME FOR TELECOMMUNICATIONS AND POSTS TELECOMMUNICATIONS STATUS STUDY - Final Report, March 21, 1997

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The data presented here were prepared by Cullen International under contract to the European Commission
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Introduction

The European Commission has initiated a systematic analysis and continuous assessment of the development of the telecommunications sector in the Central and Eastern European countries. The purpose is to measure the progress achieved within the Phare Multi-Country Programme for Telecommunications and Posts and to assess the Phare countries' eligibility to join the European Union.

Accordingly a project has been launched to establish an initial base of information, with a view to the creation of a Phare Regulatory Observatory. As the first step towards this, the following revised interim report has been produced. It is based on a limited number of sources and its aims are to provide a structured overview of the telecommunications sector in ten Phare countries: Bulgaria, the Czech Republic, Estonia, Hungary, Latvia, Lithuania, Poland, Romania, Slovakia and Slovenia.

A preliminary version of the interim report was produced in August 1996 at short notice, in order to be available for the Second EU/CEEC Forum on the Information Society held in Prague on September 12 - 13, 1996. It was based on a desk study of information collected during the previous 12 months by the European Union and other institutions. The most important sources for this study were:

- European Commission (DG XIII): *Draft Table on the Major Aspects of the Regulatory Framework in Central and Eastern Europe*, based on material provided by the CEECs;
- Sagatel study IS4/94: *The development of advanced networks in Phare and Tacis countries;*
- EBRD: *Regulatory Status Survey for the Telecommunications sector in Central and Eastern Europe and the former Soviet Union*;
- CEEC Information Society Forum - Panel A (Financing and Infrastructure) *Conclusions and recommendations of Panel A, final version;*
- CEEC Information Society Forum - Panel B (Legal and Institutional Framework), *Draft Report of Panel B.*

No additional independent research could be carried out for the August version of the interim report and much of the information required to make a reliable preliminary assessment was unavailable. Consequently there were unavoidable gaps in the content of this version. Furthermore, due to the rapidly evolving situation in the Phare countries the August report soon needed to be updated. The countries covered by this study were therefore asked to provide comments on the preliminary version in order to fill in gaps and correct any inaccuracies. They were given four months in which to respond.

The August report was subsequently officially reviewed and updated by the officials responsible in the following 8 Phare countries: the Czech Republic, Estonia, Hungary, Latvia, Lithuania, Poland, Slovakia and Slovenia, and a second version of the interim report was produced in November 1996.

However, despite the helpful cooperation and comments of these officials, some gaps still remained in the report, mainly because the information required was simply unavailable at the time.

Accordingly in early 1997 interviews were conducted with government representatives from all 10 countries represented in this report. Although primarily aimed at collecting additional information, these interviews also provided an opportunity for further revising, updating and finalising the report.

The authors therefore believe that this final revised version of the interim report now achieves its aim and gives a comprehensive overview of the telecommunications sector in the countries concerned.

Bulgaria Czech Republic Estonia Hungary Latvia Lithuania Poland Romania Slovakia Slovenia

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PHARE MULTI-COUNTRY PROGRAMME FOR TELECOMMUNICATIONS AND POSTS - TELECOMMUNICATIONS STATUS STUDY

Final Report - March 21, 1997 - *BULGARIA*

List of contents - Bulgaria

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Executive summary - Bulgaria

The Bulgarian regulatory framework is being revised to enable the telecommunications networks and markets to be liberalised and modernised. A completely new Telecommunications Law is needed to replace the old Communications Law of 1975 and this is expected to be enacted during 1997. The Trade Act and the Competition Protection Act regulate competition in general, while foreign investments in Bulgaria are regulated both by the Act on Economic Activity of Foreign Persons and the Act on Protection of Foreign Investments. A Concession Act (enacted in '96, and currently under review by the interim government) regulates the radio-frequency spectrum for civil use, the monopoly telecommunications services and some networks of national interest.

The newly elected parliament is expected to amend the Concession Act and enact the Telecommunications Act very soon. The sale of at least 25% of the Bulgarian Telecommunications Company (BTC) to a strategic partner is expected to follow immediately.

The Bulgarian telecommunication regulatory and administrative structure is still centralised. In 1992 the Post & Telecommunications Administration split into three separate entities:

- The Committee of Posts and Telecommunications, an administrative body with somewhat conflicting functions - making postal and telecommunications policy, owning the dominant postal and telecommunications operators on behalf of the government, and acting as regulator in the same sector;
- The Bulgarian Postal Company, operating postal services under the Trade Act with some subsidies from the budget;
- The Bulgarian Telecommunications Company (BTC), operating telecommunications networks and services under the Trade Act.

The Committee of Posts and Telecommunications (CPT), is directly dependent on the Council of Ministers. Some attempt at strengthening the regulatory function of the CPT and resolving its conflicting functions may be seen in its latest structural changes, which attempt to define and separate the three functions more clearly, though within the existing organisation.

A partial privatisation of the Bulgarian Telecommunications Company (BTC), the main public telecommunications operator, is planned but not yet started. The World Bank is helping the Bulgarian Government to hire a financial advisor on privatisation.

There is no legal limit to foreign ownership in Bulgaria. Sprint Business Telecommunications Company is a joint venture company with 60% foreign ownership, and Bulphon has 68%.

Markets for telecommunications networks have not yet been opened to competition. Owned 100% by the state, BTC retains under its current licence exclusive rights to operate the PSTN and voice telephony until 1997. Preparatory work for the privatisation of BTC ended with a decision to maintain the monopoly for voice telephony until 1 January 2003 and the infrastructure until 1 January 2005, in order to cope with the shortfall in service and infrastructure. Thus at the moment neither CATV networks nor alternative infrastructures can be used to provide voice telephony in Bulgaria.

Liberalisation is beginning in the mobile sector and paging operators are competing at both local and national level. There are 70 CATV operators. Payphones are liberalised, as are all data and value-added services.

The country enjoys a relatively high penetration rate of 34 telephone lines per 100 inhabitants. The local and transit networks are still based on analogue technology and these networks need to be modernised by their owner, BTC. However, the implementation of a digital overlay network began in 1995.

The regulatory trend is towards the gradual abolition of the BTC monopoly of telecommunications, modernisation of the networks and liberalisation of telecommunications markets - voice telephony being an exception in the short term.

Although in theory Bulgarian operational and regulatory telecommunications functions have been separate from 1992 onwards, nevertheless, to get into line with EU legislation, a truly independent regulatory authority needs to be created.

Next: The regulatory framework

Czech Republic Estonia Hungary Latvia Lithuania Poland Romania Slovakia Slovenia

Previous: Executive summary

1. The regulatory framework - Bulgaria

1.1 Telecommunications

Primary legislation	Communications Law	Enacted 1/1/1975
	Concession Act	Enacted 01/1996
	Communications Law is under revision. A recent draft of a telecommunications law has been issued.	pending
Key secondary legislation **Subject** • National Regulatory Authority (NRA)	Decree N114 of the Council of Ministers stipulating the basic functions and tasks of the Committee of Posts and Telecommunications	Enacted 1991

Table 1 - Telecommunications regulations

1.2 Broadcasting

Primary legislation	Law on Radio and Television	Enacted 1996
Key secondary legislation	Ordinance on the Technical Requirements and Rules for Licensing and Registration of Local Transmitters for Radio and TV Broadcasting.	Enacted Date? Enacted Date?

Table 2 - Broadcasting regulations

1.3 Competition

Primary legislation	Trade Act Competition Protection Act	Enacted 1992 Enacted 1993
Key secondary legislation	Act on Economic Activity of Foreign Persons Act on Protection of Foreign Investments	Enacted 1994 Enacted 1994

Table 3 - Competition regulations

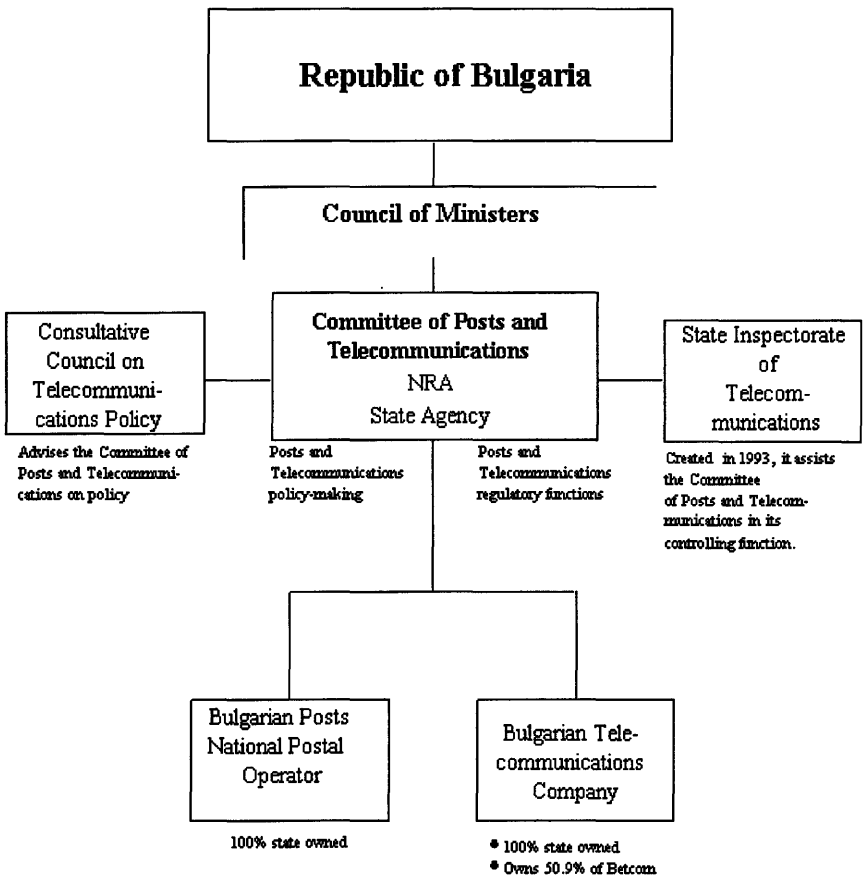
Next: Players in the telecommunications market

Czech Republic Estonia Hungary Latvia Lithuania Poland Romania Slovakia Slovenia

Previous: The regulatory framework

2. Players in the telecommunications market - Bulgaria

2.1 Main regulatory structure



2.2 Telecommunications regulatory authorities

Regulatory authorities	Committee of Posts and Telecommunications - CPT (body of the Council of Ministers)	**Key responsibilities**: • to pursue State policy in post and telecommunications • to pursue regulatory functions in post and telecommunications (i.e. licensing, privatisation, type approval, application of tariffs policy, control on illegal access to the telecommunications services markets) • to stimulate the market • to represent the state as owner
	State Inspectorate of Telecommunications	• to assist the CPT in its controlling functions
	The Consultative Council on Telecommunications Policy	• to advise the CPT on telecommunications policy

Table 4 - Bulgarian regulatory authorities

2.3 Telecommunications operators

Switched fixed networks and services	PSTN	Bulgarian Telecommunications Company Ltd. - BTC - the public national operator, a state-owned company incorporated on 11 December 1992, by Injunction 124 of the Council of Ministers
	Cable TV	Over 40 private operators are licensed but around 100 operate CATV services without a licence
Mobile and satellite networks	Altaj	BTC
	NMT 450	Radio Telecommunication Company Ltd.
	Trunked networks	None in operation
	GSM	Mobiltel Ltd. (100% Bulgarian investors)
	DCS 1800	No operator
	Paging	*On a national level*, 3 operators have a licence: • Radio Telecommunication Company Ltd. (public); • Global and Jordan (private); • BTC Ltd. *On a local level*, the following 7 companies have developed paging networks in 10 towns: • Black Sea; • Bulvar Electronics; • DIVA; • Microbul; • BTC; • Pirel; • Skortel.
	Satellite	BTC Ltd. BMF (Immarsat services)

Table 5 - Bulgarian telecommunications operators

Next: Privatisation and strategic alliances

Czech Republic Estonia Hungary Latvia Lithuania Poland Romania Slovakia Slovenia

Previous: Players in the telecommunications market

3. Privatisation and strategic alliances - Bulgaria

3.1 Current status and plans for privatisation of the main telecommunications operator

Telecoms operator	Status	Plans	Procedure used and/or planned	Current/ max. level of foreign participation	Plans to form a company
BTC Ltd.	Not privatised	Partial privatisation within a 1-2 year period	Open bidding	Not limited; expected 25 - 51% in the beginning	Incorporated 11 Dec. 1992

Table 6 - Current status and plans for privatisation

3.2 Strategic alliances

Company	Services	Ownership status
BETKOM	Supply, installation and operation of GPT pay-phones, pre-paid card phones	Joint-stock company: • 50.9% BTC Ltd. • 49.1% GPT Great Britain
Bulfon	Pre-paid card phones	Joint venture: • 32% BTC Ltd. • 68% Intracom.
Business Star	Long-distance and international telephony over an OBN (overlay business network)	Joint venture: • BTC Ltd. • PTT Telekom Netherlands
Radio Telecommunications Company Ltd. (RTC)	Mobile telephony and paging	Joint venture: • 51% consortium of BTC Ltd. (39%) & Radio Electronic Systems (12%) • 49% Cable & Wireless
Sprint Business Telecommunications Company	X.25 data transfer network Telex, e-mail	Joint venture: • 60% Sprint USA • 40% BTC Ltd.

Table 7 - Strategic alliances

Next: Status of liberalisation of the markets for networks and services

Czech Republic Estonia Hungary Latvia Lithuania Poland Romania Slovakia Slovenia

Previous: Privatisation and strategic alliances

4. Status of liberalisation of the markets for networks and services - Bulgaria

4.1 Telecommunications networks and alternative infrastructure

Category of infrastructure	Status	Legal requirements
Public telecommunications network	The Bulgarian PSTN is operated exclusively by BTC Ltd. until at least 1997. BTC Ltd. has exclusive rights to provide access to local, long-distance telephony, qnd telegraph over the fixed network	BTC's exclusive rights are contained in the licence granted by the CPT on behalf of the Council of Ministers. In the draft Act , 1 January 2003 is the expiry date for these exclusive rights, and 1 January 2005 the expiry date for infrastructure
CATV	Cannot be used to provide voice telephony but can for non-reserved services	The provision of some non-reserved services require a licence.
Alternative infrastructure (internal networks of motor ways, railways, electricity utilities and oil industry)	May be used for services to a closed user group. No interconnection permitted with PSTN or PSDN	Does not require a licence.

Table 8 - Telecommunications networks and alternative infrastructure

4.2 Telecommunications services

4.2.1 Voice telephony

In 1992 BTC Ltd. was granted a 5-year exclusive rights licence and a 20-year general licence. The exclusive rights period will be extended probably until January 1, 2003.

Voice telephony	Status of liberalisation	Service provider(s)	Exclusive rights date of expiry
Local	Monopoly	BTC Ltd.	1997, extended probably until 2003
Domestic long-distance	Monopoly	BTC Ltd.	1997, extended probably until 2003
International long-distance	Monopoly	BTC Ltd.	1997, extended probably until 2003

Table 9 - Voice telephony - status of liberalisation

4.2.2 Data transmission

With 3 licences already granted, there is limited competition in the data transmission market. BTC Ltd. uses the X.25 BULPAC data network to provide data services. The second operator is Sprint Business Telecommunications Company and the third operator the academic network used and owned by the academic community. Any other data network operator can receive a licence, the only limitation being the compulsory use of BTC's facilities for transmission.

4.2.3 Mobile communications

Mobile communications	Service providers	Status of liberalisation	Exclusive rights: date of expiry	Additional information
Altaj	BTC	Only spectrum restrictions	Not applicable	To cease operations in 1997
NMT 450	RTC	No competition; shares the same niche market as Mobiltel	Not applicable	Operates a paging service in competition
GSM	Mobiltel	Open to competition but no other licence has yet been granted The end of '97 is the deadline for granting a second GSM licence	Not applicable	Started late in 1995; at present only operating in Sofia and Plovdiv; the granting of a second GSM licence is under consideration
DCS 1800	No service provider	Not applicable	Not applicable	Not applicable
Paging	RTC, BTC, Global & Jordan, Bulvar, Microbul, Pirel, Black Sea, Skortel, DIVA	Open to competition on the national and local front	Not applicable	Nationwide and local licences have been granted, for 12 and 8 years respectively

Table 10 - Status of liberalisation of the mobile communications market

4.2.4 Satellite communications

BTC operates a class A earthstation and serves as umbrella for a multitude of VSAT terminals.

Bulgarian Maritime Fleet has a licence to operate IMMARSAT services. Two VSAT operators will be granted licences, restricted only from providing voice telephony.

4.2.5 Other services

TELEMATIC - 100% owned by a BTC subsidiary

Teletex service TELEVEST - owned by the same subsidiary

RDS paging service in Sofia - owned as above

Over 15 INTERNET primary service providers (not licensed)

Next: Additional information on networks and services

Czech Republic Estonia Hungary Latvia Lithuania Poland Romania Slovakia Slovenia

Previous: Status of liberalisation of the markets for networks and services

5. Additional information on networks and services - Bulgaria

5.1 Penetration rate

Penetration rate	
CATV connections per 100 households	4
Main telephone lines per 100 inhabitants	34
Percentage of households provided with telephone lines	65%

Table 11 - Penetration rate

5.2 Quality of service - Voice telephony

5.2.1 Waiting time for telephone subscription

	Average waiting time	Maximum waiting time
Waiting time for telephone subscription	5 years	20 years

Table 12 A - Waiting time for telephone subscription

5.2.2 Numbers of faults cleared within 24 hours

	Numbers of faults cleared within 24h.
On average	51%

Table 12 B - Quality of service of voice telephony

5.3 Network investments

5.3.1 Investment volume per year

The economic situation in the recent years makes any average estimation very difficult. 65,000 new lines per annum has been the maximum, 45,000 the minimum. The Digital Overlay Network (DON) investment programme in the last 3 years accounts for approximately 90 million US$ loans and 40 million US$ self-financed investments.

5.3.2 Investment per main telephone line

Around US$ 700 per new line, 200 -300 US$ per line for upgrade

5.3.3 Investment plans

The Committee of Posts and Telecommunications Development Plan has two phases:

- First phase: 1994 - 1997: setting up a nationwide Digital Overlay Network (DON) at an estimated cost of ECU 252.2 million
- Second phase: 1998 - 2010: gradual digitisation of the local network at an estimated cost of ECU 1.68 billion

Next: Participation in international bodies, groups and projects

Czech Republic Estonia Hungary Latvia Lithuania Poland Romania Slovakia Slovenia

Previous: Additional information on networks and services

6. Participation in international bodies, groups and projects - Bulgaria

6.1 Membership/participation in international bodies or groups

Bulgaria	Status	Date of membership
ITU	member	6 September, 1980
CEPT	member	associated, 1992
OECD	non-member	not applicable
WTO	member	1 December 1996
ETSI	member	associated, 1992

Table 13 - Bulgarian participation in international bodies

6.2 Participation of Bulgaria in international telecommunications projects

Transbalkan Line - TBL

Albanian Telecom, BTC, IRITEL, PTT of the self-styled Macedonia and the Turkish PTT are engaged in this project. Istanbul, Sofia, Skopie, Tirana and Bari will be connected by a 1,600 km digital trunk line, based on fibre optic terrestrial and submarine cables and on digital microwave links. SDH technology and STM-1 and STM-4 transport modules will be used.

Submarine Cable System in the Black Sea - KAFOS

BTC, ROMTELECOM, Turkish PTT and UKRTEL started this project in May 1992. Later UKRTEL dropped out to join ITUR, and MOLDTELECOM joined KAFOS in its place. The terrestrial points are Istanbul, Varna and Mangalia. Its intention is to provide greater access to COLUMBUS and FLAG, via ITUR.

TransEuropean Network - TET

TET connects Brno (Czech Republic) to Yeroskipos (Cyprus).

BTC is participating with fibre optic technology on the Bulgarian/Romanian border - Rousse - Sofia, in the Digital microwave link Sofia to Petrich and in the fibre optic cable from Petrich to the border between Bulgaria/Greece.

TransEuropean Line - TEL

The project is based on fibre optic technology, connecting Frankfurt with cities in Central and Eastern Europe. BTC is building two links:

1. Border Romania/Bulgaria - Rousse - Sofia
2. Border Romania/Bulgaria - Rousse - Varna.

Black Sea Fibre Optic System - BSFOS

This is a common project between BTC, CYTA (Cyprus), OTE (Greece), ROSTELECOM (Russia) and UTEL (Ukraine). Georgia joined the project later on. Varna, Odessa, Novorossiysk and Poty will be linked by submarine cables.

Next: Future trends in the sector

Czech Republic Estonia Hungary Latvia Lithuania Poland Romania Slovakia Slovenia

Previous: Participation in international bodies, groups and projects

7. Future trends in the sector - Bulgaria

7.1 Telecommunications policy

Two words sum up the main trends of Bulgarian telecommunications policy for the future:

liberalisation and privatisation. The short- and long-term goals of telecommunications development in Bulgaria are formulated in the document *State Policy in Telecommunications 1991*:

- gradual abolition of the state monopoly by introducing governmental regulation and encouraging a competitive market for telecommunications services;
- provision of basic telecommunications services of high quality at reasonable prices;
- rapid introduction of new services, with priority being given to the demands of business customers;
- putting the maximum share of profits towards establishing an investment fund for infrastructure development.

Other objectives of the Bulgarian Telecommunications policy are mentioned in a report from the Committee of Posts and Telecommunications:

- private sector participation in network building and service provision;
- fair competition under Bulgarian law.

7.2 Developments of markets and technology

The national carrier BTC has created a development plan covering the period 1994 - 2010, structured in two phases:

1. 1994 - 1997: completion of the digital overlay network (DON) and the re-design of the transit network

2. 1998 - 2010: replacing analogue with digital equipment in the local network.

As far as market development is concerned, satellite communications and value-added services are currently developing well.

Next: Appendix 1 - List of sources

Czech Republic Estonia Hungary Latvia Lithuania Poland Romania Slovakia Slovenia

Previous: Future trends in the sector

Appendix 1 - List of sources - Bulgaria

1. Draft table on the Major Aspects of the Regulatory Framework in Central and Eastern

Europe, final version 5

Source: European Commission, DG XIII

Ref.: DG XIII, IS 2 MS/HPG

Date: 4 July 1996

2. Study IS4/94 on the development of advanced networks in PHARE and TACIS countries

Source: Sagatel

Ref.: S.4375/BUL

Date: February 1996

3. Regulatory Status Survey for the Telecommunications sector in Central and Eastern Europe and the former Soviet Union

Source: EBRD, Telecommunications Team, Terrance Rochefort

Date: March 1995

4. Central and East European Countries (CEEC) Information Society Forum - *Conclusions and recommendations of Panel A (Financing and Infrastructure), final version*

Source: The European Commission and the Hungarian Ministry of Transport,

Communications and Water management

Date: May 1996

5. Central and East European Countries (CEEC) Information Society Forum - *Draft Report of Panel B (Legal and Institutional Framework)*

Source: European Commission, DG XIII

Ref.: hpg/dhar regpanel

Date: 4 March 1996

6. Committee of Posts and Telecommunications: *The reform of Bulgarian Telecoms 1995*

Source: Bulgarian Committee of Posts and Telecommunications

Undated

7. Commission of the European Communities: *Evaluation of 1991 PHARE programme for*

Bulgarian Telecommunications

Source: European Commission, Ove Arup & Partners, Consulting Engineers

Date: July 1994

8. Bulgarian Ministry of Telecommunications and Posts, *Information Note n°2*

Source: unknown

undated

9. Committee of Posts and Telecommunications Information Newsletter, Autumn 1995

Source: Committee of Posts and Telecommunications

Date: Autumn 1995

10. Draft outline of the major elements of regulatory reform in developing countries

Source: European Commission, DG XIII, Gebhardt, version 2

Ref.:

Date: 11 July 1996

11. The Road to Accession, Telecommunications and Posts Sector Paper

Source: European Commission

Ref.:

Date: 17 July 1996

12. Interviews with officials of the Committee of Posts and Telecommunications: Mrs. Snejana Anguelova, Director of the Project Implementation Unit, Mrs. Lina Danovska, senior adviser, and Mr. Rendov, senior adviser.

Czech Republic Estonia Hungary Latvia Lithuania Poland Romania Slovakia Slovenia

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PHARE MULTI-COUNTRY PROGRAMME FOR TELECOMMUNICATIONS AND POSTS - TELECOMMUNICATIONS STATUS STUDY

Final Report - March 21, 1997 - *CZECH REPUBLIC*

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Executive summary - Czech Republic

After Czechoslovakia split into the Czech Republic and Slovakia in 1993, the 1992 Telecommunications Act was recognised as being valid for both republics. The Act on the Commission for Broadcast and Television now regulates broadcasting in the Czech Republic, and the Economic Competition Act and the Economic Law regulate competition.

The operational function of SPT Telecom has been separated from the regulatory function which is carried out by the Czech Telecommunication Office. As this remains part of the Ministry of Transport and Communications, additional information is needed in order to assess further the independence of the national regulatory authority from the operator.

SPT Telecom has been partially privatised. An international consortium, Telsource, holds 27% of the company, 19% is owned by individual shareholders and companies, and 3% by restitution funds. Thus SPT Telecom is still 51% state-owned, under the responsibility of the Ministry of Transport and Communications.

In the operation of the PSTN and the provision of voice telephony, the Czech Republic has adopted a regime of multiple (exclusive) concessions in the local sector and has granted SPT Telecom exclusive rights in the domestic long-distance and international sectors. While CATV networks cannot be used to provide telecommunications services, the use of alternative infrastructure to provide such services is permitted under the conditions provided in the Czech Telecommunications Act.

Mobile markets are liberalised. EuroTel is the cellular mobile operator of an analogue NMT 450 system. Recently the Czech authorities have granted two licences for GSM services (EuroTel and RadioMobil). There is an open market in satellite communications and data transmission.

The United Telecommunications Network (UTN), the network of the former Czechoslovakia, serves both the Czech Republic and Slovakia. Until the end of 1996, communications between the two countries considered as domestic long-distance calls. The UTN in the Czech Republic consists of analogue cables and analogue radio links, as well as digital systems. The construction of a nationwide digital overlay network was completed in 1994 and digital technology will be extended to all network levels by 1998. The current penetration rate of telephone lines in the Czech Republic is 25 per 100 inhabitants.

As a general comment, the country may be said to be well advanced both in the process of modernising its network and in liberalising its telecommunications services market.

