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# Some Issues Concerning Telecommunications Development

## A Polish Perspective

By Hanna Kontkiewicz