Although good progress has apparently been made, a great deal still needs to be done in order for the Czech Republic to get into line with EU legislation. National legislation needs to be revised with particular emphasis on liberalising voice telephony and infrastructure markets and on enabling VSAT communications to be connected to the PSTN.

Next: The regulatory framework

Bulgaria Estonia Hungary Latvia Lithuania Poland Romania Slovakia Slovenia

Previous: Executive summary

1. The regulatory framework - Czech Republic

1.1 Telecommunications

Primary legislation	Act N° 110/1964 Coll. on Telecommunications, as amended by Act N° 150/1992 Coll.	Enacted 12/03/92
Key secondary legislation **Subject** • Type approval mechanism	Decree on Type Approval of Terminals, N26/1996	Enacted 1996

Table 1- Telecommunications regulations

1.2 Broadcasting

Primary legislation	Act on the Council of the Czech Republic for Broadcasting N° 103/1992	Enacted 1992
Key secondary legislation	Decree N73/1974 and N360/1991 on audio and video cable systems	Enacted 1994 and 1991

Table 2 - Broadcasting regulations

1.3 Competition

Primary legislation	Act on the Economic Competition No 63/1991 The Commercial Law No 513/1991	Enacted 1993 Enacted 1991
Key secondary legislation	Decree N526/1990 and N580/1990 on price regulation	Enacted 1990

Table 3 - Competition regulations

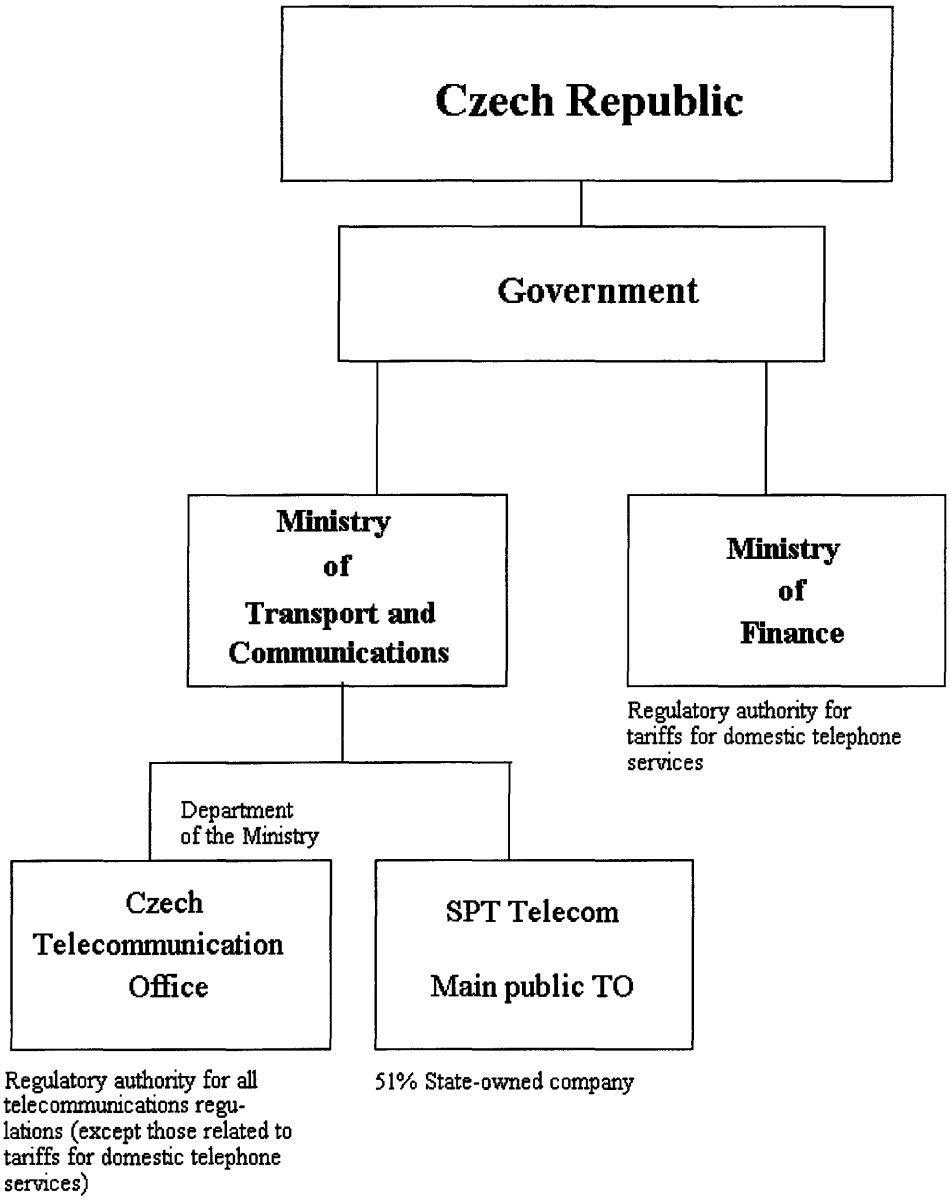
Next: Players in the telecommunications market

Bulgaria Estonia Hungary Latvia Lithuania Poland Romania Slovakia Slovenia

Previous: The regulatory framework

2. Players in the Telecommunications market - Czech Republic

2.1 Main regulatory structure



2.2 Telecommunications regulatory authorities

Regulatory authorities	Czech Telecommunication Office (Department of Ministry of Transport and Communications)	**Key responsibilities:** • all telecommunications regulations except for tariffs for domestic telephone services
	Ministry of Finance	• tariffs for domestic telephone services

Table 4 - Telecommunications regulatory authorities

2.3 Telecommunications operators

Switched fixed networks and services	PSTN	SPT Telecom, a.s. • joint-stock, state-owned company (51%) 6 local telecommunications operators (TOs) • operate in 16 local areas • 5% of the overall number of main lines 2 pilot local operators (Praha, Liberec) 1 public data network (Nextel) in operation 2 licences issued for public data networks: • GiTy, a.s. • AliaTel, a.s. Approximately 40 operators of private data networks
	Cable TV	Approximately 80 Cable TV companies
Mobile and satellite networks	Radiotelephone 160 MHz	SPT Telecom, a.s.
	NMT 450	Eurotel Prague spol. sr.o. • joint venture between SPT (51%) and a consortium of 2 American companies (Bell Atlantic, 24,5% and US West, 24,5%).
	Trunked networks	Approximately 50 local operators
	GSM	2 public operators • EuroTel Prague, spol. s r.o. • RadioMobil
	DCS 1800	No operator

	Paging	Radiokontakt Operator
		• joint-venture company
		  ○ Czech Radiocommunications (51%),
		  ○ Télédiffusion de France (49%)

	Satellite	Approximately 18 companies

Table 5 - Czech Republic telecommunications operators

Next: Privatisation and strategic alliances

Bulgaria Estonia Hungary Latvia Lithuania Poland Romania Slovakia Slovenia

Previous: Players in the telecommunications market

3. Privatisation and strategic alliances - Czech Republic

3.1 Current status and plans for privatisation of the main telecommunications operators

Telecoms Operators	Status	Plans	Procedure used and/or planned	Current/ max. level of foreign participation	Plans to form a company
SPT Telecom	Partly privatised	Privatisation in progress	Joint-stock company	27% / 34%	Incorporated
8 local TOs	Variable	Privatisation in progress	Joint venture	Variable / 100%	Incorporated

Table 6 - Current status and plans for privatisation

3.2 Strategic alliances

Company	Services	Ownership status
EuroTel Prague spol. s r.o.	Mobile telephony	Joint venture: • 51% SPT Telecom • 24.5% Bell Atlantic • 24.5% US WEST
Kabel Plus a.s.	Local telephony, CATV	Joint venture: • 36.1% Ceská Pojišt'ovna (insurance company) • 28.6% US West • 35.3% individuals and others
RadioKontakt Operator	Paging	Joint venture: • 51% Czech Radiocommunications • 49% Télédiffusion de France

RadioMobil	GSM	Joint venture:
		• 51% Czech Radiocommunications
		• 49% TMobil consortium
		  ○ 84,55% DeTeMobil,
		  ○ 12% STET
		  ○ 3,45% Czech companies

SPT Telecom, a.s.	Telephony, data communications, telex and telegraph	Joint venture:
		• 51% Government
		• 19% individual shareholders
		• 27% Telsource
		  ○ 49% Swiss Telecom PTT
		  ○ 51% PTT Telecom NL
		• 3% restitution funds

Süweda Prague	CATV	Joint venture: • 51% Süweda(Germany) • 49% Czech investors
TELECOM spol. sr.o.	Videoconference	Joint venture: • 50% SPT Telecom • 50% PTT Telecom NL

Table 7 - Strategic alliances

Next: Status of liberalisation of the markets for networks and services

Bulgaria Estonia Hungary Latvia Lithuania Poland Romania Slovakia Slovenia

Previous: Privatisation and strategic alliances

4. Status of liberalisation of the markets for networks and services - Czech Republic

4.1 Telecommunications networks and alternative infrastructure

Category of infrastructure	Status	Legal requirements
Public telecommunications network	The United Telecommunications Network (UTN) which covers the whole territory of the former Czechoslovakia is operated on the Czech Republic territory by SPT Telecom and the Local TOs under exclusive rights.	Exclusive rights granted by Government decision and authorisations
CATV	Cannot be used for providing telecommunications services	Not legally permitted
Alternative infrastructure (internal networks of roads, railways, electricity utilities and the oil industry)	Can be used as alternative infrastructure to the PSTN	Use is permissible as defined in the Czech Telecommunications Law.

Table 8 - Telecommunications networks and alternative infrastructure

4.2 Telecommunications services

4.2.1 Voice telephony

Voice telephony	State of liberalisation	Service provider(s)	Exclusive rights - date of expiry
Local	Multiple exclusive concessions	SPT Telecom + six local & two city TOs	January 1, 2001
Domestic long-distance	Exclusive rights	SPT Telecom	January 1, 2001
International long-distance	Exclusive rights	SPT Telecom	January 1, 2001

Table 9 - Voice telephony - state of liberalisation

4.2.2 Data transmission

The data transmission market is open to competition. There is one main packet switched data network called Nextel which is operated by SPT Telecom. Two licences were issued for two other PSDN. There are 40 operators of private networks.

4.2.3 Mobile communications

Mobile communications	Service providers	State of liberalisation	Exclusive rights - date of expiry	Additional information
Radiotelephone 160 MHz	SPT Telecom	No competition	Not applicable	Service available mainly in Prague and Brno
NMT 450	EuroTel	No competition	2011	Late 1995, 90% of the territory was covered
GSM	EuroTel RadioMobil	Limited competition	Not applicable	Nationwide coverage Commercial services by the end of 96
DCS 1800	No service provider	Not yet decided	Not yet decided	Not applicable
Paging	Radiokontakt Operator	No competition	1994	Only one network

Table 10 - State of liberalisation of mobile telecommunications markets

4.2.4 Satellite Communications

The satellite communications market is open to competition.

4.2.5 Other services

Other services can be freely provided. There are approximately 50 local operators of trunk networks in the 450 MHz range.

Next: Additional information on networks and services

Bulgaria Estonia Hungary Latvia Lithuania Poland Romania Slovakia Slovenia

Previous: Status of liberalisation of the markets for networks and services

5. Additional information on networks and services - Czech Republic

5.1 Penetration rate

Penetration rate	
CATV connections per 100 households	12
Main telephone lines per 100 inhabitants	25
Percentage of households provided with telephone lines	45%

Table 11 - Penetration rate

5.2 Quality of service - Voice telephony

5.2.1 Waiting time for telephone subscription

	Average waiting time	Maximum waiting time
Waiting time for telephone subscription	over 2 years (847 days)	over 20 years

Table 12 A - Waiting time for telephone subscription

5.2.2 Numbers of faults cleared within 24 hours

The numbers of faults cleared within 24 hours is unknown but the information on the number of faults cleared within 72 hours is available.

	Numbers of faults cleared within 72h.
On average	90.33

Table 12 B - Quality of service of voice telephony

N.B.: the information provided in the table concerns only the number of successful connections.

Next: Participation in international bodies, groups and projects

Bulgaria Estonia Hungary Latvia Lithuania Poland Romania Slovakia Slovenia

Previous: Additional information on networks and services

6. Participation in international bodies, groups and projects - Czech Republic

6.1 Membership/participation in international bodies or groups

Czech Republic	Status	Date of membership
ITU	member	1993
CEPT	member	1993
OECD	member	December 1995
WTO	member	1 January 1995
EUTELSAT	member	1993
INMARSAT	member	1988
INTELSAT	member	1992
INTERSPUTNIK	member	1971
ETSI	member	1993

Table 13 - Participation of the Czech Republic in international bodies

6.2 Participation of the Czech Republic in international telecommunications projects (such as Trans Europe Lines):

The Czech Republic is involved in the PHARE Multi-Country Programme for Telecommunications and Posts.

Next: Future trends in the sector

Bulgaria Estonia Hungary Latvia Lithuania Poland Romania Slovakia Slovenia

Previous: Participation in international bodies, groups and projects

7. Future trends in the sector - Czech Republic

7.1 Telecommunications policy

- Adopted in 1994, the Government Decision N°428 contains the 10 rules of the country's telecommunications policy.
- In 1995, the Government decided to introduce GSM technology which will be operated by two competitive companies with nation-wide coverage. Two GSM licences were granted: to EuroTel (see 3.2 before), and in March 1996, to RadioMobil which is a joint-venture between Ceské Radiokomunikace (Czech Radiocommunications) (51%) and the TMobil consortium (49%).
- SPT Telecom, the public carrier, has launched a network development program. The first phase, implementing a national digital overlay network, has been completed, and the second phase, which involves the extension of local networks and the gradual change from analogue to digital technology at all network levels, is still in progress. The second phase covers the period 1995 to 1998.

7.2 Development of markets and technology

The market for terminal equipment is fully liberalised as well as the market for value-added services.

Next: Appendix 1 - List of sources

Bulgaria Estonia Hungary Latvia Lithuania Poland Romania Slovakia Slovenia

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PHARE MULTI-COUNTRY PROGRAMME FOR TELECOMMUNICATIONS AND POSTS - TELECOMMUNICATIONS STATUS STUDY

Final Report - March 21, 1997 - *ESTONIA*

List of contents - Estonia

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Executive summary - Estonia

Estonia has adopted a modern regulatory framework in order to enable the rapid development of its telecommunications networks and services. The primary telecommunications law is the Communications Law of the Republic of Estonia. Broadcasting regulations are set out in the Law on Broadcasting while competition rules can be found in the Competition and Price Laws.

The regulatory functions have been separated by law from the operational functions. However, a single ministry, the Ministry of Transport and Communications is responsible both for the holding company Estonian Telecom, which owns the operator (Estonian Telephone Company Ltd.) and for regulatory functions through the Communications Section and the Inspectorate of Telecommunications. With the enactment of the new Communications Law by the end of 1997 or in 1998, the Inspectorate of Communications will be set up as separated entity from the Ministry. As a consequence the regulatory and the operational will be more clearly divided.

The Estonian Telephone Company is a partly privatised company, owned 51% by the state through Estonian Telecom, a 100% state-controlled public holding company. In order to undertake rapid network transformation in the absence of adequate national funding and know-how, the Government has decided that foreign companies can invest in Estonia without any limits on participation. Nevertheless, in practice, the current level of participation of foreign companies in Estonian telecommunications operators is less than 50%.

Except for the domestic long-distance and international segments of voice telephony, which remain within the province of the Estonian Telephone Company, local voice telephony and infrastructure markets have been liberalised. Besides the Estonian Telephone Company, there is another small operator of telecommunications infrastructure in a remote area of Estonia, called Eleks Ltd.

Competition exists in the mobile and paging sectors and in local voice telephony. CATV networks will soon be allowed to provide the latter, though long-distance voice telephony remains under monopoly. The data transmission and value-added services markets are also open to competition.

Like the two other Baltic States, the Estonian telecommunications network suffers from having been an extension of the USSR network. By January 1, 1997, the penetration rate of telephone lines was 30 per 100 inhabitants. As the network is being upgrading, it is expected that by the end of the year 1997, basic fibre optic cable rings over the entire country will be completed, so that by the year 2000, 48% of lines will be connected to digital exchange, and the waiting period for getting connected will be reduced to two weeks.

Estonia is progressing in both the privatisation and liberalisation of the telecommunications sector.

To get in line with EU legislation, Estonian regulations would need to be revised with particular emphasis laid on the complete liberalisation of voice telephony and on creating the conditions for fair competition between the Estonian Telephone Company and other operators.

Next: The regulatory framework

Bulgaria Czech Republic Hungary Latvia Lithuania Poland Romania Slovakia Slovenia

Previous: Executive summary

1. The regulatory framework - Estonia

1.1 Telecommunications

Primary legislation	Communications Law of the Republic of Estonia	Enacted 1 February 1991
Key secondary legislation **Subject**		
• Concession agreement	Concession Agreement between the Government of the Republic of Estonia and Estonian Telephone Company Limited (ETC Ltd.)	Enacted 16 Dec. 1992
• Frequency allocation	Government Regulation on Regime for Frequency Registration	Enacted 15 Dec. 1992
• Radio transmission	Ministry of Transport and Communications Regulation on Border-Crossing Regime for Radiotransmitters	Enacted 23 March 1994
• Radio equipment	Ministry of Transport and Communications Regulation on Regime for Use of Radio Equipment	Enacted 31 May 1995

Table 1 - Telecommunications regulations

1.2 Broadcasting

Primary legislation	Law on Broadcasting	Enacted 19 May 1994
Key secondary legislation	Government Regulation on Supervision of Conditions for Broadcasting licences	Enacted 19 Oct. 1994

Table 2 - Broadcasting regulations

1.3 Competition

Primary legislation	Competition Law	Enacted 16 June 1993
Key secondary legislation	Price Law	Enacted 25 Dec. 1989

Table 3 - Competition regulations

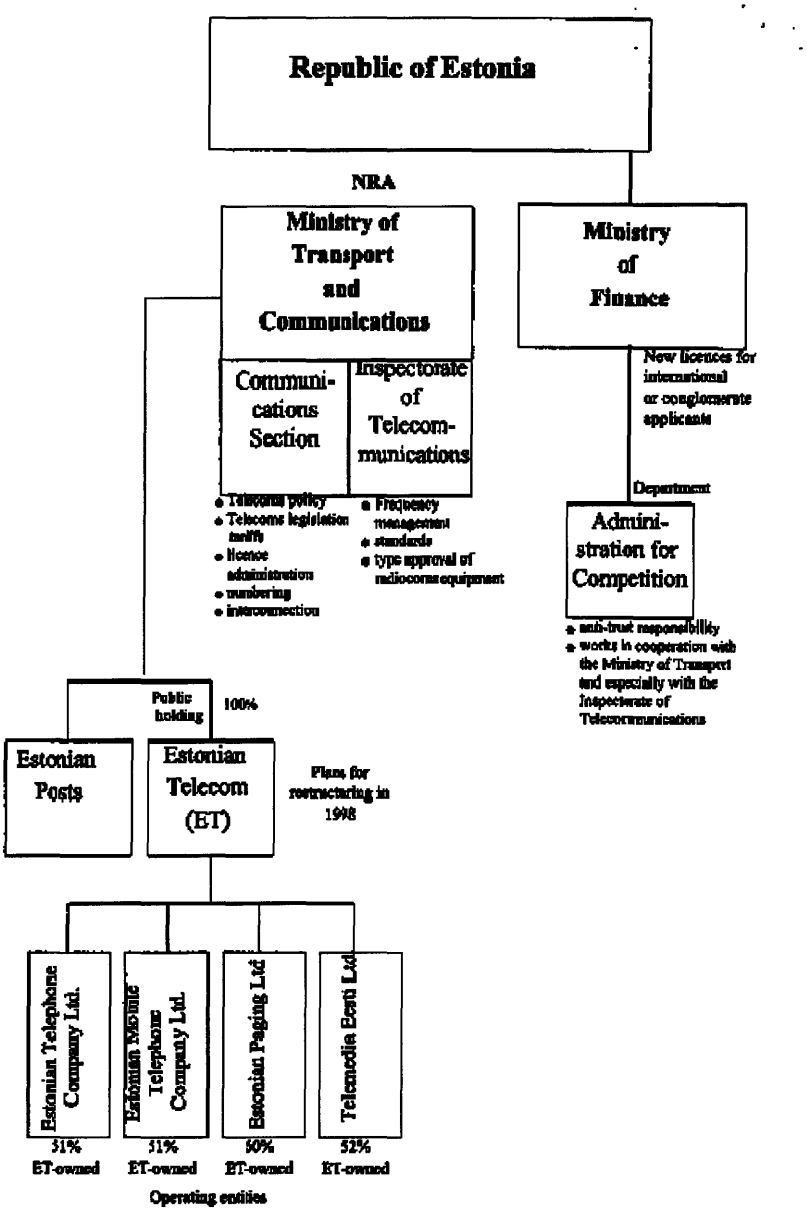
Next: Players in the telecommunications market

Bulgaria Czech Republic Hungary Latvia Lithuania Poland Romania Slovakia Slovenia

Previous: The regulatory framework

2. Players in the telecommunications market - Estonia

2.1 Main regulatory structure



2.2 Telecommunications regulatory authorities

Regulatory authorities		Key responsibilities:
	Ministry of Transport and Communications (the National Regulatory Authority (NRA)	
	• Communications Department	• telecommunications policy • telecommunications legislation • tariffs • new licences where no foreign investment is involved
	• Inspectorate of telecommunications	• frequency management • standards • type approval of radio communications equipment and from the first January 1998 with the setting-up of an independent body: • numbering system organisation • interconnection problems • licence administration
	Ministry of Finance	• when foreign investments are involved, the Ministry of Transport and Communications sets the terms and conditions of the licences and the Ministry of Finance grants the licences
	• Administration for Competition (Department of the Ministry of Finance)	• anti-trust responsibility over all economic sectors • work in cooperation with the Ministry of Transport and Communications and especially with the Inspectorate of Telecommunications

Table 4 - Telecommunications regulatory authorities

2.3 Telecommunications operators

Switched fixed networks and services	PSTN	Estonian Telephone Company Limited (ETC Ltd.)
	Cable TV	Levi Cable Ltd. Tallinn Cable Television Ltd. STV Starman Ltd. others
Mobile and satellite networks	Altaj	Estonian Telephone Company Ltd. Telera Ltd.
	NMT 450	Estonian Mobile Telephone Company Ltd.
	Trunked networks	Estavla Ltd. others
	GSM	Estonian Mobile Telephone Company Ltd. Radiolinja Eesti Ltd. Ritabell Ltd.
	DCS 1800	Estonian Mobile Telephone Company Ltd. Radiolinja Eesti Ltd. Ritabell Ltd.
	Paging	Baltcom Estonia Ltd. Estonian Paging Ltd. Jiushen Ltd. (100% Chinese owned)
	Satellite	No operator

Table 5 - Telecommunications operators

Next: Privatisation and strategic alliances

Bulgaria Czech Republic Hungary Latvia Lithuania Poland Romania Slovakia Slovenia

Previous: Players in the telecommunications market

3. Privatisation and strategic alliances - Estonia

3.1 Current status and plans for privatisation of the main telecommunications operators

Telecoms operators	Status	Plans	Procedure used and/or planned	Current /max. level of foreign participation	Plans to form a company
ESDATA Ltd.	100% Privatised	Not applicable	Joint venture	35/100 %	Limited company, redistribution of shares is under discussion
Estonian Mobile Telephone Company Ltd.	Partly privatised	Not applicable	Joint venture	49/100%	Limited company, redistribution of shares is under discussion
Estonian Paging Ltd.	Partly privatised	Not applicable	Joint venture	40/100%	Limited company, redistribution of shares is under discussion
Estonian Telephone Company Ltd.	Partly privatised in 1992	Not applicable	Joint venture	49/100%	Limited company, redistribution of shares is under discussion
Telemedia Eesti Ltd.	100% privatised	Not applicable	Joint venture	52/100%	Limited company, redistribution of shares is under discussion

Table 6 - Current status and plans for privatisation

3.2 Strategic alliances

Company	Services	Ownership status
ESDATA Ltd.	Data	Joint venture: • 15% ETC • 15% ET (holding) • 35% Institute of Cybernetics • 35% Telecom Finland
Estonian Paging Ltd. EP Ltd.	Paging	Joint venture: • 60% Estonian Telecom • 40% Telecom Finland
Estonian Mobile Telephone Company Ltd. - EMT Ltd.	Mobile telephony (NMT 450, GSM, DCS 1800)	Joint venture: • 51% Estonian Telecom • 49% Baltic Tele AB (consortium made of 24.5% Telecom Finland & 24.5% Telia)
Estonian Telephone Company Ltd. - ETC Ltd.	Telephone (local, long distance, international) Telex Telegram Altaj Data transmission	Joint venture: • 51% Estonian Telecom • 49% Baltic Tele AB (consortium made of 24.5% Telecom Finland & 24.5% Telia)
Telemedia Eesti Ltd.	Telephone directories	Joint venture: • 48% Estonian Telecom • 48% Telemedia East AB • 4% Employees

Table 7 - Strategic alliances

Next: Status of liberalisation of the markets for networks and services

Bulgaria Czech Republic Hungary Latvia Lithuania Poland Romania Slovakia Slovenia

Previous: Privatisation and strategic alliances

4. Status of liberalisation of the markets for networks and services - Estonia

4.1 Telecommunications networks and alternative infrastructure

Category of infrastructure	Status	Legal requirements
Public telecommunications network	Not yet liberalised. Limited competition regime with exclusive rights granted to ETC Ltd. to operate, international and long-distance telecommunications services for 8 years, extendible for an additional 6-year period	Under the Concession Agreement, ETC Ltd. has a 25-year concession to operate the public national network
CATV	Apart from the exclusive rights granted to ETC Ltd., CATV infrastructure can be used as alternative infrastructure for providing telecommunications services. To date, no CATV company has applied for a licence.	The CATV operator must apply for a licence. Article 30 of the draft cable law stipulates that in order to provide other telecommunications services through the cable television network, the operator shall have the relevant licence in the order prescribed by the law.
Alternative infrastructure (internal networks of roads, railways, electricity utilities and oil industry)	Apart from the exclusive rights granted to ETC Ltd., such infrastructure can be used as an alternative infrastructure for providing telecommunications services. To date, no owner of alternative infrastructure has applied for a licence.	Owner of alternative infrastructure must apply for a licence.

Table 8 - Telecommunications networks and alternative infrastructure

4.2 Telecommunications services

4.2.1 Voice telephony

Voice telephony	Status of liberalisation	Service provider(s)	Exclusive rights date of expiry
Local	Open to competition in accordance with the terms and conditions of the Concession Agreement	ETC Ltd. Eleks Ltd (Haljala region)	Not applicable
Domestic long-distance	Exclusive rights/special rights have been granted	ETC Ltd.	January 1,2001
International long-distance	Exclusive rights/special rights have been granted	ETC Ltd.	January 1,2001

Table 9 - Voice telephony - status of liberalisation

4.2.2 Data transmission

Internet and Packet-Switched transmission markets are open. Data communications are operated mainly by two operators (ESDATA and ESTPAK Data - which is controlled 100% by ETC Ltd.). Data communications have developed very fast and are expected to continue to do so. ATM services are not yet under consideration.

4.2.3 Mobile communications

Mobile communications	**Service providers**	**Status of liberalisation**	**Exclusive rights - date of expiry**	**Additional information**
Altaj	ETC Ltd. Telera Ltd.	Open to competition	Not applicable	Have operated since 1980. Expected to stop service in 1998
NMT 450	Estonian Mobile Telephone Company Ltd. (EMT Ltd.)	Open to competition	Not applicable	At the end of 1992, a NMT 900 network became operational, mainly for Finnish businessmen, today in decline.
GSM	EMT Ltd. Radiolinja Eesti Ltd. Ritabell Ltd.	Open to competition	Not applicable	GSM is developing quite rapidly but frequency plans are made for a maximum of 3 operators. Ritabell will be operational by mid-1997.
DCS 1800	EMT Ltd. Radiolinja Oy Ritabell Ltd.	Open to competition	Not applicable	DCS 1800 is not yet in operation
Paging	Baltcom Estonia Estonian Paging Jiushen Ltd.	Open to competition	Not applicable	Baltcom Estonia will start dealing with ERMES in 1997.

Table 10 - Status of liberalisation of mobile telecommunications markets

4.2.4 Satellite communications

There is currently no operator registered in Estonia, nor are there any specific regulations for the provision of satellite telecommunications services. Satellite terminal equipment can be freely provided. Apart from the question of exclusive rights granted under the Concession Agreement to ETC Ltd. and of the availability of frequencies, satellite communications services can even be provided without a licence if no connection to the public network has to be made.

4.2.5 Other services

The market of value-added services is open to competition. No licence is needed to provide value-added services if no connection to the public network has to be made.

Next: Additional information on networks and services

Bulgaria Czech Republic Hungary Latvia Lithuania Poland Romania Slovakia Slovenia

Previous: Status of liberalisation of the markets for networks and services

5. Additional information on networks and services - Estonia

5.1 Penetration rate

Penetration rate	
CATV connections per 100 households	? (Not available)
Main telephone lines per 100 inhabitants	28
Percentage of households provided with telephone lines	60%

Table 11 - Penetration rate

5.2 Quality of service - Voice telephony

5.2.1 Waiting time for telephone subscription

	Average waiting time	Maximum waiting time
Waiting time for telephone subscription	2 years	4 years

Table 12 A -Waiting time for telephone subscription

5.2.2 Amount of faults cleared within 24 hours

	Amount of faults cleared within 24h.
On average	64%

Table 12 B - Quality of service of voice telephony

5.2.3 Quality of service of the Tallinn city networks

	Tallinn city networks
Cable faults per 100 subscribers	9.2
Line faults per 100 subscribers (starting from distribution points downwards)	25.1
Faults in telecommunications equipment (exchanges, local loop network) **per 100 subscribers**	17.3

Table 12 C - Quality of service of the Tallinn city networks

5.3 Network investments

5.3.1 Investment volume per year

1995: EEK 525 million (ECU 34 million)

1996: EEK 682.5 million (ECU 44 million)

5.3.1.1 Network investment volume per year in urban areas and in rural areas:

42.9 million US dollars in urban areas and 7.8 million US dollars in rural areas,

5.3.4 Investment per main telephone line:

one-off investment: 115 US dollars

5.3.3 Network investment plan for the country as a whole and as regard to regional diversity

1998: EEK 655 million

In Tallinn: 16.4 million US dollars

In other cities: 26.5 million US dollars

In rural areas: 7.8 million US dollars

Next: Participation in international bodies, groups and projects

Bulgaria Czech Republic Hungary Latvia Lithuania Poland Romania Slovakia Slovenia

Previous: Additional information on networks and services

6. Participation in international bodies, groups and projects - Estonia

6.1 Membership/participation in international bodies or groups

Estonia	Status	Date of membership
ITU	member	April 22, 1992
CEPT	member	August 1993
OECD	non member	not applicable
WTO	membership under negotiation	not applicable
ETSI	membership in preparation	not applicable

Table 13 -Participation of the Republic of Estonia in international bodies

6.2 Estonian participation in international telecommunications projects

On the governmental level, Estonia is involved in the PHARE Multi-Country Programme for Posts and Telecommunications. It is mainly the Estonian telecommunications operators which are involved in international telecommunications projects.

Next: Future trends in the sector

Bulgaria Czech Republic Hungary Latvia Lithuania Poland Romania Slovakia Slovenia

Previous: Participation in international bodies, groups and projects

7. Future trends in the sector - Estonia

7.1 Telecommunications policy

The draft new Communications Law and the other pieces of new regulations set out the Estonian telecommunications policy. No separate complete policy document for Estonian telecommunications is published. The policy aims at harmonising the Estonian regulatory framework with EU Telecommunications Directives and policy completely by the year 2000.

7.2 Development of markets and technology

The following improvements in the situation are expected by the year 2001:

- 45 main telephone lines per 100 inhabitants
- 50% of all lines to be digital lines

By the year 2005, the percentage of lines connected to digital exchanges is expected to rise to 68%.

Next: Appendix 1 - List of sources

Bulgaria Czech Republic Hungary Latvia Lithuania Poland Romania Slovakia Slovenia

Previous: Future trends in the sector

Appendix 1 - List of sources - Estonia

1. Draft table on the Major Aspects of the Regulatory Framework in Central and Eastern

Europe, final version 5

Source: European Commission, DG XIII

Ref.: DG XIII, IS 2 MS/HPG

Date: 4 July 1996

2. Completed questionnaire on the telecommunications sector status

Source: European Commission, DG XIII, Gebhardt,

Ref.: HPG/dhar - 9603t051

Date: 21 March 1996

3. Study IS4/94: *The development of advanced networks in PHARE and Tacis countries*

Source: Sagatel

Ref.: S.4375/EST

Date: February 1996

4. Regulatory Status Survey for the Telecommunications sector in Central and Eastern

Europe and the former Soviet Union

Source: EBRD, Telecommunications Team, Terrance Rochefort

Date: March 1995

5. Central and East European Countries (CEEC) Information Society Forum - *Conclusions and recommendations of Panel A (Financing and Infrastructure), final version*

Source: The European Commission and the Hungarian Ministry of Transport,

Communications and Water Management

Date: May 1996

6. Central and East European Countries (CEEC) Information Society Forum - *Draft Report of Panel B (Legal and Institutional Framework)*

Source: European Commission, DG XIII

Ref.: hpg/dhar regpanel

Date: 4 March 1996

7. Draft outline of the major elements of regulatory reform in developing countries

Source: European Commission, DG XIII, Gebhardt, version 2

Ref.:

Date: 11 July 1996

8. The Road to Accession, Telecommunications and Posts Sector Paper

Source: European Commission

Ref.:

Date: 17 July 1996

9. Interviews with officials of the Ministry of Transport and Communications: Mr. Laks, Head of Department of Foreign Relations; Mr. Naestema, Deputy Director; Mr. Astrik, Head of Department of Post and Communications.

Bulgaria Czech Republic Hungary Latvia Lithuania Poland Romania Slovakia Slovenia

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PHARE MULTI-COUNTRY PROGRAMME FOR TELECOMMUNICATIONS AND POSTS - TELECOMMUNICATIONS STATUS STUDY

Final Report - March 21, 1997 - *HUNGARY*

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Executive summary - Hungary

The current telecommunications law is Act LXXII on Telecommunications. Two other important telecommunications legislative measures are the Act LXII on Frequency Management and the Act on Radio and Television. This last also regulates broadcasting matters. In 1993, certain government decrees and ministerial decrees were adopted in order to complement Act LXXII on Telecommunications.

Hungary has adopted a regulatory framework with a liberal regime designed to attract investors and introduce competition both in markets for telecommunications networks and in services. Key provisions contained in the 1992 Act LXXII include free network access, compulsory service provision and the provision of services on the basis of contractual negotiations between parties (concession contracts, networks contracts and subscribers contracts).

Separation between regulatory and operational functions was part of the reform initiated in Hungary in 1989. The regulatory functions are exercised by the Ministry of Transport, Communications and Water Management, whereas the instituted public authority is the Communications Authority under ministerial supervision. They are separated from the telecommunications operators.

In 1993, MATAV, the public telecommunications operator, was privatised. Today, 67% of MATAV's shares are held by a foreign consortium. There is no restriction on foreign ownership by law or decrees except for the provision of 'concessionary services' but it may be a condition of concessional tendering. According to Act XXXIX of 1995 on the sale of entrepreneurial assets in state property, 25%+1 vote should remain state property with respect to companies operating such services. Many joint ventures have been concluded.

The infrastructure market is liberalised and there is no restriction by law or decrees on building alternative infrastructure. Only authorised service providers may use leased infrastructure, i.e. Matav may lease lines from others to provide a service but the owner of the infrastructure may not provide a service if it is not authorised. The only remaining restriction on the use of such infrastructure is that concessionary services (public switched telephone services) can only be provided by the concessionary companies. In effect, all telecommunications services except public voice telephony can be offered on these alternative infrastructures.

Liberalisation has been introduced for local telephony. The country has 54 so-called primary areas - 18 of which are run by 13 independent local telephone operators. MATAV still has a dominant position and will hold exclusive rights for long-distance and international public telephone services until the end of the year 2001. Value-added services, CATV, data, and satellite communications markets are open to competition. The mobile communications market is concessional, i.e. open if the minister invites tenders.

Since 1991, improvements have been made to the Hungarian local and transit networks. On the transit network level, a digital backbone network (DBN) has replaced the old analogue transit structures. Although the penetration rate is low (25 telephone lines per 100 inhabitants), the quality of service is improving.

As regards the development of the telecommunications network and services, Hungary is well advanced. Full digitisation of all telecommunications services and infrastructures is planned for the year 2002.

To get into line with EU legislation, Hungarian legislation would need to be revised with particular emphasis on liberalising domestic long-distance and international voice telephony.

Next: The regulatory framework

Bulgaria Czech Republic Estonia Latvia Lithuania Poland Romania Slovakia Slovenia

Previous: Executive summary

1. The Regulatory Framework - Hungary

1.1 Telecommunications

Primary legislation	ACT LXXII on Telecommunications	Enacted 23 Nov. 1992
Key secondary legislation **Subject**		
• Ownership limitation	Act XXXIX of 1995 on the sale of entrepreneurial assets in State property	Enacted 1995
• Frequency allocation	Act LXII on Frequency Management	Enacted 27 April 1993
• Radiocommunications	Act on Radio and Television	Enacted 1996
• Communications Authority	Government Decree N142/1993 on the Establishment of an integrated communications authority and the amendment and repeal of certain telecommunications laws	Enacted 1993
• Network interconnection	Government Decree N158/1993 on telecommunications network interconnection, authorisation of interconnection, and network contracts	Enacted 1993
• Basic technical plans on telecommunications	Ministerial Order Statute 23/1993 (MTCWM) of the Minister of Transport, Telecommunications and Water Management on the basic technical Plans of the Telecommunications system	Enacted 1993
• Structural plan for the PSTN	Ministerial Decree Statute 26/1993 (MTCWM) of the Minister of Transport, Telecommunications and Water Management on the structural plan for the Public Service Telephone Network	Enacted 1993

• Concession procedure and administration fees for telecommunications	Ministerial Decree N25/1993 (IX.9) KHVM of the Ministry of Transport, Telecommunications and Water Management on the concession procedure and the administration fees for the telecommunications sector	Enacted 9 Sept. 1993
• Number allocation in the PSTN	Ministerial Decree Statute 24/1993 (IX.9) KHVM (MTCWM) of the Minister of Transport, Telecom-munications and Water Management on the number allocation plan in the Public Service Telephone Network	Enacted 9 Sept. 1993
• Regulation on tariffs of public telephone service	Ministerial Decree N30/1993 (XI.23) KHVM (MTCWM) on the regulation of the tariffs of public telephone services	Enacted 23 Nov. 1993

Table 1 - Telecommunications regulations

1.2 Broadcasting

Primary legislation	Act on Radio and Television	Enacted 21 Dec. 1995
Key secondary legislation	No information available	Enacted Date?

Table 2 - Broadcasting regulations

1.3 Competition

Primary legislation	Act LVI on the prohibition of unfair business practices and on the prohibition of limitation of competition	Enacted 25 June 1996
	Act LXXXVI on the prohibition of unfair business practices	Enacted Date?
Key secondary legislation	No information available	Enacted Date?

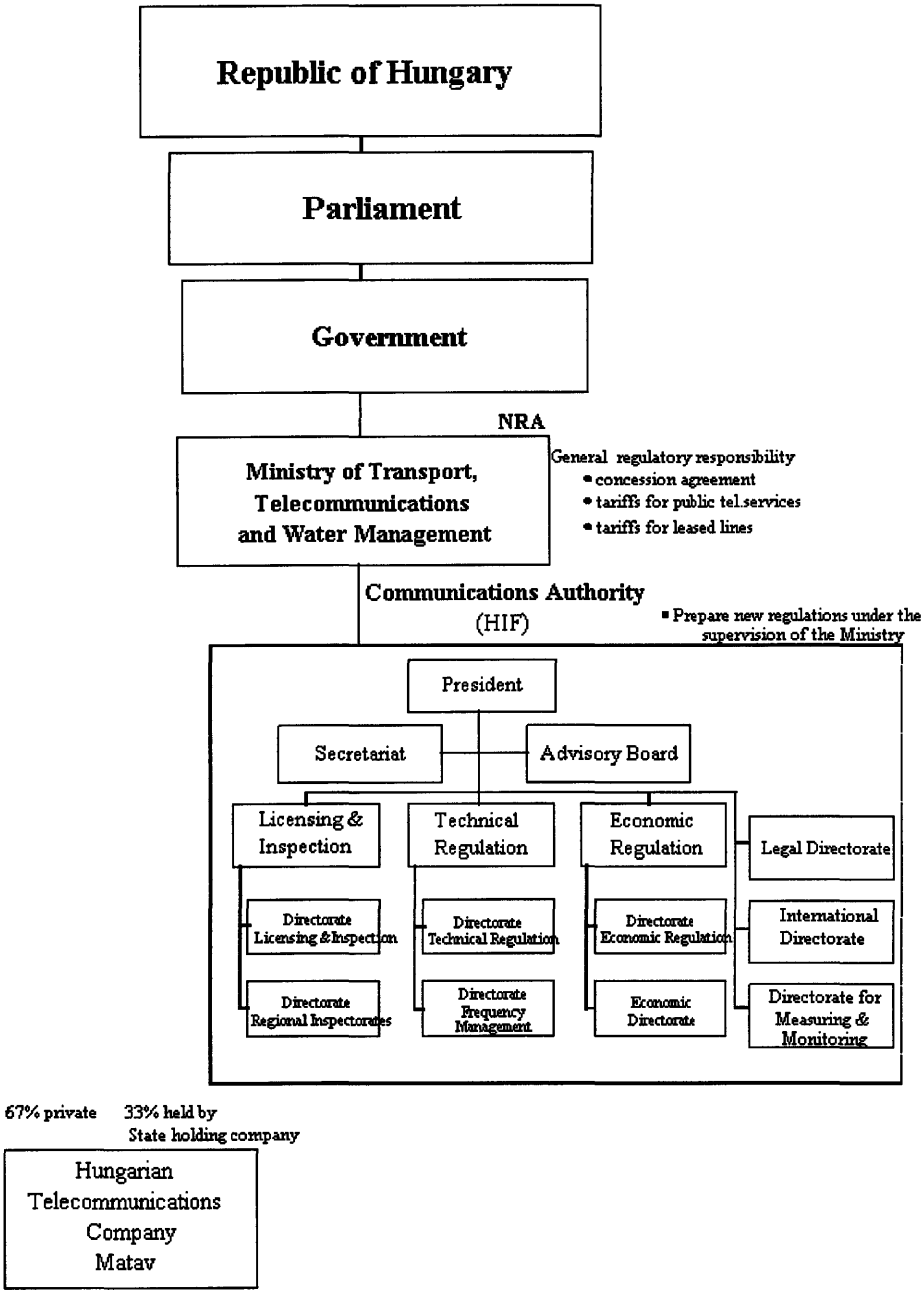
Table 3 - Competition regulations

Next: Players in the telecommunications market

Previous: The regulatory framework

2. Players in the telecommunications market - Hungary

2.1 Main regulatory structure



2.2 Telecommunications regulatory authorities

Regulatory authorities	Ministry of Transport, Telecommunications and Water Management	**Key responsibilities:** The Ministry has a general regulatory responsibility. The Minister grants concession agreements and determines all tariffs for public telephone services and leased lines through a price-capping system.
	Communications Authority, Hungary	Preparation of new regulations under the supervision of the Ministry

Table 4 - Telecommunications regulatory authorities

2.3 Telecommunications operators

Switched fixed networks and services	PSTN	Magyar Tavkozlesi - MATAV Hungarian Telecommunications Company 13 local telecommunications operators
	Cable TV	KableKom (serves more than 215 000 customers) Süweda (potential 200 000 subscribers)
Mobile and satellite networks	Radiotelephone 160 MHz	No operator
	NMT 450	WesTel Radiotelephone
	Trunked networks	Tetra will be introduced in 1997
	GSM	WesTel GSM - Mobile Telecommunications Co. Pannon GSM
	DCS 1800	Planned for1997
	Paging	Easy Call Hungaria Eurohivo Operator Hungaria
	Satellite	VSAT services are provided by some 15 companies, among which four are leaders in the market: • Banknet • Hungaro DigiTel • Sat-net (operating as a department of Matav) SFMT Montana

Table 5 - Telecommunications operators

Next: Privatisation and strategic alliances

Bulgaria Czech Republic Estonia Latvia Lithuania Poland Romania Slovakia Slovenia

Previous: Players in the telecommunications market

3. Privatisation and strategic alliances - Hungary

3.1 Current status and plans for privatisation of the main telecommunications operator

Telecoms operators	Status	Plans	Procedure used and/or planned	Current /max. level of foreign participation	Plans to form a company
MATAV Rt.	Partially privatised in two steps: first half (33%) in 1993 and second half in 1995	Plan to float a part of the MATAV shares on the Stock Exchange. MagyarCom will then own a maximum of 50% of MATAV shares	Procedure used: concession agreement with the MagyarCom Consortium for 67% of the shares Procedure planned: to float 17% of MATAV shares	67% / 100%*	Incorporated

Table 6 - Current status and plans for privatisation

Comments*: There is no restriction on foreign ownership except for the provision of concessionary services. According to Act XXXIX of 1995 on the sale of entrepreneurial assets in State property, 25%+1 vote should remain State property in the case of these services.

3.2 Strategic alliances

Company	Services	Ownership status
Digitel (Esztav)	Telephony	Joint venture: • Bezeq, French, Hungarian investors
Easy Call Hungary	Paging	Joint venture: • Matrix Telecommunications • Telecom Finland
EMITEL	Telephony	Joint venture: • 50% MATAV • 50% Bezeq
Eurohivo Kft Magyar Paging	Paging	Joint venture: • Microsystem Telecom Corporation • Gerard AC Sales and Leasing (US)

Hungaro DigiTel	VSAT	Joint venture: • Antenna Bulgaria • Muszertechnika • TKI • Marconi Global Com
Hungarotel	Telephony	Joint venture: • Hungarian Telecommunications Cable Company (US)
Jasz-Tel	Telephony	Joint venture: • Dutch, Swiss and Hungarian investors
Kelet-Nograd Com	Telephony	Joint venture: • Hungarian Telecommunications Cable Company (US)
MagyarCom	Telecommunications	Consortium: • Deutsche Telekom • Ameritech
MATAV (HTC)	Telephony Data Telex Telegraph	Joint venture: • 27% AV Rt. State-owned • 67% MagyarCom consortium (Deutsche Telekom +Ameritech) • 1.97% EBRD • 0.99% IFC • 3.04% MATAV employees & others
Operator Hungaria	Paging	Joint venture: • 51% Antenna Hungaria • 49% TDF Radio-Services (France)

Pannon GSM	Mobile telephony	Joint venture: • 44% Scandinavian consortium (Telecom Denmark, Finland & Swedish Telia AB) • 26% Consortium of MOL Rt Hungarian Oil Company, Wallis Int. & Videoton) • 16% PTT Netherlands • 14% Telenor
Papatel	Telephony	Joint venture: • Hungarian Telecommunications • Cable Company (US)
Raba-Com	Telephony	Joint venture: • Hungarian Telecommunications • Cable Company (US)
WesTel 900 GSM	Mobile telephony - GSM	Joint venture: • 43.6% MATAV • 41.9% US West • 9.5% WesTel Radiotelefon • 5% International Finance
WesTel Radiotelefon	Mobile telephony - analogue services	Joint venture: • 51% MATAV • 49% US West

Table 7 - Strategic alliances

Another potential strategic alliance may be formed by local telephone companies uniting in order to have more power against Matav. They are also working with alternate infrastructure providers and private networks to form a consortium which would be a second long-distance operator after 2002.

Next: Status of liberalisation of the markets for networks and services

Bulgaria Czech Republic Estonia Latvia Lithuania Poland Romania Slovakia Slovenia

Previous: Privatisation and strategic alliances

4. Status of liberalisation of the markets for networks and services - Hungary

4.1 Telecommunications networks and alternative infrastructure

Category of infrastructure	Status	Legal requirements
Public telecommunications network	Divided in 54 primary areas, the long-distance and international telephone network is operated by MATAV. Mobile, paging, operators and others concessionary service providers have to lease lines from MATAV to interconnect their base stations and the primary areas. Some paging networks use satellite and other radio means to distribute messages.	Concession agreement made with Minister on behalf of the Government
CATV	Can in principle be used to provide telecom-munications services except for public switched telephone services.	Legally permitted
Alternative infrastructure (internal networks of roads, railways, electricity utilities and the oil industry)	At present, cannot be used as an alternative to the PSTN. Except for public switched telephone services, it can be used for any other telecom-munications services but must be used internally for a closed user group.	Legally permitted

Table 8 - Telecommunications networks and alternative infrastructure

4.2 Telecommunications services

4.2.1 Voice telephony

Voice telephony	Status of liberalisation	Service provider(s)	Exclusive rights: date of expiry
Local	Exclusive rights granted to • MATAV for operate 29 areas on a national basis, 2 as reverted areas & 5 local areas; • 13 local TOs to operate local areas.	MATAV Rt. + 13 local telephone operators	January 1, 2002
Domestic long-distance	Exclusive rights granted to MATAV	MATAV Rt.	January 1, 2002
International long-distance	Exclusive rights granted to MATAV	MATAV Rt.	January 1, 2002

Table 9 - Voice telephony - status of liberalisation

4.2.2 Data transmission

The data transmission market is open to competition and developing rapidly. The universities have their own academic network, and the Hungarian Railways have the Hungarian Railway System. Banks have Banknet which is also used for tourist bureaux and Internet access. Twenty private Hungarian banks have formed a joint venture to run their own network called Giropak. MATAV is operating four data transmission networks (DATEX-P, DATEX-L, PLEX-Com and Sat-Star).

4.2.3 Mobile communications

Mobile communi-cations	Service providers	Status of liberalisation	Exclusive rights: date of expiry	Additional information
Radiotelephone 160 MHz	No service provider	Not applicable	Not applicable	Not in operation
NMT 450i	WesTel Radiotelefon	WesTel is the only provider allowed to provide a NMT 450 service to the public.	Date not fixed	Country coverage close to 100%
GSM	WesTel 900 GSM Pannon GSM	2 operators	Not applicable	Licences issued in 1993 for a 15-year period.
DCS 1800	No service provider	Not applicable	Not applicable	To be introduced before 2000
Paging	Easy Call Hungaria Eurohivo Operator Hungaria	Open to competition	Not applicable	Hungarian TOs ERMES standard. ERMES standard. UHF (FM transmitters)

Table 10 - Status of liberalisation of mobile telecommunications markets

4.2.4 Satellite communications

Satellite communications are open to competition. VSAT services are provided by more than 15 companies.

4.2.5 Other services

Other services are open to competition.

Next: Additional information on networks and services

Bulgaria Czech Republic Estonia Latvia Lithuania Poland Romania Slovakia Slovenia

Previous: Status of liberalisation of the markets for networks and services

5. Additional information on networks and services - Hungary

5.1 Penetration rate

Penetration rate	
CATV connections per 100 households	20
Main telephone lines per 100 inhabitants	25
Percentage of households provided with telephone lines	Not available

Table 11 - Penetration rate

5.2 Quality of service - Voice telephony

5.2.1 Waiting time for telephone subscription

	Average waiting time	Maximum waiting time
Waiting time for telephone subscription	• 90% of the requests within 6 months • 8% of the requests within 12 months • 2% of the requests after 12 months	Not known

Table 12 A - Waiting time for telephone subscription

5.2.2 Numbers of faults cleared within 24 hours

	Numbers of faults cleared within 24 hrs.
On average	78.07%

Table 12 B - Quality of service of voice telephony

5.3 Network investments

5.3.1 Investment volume per year

1994: US$ 500 millions

5.3.2 Investment per main telephone line

One-off investment US$ 1500

5.3.3 Investment plans

Slight increase until 1998 (16 - 18% a year)

Flattening curve after 1998

Next:Participation in international bodies, groups and projects

Bulgaria Czech Republic Estonia Latvia Lithuania Poland Romania Slovakia Slovenia

Previous: Additional information on networks and services

6. Participation in international bodies, groups and projects - Hungary

6.1 Membership/participation in international bodies or groups

Hungary	Status	Date of membership
ITU	member	founding member
CEPT	member	September 26, 1990
OECD	member	1996
WTO	member	January 1, 1995
ETSI	member	February 3, 1993

Table 13 - Hungarian participation in international bodies

6.2 Hungarian participation in international telecommunications projects

CEEFOS (Central and Eastern Europe Fibre Optic System)

Next:Future trends in the sector

Bulgaria Czech Republic Estonia Latvia Lithuania Poland Romania Slovakia Slovenia

Previous: Participation in international bodies, groups and projects

7. Future trends in the sector - Hungary

7.1 Telecommunications policy

The current Hungarian telecommunications policy applied until the end of 1996. A new 10-year communications policy is expected to be approved by Parliament in the near future. Hungary wishes to join the European Community and therefore intends to harmonise its laws.

The current policy contains, among other measures:

- full liberalisation of all telecommunications services and infrastructure by 2002;
- the introduction of PCN/DCS before 2000.

7.2 Development of markets and technology

- full digitisation of the network (100%) by 2002 at the latest
- installation of 3000 km of optic fibre has already been carried out
- GSM countrywide coverage has already been achieved
- countrywide operation of ISDN after 1997
- ATM capabilities are on trial
- intelligent network is in use for business users

Next: Appendix 1 - List of sources

Bulgaria Czech Republic Estonia Latvia Lithuania Poland Romania Slovakia Slovenia

Previous: Future trends in the sector

Appendix 1 - List of sources - Hungary

1. Draft table on the Major Aspects of the Regulatory Framework in Central and Eastern

Europe, final version 5

Source: European Commission, DGXIII

Ref.: DG XIII, IS 2 MS/HPG

Date: 4 July 1996

2. Completed questionnaire on the telecommunications sector status

Source: European Commission, DGXIII, Gebhardt,

Ref.: HPG/dhar - 9603t051

Date: 21 March 1996

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4. Regulatory Status Survey for the Telecommunications sector in Central and Eastern Europe and the former Soviet Union

Source: EBRD, Telecommunications Team, Terrance Rochefort

Date: March 1995

5. Central and Eastern European Countries (CEEC) Information Society Forum - Panel A *Conclusions and recommendations of Panel A, (Financing and Infrastructure)* Final version

Source: The European Commission and the Hungarian Ministry of Transport, Communications and Water Management

Date: May 1996

6. Central and Eastern European Countries (CEEC) Information Society Forum - *Draft Report of Panel B (Legal and Institutional Framework)*

Source: European Commission, DG XIII

Ref.: hpg/dhar regpanel

Date: 4 March 1996

7. Draft outline of the major elements of regulatory reform in developing countries

Source: European Commission, DGXIII, Gebhardt, version 2

Ref.:

Date: 11 July 1996

8. The Road to Accession, Telecommunications and Posts Sector Paper

Source: European Commission

Ref.:

Date: 17 July 1996

9. Hungarian Post and Telecommunications Regulation and Policy

Source:

Date: 15 November 1994

10. Act XLV of 1992 on the Post

Source:

Undated

11. Act LXII of 1993 on frequency management

Unofficial translation of the Hungarian-language document *1993. évi LXII. Tor*

veny A Frekvenciagazdalkodasrol

Source: Magyar Közlöny N°87

Date: 2 July 1993

12. Summary of the Hungarian telecommunications sector

Source:

Date: 15 November 1994

13. Interviews with officials of the Ministry of Transport, Telecommunications and Water Management: Dr. Csaba Csapodi, Director General of the Development Department and Mr. Peter Eszto, Deputy Director.

Bulgaria Czech Republic Estonia Latvia Lithuania Poland Romania Slovakia Slovenia

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PHARE MULTI-COUNTRY PROGRAMME FOR TELECOMMUNICATIONS AND POSTS -

TELECOMMUNICATIONS STATUS STUDY

Final Version - March 21, 1997 - *LATVIA*

List of contents - Latvia

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Executive summary - Latvia

Latvia has chosen to adopt a gradual restructuring of its telecommunications sector rather than aim for a radical transformation. The current Latvian telecommunications law is the 1993 Law on Telecommunications and the main broadcasting regulation is the Law on Radio and Television.

The Ministry of Transport is responsible for telecommunications. It contains two departments - the Department of Communications and the Department of Informatics, and the Ministry is mainly responsible for granting operating licences. The Telecommunications Tariff Council and the Telecommunications State Inspectorate fall under its authority. The national regulatory authority is meant to be set up independently from all telecommunications organisations.

To compensate for lack of funds and know-how, Latvia has adopted a liberal regime on foreign participation in Latvian telecommunications companies. The only existing limitation on the establishment of a joint venture with foreign investors is that the company must be legally registered in Latvia.

Lattelekom, the public telecommunications corporation, was created in 1991 and partly privatised in 1994. When this happened, the foreign consortium, TILTS, had to sign an umbrella agreement with the Latvian Cabinet of Ministers by which it committed itself to certain obligations (full digitisation of the network within 8 years, universal service obligations and respect for a stipulated tariff system).

The infrastructure market has not been liberalised. The 1993 Law on Telecommunications granted Lattelekom exclusive rights to operate the PSTN. It is not permitted to use CATV networks and alternative infrastructure to provide basic telecommunications services in the Latvian territory.

Liberalisation of the services market is not complete. Lattelekom has exclusive rights to provide basic telecommunications services. There is, however, competition in the liberalised market for mobile communications with NMT 450, GSM and paging operators being licensed. The market for private data transmission via satellite is also liberalised.

Under the USSR, the Latvian telecommunications network was part of the Russian telecommunications infrastructure. Consequently Latvia has suffered from a lack of international connections, an old infrastructure and a scarcity of billing systems at local level. Though in the process of being modernised, the Latvian network is still rudimentary. It has a weak rural coverage, a low level of digitisation, and both calls from the analogue local network and international calls must be operator-assisted, except in the Riga area. However, the level of service quality is improving. For instance, 74.46% of faults are now cleared within 24 hours.

To get into line with EU legislation, Latvian legislation needs to be revised with particular emphasis on liberalising basic telecommunications services and infrastructure markets.

Next: The regulatory framework

Bulgaria Czech Republic Estonia Hungary Lithuania Poland Romania Slovakia Slovenia

Previous: Executive summary

1. The regulatory framework - Latvia

1.1 Telecommunications

Primary legislation	Law on Telecommunications	Enacted 10 May 93
	Republic of Latvia Supreme Council Resolution on the Procedures by which the Republic of Latvia Law on Telecommunications takes effect	Enacted 4 May 93
	Radio and Television Law	Enacted 8 Sept. 95
	Law on Conformity Assessment	Enacted 8 Aug. 96
Key secondary legislation **Subject**		
• Licensing regime	Licensing Procedure on Wireless Communication Services	Enacted 15 July 93
• Opening telecommunications market segments to competition	Law on Entrepreneurial Activity	Enacted 26 Sept. 90
• Conformity assessment	Regulations on Conformity Assessment	Enacted 4 April 96
	Rules on the Mandatory Certification of Telecommunications Equipment	Enacted 6 Nov. 95
	Certification Procedure for Telecommunications Equipment	Enacted 24 Nov. 95

Table 1 - Telecommunications regulations

1.2 Broadcasting

Primary legislation	Radio and Television Law	Enacted 8 Sept. 95
Key secondary legislation	National Radio and TV Council	Enacted 8 Sept. 95

Table 2 - Broadcasting regulations

1.3 Competition

Primary legislation	Law on Competition and Restriction of Monopolies	Enacted 3 Dec. 91
Key secondary legislation	Committee of Monopoly Supervision	Enacted 3 Dec. 91

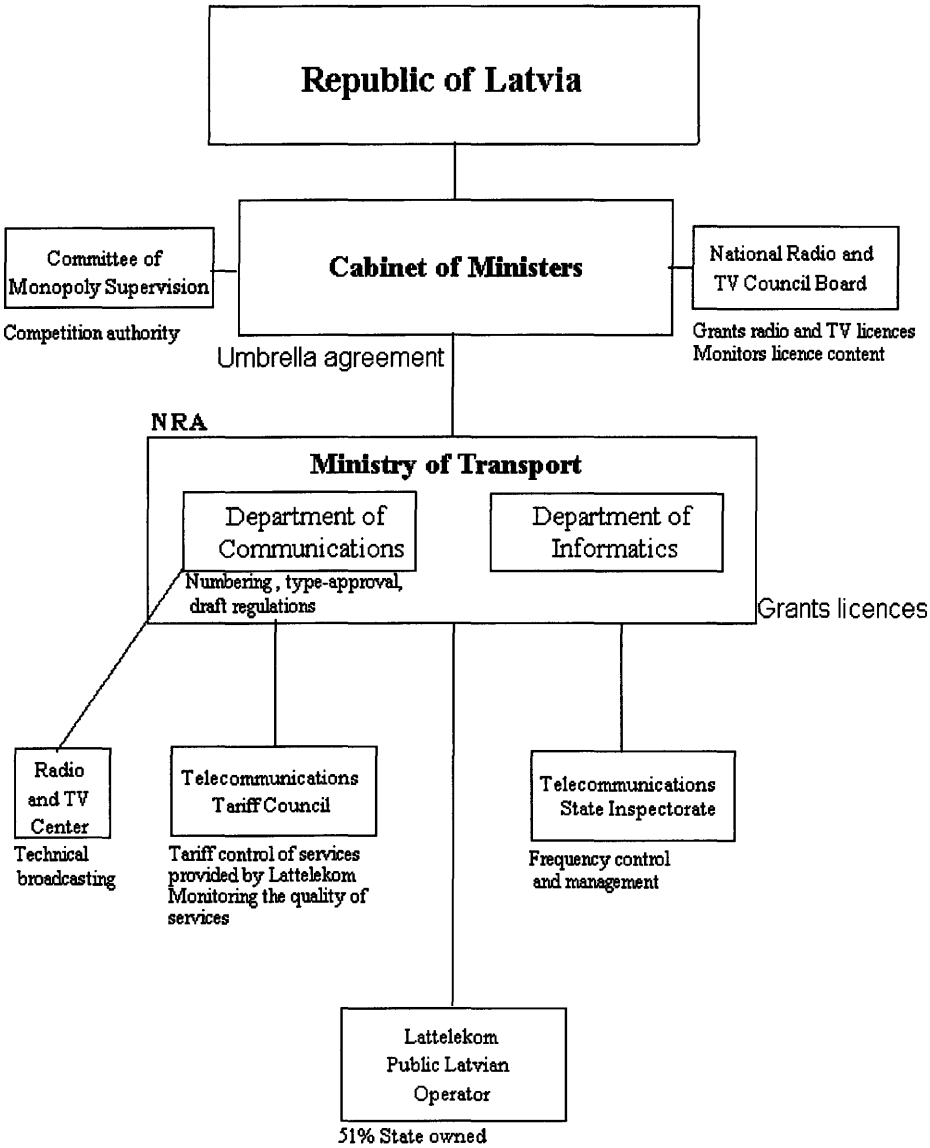
Table 3 - Competition regulations

Next: Players in the telecommunications market

Previous: The regulatory framework

2. Players in the telecommunications market - Latvia

2.1 Main regulatory structure



2.2 Telecommunications regulatory authorities

	Cabinet of Ministers	**Key responsibilities:** • responsible for the umbrella agreement
	Ministry of Transport NRA	• arbitrates in disputes between Lattelekom and other operators on issues such as interconnection • holds ownership function of the State within Lattelekom • grants licences • regulates the telecommunications industry
Regulatory authorities	Department of Communications (within the Ministry of Transport)	• numbering • type-approval • drafting of telecommunications regulations
	Telecommunications State Inspectorate	• responsible for frequency allocation and management
	Telecommunications Tariff Council	• controls tariffs on services provided by Lattelekom • quality of services
	National Radio and TV Council Board	• issues radio and TV licences • monitors the content of radio and TV programmes in compliance with the licences granted

Table 4 - Telecommunications regulatory authorities

2.3 Telecommunications operators

Switched fixed networks and services	PSTN Cable TV	Lattelekom 32 CATV providers are registered
Mobile and satellite networks	Altaj	Radio and TV Centre
	NMT 450	Latvian Mobile Telephone Company State Information Network Agency
	NMT 900	Latvian Mobile Telephone Company
	GSM	Latvian Mobile Telephone Company Baltcom (licence granted in March 1996)
	DCS 1800	No operator
	Paging	Telia Latvia Baltcom Plus + Alina (they share the licence) HALLO
	Satellite	No operator

Table 5 - Telecommunications operators

Next: Privatisation and strategic alliances

Bulgaria Czech Republic Estonia Hungary Lithuania Poland Romania Slovakia Slovenia

Previous: Players in the telecommunications market

3. Privatisation and strategic alliances - Latvia

3.1 Current status and plans for privatisation of the main telecommunications operators

Telecoms operators	Status	Plans	Procedure used and/or planned	Current/ max. level of foreign participa-tion	Plans to form a company
Lattelekom	Partly privatised	In January 14 1997, 49% passed to the TILTS consortium	Selling stakes	49%/100%	Now limited company; it should be transformed into a public joint-stock company in 1997
Latvian Mobile Telephone	Partly privatised	Not applicable	Joint venture between 5 companies	49%/100%	Not applicable

Table 6 - Current status and plans for privatisation

3.2 Strategic alliances

Company	Services	Ownership status

Lattelekom	Telephony (local, long distance, international)
	Public data communications
	Leased lines
	Telex
	Telegraph
		Joint venture:
		• 51% State-owned
		• 49% Tilts consortium
		  ○ 63% Cable & Wireless
		  ○ 27% Telecom Finland
		  ○ 10% IFC

Latvian Mobile Telephone LMT	NMT 450 NMT 900 GSM	Joint venture: • 24.5% Telia • 24.5% Telecom Finland • 23% Latvian State Radio Centre • 23% VEF (Latvian Manufacturer) • 5% Lattelekom
Baltcom GSM	GSM	Joint venture: • 51% IU Alina (Latvian electronics company) • 49% Latcom Inc (joint venture: Western Wireless International Corporation & Metromedia International Telecommunications

Table 7 - Strategic alliances

As long as the resulting company is legally registered, current legislation states that there are no specific limitations on setting up a joint venture with foreign investors.

Next: Status of liberalisation of the markets for networks and services

Bulgaria Czech Republic Estonia Hungary Lithuania Poland Romania Slovakia Slovenia

Previous: Privatisation and strategic alliances

4. Status of liberalisation of the markets for networks and services - Latvia

4.1 Telecommunications networks and alternative infrastructure

Category of infrastructure	Status	Legal requirements
Public telecommunications network	The Latvian public telecommunications network is operated by the main public operator, Lattelekom, under exclusive rights until 2013.	Exclusive rights contained in the Law on Telecommunications.
CATV	Open to competition but CATV networks cannot be used to provide basic telecommunications services until 2013.	Not legally permitted
Alternative infrastructure (internal networks of roads, railways, electricity utilities and oil industry)	Open to competition but alternative infrastructure cannot be used to provide basic telecommunications services until 2013.	Not legally permitted

Table 8 - Telecommunications networks and alternative infrastructure

4.2 Telecommunications services

4.2.1 Voice telephony

Voice telephony	Status of liberalisation	Service provider(s)	Exclusive rights date of expiry
Local	Not liberalised	Lattelekom	January 1, 2013
Domestic long-distance.	Not liberalised	Lattelekom	January 1, 2013
International long-distance	Not liberalised	Lattelekom	January 1, 2013

Table 9 - Voice telephony - status of liberalisation

An umbrella agreement was signed in 1994 between the Tilts consortium and the Latvian Government. This agreement contains three main obligations:

1. full digitisation of the network within a period of 8 years;

2. compliance with universal service obligations;

3. application of a stipulated tariff system for the first three years and then of a price cap system until 2002.

4.2.2 Data transmission

The data transmission market is partially liberalised. Exclusive rights have been granted to Lattelekom up to 2013 to provide public data communications and image transmission services to the public. Private data communications services can be offered competitively.

4.2.3 Mobile communications

Mobile communications services are open to competition in Latvia.

Mobile communications	Service providers	Status of liberalisation	Exclusive rights - date of expiry	Additional information
Altaj / 160-300 MHz	One operator	No competitor	Not applicable	Not available
NMT 450	Latvian Mobile Telecommunica-tions Company	Open to competition	Not applicable	A NMT 900 is operated by the same company
GSM	Latvian Mobile Telecommunications Company BaltCom (March 1996 until 2001)	Open to competition	Not applicable	BaltCom is now operational
DCS 1800	No service provider	Not applicable	Not applicable	No current plan for providing this service
Paging	Alina State Information Network Agency TELIA LATVIA HALLO	Open to competition; licence required except for Governmental bodies	Not applicable	4 licences granted, 4 operators.

Table 10 - Status of liberalisation of mobile telecommunications markets

4.2.4 Satellite communications

Satellite communications are liberalised in Latvia but only for private data transmission. Lattelekom has no plan at the moment to offer VSAT services alone. Lattelekom provides third party access to the satellite. Teleport Baltija offers VSAT satellite communications. In practice, there is some illegal by-passing but this is very difficult for the Department of Communications to control. Some companies are using VSAT to provide basic telecommunications services.

4.2.5 Other services

The value-added services market is open to competition, but in pursuance of Latvian Law on Telecommunications any company wishing to provide value-added services has to use the Lattelekom facilities. The state-owned operator, Lattelekom, is the main supplier of value-added services in Latvia (LAN to LAN, videoconference, Internet access, etc.). In March 1997, it has launched a fast Internet service called Apollo to compete with about thirty Internet services providers already present in this market.

CATV services can be offered without a licence but registration is needed. Before the registration is given, the National Radio and TV Council Board examine the content of the CATV services to see if it is compatible with the Latvian broadcasting regulations. Currently, several local operators are offering services via analogue networks. E-mail services are provided by Lattelekom and by SOVAM (Soviet America)Teleport.

Next: Additional information on networks and services

Bulgaria Czech Republic Estonia Hungary Lithuania Poland Romania Slovakia Slovenia

Previous: Status of liberalisation of the markets for networks and services

5. Additional information on networks and services - Latvia

5.1 Penetration rate

Penetration rate	
CATV connections per 100 households	Not available but the number of CATV connections per 100 inhabitants is around 17 in Riga
Main telephone lines per 100 inhabitants	29.7
Percentage of households provided with telephone lines	72.5%

Table 11 - Penetration rate

5.2 Quality of service - Voice telephony

5.2.1 Waiting time for telephone subscription

	Average waiting time	Maximum waiting time
Waiting time for telephone subscription	around 5 years	around 104,000 people were on the waiting list in the beginning of 1997

Table 12 A - Waiting time for telephone subscription

5.2.2 Numbers of faults cleared within 24 hours

	Numbers of faults cleared within 24h.
On average	74.46 % (83.8% within 48h.)

Table 12 B - Quality of service of voice telephony

5.3 Network investments

5.3.1. Investment volume per year

1995: US$ 108 million

1996: US$ 52 million

5.3.2. Investment per main telephone line

One-off investment: US$ 631.35 / MTL

5.3.3. Investment plans

From 1996 to 1998: US$ 219.60 million

Next: Participation in international bodies, groups and projects

Bulgaria Czech Republic Estonia Hungary Lithuania Poland Romania Slovakia Slovenia

Previous: Additional information on networks and services

6. Participation in international bodies, groups and projects - Latvia

6.1 Membership/participation in international bodies or groups

Latvia	Status	Date of membership
ITU	member	November 1991 (renewal)
CEPT	member	21 February 1994
OECD	non-member	not applicable
WTO	non-member but Latvian membership is under negotiation	plans to join in 1997
ETSI	non-member	not applicable

Table 13 - Latvian participation in international bodies

6.2. Participation of Latvia in international telecommunications projects

Next: Future trends in the sector

Bulgaria Czech Republic Estonia Hungary Lithuania Poland Romania Slovakia Slovenia

Previous: Participation in international bodies, groups and projects

7. Future trends in the sector - Latvia

7.1 Telecommunications policy

Currently Latvian policy is concerned with:

- harmonising legislation and standardisation with EU concepts
- developing telecommunications and broadcasting
- implementing the National Programme for European Integration
- extending the availability of information services to all residents of Latvia, regardless of their geographical location
- reducing the monopoly period for voice telephony and public data transmission
- introducing advanced services and modernisation of the PSTN
- preparing a strategic 10-year national plan for the information society in Latvia.

7.2 Development of markets and technology

Development efforts are currently concentrated on:

- introducing advanced services
  - coverage of main cities and routes for GSM services
  - ERMES is under consideration, and also whether it should be provided by the current paging operators or by separate new operators.
  - ISDN countrywide capabilities planned (first trials made in Riga in 1996).
- modernising the PSTN
  - average installation of 1,200 km of fibre optic every three years.
  - full digitisation of the network by the end of the year 2002
    - period 1994-1996: digitisation of the transit network
    - period 1997-2002: digitisation of the local network
  - penetration rate of around 35 main lines per 100 inhabitants by the end of the year 2001.

Next: Appendix 1 - List of sources

Bulgaria Czech Republic Estonia Hungary Lithuania Poland Romania Slovakia Slovenia

Next: Future trends in the sector

Appendix 1 - List of sources - Latvia

1. Draft table on the Major Aspects of the Regulatory Framework in Central and Eastern

Europe, final version 5

Source: European Commission, DG XIII

Ref.: DG XIII, IS 2 MS/HPG

Date: 4 July 1996

2. Completed questionnaire on the telecommunications sector status

Source: European Commission, DG XIII, Gebhardt,

Ref.: HPG/dhar - 9603t051

Date: 21 March 1996

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Date: March 1995

5. Central and Eastern European Countries (CEEC) Information Society Forum - Panel A *Conclusions and recommendations of Panel A, (Financing and Infrastructure) final version*

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Source: European Commission

Ref.:

Date: 17 July 1996

9. Supreme Council Resolution on the Procedures by which the Republic of Latvia Law on

Telecommunications takes effect. Authenticated translation.

Source:

Date: 4 May 1993

10. Interviews with officials of the Ministry of Transport and Communications: Mrs. Rudaka, Director of the Communications Department; Mr. Siksna, Senior Advisor; Dr. Virtmanis, Director of the Department of Informatics; Mr. Jakobsons, Deputy Director of the Communications Department and Mr. Kalnietis, adviser.

Bulgaria Czech Republic Estonia Hungary Lithuania Poland Romania Slovakia Slovenia

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PHARE MULTI-COUNTRY PROGRAMME FOR TELECOMMUNICATIONS AND POSTS - TELECOMMUNICATIONS STATUS STUDY

Final Report - March 21, 1997 - *LITHUANIA*

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Executive summary - Lithuania

The largest of the Baltic States, Lithuania has adopted a radical restructuring of its telecommunications sector. The very liberal telecommunications regime should continue to attract foreign investors and technology which should in turn lead to rapid improvements in upgrading the infrastructures and in the quality of services.

In 1991, general legislation for the telecommunications sector was passed and the new Ministry of Communications and Informatics was created. Further telecommunications legislation was passed in December 1995, providing for the liberalisation of telecommunications services and requiring all companies wishing to operate telecommunications on the Lithuanian territory to be granted a licence. While postal and telecommunications matters are both treated in the Law on Communications, provisions on radio-communications and broadcasting matters are treated separately mainly in the Law on Radio Communications. The primary competition regulation is the Law on Competition.

Lithuanian Telecom (SE Lietuvos Telekomas) is a government enterprise owned 100% by the Ministry of Communications and Informatics on behalf of the State. Although not yet made into a company, it is planned to privatise SE Lietuvos Telekomas. In view of this privatisation process in 1998, the Ministry of Communications and Informatics is preparing a new telecommunications law. There has been no restriction on foreign investment in Lithuania since December 1995.

The markets for infrastructure have been liberalised. Currently, SE Lietuvos Telekomas operates the public network. Provided that there are legally registered and that they apply for a licence, CATV networks and alternative infrastructure can provide telecommunications services.

The markets for services have been liberalised. To operate in the Lithuanian territory, all telecommunications operators must hold a licence granted by the Ministry of Communications and Informatics. In mobile telecommunications services, licences have been granted for NMT 450, GSM and Paging Services. There are 32 privately-owned CATV companies. Data and satellite communications markets are also open to competition.

By the end of 1997, the transit network will be composed of fibre optic cable enabling Lithuania to have fast connections with all its neighbours. The penetration rate of telephone lines is 25.4 per 100 inhabitants and on average new applicants have to wait 2 years to obtain a telephone line connection.

To get into line with EU legislation, Lithuanian legislation needs to be revised in order to ensure that regulatory authorities are clearly independent from any operating entities.

Next: The regulatory framework

Bulgaria Czech Republic Estonia Hungary Latvia Poland Romania Slovakia Slovenia

Previous: Executive summary

1. The Regulatory Framework - Lithuania

1.1 Telecommunications

Primary legislation	Law on Communications 1995	Enacted Dec. 1995
Key secondary legislation **Subject**		
• Radiocommunications	Law on Radio Communications	Enacted 1995
• Licensing	Government Resolution N° 1400 - regulations on licensing of telecommunications activities	Enacted 31 Oct. 1995
• Enterprises	Law on Enterprises	Enacted 27 April 1995
• Foreign investment	Law on Foreign Investment	Enacted ?

Table 1 - Telecommunications regulations

1.2 Broadcasting

Primary legislation	Law on the provision of information to the public	Enacted August 1996
	Law on Radio Communication	Enacted 7 Nov. 1995
Key secondary legislation	?	?

Table 2 - Broadcasting regulations

1.3 Competition

Primary legislation	Law on Competition	Enacted ?
Key secondary legislation	?	?

Table 3 - Competition regulations

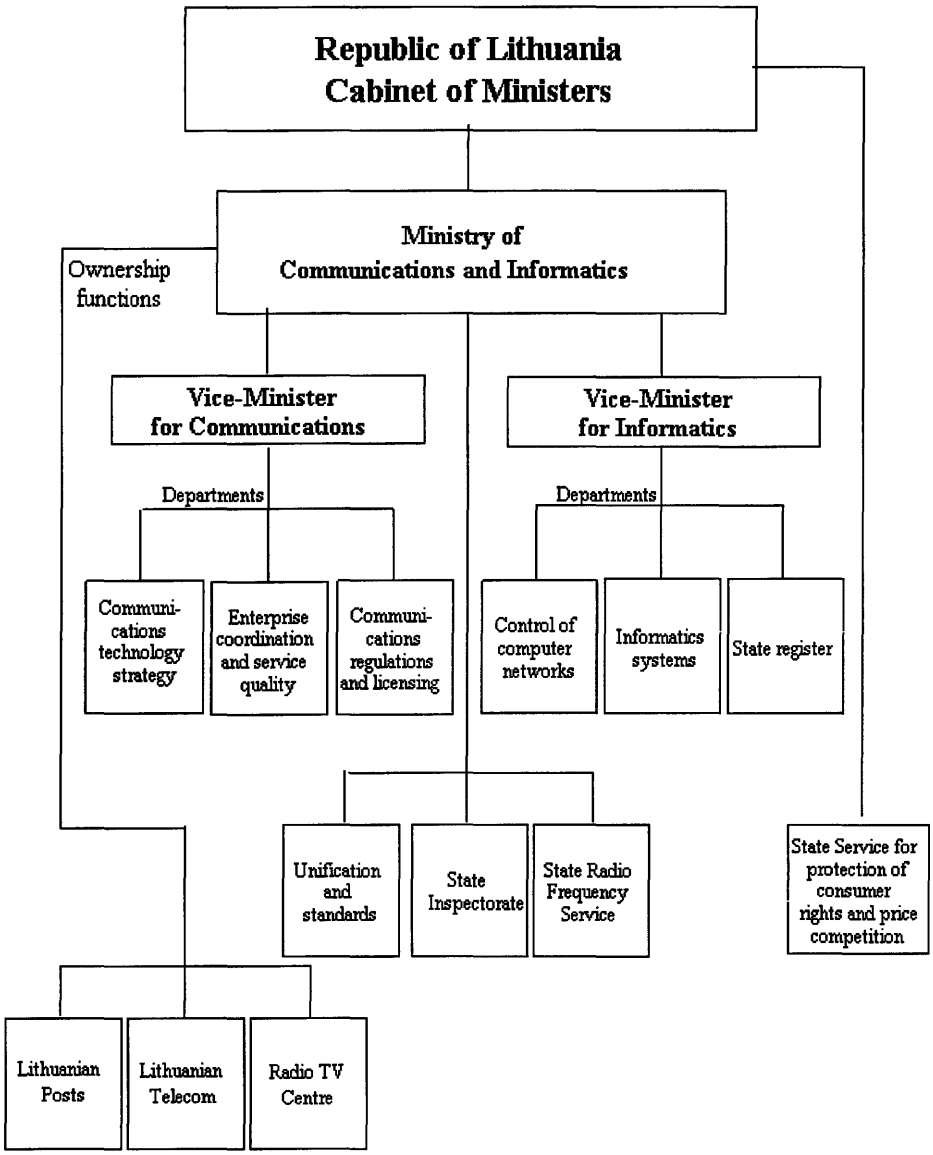
Next: Players in the telecommunications market

Bulgaria Czech Republic Estonia Hungary Latvia Poland Romania Slovakia Slovenia

Previous: The regulatory framework

2. Players in the Telecommunications market - Lithuania

2.1 Main regulatory structure



2.2 Telecommunications regulatory authorities

Regulatory authorities	Ministry of Communications and Informatics	**Key responsibilities:** • NRA: general responsibility for postal and telecommunications areas
	State Service for the Protection of Consumer Rights and Price Competition	• sets telecommunications tariffs once the telecommunications organisations have made their proposals
	State Radio Frequency Service	• monitors the telecommunications sector and the implementation of telecommunications regulations • is in charge of the licensing procedure (drafting, monitoring, follow-up) • has type approval responsibility • in the near future, it will authorise the certification, body to operate certification, and test-houses to deliver certifications, and also be responsible for frequency allocation
	State Inspectorate of Telecommunications	This division of the ministry may become a division of the Communications Agency soon to be created

Table 4 - Telecommunications regulatory authorities

Next: Privatisation and strategic alliances

Bulgaria Czech Republic Estonia Hungary Latvia Poland Romania Slovakia Slovenia

Previous: Players in the telecommunications market

3. Privatisation and strategic alliances - Lithuania

3.1 Status and plans for privatisation of the main telecommunications operators

Telecoms operators	Status	Plans	Procedure used and/or planned	Current/ max. level of foreign participation	Plans to form a company
SE Lietuvos Telekomas	Government enterprise 100% State-owned	Privatisation under consideration	Still under consideration	0% /100%	Incorporated within 1-4 years. Is expected to be merged with Radio Telecommunications Centre
Comliet	Partly privatised, still with a majority of Lithuanian interests	Not applicable	Joint venture	49% /100%	Incorporated
Lintel	Partly privatised	Not applicable	Joint venture	51% /100%	Incorporated
Mobile Telecom-munications	Partly privatised, still with a majority of Lithuanian interests	Not applicable	Joint venture	49% /100%	Incorporated
Nelte	Partly privatised, still with a majority of Lithuanian interests	Not applicable	Joint venture	49% /100%	Incorporated
Omnitel	Partly privatised	Not applicable	Joint venture	77% /100%	Incorporated

Table 6 - Status of and plans for privatisation

3.2 Strategic alliances

Company	Service	Ownership status
Comliet	Mobile telephony analogue cellular telephony	Joint venture: • 41% SE Lietuvos Telekomas • 24.5% Millicom International • 24.5% Tele Danmark • 10% Antenna UAB
Lintel	Operation of international S12 switch	Joint venture: • 49% US West • 49,8% SE Lietuvos Telekomas • 1.2% Comliet
Mobilios Telekomunikacijos (Mobile Telecom-munications)	Mobile telephony GSM	Joint venture: • 28.4% Lintel • 33.1% Millicom • 38.5% Tele Danmark
Nelte	Paging	Joint venture: • 77% Foreign company • 23% Comliet
Omnitel (former called Litcom)	Mobile telephony	Joint venture: • 51% Lithuanian investors • 49% Motorola

Table 7 - Strategic alliances

Since December 1995 there has been no legal restriction on foreign investment in Lithuania nor on the establishment of telecommunications enterprises with foreign capital. The Law on Foreign Investment protects foreign investors from discrimination. There are no tax obstacles to the repatriation of profits.

Next: Status of liberalisation of the markets for networks and services

Bulgaria Czech Republic Estonia Hungary Latvia Poland Romania Slovakia Slovenia

Previous: Privatisation and strategic alliances

4. Status of liberalisation of the markets for networks and services - Lithuania

4.1 Telecommunications networks and alternative infrastructure

Category of infrastructure	Status	Legal requirements
Public telecommunications network	Lithuanian telecommunications infrastructure is liberalised, but today there is still only one company operating the PSTN: SE Lietuvos Telekomas.	A licence is needed.
CATV	CATV can be used as an alternative infrastructure to provide telecommunications services but to date no owner of such an infrastructure has applied for a licence.	A licence is needed to provide telecommunications services in Lithuania and can be granted to companies that are legally registered in Lithuania.
Alternative infrastructure (internal networks of roads, railways, electricity utilities and oil industry)	Alternative infrastructure can be used to provide telecommunications services but to date no owner of such infrastructure has applied for a licence.	A licence is needed to provide telecommunications services in Lithuania and can be granted to companies that are legally registered in Lithuania.

Table 8 - Telecommunications networks and alternative infrastructure

4.2 Telecommunications services

4.2.1 Voice telephony

Voice Telephony	Status of liberalisation	Service provider(s)	Exclusive rights date of expiry
Local	Liberalised from 1995	Sole service provider: SE Lietuvos Telekomas	Not applicable
Domestic long-distance	Liberalised from 1995	Sole service provider: SE Lietuvos Telekomas	Not applicable
International long-distance	Liberalised from 1995	SE Lietuvos Telekomas Omnitel Lintel	Not applicable

Table 9 - Voice telephony - Status of liberalisation

4.2.2 Data transmission

The data transmission market is open to competition. Services are provided by several companies, among which SE Lietuvos Telekomas, Omnitel, the Academic and Research computer network, Infostruktra and Relcom. The academic network called Litnet is part of the Internet network.

4.2.3 Mobile communications

The mobile communications market is open to competition.

Mobile communications	Service providers	Status of liberalisation	Exclusive rights - date of expiry	Additional information
Altaj 300 MHz	SE Lietuvos Telekomas	Open to competition	Not applicable	State-owned; Covers highways and main cities.
NMT 450	Comliet	Open to competition	Not applicable	Covers 60% of the territory over highways and big cities, provides 100% of car-sets and 85% of hand-sets
GSM	Omnitel GSM Mobile Tele-communications (MT) - BITE	Open to competition	Not applicable	Similar coverage and amount of network investments (ECU20m.)
DCS 1800	No service provider	Not applicable	Not applicable	Not in operation
Paging	26 operators	Open to competition	Not applicable	Ermes postponed; networks based on the Pocsag standard; exception made for RTV which uses RDS technology.

Table 10 - Status of liberalisation of mobile telecommunications markets

4.2.4 Satellite Communications

The satellite communications market is open to competition. VSAT traffic can be connected to the PSTN but in practice there is currently no VSAT operator wishing to be connected under the conditions set up by SE Telekomas Lietuvos.

4.2.5 Other services

The market for other services is open to competition. The E-mail market is deregulated, and currently there are more than six e-mail service providers.

Next: Additional information on neworks and services

Bulgaria Czech Republic Estonia Hungary Latvia Poland Romania Slovakia Slovenia

Previous: Additional information on networks and services

6. Participation in international bodies, groups and projects - Lithuania

6.1 Membership/participation in international bodies or groups

Lithuania	Status	Date of membership
ITU	member	November 1991 (renewal)
CEPT	member	September 1992
OECD	not member	not applicable
WTO	negotiation for accession	not applicable
ETSI	membership under consideration	not applicable

Table 13 -Participation of Lithuania in international bodies

6.2 Participation of Lithuania in international telecommunications projects

- MoU on Trans-Europe Lines signed: Though the Memorandum of Understanding on GSM is not yet signed, all provisions and recommendations of this MoU are respected in practice. Indeed the GSM licences issued stipulate that they are following the measures and standards recommended by the MoU on GSM.
- Joint project with Sweden to lay a submarine fibre optic cable. Started in 1996, this project is expected to be finalised in 1997.
- BIIP - Baltic Information Infrastructure Pilot: This project aims at creating information highways between Vilnius, Riga and Tallinn. The first steps of this project were funded with the help of the European Union.
- PHARE Multi-Country Programme for Telecommunications and Posts.
- Vienna agreement on frequency allocation

Next: Future trends in the sector

Bulgaria Czech Republic Estonia Hungary Latvia Poland Romania Slovakia Slovenia

Previous: Participation in international bodies, groups and porjects

7. Future trends in the sector - Lithuania

7.1 Telecommunications policy

SE Lietuvos Telekomas will remain a state enterprise until the year 2000.

The Ministry of Communications and Informatics is considering special legislation for the sector. Every year until 2000 the policy on information and communications technology is revised.

7.2 Development of markets and technology

The Lithuanian network will be upgraded progressively until the year 2005 by

- replacing (gradually) the analogue switching technology with digital system
- installing (gradually) long-distance fibre optic cables (Warsaw - Kaunas - Riga - Tallinn, and in 1997 Lithuania - Belarus)
- migrating (gradually) the transit star architecture towards a mesh structure
- use of SDH transit technology

The GSM network should cover the whole Lithuanian territory. While DECT is not planned so far, one licence for ERMES services is under consideration and ATM functions are planned for after 2000. ISDN functions are to be started in 1997.

Next: Appendix 1 - List of sources

Bulgaria Czech Republic Estonia Hungary Latvia Poland Romania Slovakia Slovenia

Previous: Future trends in the sector

Appendix 1 - List of sources - Lithuania

1. Draft table on the Major Aspects of the Regulatory Framework in Central and Eastern Europe, final version 5

Source: European Commission, DG XIII

Ref.: DG XIII, IS 2 MS/HPG

Date: 4 July 1996

2. Completed questionnaire on the telecommunications sector status

Source: European Commission, DG XIII, Gebhardt,

Ref.: HPG/dhar - 9603t051

Date: 21 March 1996

3. Study IS4/94 on the development of advanced networks in PHARE and TACIS countries

Source: Sagatel

Ref.: S.4375/LTH

Date: February 1996

4. Regulatory Status Survey for the Telecommunications sector in Central and Eastern Europe and the former Soviet Union

Source: EBRD, Telecommunications Team, Terrance Rochefort

Date: March 1995

5. CEEC Information Society Forum - Panel A, *Conclusions and recommendations of Panel A (Financing and Infrastructure),* Final version

Source: The European Commission and the Hungarian Ministry of Transport, Communications and Water Management

Date: May 1996

6. CEEC Information Society Forum - *Draft Report of Panel B (Legal and Institutional Framework)*

Source: European Commission, DG XIII

Ref.: hpg/dhar regpanel

Date: 4 March 1996

7. Draft outline of the major elements of regulatory reform in developing countries

Source: European Commission, DG XIII, Gebhardt, version 2

Ref.:

Date: 11 July 1996

8. The Road to Accession, Telecommunications and Posts sector paper

Source: European Commission

Ref.:

Date: 17 July 1996

9. Interviews with officials of the Ministry of Communications and Informatics: Mr. Varnas, Vice-minister for Communications; Mr. Burkauskas, PHARE Multi-Country PCU for Telecommunications and Posts; Mr. Usas, Senior advisor; Mr. Mykolaitis, head of the Licence Division, Mr. Stanislovaitis, head of the Standards and Unification Department and Mr. Bitinas, head of the Strategy of Technologies Department.

Bulgaria Czech Republic Estonia Hungary Latvia Poland Romania Slovakia Slovenia

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PHARE MULTI-COUNTRY PROGRAMME FOR TELECOMMUNICATIONS AND POSTS - TELECOMMUNICATIONS STATUS STUDY

Final Report - March 21, 1997 - *POLAND*

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Executive summary - Poland

The 1990 Polish Communications Act was recently amended and consolidated in the Act of 1995. The regulatory framework also contains two other important laws. The first, the Law on Economic Activity with Participation of Foreign Parties, regulates foreign investment. The second, the State Enterprise Privatisation Act, concerns the privatisation of State enterprises. The spirit of these two laws is to accelerate generally development by permitting privatisation and investment by foreign companies in Poland. However, the Communications Act serves to protect Polish interests by limiting the foreign ownership of Polish telecommunications operators. The Acts on National Council for TV and Radio Broadcasting and on Anti-Monopolistic practice regulate, respectively, broadcasting and competition matters.

Regulatory responsibilities have been delegated to the following two separate entities reporting to the political authority which is the Ministry of Posts and Telecommunications:

- the State Radiocommunications Agency - responsible for frequency allocation and other matters related directly to Polish radiocommunications.
- the State Postal and Telecommunications Inspectorate - monitors operators' activities, supervises their adherence to licensing conditions and collects annual non-radiocommunications licence fees.

Regulatory functions have been administratively separated from the operational functions which have been delegated to the main public telecommunications operator, TPSA. To ascertain whether or not the three entities above are fully independent from the telecommunications operator, further information and assessment is needed

Incorporated in 1992, the public operator, Telekomunikacja Polska SA (TPSA), is still 100% state-owned, but a decision on its privatisation is to be taken in 1997. Depending on the type of services provided, foreign participation is restricted by Polish legislation and monitored by the Ministry of Posts and Telecommunications and the Ministry of the Treasury.

Liberalisation of the markets for services and infrastructures has been partially undertaken but progress is slow. CATV companies are allowed to compete with telecommunications operators for the provision of telecommunications services but are obliged to obtain an operating licence to do so. Alternative infrastructure can be used to provide local voice telephony, data communications, paging or any other telecommunications services but only for communication and subject to a licence. Any company which has been granted a licence is authorised to set up and operate telephony services at a local level.

For domestic long-distance telecommunications, Polish legislation stipulates that the operator must be at least 51% Polish-owned and also that a majority of the board of directors must be Polish citizens resident in Poland. International carriers in Poland must be 100% Polish-owned, and public telephony and telegraphy have to remain with TPSA. An interconnection regime has been developed by a Ministry decision establishing the terms for negotiations (3 months), and an arbitration procedure exists which is supervised by the Ministry.

At the service level, the provision of local voice telephony is open to competition with limitation; i.e. TPSA and only one other operator. However, problems with interconnection has limited the effectiveness of such competition. The mobile sector is competitive with one NMT 450 licence and two GSM licences granted in 1996. The CATV and data communications markets are open and value-added services companies have a foreign participation limitation of 40%.

The mobile communications market is open to competition but GSM operators must be 51 % Polish-owned with a board of which the majority are Polish citizens residing in Poland. They must also pay a substantial fee to obtain a licence from the Ministry.

The Polish network, owned and operated by TPSA, has a four-level hierarchical structure comprising 2 transit levels and two local levels. Some switches are still manual, and some villages are still off-line. Digitisation of the network is in progress and a nation-wide digital SDH backbone network is being implemented by TPSA, including a few digital metropolitan area networks (MANs).

The penetration rate - 15 telephone lines per 100 inhabitants - is low in contrast to the general development of the country, and the demand for telephone lines is far from being satisfied (in 1994, 2.3 million people were waiting for a telephone connection). There is a low penetration rate for telephony services in rural areas.

Official determination to limit foreign ownership forms an important part of the Polish telecommunications policy. Less restrictive limitations could attract more investors and speed up the liberalisation process which is slow and gradual in Poland.

To get into line with EU legislation, Polish legislation should be revised with particular emphasis on further liberalising the markets for alternative infrastructure, voice telephony and satellite communications.

Next: The regulatory framework

Bulgaria Czech Republic Estonia Hungary Latvia Lithuania Romania Slovakia Slovenia

Previous: Executive summary

1. The regulatory framework - Poland

1.1 Telecommunications

Primary legislation	Communications Act, amended and consolidated	Enacted 23 Nov. 1990 Amended 12 May 1995
Key secondary legislation **Subject** • Foreign investment in Poland	The Law on Economic Activity with the Participation of Foreign Parties - The Polish Foreign Investment Law	Enacted Jan. 1990
• Privatisation of State Enterprise	The State Enterprise Privatisation Act	Enacted 23 July 1990

Table 1 - Telecommunications regulations

1.2 Broadcasting

Primary legislation	Act on National Council for TV and Radio Broadcasting	Enacted 29 Dec. 1992
Key secondary legislation	No secondary legislation	Not applicable

Table 2 - Broadcasting regulations

1.3 Competition

Primary legislation	Act on Anti-Monopolistic practice	Enacted 24 Feb. 1990
Key secondary legislation	No secondary legislation	Not applicable

Table 3 - Competition regulations

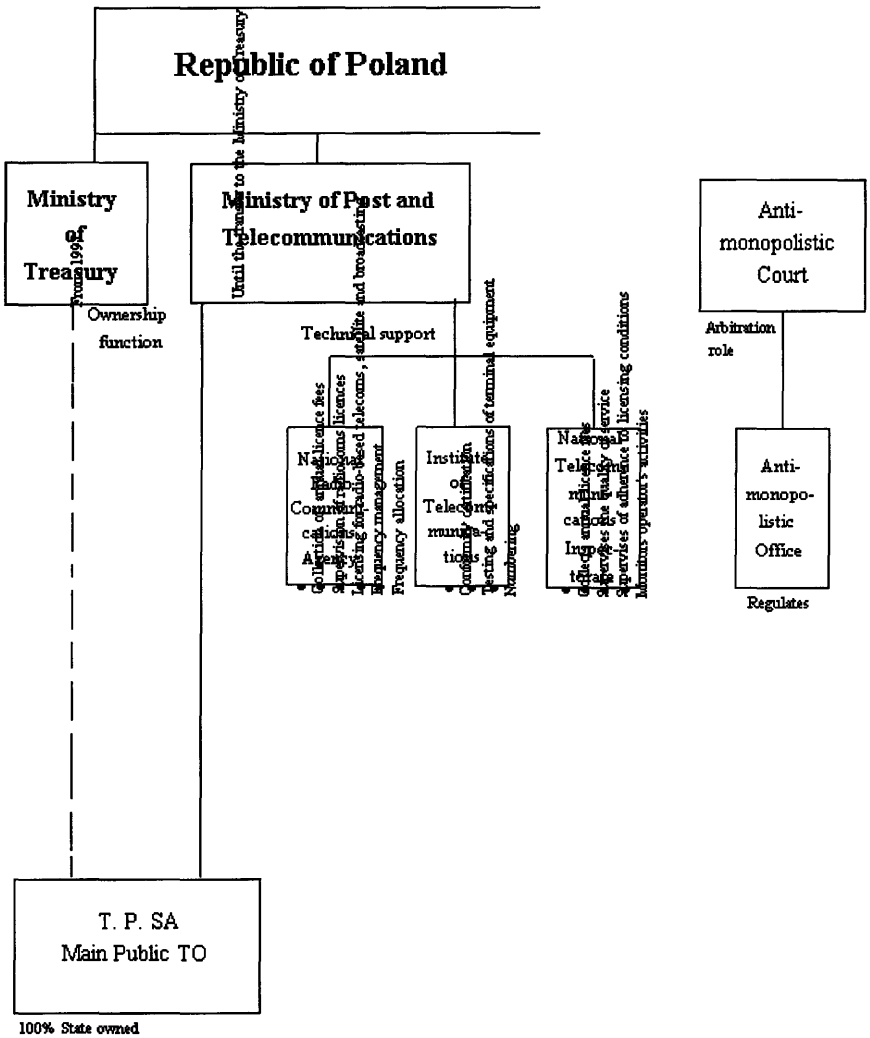
Next: Players in the telecommunications market

Bulgaria Czech Republic Estonia Hungary Latvia Lithuania Romania Slovakia Slovenia

Previous: The regulatory framework

2. Players in the telecommunications market - Poland

2.1 Main regulatory structure



2.2 Telecommunications regulatory authorities

Regulatory authorities	Ministry of Posts and Telecommunications Agencies of the Ministry of Posts and Telecommunications: • National Postal and Telecommunications Inspectorate • National Radiocommunications Agency • Anti-Monopolistic Court • Anti-Monopolistic Office • Institute of Telecommunications	**Key responsibilities:** • regulatory authority • ownership function • monitors operators' activities • supervises the quality of service • supervises the adherence to licensing conditions • collects annual fees • frequency allocation • frequency management • licensing for radio-based telecoms, satellite and broadcasting • supervision of radiocommunications licences • collection of annual licence fees • arbitration • regulations • technical support

Table 4 - Telecommunications regulatory authorities

2.3 Telecommunications operators

Switched fixed networks and services	PSTN	Telekomunikacja Polska SA (TPSA) 68 local operators (but only approximately 15 operate) More than 130 companies licensed
	Cable TV	400 operators
Mobile and satellite networks	Radiotelephone 160 MHz NMT 450	TPSA Centertel
	Trunked networks	UniNet Metro-Bip
	GSM	GSM licences under preparation for 2 consortia • Polska Telefonia Cyfrowa (PTC) • Polkomtel
	DCS 1800	In April, 1997 there will be a tender for this service
	Paging	Countrywide, Polpager Regionally, 50 operators, among which are Metro-Bip, Telepage, Easy Call, Belpagette and Alphapage.
	Satellite	6 national VSAT networks (national services) TPSA (international telephony and telegraphy)

Table 5 - Telecommunications operators

Next: Privatisation and strategic alliances

Bulgaria Czech Republic Estonia Hungary Latvia Lithuania Romania Slovakia Slovenia

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Previous: Players in the telecommunications market

3. Privatisation and strategic alliances - Poland

3.1 Current status and privatisation plans of the main telecommunications operator

Telecoms operator	Status	Plans	Procedure used and/or planned	Current/ max. level of foreign participation	Plans to form a company
Tele-komunikacja Polska SA (TPSA)	Not privatised	Preparatory studies due to be finished by the end of 1996. Decisions on privatisation to be taken in 1997	Either by selling stakes for up to 49% of the capital, or through floatation on the Stock Exchange, or through the creation of a holding company	0% / 49%	Incorporated under Act on Communication of November 1990

Table 6 - Current status and plans for privatisation

3.2 Strategic alliances

Company	Services	Ownership status
Rol Tel	Local telephony	Joint venture: • 90% Netia • 10% EBT (Elbit & Beseq)
Telekom Modlin	Local telephony	Joint venture: • 90% Netia • 10% EBT (Elbit & Beseq)
Telekom Josefow	Local telephony	Joint venture: • 90% Netia • 10% EBT (Elbit & Beseq)
Netia Telekom	Local telephony	Holding for local telecoms operators: • 75% RP Telekom • 25% Telia
SRPT	Local telephony	Holding for local TOs: • 41.7% RP Telekom • 25% Telia • 21.6% local investors • 11.7% IFC

Polska Telefonia Komorkowa (Centertel)	Mobile telephony	Joint venture: • 51% TPSA • 24.5 Ameritech • 24.5 % France Tlcom
Polkomtel SA	Mobile telephony	Joint venture: • 61.5% Polska Miedz and Plock • 19.25 % Air Touch International • 19.25 % Tele Danmark
Polska Telefonia Cyfrowa	Mobile telephony	Joint venture: • 51% Polska Telefonia Cyfrowa • 49% West & DeTeMobil
Uni Net	Trunked PMR	Joint venture: • 58 % RP Telekom • 38% Motorola • 4% local investors
Polpager	Paging	Joint venture: • 50% Polpager System (Belgian -Polish joint venture) • 50% TPSA
Telepage	Paging	Joint venture: • 60% Ross Financial • 30 % Mick & Associates and Polish companies
Belpagette Poland	Paging	Joint venture: • Matrix (Asian investors) • Belpagette (Canada)
Alphapage	Paging	JV including Luxcell Group Inc.
Polish Televizja Kablowa PTK	CATV	Joint venture: • 70% Chase Enterprise • 30% Poltelcable
Gosat service	CATV	Polish-Norwegian joint venture
Aster City Cable	CATV	Joint venture: • 51% local investors • Bresnan International Partners

Table 7 - Strategic alliances

Next: Status of liberalisation of the markets for networks and services

Bulgaria Czech Republic Estonia Hungary Latvia Lithuania Romania Slovakia Slovenia

Previous: Privatisation and strategic alliances

4. Status of liberalisation of the markets for networks and services - Poland

4.1 Telecommunications networks and alternative infrastructure

Category of infrastructure	Status	Legal requirements
Public telecommunications network	Local telephony: TPSA and any company granted a licence is authorised to set up and operate telephone services	Licence from the Ministry of Communications
	Long-distance: TPSA	Domestic long-distance carriers must be at least 51% Polish-owned
	International telephony: TPSA	Legal monopoly for TPSA in public voice telephony and telegraphy services. In other services, international carriers must be 100% Polish-owned.
CATV	CATV networks cannot be used as an alternative to the PSTN to provide telecommunications services unless licensed	Legally permitted if licensed. Local requirements are the same as in general regulations. Limitation to minority foreign ownership since July, 1995. Some CATV networks are exempted from this limitation.
Alternative infrastructure (internal networks of roads, railways, electricity utilities and oil industry)	These networks may only be used for traffic within a local zone, according to the licence. 11 operators have received a licence to provide telephony to the residential subscribers living in special housing programmes	Licence from the Ministry of Communications

Table 8 - Telecommunications networks and alternative infrastructure

4.2 Telecommunications services

4.2.1 Voice telephony

Voice telephony	Status of liberalisation	Service provider(s)	Exclusive rights date of expiry
Local	Open to competition without any limitation on foreign ownership. Local competition is organised under a duopoly regime, TPSA plus a private operator	• Telekommunikacja Polska SA (TPSA) • approximately 15 operators competing with TPSA in each local territory in a duopoly arrangement	Not applicable
Domestic long-distance	Not liberalised; exclusive rights granted to TPSA	TPSA Limitation to minority foreign ownership since July, 1995. Some CATV networks established prior to this are allowed to continue operations.	January 1, 2001
International long-distance	Not liberalised; TPSA has a legal monopoly under the Act	TPSA	No date decided yet

Table 9 - Voice telephony - status of liberalisation

4.2.2 Data transmission

The data transmission market is open to competition. There are:

- 5 countrywide operators
- 30 value-added services providers
- Internet services

Moreover, a trial installation for mobile data transmission was implemented in March 1995 by Telbank.

4.2.3 Mobile communications

Mobile communications market is open to competition, and at the moment four public operators are present.

Mobile communications	Service providers	Status of liberalisation	Exclusive rights date of expiry	Additional information
Radiotelephone 160 MHz	TPSA	No other operator	Not applicable	Operated since 1972 (manual switching). The whole country is covered. 10,000 subscribers
NMT 450	Centertel	No, but competitive with GSM	Not applicable	Operated since 1992
GSM	Polkomtel Polska Telefonia Cyfrowa PTC	Competitive, only 2 GSM operators	Not applicable	GSM licences are granted for 15 years. TOs have to pay a fee of ECU 100 million and must be at least 51% Polish-owned
DCS 1800	No service provider yet	Not applicable	Not applicable	The licensing of a DCS 1800 network is under consi-deration
Paging	Polpager and other local operators	Open to competition	Not applicable	Polpager is the only countrywide operator

Table 10 - Status of liberalisation of mobile telecommunications markets

4.2.4 Satellite Communications

Except for international satellite telephony and telegraphy, the satellite communications market is open to competition. TPSA has been granted exclusive rights to provide international satellite-based telephony and telegraphy.

4.2.5 Other services

The market for other services is open to competition. E-mail services are offered by TPSA, by Nask and by about 70 Internet providers.

For VSAT, there are 6 networks providers (GTE, ANT, DT, Eurodata, Teleport Europe, and Unisource) and about 600 users in Poland.

In 1995, there were more than 700 CATV networks in operation, offering their services to 2 million subscribers. According to the 1993 Broadcasting Law, the operators require a licence, are required to broadcast about 30% of domestically produced programs and cannot advertise for more than 12 minutes per hour. According to the Communications Act, no foreign operator can own more than 49%.

Next: Additional information on networks and services

Bulgaria Czech Republic Estonia Hungary Latvia Lithuania Romania Slovakia Slovenia

Previous: Status of liberalisation of the markets for networks and services

5. Additional information on networks and services - Poland

5.1 Penetration rate

Penetration rate	
CATV connections per 100 households	20
Main telephone lines per 100 inhabitants	15
Percentage of households provided with telephone lines	33%

Table 11 - Penetration rate

5.2.Quality of service - Voice telephony

5.2.1 Waiting time for telephone subscription

In 1996, 79% of requests were met. In 1994, 2.3 million people were on the waiting list.

	Average waiting time	Maximum waiting time
Waiting time for telephone subscription	36 months	20 years

Table 12 A - Waiting time for telephone subscription

5.2.2 Numbers of faults cleared within 24 hours

	Numbers of faults cleared within 24h.
On average	Data not available

Table 12 B - Quality of service of voice telephony

5.3 Network investments

5.3.1. Investment volume per year

1994: US$ 0.8 billion

5.3.2. Investment per main telephone line

1994: US$ 158

5.3.3. Investment plans

The Polish Ministry of Posts and Communications expects the number of subscribers to reach 10 million by the year 2000.

Investments in Poland are described in two documents:

- *Development Strategy of Telecommunications in the Republic of Poland until the year 2000.* This foresees two phases of development:
  - - First Development Project (1994-1997): ECU 567.4 million already invested in 1994
  - - Second Development Project (1997- ?): ECU 1.93 billion
- *Telecommunications Development Policy* approved by the Government in May 1996 and put before Parliament.

Next: Participation in international bodies, groups and projects

Bulgaria Czech Republic Estonia Hungary Latvia Lithuania Romania Slovakia Slovenia

Previous: Additional information on networks and services

6. Participation in international bodies, groups and projects - Poland

6.1 Membership/participation in international bodies or groups

Poland	Status	Date of membership
ITU	member	From the beginning
CEPT	member	From the beginning
OECD	member	July 1996
WTO	member	1 July 1995
ETSI	member	1991

Table 13 -Polish participation in international bodies

6.2 Polish participation in international telecommunications projects

FLAG, ICO, Intelsat, Immarsat, Eutelsat, Intersputnik, MoU GSM, ETO/ECTRA

Next: Future trends in the sector

Bulgaria Czech Republic Estonia Hungary Latvia Lithuania Romania Slovakia Slovenia

Previous: Participation in international bodies, groups and projects

7. Future trends in the sector - Poland

7.1 Telecommunications policy

Current Polish telecommunications policy includes among other objectives a public tender for local telephony licences.

The national operator, TPSA, has committed itself to achieving the following goals before the year 2000:

- extension of SDH technology in the transit network (digital SDH backbone network for the end of 1998);
- installation of digital technology in local networks;
- development of telephone services in rural areas;
- extension of international network interconnections with fibre optic technology.

A *Development Strategy of Telecommunications in the Republic of Poland until the Year 2000* was produced in 1993 by the Ministry of Posts and Telecommunications in cooperation with TPSA. It includes a new Law on Telecommunications, an initial development project with a master plan for the development and upgrading of the network and a second development project dedicated to the further development of the network and local communications (27% digitisation for the year 2000).

Within the Ministry of Posts and Telecommunications, a special body, called the Government Plenipotentiary for Rural Telephony, was created in 1991 to improve the development and availability of telecommunications in rural areas.

In May 1996, the Government approved the "Telecommunications Development Policy" and transmitted it to the Parliament. In 1997 the drafts of new (separate) Telecommunications and Postal Acts should be prepared.

7.2 Development of markets and technology

ERMES paging services are expected for 1997. Following the B-ISDN trials of mid-1996, the partial introduction of ISDN is planned for 1997 with country-wide coverage in 1999. ATM is to be implemented in MAN and countrywide backbone structures. The introduction of intelligent networks is also planned.

Next: Appendix 1 - List of sources

Bulgaria Czech Republic Estonia Hungary Latvia Lithuania Romania Slovakia Slovenia

Previous: Future trends in the sector

Appendix 1 - List of sources - Poland

1. Draft table on the Major Aspects of the Regulatory Framework in Central and Eastern

Europe, final version 5

Source: European Commission, DGXIII

Ref.: DG XIII, IS 2 MS/HPG

Date: 4 July 1996

2. Completed questionnaire on the telecommunications sector status

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Ref.: HPG/dhar - 9603t051

Date: 21 March 1996

3. Study IS4/94 on the development of advanced networks in Phare and Tacis countries

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Europe and the former Soviet Union

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Ref.: none

Date: March 1995

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Source: The European Commission and the Hungarian Ministry of Transport, Communications and Water Management

Ref.: none

Date: May 1996

6. Central and East European Countries (CEEC) Information Society Forum: *Draft Report of Panel B (Legal and Institutional Framework)*

Source: European Commission, DG XIII

Ref.: hpg/dhar regpanel

Date: 4 March 1996

7. Draft outline of the major elements of regulatory reform in developing countries

Source: European Commission, DGXIII, Gebhardt, version 2

Ref.: none

Date: 11 July 1996

8. The Road to Accession, Telecommunications and Posts sector paper

Source: European Commission

Ref.: none

Date: 17 July 1996

9. Interviews with Mr. Halka, the Director General of the Ministry of Posts and Telecommunications, Mr Busz, Deputy Director General and a Chief Specialist, Ms Anna Mioduszewska-Suchowicz.

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PHARE MULTI-COUNTRY PROGRAMME FOR TELECOMMUNICATIONS AND POSTS -

TELECOMMUNICATIONS STATUS STUDY

Final Report - March 21, 1997 - *ROMANIA*

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Executive summary - Romania

A new Telecommunications Law has been in effect since September 1996. Some of the principles defined in this law have been further specified in ministerial orders. Broadcasting and competition matters are, respectively, regulated by the Audiovisual Law (48/1992) and the Competition Law.

At present, the Ministry of Communications is the regulatory authority together with the General Inspectorate of Radiocommunications. A new Communications Authority will be created on the basis of the telecommunications law.

Rom Telecom is an autonomous administration which is 100% state-owned. Its transformation into a joint stock company is planned for the year 1997 and partial privatisation is planned to start in 1998.

The infrastructure market is not liberalised in Romania and exclusive rights have been granted to Rom Telecom until September 2001. Neither CATV operators nor the operators of alternative infrastructure can provide basic services (voice telephony and telegraphy).

The telecommunications services market has not been fully liberalised and progress in this direction is mixed and somewhat inconsistent. Voice telephony falls under the exclusive monopoly of Rom Telecom and there is only limited competition in the data communications market. The local paging market is open to competition and there are some frequency restrictions at the national level. The satellite communications market is open but interconnection with the PSTN is allowed only for data transmission. Although VSAT operators are allowed to provide data transmission, there is a low level of demand. Mobile communications are open to competition and two GSM operators have been licensed. One of them started operations in April 1997 and the other one will start in June 1997. About one hundred CATV operators have a total of some four hundred licences.

The Romanian public network has a mesh architecture with a four level-structure. The network which is undergoing a process of digitisation is still mainly analogue (75%)and has a low coverage, especially in rural areas. Fibre optic cables have, however, been employed to interconnect new digital exchanges in a country-wide backbone network. The problem of the low penetration of telephony in rural areas is being specially addressed by the General Directorate for Strategy within the Ministry of Communications.

There are, however, a few hopeful signs. The achievement of the objectives contained in the Romanian Master Plan should improve the situation. The liberal attitude of the Romanian legislation with regard to foreign investment should help the development of the telecommunications sector. Moreover, the partial privatisation of the public telecommunications organisation, Rom Telecom, should accelerate network modernisation and contribute to meeting the needs of both residential and business customers.

To get into line with EU legislation, Romanian legislation should be revised with particular emphasis on liberalising infrastructure and voice telephony markets in accordance with the time schedule (by the beginning of the year 2002) to which the government committed itself at the WTO negotiations in February 1997. Data communications and national paging markets should also be further opened to competition. Interconnection with the PSTN should be possible for satellite communications users.

Next: The regulatory framework

Bulgaria Czech Republic Estonia Hungary Latvia Lithuania Poland Slovakia Slovenia

Previous: Executive summary

1. The regulatory framework - Romania

1.1 Telecommunications

Primary legislation	1996 Telecommunications Law (74/1996)	Enacted 12 July, 1996
Key secondary legislation **Subject**		
	(Decree 191/1995 regarding operations of postal and telecommunications services)	Enacted 1995
Ministerial Orders on • ONP for leased lines	Ordinance of the Minister of Communications No. 76/1994	Enacted 10 March, 1994
• radiomessaging services	Ordinance of the Minister of Communications No. 55/1992 on authorisation of radio-paging services	
• radiocommunications	Ordinance of the Minister of Communications No. 364/1993. On authorisation of the radiotelephone services.	
• terminal equipment	Ordinance of the Minister of Communications No. 363/93	Enacted 9 Nov., 1993
• trunked mobile communications	Ordinance of the Minister of Communications No. 364/93	
• value-added services	Ordinance of the Minister of Communications No. 90/92	Enacted 20 May, 1992
• satellite communications	Ordinance of the Minister of Communications No. 177/96	Enacted 30 April, 1996

Table 1 - Telecommunications regulations

1.2 Broadcasting

Primary legislation	Audiovisual Law (48/1992)	Enacted 21 May, 1992
Key secondary legislation	Ordinance of the Minister of Communications No. 110/92	Enacted 3 June, 1996

Table 2 - Broadcasting regulations

1.3 Competition

Primary legislation	Competition Law 21/96, in force after 9 months (January 1997)	Enacted 10 April 1996
Key secondary legislation	Competition Council	Enacted 1996

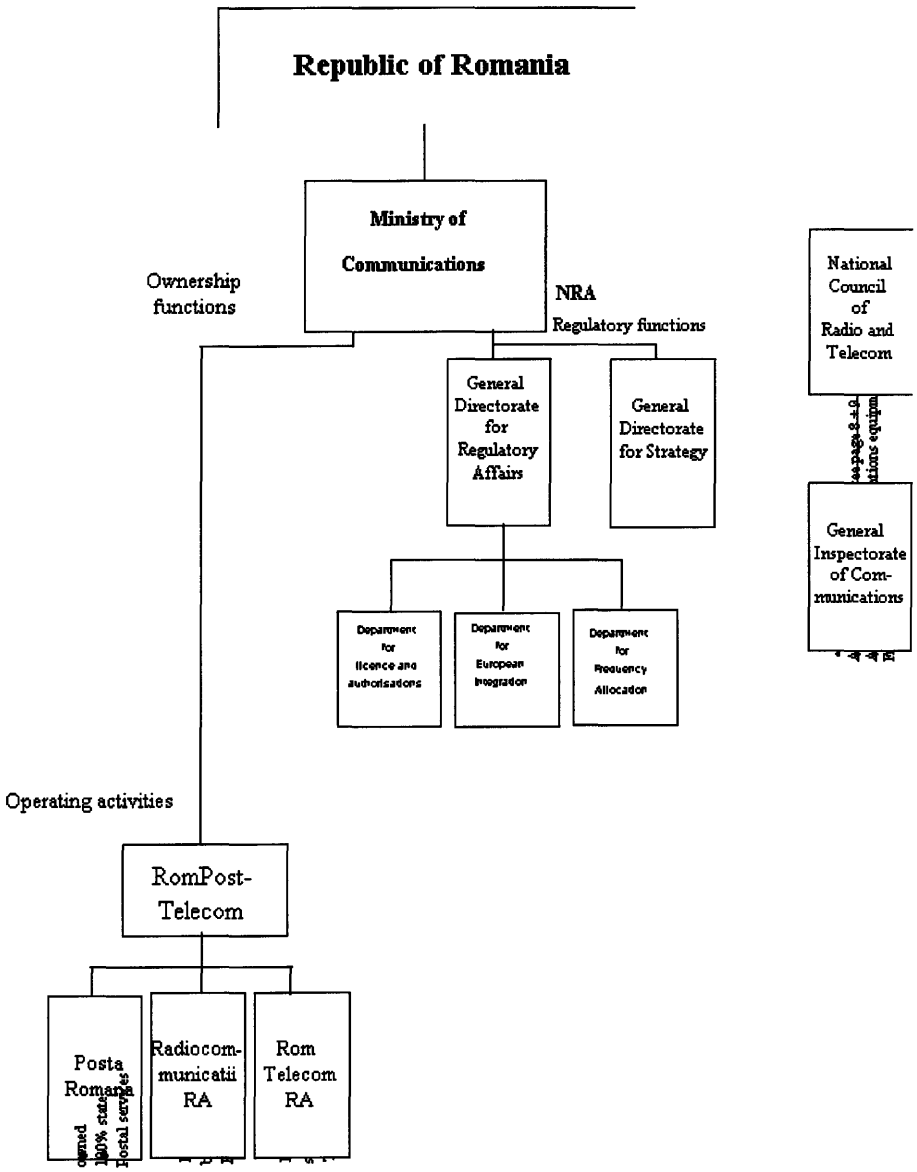
Table 3 - Competition regulations

Next: Players in the telecommunications market

Bulgaria Czech Republic Estonia Hungary Latvia Lithuania Poland Slovakia Slovenia

Previous: The regulatory framework

2. Players in the telecommunications market - Romania



2.1 Main regulatory structure

2.2 Telecommunications regulatory authorities

		Key responsibilities:
	Ministry of Finance	• regulates tariffs of public services and public entities
	Ministry of Communications	• general regulatory competence
	State Secretary for Regulatory Affairs	• helps the Ministry for Regulatory Affairs
	General Directorate for Regulatory Affairs includes the Department for Licence and Authorisation	• drafting of the licences and authorisation conditions • monitoring that licences conditions are respected
	State Secretary for Strategy and Development	• helps the Ministry for Strategy and Development Affairs
Regulatory authorities	Department for Strategy (department of the Ministry of Communications)	• leading national telecommunications development and policy • tackling the problem of underdevelopment or non-existence of telephony in rural areas
	General Inspectorate of Communications	By delegation from the Ministry: • technical expertise about tele- and radiocommunications equipment • type-approval • frequency allocation • control of the frequency spectrum
	Romanian Institute for Standardisation (covers all sectors of the economy)	• definition and approval of the standards (need for a ministerial decision to move standards into a mandatory technical norm)
	The National Audiovisual Council (CNA)	• awarding TV and radiocommunications licences as cable licences after authorisation of the technical aspects by the Ministry of Communications.
	Consultative Committee for Telecommunications	• making recommendations • debating the content of licenses and of telecommunications policy

Table 4 - Telecommunications regulatory authorities

2.3 Telecommunications operators

Switched fixed networks and services	PSTN	Rom Telecom, RA
	Cable TV	About 150 cable TV operators licensed for a total of 400 licences (numerous mergers took place in recent years)
Mobile and satellite networks	Radiotelephone	
	160 MHz	Telemobil (monopoly under licence)
	NMT 450	numerous (bus and taxi companies, etc. ...)
	Trunked networks	2 operators under licences (not published) after public tenders
	GSM	No operator
	DCS 1800	25 local private paging operators
	Paging	Radiocommunicatii
	Satellite	around 100 users of VSAT terminals.

Table 5 - Telecommunications operators

Next: Privatisation and strategic alliances

Bulgaria Czech Republic Estonia Hungary Latvia Lithuania Poland Slovakia Slovenia

Previous: Players in the telecommunications market

3. Privatisation and strategic alliances - Romania

3.1 Current status and plans for privatisation of the main telecommunications operators

Telecoms Operators	Status	Plans	Procedure used and/or planned	Current/ max. level of foreign participa-tion	Plans to form a company
Rom Telecom	Independent public body, government enterprise, 100% state owned	Partial privatisation planned for 1998	Under consideration	0% / 0%	To be transformed into a joint stock company in 1997
Telemobil	Already privatised			60% private 40% state	To be privatised totally

Table 6 - Current status and plans for privatisation

In principle, there is no restriction on the amount of foreign investment and participation in Romanian companies. Foreign investments can be realised via partnerships with Romanian nationals, limited liability companies or joint stock companies.

The Foreign Investment Law which came into effect on 1 January 1995 granted tax holidays for foreign investments of over US$50 million and several years' duty-free importation. Tax holidays granted to companies incorporated before 31 December 1994 will stay valid.

Two major instruments were used to initiate and speed up the process of privatisation: the 1994 Mass Privatisation Programme and the 1995 Law on Acceleration of Privatisation. However by March 1996, the goal of privatising 3000 companies had been only partly reached. Less than a third of the country's population opted to take part in this privatisation process. While there is no limitation on the amount of money invested in the privatised companies, the percentage of shares for sale to be sold to Romanian nationals is limited to 30% and the State Ownership Fund is in charge of selling the shares.

3.2 Strategic alliances

Company	Services	Ownership status
Telefonica Romania (Telemobil)	Analogue cellular telephony	Joint venture: • 60% Telefonica of Spain • 20% Rom Telecom & • 20% Radiocommunicatii RA
Rompac-RTNS	Data communications	Joint venture: • 50.5 % Transpac • 48.98% Rom Telecom • 0.52% private investors
Cable Vision of Romania	CATV	Joint venture: • 52% Christal Ltd. • 45% Rom Telecom • 1% KU Inc. • 1% Rutter-Dunn • 1% private investors
CNM (National Mobile Communications)	Paging System	• Radiocommunications 46% U.S. Companies
RARTel	Satellites	Radiocommunications, Italian Telecommunications (subsidiary of STET).
Logicnet	Data communications	Sprint + private Romanian companies. 100% privatised.

Table 7 - Strategic alliances

Next: Status of liberalisation of the markets for networks and services

Bulgaria Czech Republic Estonia Hungary Latvia Lithuania Poland Slovakia Slovenia

Previous: Privatisation and strategic alliances

4. Status of liberalisation of the markets for networks and services - Romania

4.1 Telecommunications networks and alternative infrastructure

Category of infrastructure	Status	Legal requirements
Public telecommunications network	The Romanian PSTN is operated by Rom Telecom under monopoly probably until 2002.	Exclusive rights
CATV	Use of CATV as alternative infrastructure to the PSTN is in principle not permitted.	Not legally permitted, except by special authorisation of the Ministry
Alternative infrastructure (internal networks of roads, railways, electricity utilities and oil industry)	Alternative infrastructure cannot be used to provide basic services.	Not legally permitted

Table 8 - Telecommunications networks and alternative infrastructure

4.2 Telecommunications services

4.2.1 Voice telephony

Voice telephony	Status of liberalisation	Service provider(s)	Exclusive rights date of expiry
Local	Not liberalised; exclusive rights granted to the public operator	Rom Telecom	January 1, 2002
Domestic long-distance	Not liberalised; exclusive rights granted to the public operator	Rom Telecom	January 1, 2002
International long-distance	Not liberalised; exclusive rights granted to the public operator	Rom Telecom	January 1, 2002

Table 9 - Voice telephony - status of liberalisation

4.2.2 Data transmission

While the interconnection with the PSTN is allowed for data communications, there is only limited competition in this market. The level of the demand is low. Rom Telecom provides circuit switched data communications while packet switched data communications are provided by Rompac (a 50.5% subsidiary of the Transpac group) and Logic. In 1995, a packet switched data transmission service was initiated between Romania and Austria.

4.2.3 Mobile communications

A licence is required to operate a GSM network. 2 GSM licences were issued in October 1996, after a public call for tenders.

Mobile communications	Service providers	Status of liberalisation	Exclusive rights - date of expiry	Additional information
Radiotelephone 190 MHz	Different	Open to competition	Not applicable	
NMT 450	Telemobil (Telefonica International & Rom Telecom)	Open to competition but only 1 operator offers this service (in practice, a monopoly)	Not applicable	Started in 1992. In 1995 covered about 14,000 customers. Capacity limited.
GSM	Two GSM licences were granted in mid-1996.	Open to competition even though only one operator started operation in April 1997.	Not applicable	The second GSM operator should start operation in June 1997.
DCS 1800	No service provider	Not applicable	Not applicable	Trials and pilot project to be launched
Paging	9 private local companies. Alfa-Bit, the largest operator, is 100% privately owned.	At national level, paging services are under a limited competition regime due to some frequency restrictions. At local level, provision is under a free competition regime	Not applicable	POCSAG standard. 29 cities covered. No national licence granted.

Table 10 - Current status of liberalisation of mobile telecommunications markets

4.2.4 Satellite communications

The satellite communications market is open to competition but interconnection to the public network is not allowed. Although VSAT operators are allowed to provide data transmission, there is a low level of demand. Romania is a member of Intelsat and Eutelsat, and the signatory is the Ministry of Communications.

4.2.5 Other services

The market for other services is open to competition. In 1995 Rom Telecom set up a joint venture with France Télécom's subsidiary Transpac, called Rompac RTNS, which provides packet switched data network services. By early 1996, Global One was offering a range of services including global X.25, frame relay, LAN-to-LAN, messaging and pre-paid calling card.

About 100 CATV operators have been licensed, with a total of 400 licences. Non-exclusive licences are granted to cable companies by the National Audiovisual Council. There is no specific law covering the provision of cable telephony. Cable operators have agreed to split the territory and operate in their assigned areas. All CATV networks are analogue and consist of aerial cables. The biggest CATV operator in Romania is Cable Vision of Romania.

Radiocommunicatii RA operates radio and TV broadcasting carrier services.

Next: Additional information on networks and services

Bulgaria Czech Republic Estonia Hungary Latvia Lithuania Poland Slovakia Slovenia

Previous: Status of liberalisation of the markets for networks and services

5. Additional information on networks and services - Romania

5.1 Penetration rate

Penetration rate	
CATV connections per 100 households	33
Main telephone lines per 100 inhabitants	14 (3 in rural areas)
Percentage of households provided with telephone lines	41%

Table 11 - Penetration rate

5.2 Quality of service - Voice telephony

Under the terms of their licences, the CATV are free to choose how they penetrate the market. Widespread penetration in rural areas is not considered.

5.2.1 Waiting time for telephone subscription

	Average waiting time	Maximum waiting time
Waiting time for telephone subscription	4 years	5 years

Table 12 A -Waiting time for telephone subscription

5.2.2 Numbers of faults cleared within 24 hours

	Number of faults cleared within 24 hrs.
On average	not available

Table 12 B - Quality of service of voice telephony

5.3 Network investments

5.3.1 Investment volume per year

In 1994, US$ 160 million was invested in the telecommunications sector.

5.3.2 Investment per main telephone line

One-off investment: Lei 0.877 million (approximately US$420) per MTL.

The average cost per line added in the Phare countries is around US $ 1,200.

5.3.3 Investment plans

A Long-term Telecommunication Development Programme - Master Plan was developed for the period 1991-2005, and is currently being re-evaluated. A new programme will be put forward by the Government in early 1997.

The cost of network modernisation for 1994-1998 is estimated at about ECU 843 million.

Next: Participation in international bodies, groups and projects

Bulgaria Czech Republic Estonia Hungary Latvia Lithuania Poland Slovakia Slovenia

Previous: Additional information on networks and services

6. Participation in international bodies, groups and projects - Romania

6.1 Membership/participation in international bodies or groups

Romania	Status	Date of membership
ITU	member	since the beginning
CEPT	member	since 1990
OECD	non-member	not applicable
WTO	member	since its foundation (1995)
ETSI	member	?
Intelsat	member	1990
Eutelsat	member	1990
Immarsat	member	1990
Interspoutnik	member	1957

Table 13 - Romanian participation in international bodies

6.2 Romanian participation in international telecommunications projects

Romania is involved in the regional and trans-european projects such as TEL, TET, KAFOSor TAE. ROM Telecom is taking benefit from studies and expertise financed by the PHARE Multi-Country Programme for Telecommunications and Posts, the US - TDA, the EBRD and the World Bank.

Next: Future trends in the sector

Bulgaria Czech Republic Estonia Hungary Latvia Lithuania Poland Slovakia Slovenia

Previous: Participation in international bodies, groups and projects

7. Future trends in the sector - Romania

7.1 Telecommunications policy

Liberalisation should be completed by 2002. ROM Telecom will be transformed into a joint stock company in 1997 and will, in the first instance, be 100% owned by the state, although partial privatisation is expected in 1998. Current priorities are the development of long- distance and urban networks, but this perpetuates the problem of under-developed rural networks.

In order to promote rural telephony, local voice telephony services may be liberalised. The use of combined networks will necessitate regulation on infrastructure interconnection.

Finally, the creation of the General Inspectorate of Communications, through transformation of the existing General Inspectorate of Radiocommunications and the attribution to it of a wider role covering all areas of communications will facilitate more effective monitoring of compliance with legislation, licencing and authorisation.

7.2 Development of markets and technology

The Long-term Telecommunication Development Programme for the period 1991-2005 includes quantitative objectives. For the year 2005, a target of 7 million lines has been set, which is equivalent to 30 main telephone lines per 100 inhabitants. Medium-term objectives are the extension of the analogue network, the introduction of digital technology, the installation of digital microwave links and fibre optic cables and the implementation of a high-speed data transmission network. The long-term objective is the full completion of network digitisation by the year 2005. By 1998 5,000 km of optical fibre will need to be installed and 10,000 additional km by the year 2005.

Radiocommunications are considered as a good option to tackle the problem of the under-developed rural networks. Therefore radiocommunications networks will be further developed.

Now that Romania had unlocked military frequency spectrum for civilian use, ERMES services can be offered. GSM licences were granted in 1996. DECT services are under consideration for rural communications.

Next: Appendix 1 - List of sources

Bulgaria Czech Republic Estonia Hungary Latvia Lithuania Poland Slovakia Slovenia

Previous: Future trends in the sector

Appendix 1 - List of sources - Romania

1. Draft table on the Major Aspects of the Regulatory Framework in Central and Eastern

Europe, final version 5

Source: European Commission, DGXIII

Ref.: DG XIII, IS 2 MS/HPG

Date: 4 July 1996

2. Completed questionnaire on the telecommunications sector status -

Source: European Commission, DGXIII, Gebhardt,

Ref.: HPG/dhar - 9603t051

Date: 21 March 1996

3. Study IS4/94 on the development of advanced networks in Phare and Tacis countries

Source: Sagatel

Ref.: S.4375/LTH

Date: February 1996

4. Regulatory Status Survey for the Telecommunications sector in Central and Eastern Europe and the former Soviet Union

Source: EBRD, Telecommunications Team, Terrance Rochefort

Date: March 1995

5. Central and East European Countries (CEEC) Information Society Forum - Conclusions and recommendations of Panel A, (Financing and Infrastructure) final version

Source: The European Commission and the Hungarian Ministry of Transport, Communications and Water Management

Date: May 1996

6. Central and East European Countries (CEEC) Information Society Forum - Draft Report of Panel B (Legal and Institutional Framework)

Source: European Commission, DG XIII

Ref.: hpg/dhar regpanel

Date: 4 March 1996

7. Draft outline of the major elements of regulatory reform in developing countries

Source: European Commission, DGXIII, Gebhardt, version 2

Ref.:

Date: 11 July 1996

8. The Road to Accession, Telecommunications and Posts Sector Paper

Source: European Commission

Ref.:

Date: 17 July 1996

9. Draft Telecommunications Law (unofficial translation)

Source: Romanian Ministry of Communications

Date: June 1994

10. Communications Markets in Eastern Europe 1996

Source: CIT Publications Limited

Date: 1996

11. Interviews with officials of the Ministry of Communications: Dan Chirondogan, Secretary of State; Adrian Bocsan, Director general, General Directorate for Regulations; Steliana Barbu, Head of Department, Directorate for Strategy; Iona Slavescu, Head of Department: Regulations, Licences and Authorisation; Maria Velieu, Department of Frequency allocations; head of Department, Directorate for International relationships; and Mara Varga, head of the International Relations Department of ROMTelecom.

Bulgaria Czech Republic Estonia Hungary Latvia Lithuania Poland Slovakia Slovenia

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Facultés Universitaires Notre-Dame de la Paix

Centre de Recherches Informatique et Droit

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FUNDP

PHARE MULTI-COUNTRY PROGRAMME FOR TELECOMMUNICATIONS AND POSTS - TELECOMMUNICATIONS STATUS STUDY

Final Report - March 21, 1997 - *SLOVAKIA*

List of Contents - Slovakia

Bulgaria Czech Republic Estonia Hungary Latvia Lithuania Poland Romania Slovenia

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Previous: List of contents

Executive summary - Slovakia

Important modifications to the Slovak regulatory framework are expected shortly when a new Telecommunications Law is enacted. Broadcasting and competition matters are regulated respectively by the Decree covering the cable network for TV and Radio Broadcasting and by the Competition Law.

Partial separation of regulatory from operational functions was introduced in 1992 with the first amendments to the Telecommunications Law in the Slovak Republic. After the new Law is enacted, the independent regulatory authority will take the form of an agency. Nevertheless, the Telecommunications Office will stay under control of the government until about the year 2000. Afterwards, following the UK's OFTEL model, this agency will become independent from the government. Currently regulatory responsibilities are shared between the Ministry of Transport, Posts and Telecommunications and the Ministry of Finance (which is responsible for establishing tariffs for domestic telecommunications services).

After the division of Czechoslovakia, Slovakia adopted a conservative regime as far as limitations on foreign investment were concerned. In line with the policy on Protection of the Economy in Slovakia, state enterprises or companies with state participation are not allowed to form joint ventures or any kind of partnership with foreign investors, to protect the status of the main telecommunications operator, Slovak Telecom, which is a government enterprise wholly owned by the state. However, there are plans to privatise Slovak Telecom shortly which will involve amending the law.

The market for telecommunications infrastructures is partly liberalised. Though the operation of the PSTN was reserved for Slovak Telecom until 2002 at the latest, CATV operators and operators of alternative infrastructure are allowed under certain conditions to use their networks to provide telecommunications services from 1 January, 1998.

As regards basic services, the provision of voice telephony in Slovakia is reserved for Slovak Telecom until 2002 at the latest - provided that the company fulfils the special conditions stipulated in the operating licence. Public data communications were under the monopoly of Eurotel Bratislava up to 1996, but are now open to competition. Mobile communications markets are partly liberalised. Since 1992, paging and GSM have also been licensed (Eurotel, GLOBTEL GSM) with services beginning in January 1997. Although the VSAT services market is open to competition, interconnection to the PSTN is not allowed.

After the split of the territory in 1993, the United Telecommunications Network (UTN) - the network of the former Czechoslovakia - was divided into two parts, covering both the Czech and Slovak Republics. From 1993, communications between the two countries were considered as specific long-distance calls. Specific country codes for each republic (SK +421, Cz +420) were introduced in March 1997.

The quality of service is generally poor in terms of the waiting time for a telephone subscription (14 months) - although 51% of households have a telephone line.

The pace of liberalisation and harmonisation with European Union legislation is gathering momentum in Slovakia, and the passing of the new law will further this process.

To get into line with EU legislation, Slovakian legislation should be revised in order to liberalise the markets for infrastructure, voice telephony. VSAT users should also be allowed to interconnect to the PSTN. The principles of the new bill on telecommunications were accepted in the Slovak Parliament in January 1997.

Next: The regulatory framework

Bulgaria Czech Republic Estonia Hungary Latvia Lithuania Poland Romania Slovenia

Previous: Executive summary

1. The regulatory framework - Slovakia

1.1 Telecommunications

Primary legislation	Telecommunications Law of 1964 as amended in 1992 and 1993	Enacted 1964 amended 1992, 1993
	Principles of the Bill on Telecommunications	Enacted Jan. 1997
Key secondary legislation **Subject** • TV and Radio Broadcasting	Decree on Cable Network for TV and Radio Broadcasting	Enacted 1991

Table 1 - Telecommunications regulations

1.2 Broadcasting

Primary legislation	Law on TV and Radio Broadcasting	Enacted 1991
Key secondary legislation	?	?

Table 2 - Broadcasting regulations

1.3 Competition

Primary legislation	Competition Law	Enacted 1991
Key secondary legislation	?	?

Table 3 - Competition regulations

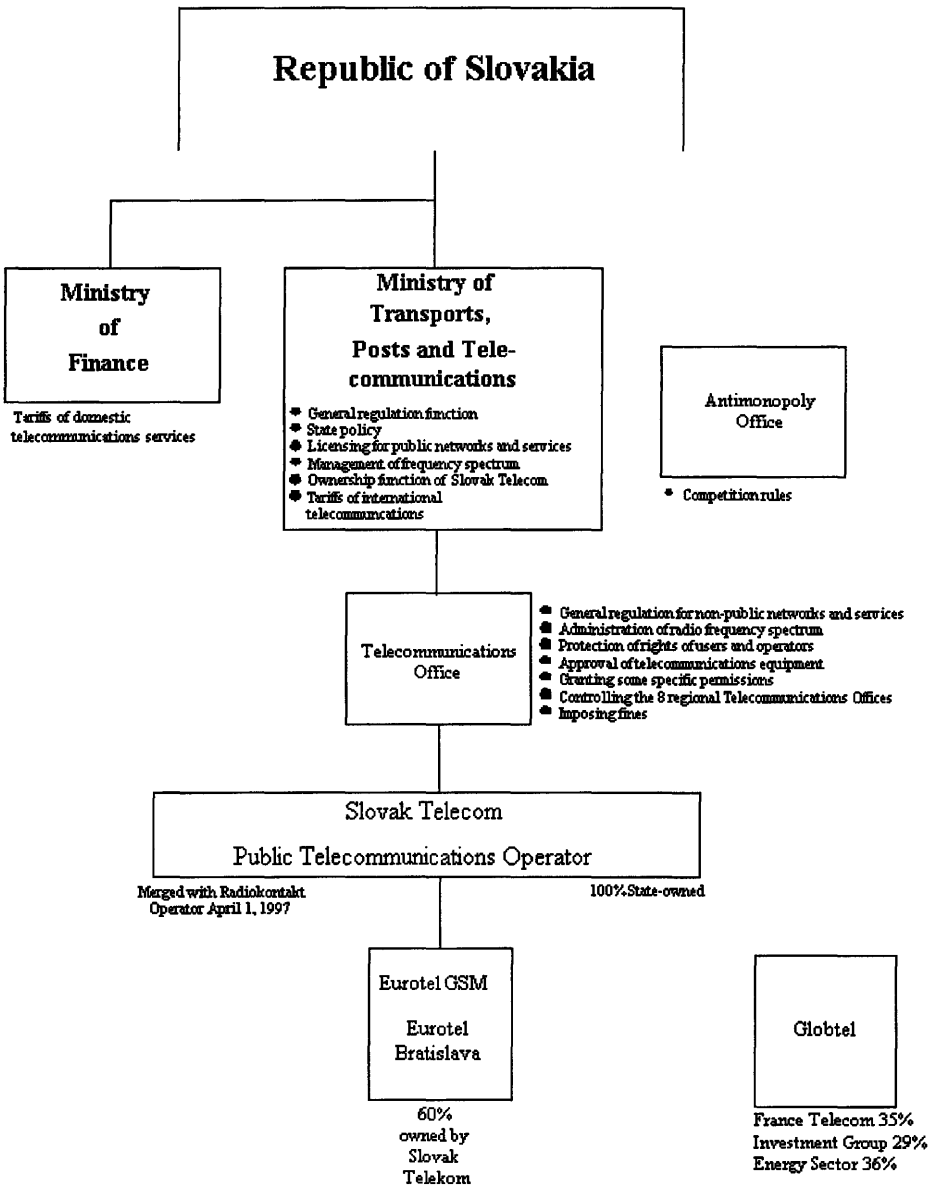
Next: The players in the telecommunications market

Bulgaria Czech Republic Estonia Hungary Latvia Lithuania Poland Romania Slovenia

Previous: The regulatory framework

2. Players in the telecommunications market - Slovakia

2.1 Main regulatory structure



2.2 Telecommunications regulatory authorities

	Ministry of Transport, Posts and Telecommunications (MDPT)	**Key responsibilities:** • State policy • legislation • licensing for public networks and services • management of frequency spectrum • ownership of Slovak Telecom • telecommunications policy • tariffs of international telecommunications • imposition of fines
Regulatory authorities	Telecommunications Office (under the control of the government until the year 2000)	• general regulation for non-public networks and services • administration of radio frequency spectrum • protection of rights of users and operators of telecommunications networks and services • approval of telecommunications equipment • granting certain specific authorisations • controlling the eight regional Telecommunications Offices • imposing fines
	Anti-Monopoly Office	• competition rules
	Ministry of Finance	• tariffs of domestic telecommunication services

Table 4 - Telecommunications regulatory authorities

2.3 Telecommunications operators

Switched fixed networks and services	PSTN Cable TV	Slovak Telecom About 1,000 licences, SKT Bratislava being the largest operator among them
Mobile and satellite networks	Radiotelephone 160 MHz NMT 450 Trunked networks GSM DCS 1800 Paging Satellite	Slovak Telecom EuroTel Bratislava New licences are expected 2 GSM licences were issued by August 1996 (Eurotel and GLOBTEL GSM) No operator Radiokontakt Operator Extra licences are expected More than 16 VSAT licences have been granted

Table 5 - Telecommunications operators

Next: Privatisation and strategic alliances

Bulgaria Czech Republic Estonia Hungary Latvia Lithuania Poland Romania Slovenia

Previous: Players in the telecommunications market

3. Privatisation and strategic alliances - Slovakia

3.1 Current status and plans for privatisation of the main telecommunications operator

Telecoms operator	Status	Plans	Procedure used and/or planned	Current/ max. level of foreign participa-tion	Plans to form a company
Slovak Telecom	Government enterprise 100% state-owned	Once transformed into a joint stock company, the state will still own 100% of the shares. During 1997 a tender to choose a strategic partner for 20% of the capital is expected. (A paper on this was submitted to the government in May 1996). On 1st April 1997 the company merged with RadioKontakt Operator	1.Joint stock company 2.Call for tender 3.Flotation	100%	Transformation into a joint stock company during 1997.

Table 6 - Current status and plans for privatisation

3.2 Strategic alliances

Company	Services	Ownership status
Eurotel Bratislava	Mobile telephony Packet switched data communications	Joint venture: • 60% Slovak Telecom • 20% Bell Atlantic • 20% US WEST
RadioKontakt Operator: on 1st April 1997 it merged with Slovak Telecom	Paging	Joint venture: • 7% Slovak Telecom • 44% Czech Radio Communications • 49% Télédiffusion de France

Table 7 - Strategic alliances

At present, according to the Law on Protection of Economy in Slovakia, state enterprises or companies with state participation are not allowed to form joint ventures or any kind of partnership with foreign investors. This therefore applies to Slovak Telecom. Nevertheless, in January 1996, a joint commission of the MDPT and Slovak Telecom started preparing a document on the possibility of foreign participation in the public operator's capital, and submitted it to the Slovak government in September 1996.

Next: Status of liberalisation in the markets for networks and services

Bulgaria Czech Republic Estonia Hungary Latvia Lithuania Poland Romania Slovenia

Previous: Privatisation and strategic alliances

4. Status of liberalisation of the markets for networks and services - Slovakia

4.1 Telecommunications networks and alternative infrastructure

Category of infrastructure	Status	Legal requirements
Public telecommunications network	The Slovak PSTN is operated by Slovak Telecom under monopoly at the latest until the end of 2002	Exclusive rights granted by licence
CATV	These infrastructures will be used to provide telecommunications services, as an alternative to the PSTN, but only for internal purposes	For public networks, a licence from the Ministry of Transport, Posts and Telecommunications is required and for non-public networks, a licence from the Telecommuni-cations Office is required
Alternative infrastructure (internal networks of roads, railways, electricity utilities and oil industry)	These infrastructures can be used to provide telecommunications services as an alternative to the PSTN, but only for internal purposes.	For public infrastructure, a licence from the Ministry of Transport, Posts and Telecommunications is required; For non-public infrastructure, a licence from the Telecommunications Office is required

Table 8 - Telecommunications networks and alternative infrastructure

4.2 Telecommunications services

4.2.1 Voice telephony

Voice telephony	Status of liberalisation	Service provider(s)	Exclusive rights: date of expiry
Local	Reserved services	Slovak Telecom	January 1, 2003 at the latest
Domestic long-distance	Reserved services	Slovak Telecom	January 1, 2003 at the latest
International long-distance	Reserved services	Slovak Telecom	January 1, 2003 at the latest

Table 9 - Voice telephony - status of liberalisation

4.2.2 Data transmission

Before April 1996 only EuroTel Bratislava provided nation-wide data communications services for the Slovak Republic. Today, data transmission services are liberalised (with 20 Internet providers). Eurotel Bratislava was granted an exclusive right to operate the Eurodata network until 1st April 1996.

4.2.3 Mobile communications

Mobile communications	Services providers	Status of liberalisation	Exclusive rights - date of expiry	Additional information
Radiotelephone 160 MHz	Slovak Telecom	Service not liberalised	Not applicable	Half of Slovakia covered; connected to PSTN; for internal use and public administrations; will be disconnected
NMT 450	Eurotel	Exclusive rights	April 1, 2001	75% of the country and the territory covered in 1995
GSM	2 GSM licences have been issued in 1996	Liberalised	Not applicable	Cost per licence: 240m USD
DCS 1800	No service provider	Liberalised in law	Not applicable	Not in operation
Paging	RadioKontakt Operator	Liberalised in law	Not applicable	National network; a tender for 2 national paging licences is expected by mid 1997.

Table 10 - Status of liberalisation in mobile telecommunications markets

4.2.4 Satellite communications

VSAT services are open to competition but Slovak legislation does not permit the interconnection of VSAT traffic to the PSTN. There are in total about sixteen VSAT carriers in the Slovak Republic, and these can transmit voice and data. The main operators are ANT, Deutsche Telecom, Eurodata, France Telecom and Telecom Europe.

4.2.5 Other services

E-mail services are provided by 20 Internet providers. ISDN services are expected to be available during 1997. There are about 1,000 CATV licences for a total of 1,830,000 cabled houses.

Next: Additional information on networks and services

Bulgaria Czech Republic Estonia Hungary Latvia Lithuania Poland Romania Slovenia

Previous: Status of liberalisation in the markets for networks and services

5. Additional information on networks and services - Slovakia

5.1 Penetration rate

Penetration rate	
CATV connections per 100 households	22
Main telephone lines per 100 inhabitants	23.2
Percentage of households provided with telephone lines	54%

Table 11 - Penetration rate

5.2 Quality of service - Voice telephony

5.2.1 Waiting time for telephone subscription

	Average waiting time	Maximum waiting time
Waiting time for telephone subscription	1994: 21 months 1995:19 months 1996: 14 months	Five years

Table 12 A - Waiting time for telephone subscription

5.2.2 Numbers of faults cleared within 24 hours

	Numbers of faults cleared within 24h.
On average	65% (1994)

Table 12 B - Quality of service of voice telephony

5.3 Network investments

5.3.1 Investment volume per year

1996: US $ 0.143 billion

5.3.2.Investment per main telephone line

One-off investment US$ 154.9 per MTL

5.3.3. Investment plans

The Slovak Government has approved a two-part development programme for the modernisation of the national telecommunications network

1. Period 1992-1995: Telecommunications Project I,

Planned investment: ECU 394.7 million

2. Period 1996-2000: Telecommunications Project II,

Planned investment : ECU 1421 million

Next: Participation in international bodies, groups and projects

Bulgaria Czech Republic Estonia Hungary Latvia Lithuania Poland Romania Slovenia

Previous: Additional information on networks and services

6. Participation in international bodies, groups and projects - Slovakia

6.1 Membership/participation in international bodies or groups

Slovakia	Status	Date of membership
ITU	member	1993
CEPT	member	1993
OECD	in negotiation	Not applicable
WTO	member	1994
ETSI	member	1993

Table 14 -Slovak participation in international bodies

6.2 Slovak participation in international projects

Slovakia is involved in the Trans Europe Lines project (TEL). Based on the deployment of an optical transmission system, this project aims to create a bridge for telecommunications between Eastern and Western Europe.

Next: Future trends in the sector

Bulgaria Czech Republic Estonia Hungary Latvia Lithuania Poland Romania Slovenia

Previous: Participation in international bodies, groups and projects

7. Future trends in the sector - Slovakia

7.1 Telecommunications policy

The *Development Concept of Communications of the Slovak Republic by 2000*, which was approved by the Government in August 1993, set development aims for the short-term (1993-1995) and the medium-term (1996-2000). Its main objectives were to achieve a significant increase in the quality and quantity of postal and telecommunications services. The short-term priorities were: international co-operation, liberalisation of telecommunications services, legislation, transformation of the state-owned enterprise, and technological development.

Another more recent and important policy document on the development of telecommunications in the Slovak Republic is the *Telecommunications policy by 2000,* approved in December 1995. This provides a comprehensive view of current and future telecommunications in Slovakia, combining the *Development Concept*, the Telecommunication Project II (see below, section 7.2) and the commitments of the Slovak Republic as given in the Agreement on the Association of the Slovak Republic to the European Union. Slovak policy aims mainly at creating the prerequisites for fulfilling these commitments.

The priority areas presented in the December 1995 policy document are:

- amendment of legislation
- liberalisation of telecommunications services
- revision of the regulatory framework
- transformation of the telecommunication operator
- acceleration of technological development.

The state telecommunications policy for 1995/1996 foresaw the enactment of a new telecommunications bill in 1997. In the meantime, a draft law has been issued which meets the requirements of the European Union White Paper for associated countries. The necessary supporting documents are already in preparation (decrees, regulations, rules etc).

7.2 Development of markets and technology

Since 1993, the Posts and Telecommunications Research Institute (VUS) has been an independent body aiming to meet the needs of the Slovak Republic in telecommunications and postal infrastructure development. Amongst its other responsibilities, it undertakes researches on new technologies in the areas of telecommunications connection and transmission, explores market for new services, measures customer satisfaction with existing services, creates technical regulations, and tests various types of equipment.

In 1996, the Ministry submitted to the government a document called *Liberalisation of Telecommunication Market in the Slovak Republic*, which proposed the liberalisation of all telecommunications services, except for basic voice services. Basic voice services should be liberalised by 2003 at the latest.

Two licences for the provision of GSM service were issued in 1996.

The development of Slovak telecommunications is based on two projects called Telecommunication Project N1 (from 1992 to 1995) and N2 (from 1996 to 2000).

Telecommunication Project N1 aims at building up a digital overlay network and a new structure for this network, thereby increasing the general level of digitisation, implementing new technologies and supporting the development of local networks.

The basic strategic objective of Telecommunication Project N2 consists of the continual development of a digital overlay network, a considerable increase in digitisation of the network, the implementation of new technologies, and the rapid development of access networks.

Next: Appendix 1 - List of sources

Bulgaria Czech Republic Estonia Hungary Latvia Lithuania Poland Romania Slovenia

Previous: Future trends in the sector

Appendix 1 - List of sources - Slovakia

1. Draft table on the Major Aspects of the Regulatory Framework in Central and Eastern Europe, final version 5

Source: European Commission, DGXIII

Ref.: DG XIII, IS 2 MS/HPG

Date: 4 July 1996

2. Completed questionnaire on the telecommunications sector status

Source: European Commission, DGXIII, Gebhardt,

Ref.: HPG/dhar - 9603t051

Date: 21 March 1996

3. Study IS4/94 on the development of advanced networks in Phare and Tacis countries

Source: Sagatel

Ref.: S.4375/SVK

Date: February 1996

4. Regulatory Status Survey for the Telecommunications sector in Central and Eastern Europe and the former Soviet Union

Source: EBRD, Telecommunications Team, Terrance Rochefort

Date: March 1995

5. Central and East European Countries (CEEC) Information Society Forum - Panel A *Conclusions and recommendations of Panel A (Financing and Infrastructure): final version*

Source: The European Commission and the Hungarian Ministry of Transport,

Communications and Water Management

Date: May 1996

6. Central and East European Countries (CEEC) Information Society Forum - Panel B: *Draft Report of Panel B (Legal and Institutional Framework)*

Source: European Commission, DG XIII

Ref.: hpg/dhar regpanel

Date: 4 March 1996

7. Draft outline of the major elements of regulatory reform in developing countries

Source: European Commission, DGXIII, Gebhardt, version 2

Ref.:

Date: 11 July 1996

8. The Road to Accession, Telecommunications and Posts sector paper

Source: European Commission

Ref.:

Date: 17 July 1996

9. Interviews with Mr. Peter Druga, the Director of the Telecom Policy Dept., Mr. Podhorsky, head of Technical Policy Section; Mr. Jankula, head of the State Administration Section (Telecom); Mr. Luknar, head of Regulatory Section; Mr. Smitka, in charge of numbering in the Telecom section; and Mr. Halus, General Director.

Bulgaria Czech Republic Estonia Hungary Latvia Lithuania Poland Romania Slovenia

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List of Contents - Slovenia

Bulgaria Czech Republic Estonia Hungary Latvia Lithuania Poland Romania Slovakia

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Previous: List of contents

Executive summary - Slovenia

The Slovenian regulatory framework currently falls short of modern requirements but the draft Law on Telecommunications is intended to address this problem. It will be a Framework Law as a result of which some seventy secondary regulations should be enacted. The Public Media Law and the Law on RTV Slovenia regulate broadcasting programmes while the Protection of Competition Law regulates competition matters. The Public Trading Services Act defines the terms and conditions for the provision of public services in Slovenia.

The Telecommunications Administration is organised within the Ministry of Transport and Communications (MTC), which regulates the Slovenian telecommunications sector, while the Ministry of Economic Relations and Development is responsible for tariff issues. The Telecommunications Administration is separated from the state-owned telecommunications operator, Telekom Slovenije.

The main public operator, Telekom Slovenije, is owned by the State but is a separate entity. Incorporated in 1995, its "ownership transformation" from a "social owned company" into a joint stock company is practically completed as is the distribution of approximately 24% of its shares to current, former and retired employees. Telekom Slovenije, the state enterprise, owns the public infrastructure and is present in nearly all telecommunications services markets. There are around 80 CATV operators with no single dominant operator. Foreign investment in the telecommunications industry and repatriation of profits and capital are allowed in Slovenia but no telecommunications company can be wholly owned by foreign investors.

The liberalisation of the infrastructure market has not yet started. CATV operators and operators of alternative infrastructure cannot provide public telecommunications services except for their own internal purposes.

The services market is undergoing liberalisation although voice telephony and telex remains under the monopoly of Telekom Slovenije until the year 2000. Competition in the data communication market is expected with the enactment of the Telecommunications Law. In the mobile communications market the operator is a subsidiary of Telekom Slovenije. Providing that they are offered through the PSTN, most of the value-added services are already liberalised. There is competition in the operation of the public payphone. Within the near future, leased lines for resellers, CATV and VSAT services are expected to be open to competition.

The PSTN in Slovenia is structured in four hierarchical levels (transit, main, node-, and local exchanges) with a star architecture. Digitisation of the network started in 1989, but much has still to be done in this direction, although Slovenia is amongst the more advanced of the PHARE countries. In the beginning of 1997, 66% of transmission channels and 46% of local exchanges were digitised.

Slovenia has a relatively high penetration rate: some 75% of households are provided with a telephone line and there are 33.3 telephone lines per 100 inhabitants.

Although the regulations need to be more liberal, there are good indications that Slovenian telecommunications markets are opening up to competition. A new reform law is in the final stage of adoption and this could be the key to the rapid development of Slovenian telecommunications.

To get into line with EU legislation, Slovenian legislation should be revised so as to achieve liberalisation across the whole telecommunications sector. There should be guarantees that the regulatory authority is independent from the telecommunications operators and that interconnection of VSAT communications is possible with the PSTN.

Next: The regulatory framework

Bulgaria Czech Republic Estonia Hungary Latvia Lithuania Poland Romania Slovakia

Previous: Executive summary

1. The regulatory framework - Slovenia

1.1 Telecommunications

Primary legislation	Law on Telecommunications (extracts from the draft new Law on Telecommunications are enclosed in Appendix 2)	Enactment expected in 1997
Key secondary legislation **Subject** • Foreign investment regulation	Law on foreign investments Law on ownership transformation of enterprises	Enacted 1989 Enacted 1991
• Delivery of public (trading) services (include universal service obligations)	Public Trading Services Act	Enacted June 1993

Table 1 - Telecommunications regulations

1.2 Broadcasting

Primary legislation	Public Media Law Law on RTV Slovenia	Enacted 1994 Enacted 1994
Key secondary legislation	Not applicable	Not applicable

Table 2 - Broadcasting regulations

1.3 Competition

Primary legislation	Law on Protection of Competition	Enacted 1993
Key secondary legislation	Decree on dumping and subsidised import Monitoring of state subsidises Sector rules	Enacted 1994 Draft law

Table 3 - Competition regulations

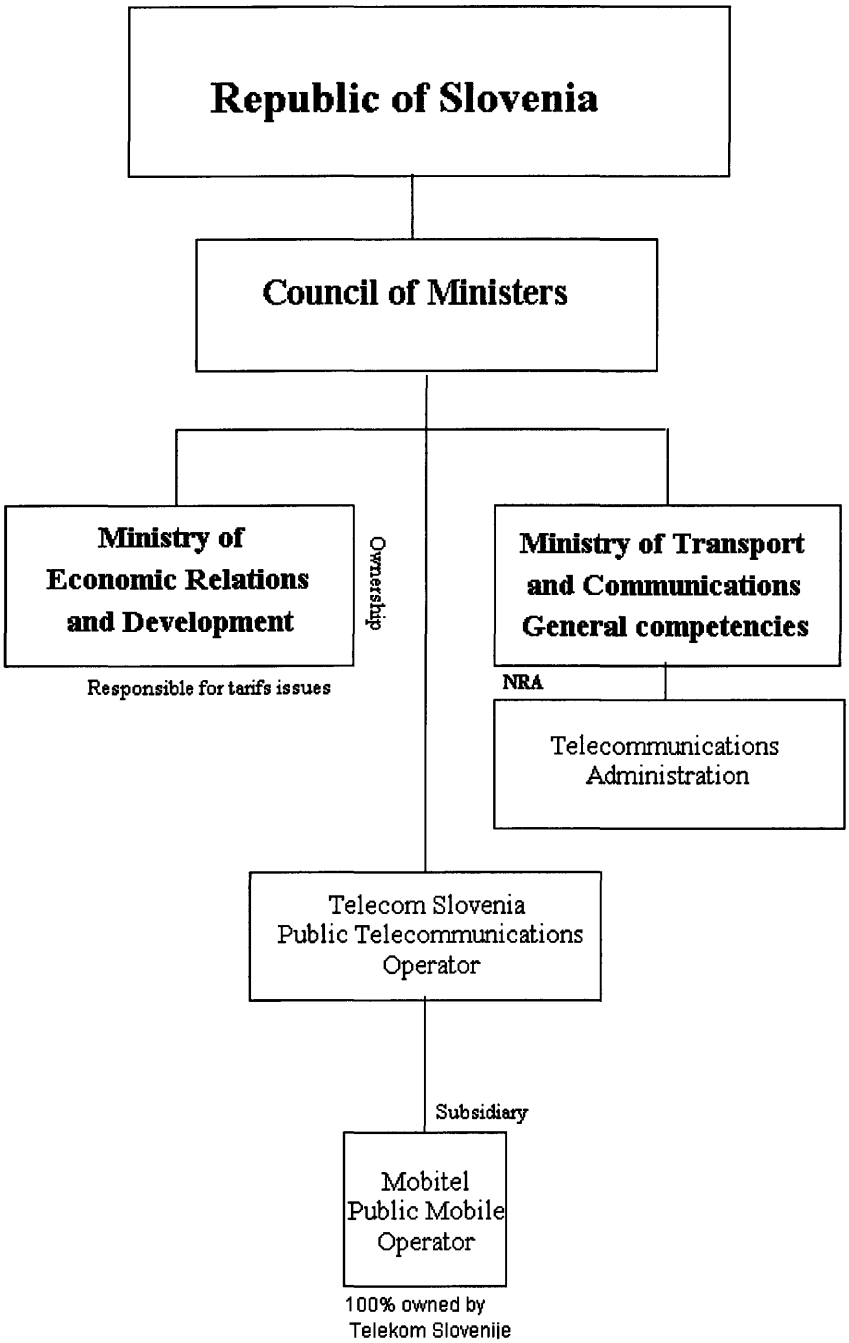
Next: The players in the telecommunications market

Bulgaria Czech Republic Estonia Hungary Latvia Lithuania Poland Romania Slovakia

Previous: The regulatory framework

2. Players in the Telecommunications market - Slovenia

2.1 Main regulatory structure



2.2 Telecommunications regulatory authorities

Regulatory authorities	Ministry of Transport and Communications Telecommunications Administration Ministry of Economic Relations and Development	**Key responsibilities**: • general regulatory authority • operating regulatory authority • tariff issues; sets the charge unit

Table 4 - Telecommunications regulatory authorities

2.3 Telecommunications operators

Switched fixed networks and services	PSTN Cable TV	Telekom Slovenije approximately 80 operators
Mobile and satellite networks	Radiotelephone 160 MHz NMT 450 Trunked networks GSM DCS 1800 Paging Satellite	No operator Mobitel NMT 410 No operator Mobitel No operator Teleray RTVS (Zavod Radio-Televizija Slovenia) VSAT operators offering services in concession

Table 5 - Telecommunications operators

Next: Privatisation and strategic alliances

Bulgaria Czech Republic Estonia Hungary Latvia Lithuania Poland Romania Slovakia

Previous: Players in the telecommunications market

3. Privatisation and strategic alliances - Slovenia

3.1 Current status and plans for privatisation of the main telecommunications operators

Telecoms operators	Status	Plans	Procedure used and/or planned	Current/ max. level of foreign participation	Plans to form a company
Telekom Slovenije	100% owned by the state-government enterprise	Approximately 24% stake will be owned by current, former and retired employees	Distribution of approximately 24% to employees	0% / 99%	• Incorporated in 1995 • To be transformed into a joint-stock company
Mobitel	Subsidiary, 100% owned by Telekom Slovenije.	It should be transformed into a joint-stock company like Telekom Slovenije	The procedure should be the same as the one used for Telekom Slovenije	0% / 99%	To be transformed into a joint-stock company like Telekom Slovenije
Teleray Paging	Private company with shared ownership (mostly owned by private individuals)	Not applicable	Distribution of shares	0% / 99%	Not applicable

Table 6 - Status and plans for privatisation

The Slovenian Law on Foreign Investment regulates how foreigners trade in Slovenia. Like all sectors of the economy, the telecommunications sector is open to foreign investors but these may not own 100% of companies that operate in the telecommunications sector. Though foreigners cannot own land, they can enjoy unlimited leasehold tenure. Profits and capital can be repatriated.

3.2 Strategic alliances

As of early 1997, there is no foreign participation or joint venture in telecommunications services in Slovenia because the public telecommunications infrastructure and most of the telecommunications services offered in Slovenia are currently controlled by the state-owned company, Telekom Slovenije.

Next: Status of liberalisation in the markets for networks and services

Bulgaria Czech Republic Estonia Hungary Latvia Lithuania Poland Romania Slovakia

Previous: Privatisation and strategic alliances

4. Status of liberalisation of the markets for networks and services - Slovenia

4.1 Telecommunications networks and alternative infrastructure

Category of infrastructure	Status	Legal requirements
Public telecommunications network	The PSTN is operated by Telekom Slovenije under monopoly up to the year 2000.	Exclusive rights are (will be) granted by the new Telecom Law (1997).
CATV	CATV infrastructures may be used for internal purposes. They cannot be used to offer public services.	Currently there is no limitation for internal purposes; Under the new telecommunications law, special permission will be required for the provision of public services.
Alternative infrastructure (internal networks of roads, railways, electricity utilities and the oil industry)	These infrastructures may be used for internal purposes. They cannot be used to offer public services.	Today, there is no limitation for internal purposes; In the new telecommunications law, a special permission will be required for the provision of public services.

Table 7 - Telecommunications networks and alternative infrastructure

4.2 Telecommunications services

After the new Telecom Law is adopted, a regime introducing more liberalisation in the provision of telecommunications services in Slovenia will be put in place. Regarding the opening of services to competition, the new law foresees some new articles (15, 16, 17) which are enclosed in Appendix 2.

4.2.1 Voice telephony

Voice telephony	Status of liberalisation	Service provider(s)	Exclusive rights date of expiry
Local	Not liberalised Monopoly	Telekom Slovenije	January 1, 2001
Domestic long-distance	Not liberalised Monopoly	Telekom Slovenije	January 1, 2001
International long-distance	Not liberalised Monopoly	Telekom Slovenije	January 1, 2001

Table 8 - Voice telephony - status of liberalisation

4.2.2 Data transmission

Currently, there is no competition in this market. The new Telecommunications Law, which is expected to be adopted during 1997, will enable the licensing of data communications services providers on condition that they use the telecommunications infrastructure of Telekom Slovenije for offering their services to the public.

Telekom Slovenije has operated a packet switched data network (Sipax) since the late 80s, since 1995 and has offered a circuit switched data communications service called Flexnet.

ARNES, the internal network of the Academic Research Network of Slovenia, connects universities and academic centres.

Through this network, Internet access is also provided for the academic community and since 1996 for a number of new commercial Internet access providers.

4.2.3 Mobile communications

The current legislation contains a licensing regime for mobile telecommunications. A concession regime is foreseen in the draft (new) Law. Currently the only operator (except Teleray paging) is a subsidiary of Telekom Slovenije.

Mobile communications	**Service providers**	**Status of liberalisation**	**Exclusive rights - date of expiry**	**Additional information**
Radiotelephone 160 MHz	No service provider	Not applicable	Not applicable	No plan for offering such service
NMT 450	Mobitel	There is only one operator present in this market	No exclusive right to Mobitel but the granting of a second licence is not planned	The system uses the 410 MHz radio band; subsidiary of Telekom Slovenije.
GSM	Mobitel	There is only one operator present in this market	1997 provided that the new Telecommuni-cations Law is adopted in 1997	Subsidiary of Telekom Slovenije; 2nd GSM operator expected to acquire a licence in 1997 (after new law is adopted)
DCS 1800	No service provider	Not applicable	Not applicable	None
Paging	Teleray	There is only one operator present in the market*	No exclusive right to Teleray*	Private company uses RDS frequencies in the FM broad-casting band.

*Granting of at least one ERMES licence is expected in 1997.

4.2.4 Satellite communications

Currently, a radio licence is required to operate any type of satellite communications service. The new law foresees a licensing regime for VSAT services and a regime of concessions for operating satellite networks and services.

4.2.5 Other services

The main public operator still enjoys exclusive rights for most telecommunications services. Consequently, ISDN, videotext, telex and teletex are currently operated by Telekom Slovenije. After the new Telecom Law is adopted, these services could be provided competitively.

The Slovenian telecommunications operator, Telekom Slovenije, plans to provide ATM services and E-mail services, which are already on trial.

Next: Additional information on networks and services

Bulgaria Czech Republic Estonia Hungary Latvia Lithuania Poland Romania Slovakia

Previous: Status of liberalisation in the markets for networks and services

5. Additional information on networks and services - Slovenia

5.1 Penetration rate (1996)

Penetration rate	
CATV connections per 100 households	36
Main telephone lines per 100 inhabitants	33.3
Percentage of households provided with telephone lines	75.5%

Table 10 - Penetration rate

5.2 Quality of service - Voice telephony

5.2.1 Waiting time for telephone subscription

	Average waiting time	Maximum waiting time
Waiting time for telephone subscription	1.8 year	3.5 years

Table 11 A - Waiting time for telephone subscription

5.2.2 Numbers of faults cleared within 24 hours

	Numbers of faults cleared within 24h.
On average	90% in non-outstanding circumstances

Table 11 B - Quality of service of voice telephony

5.3 Network investments

5.3.1. Investment volume per year

1996: US $ 78 million

5.3.2. Investment per main telephone line

1996: US $ 1300

5.3.3. Investment plans

1996: US $ 155 million

Next: Participation in international bodies, groups and projects

Bulgaria Czech Republic Estonia Hungary Latvia Lithuania Poland Romania Slovakia

Previous: Additional information on networks and services

6. Participation in international bodies, groups and projects - Slovenia

6.1 Membership/participation in international bodies or groups

Slovenia	Status	Date of membership
ITU	member	1992
CEPT	member	1993
OECD	non-member	not applicable
WTO	member	1995
ETSI	member	1993

Table 12 - Slovene participation in international bodies

6.2 Slovene participation in international telecommunications projects

Slovenia enjoys a very good geographical position as regards traffic routing within Europe, which it intends to exploit further through its participation in the Trans Europe Lines project. Based on the deployment across Central Europe of an optical transmission system, this project aims at creating a bridge for telecommunications between Eastern and Western, Northern and Southern Europe.

Next: Future trends in the sector

Bulgaria Czech Republic Estonia Hungary Latvia Lithuania Poland Romania Slovakia

Previous: Participation in international bodies, groups and projects

7. Future trends in the sector - Slovenia

7.1 Telecommunications policy

Harmonisation of Slovenian legislation with the European Union regulation and the gradual liberalisation of the market is in progress.

7.2 Development of markets and technology

The New Law on Telecommunication, which is not yet adopted, aims at creating real competition in the Slovenian telecommunications market. Expected consequences are a rapid development of the technology, the provision of numerous new services in the telecommunications field and more privatisation.

Due to its geographic position and terrestrial conditions (high mountain ranges) Slovenia is building its telecommunications transmission backbone in a shape of a cross - named the "fibre optical cross" - in the North-South direction (Austria-Croatia) and West-East (Italy-Croatia, Italy-Hungary). Certain rings will be installed to guarantee safety of operation. Full digitisation of the transit network will be accomplished by the end of 1996. SDH systems will progressively be implemented on all fibre optic routes until the completion of the SDH backbone by the year 2000.

A second GSM licence is foreseen. DECT is considered as a local loop solution for rural areas. ISDN capabilities will be offered countrywide by the year 2000.

Next: Appendix 1 - List of sources

Bulgaria Czech Republic Estonia Hungary Latvia Lithuania Poland Romania Slovakia

Previous: Future trends in the sector

Appendix 1 - List of sources - Slovenia

1. Draft table on the Major Aspects of the Regulatory Framework in Central and Eastern

Europe, final version 5

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Ref.: S.4375/SVN

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Date: March 1995

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Date: May 1996

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Ref.: hpg/dhar regpanel

Date: 4 March 1996

7. Draft outline of the major elements of regulatory reform in developing countries

Source: European Commission, DGXIII, Gebhardt, version 2

Ref.:

Date: 11 July 1996

8. The Road to Accession, Telecommunications and Posts Sector Paper

Source: European Commission

Ref.:

Date: 17 July 1996

9. Interviews with officials: Mr. Stanko Perpar, State Secretary for Communications and Mr. Unk, Senior Adviser at the Ministry of Transport and Communications.

Next: Appendix 2 - Extracts from the draft new Law on Telecommunications

Bulgaria Czech Republic Estonia Hungary Latvia Lithuania Poland Romania Slovakia

Previous: Appendix 1 - List of sources

Appendix 2 - Extracts from the draft new Law on Telecommunications

Regarding the opening of services to competition, the new law foresees the following articles:

Article 15

(*Commercial telecommunications services*)

(1) Commercial telecommunications services (except voice telephony and telex) may be carried out on the basis of a preliminary **notification**, on the basis of a **licence** or on the basis of a **concession** for the use of radio frequency spectrum.

(2) Unless otherwise specified by the provisions of this law, telecommunications services may be provided on the basis of a notification submitted to the Telecommunications Administration of the Republic of Slovenia, which may within 15 days after the receipt of this notification reject it by a written order stating that such a service cannot be provided on the basis of notification.

(3) In the notification referred to in the previous paragraph shall be stated:

- company name and/or name and surname and address of the

applicant,

- telecommunication service to be carried out,

- technical characteristics of telecommunications network,

- telecommunications equipment to be used,

- geographic area where the telecommunication service is planned to be carried out,

- other data necessary for definition of kind and nature of the

telecommunication service.

Article 16

(Services on the Basis of a licence)

(1) The following telecommunications services may be provided on the basis of a licence:

- data telecommunications,

- leasing of telecommunication lines, except those from

paragraph 5 of the Article 24 of this law,

- cable communication and/or cable distribution systems,

- public payphone boxes,

- VSAT communications.

(2) The licence for the provision of telecommunications services shall specify:

- conditions to be fulfilled by the licensee,

- conditions for the connection of the telecommunications network of

the licensee with foreign telecommunications networks,

- quality and accessibility of telecommunications services,

- special conditions for the provision of emergency services and services

for handicapped persons

- mode of keeping records of services,

- other important requirements necessary for the provision of the

telecommunications service,

- reasons for cancellation of the licence.

Article 17 (16)

(telecommunications services depending upon adequate use of radio frequency spectrum)

(1) Telecommunications services:

- mobile and satellite communications except radio-broadcasting,

- transmission and emission of radio broadcasting programmes by terrestrial networks and by satellites except the transmission and emission of programmes of RTV Slovenija,

- paging

may be carried out by the service provider that has been granted the concession for the use of radio frequency spectrum.

(2) The Government of the Republic of Slovenia shall, by the concession act, determine the conditions for the granting of the concession referred to in the previous paragraph. In the concession act, the Government of the Republic of Slovenia shall determine:

- conditions to be fulfilled by the concession-holder,

- quality and coverage of the area, for which the concession has

been granted,

- technical characteristics and conditions for the connectability of telecommunications networks,

- special conditions for the provision of emergency services

and of services for handicapped persons,

- the duration of the concession,

- supervision, obligations and reasons for cancellation of the

concession,

- the amount and mode of payment of the compensation for the

concession,

- adequate use of general conditions referred to in the Article 10

when arranging relations with users,

- conditions and procedure for the selection of a concession- holder on the basis of the invitation for public tender.

Previous: Appendix 2 - Slovenia

Abbreviation List

ATM	Asynchronous Transfer Mode
Altaj	Analogue mobile standard
BTC	Bulgarian Telecommunications Company
CATV	Cable Television
CEEC	Central and Eastern Europe Countries
CEPT	European Conference of Postal and Telecommunications Administrations
CPT	Committee of Posts and Telecommunications (Bulgaria)
CZK	Czech currency unit
DBN	Digital Backbone Network
DECT	Digital European Cordless Telecommunications
DON	Digital Overlay Network
EBRD	European Bank for Reconstruction and Development
ECTRA	European Committee for Telecommunications Regulatory Affairs
ECU	European Currency Unit
EEK	Estonian currency unit
E-mail	Electronic mail
EMT	Estonian Mobile Telephone Company
ERMES	European Radio Messaging System
ET	Estonian Telecom - public Estonian Telecommunications holding
ETC Ltd.	Estonian Telephone Company Limited
ETO	European Telecommunications Office
ETSI	European Telecommunications Standards Institute
EU	European Union
Eutelsat	European Telecommunications Satellite organisation
GSM	Global System for Mobile Communications
GTC	Latvian Governmental Telecommunications Centre
Inmarsat	International Maritime Satellite organisation
Intelsat	International Telecommunications Satellite organisation
InterSput-nik	International Organisation of Space Communications
ITU	International Telecommunications Union
LAN	Local Area Network
LMT	Latvian Mobile Telephone
LT	Lithuanian Telecom
Ltd.	Limited
MAN	Metropolitan Area Network
Matav	Magyar Tavkozlesi telecommunications
MoU GSM	Mobile Union
MTC	Ministry of Transport and Communications of Slovenia
MTCWM	Hungarian Ministry of Transport, Communications and Water Management
MTL	Main Telephone Line
MHz	Megahertz
NMT	Nordic Mobile Telephony
NRA	National Regulatory Authority
OBN	Overlay Business Network
OECD	Organisation for Economic Cooperation and Development
OFTEL	Office of Telecommunications, UK

ONP	Open Network Provision
PCNs	Personal Communications Networks
PSDN	Public Switched Digital Network
PSTN	Public Switched Telephone Network
Phare	Poland and Hungary Assistance for Economic Restructuring Programme
SA	Société Anonyme
TEL	Trans Europe Line project
TPSA	Polish telecommunications organisation
TO	Telecommunications operator
TV	Television
US	United States
UTN	United Telecommunications Network
VAS	Value Added Services
VSAT	Very Small Aperture Terminals
WTO	World Trade Organisation

Next: Glossary of terms

Bulgaria Czech Republic Estonia Hungary Latvia Lithuania Poland Romania Slovakia Slovenia

Previous: Abbreviation list

Glossary of terms

Alternative infrastructure: networks which do not belong to the incumbent telecommunications organisation.

Altaj: old analogue mobile standard used in some of the eastern Europe countries.

Analogue: refers to a signalling technique in which a transmission is conveyed by modulating the frequency, amplitude, or phase of carrier.

Calling line identification: additional facility enabling the subscriber called to see the line number of the calling user.

CATV: cable television - the distribution of television signals from a central antenna or 'head-end' to subscribers' homes over coaxial cable network.

Cellular: a communication service in which voice or data is transmitted by radiofrequencies. The service area is divided into cells, each served by a transmitter, which are then connected to a mobile switching exchange which is linked to the world-wide telephone network.

DCS 1800: standard for micro cellular communications systems developed by ETSI, building on the GSM standard.

Digital: refers to communications procedures, techniques, and equipment whereby information is encoded as either binary '1' or '0' as opposed to analogue where information is in variable but continuous wave forms.

Earth segment: the part of a satellite communications network formed by the satellite earth stations.

ERMES: European Radiomessaging System - new digital paging standard developed by ETSI that will permit the reception of tones and/or numeric or alphanumeric messages.

GSM: global system for mobile communications - digital standard.

ISDN: integrated services digital network - a fully digital communications facility designed to provide transparent end-to-end transmission of voice, data, video, and still images across the PSTN.

Leased lines: the telecommunications facilities provided in the context of the establishment, development and operation of the public telecommunications network, which provide for transparent transmission capacity between network termination points and which do not include on-demand switching (switching functions which the user can control as part of the leased line provision)

Ref.: article 2.2, Council Directive 92/44/EEC of 5 June 1992 on the application of open network provision to leased lines

Mobile and personal communications services: "services other than satellite services whose provision consists, wholly or partly, in the establishment of radio-communications to a mobile user, and makes use wholly or partly of mobile and personal communications systems".

Ref.: Glossary, *Green Paper on a common approach in the field of mobile and personal communications in the European Union*, COM (94) 145 final

Non-reserved services: services which are not the subject of special or exclusive rights which reserve the rights to provide them to one or more public or private bodies.

NMT: Nordic Mobile Telephony - analogue cellular system standard.

ONP: the Open Network Provision concept defined in Council Directive 90/387/EEC.

P(A)BX: Private (automatic) branch exchange - a telephone switch providing speech connections within an organisation, whilst also allowing users to access to both public switches and private network facilities outside the organisation.

Packet- and circuit-switched data services: "the commercial provision for the public of direct transport of data between public switched network termination points, enabling any user to use equipment connected to such a network termination point in order to communicate with another termination point.

Ref.: article 1, Commission Directive of 28 June 1990 on *Competition in the markets for telecommunications services* (90/388/EEC) as amended.

Paging: radiocommunications-based service involving non-speech, one-way, personal selective calling with a tone, vibration or visual alert. The system may either inform the user that somebody is trying to contact him or her, or it may also carry a numeric or alphanumeric message.

Public telecommunications network: "public telecommunications infrastructure which permits the conveyance of signals between defined network termination points by wire, by microwave, by optical means or by other electromagnetic means".

Ref.: article 1, Commission Directive of 28 June 1990 on *Competition in the markets for telecommunications services* (90/388/EEC) as amended.

Satellite services: the provision of satellite communications services and/or the provision of satellite networks services.

Satellite terminal: the earth station - a station located on the earth's surface and intended for communication with one or more terminals of the same kinds by means of a satellite, - the terminal consists of one or more transmitters or receivers, or a combination of transmitters and receivers, including the accessory equipment, necessary at one location for carrying on a radiocommunication service.

Secondary regulations: regulatory acts such as ministerial orders or decrees which define the scope and depth of the articles and principles provided in the main law. An example of secondary telecommunications regulation can be a decree on interconnection.

Space segment: the part of a satellite system formed by a satellite or satellites.

TO: telecommunications organisation as defined in Council Directive 90/387/EEC.

Voice telephony :"the commercial provision for the public of direct transport and switching of speech in real-time between public switched network termination points, enabling any user to use equipment connected to such a network termination point in order to communicate with another termination point"

Ref.: article 1, Commission Directive of 28 June 1990 on *Competition in the markets for telecommunications services* (90/388/EEC) as amended.

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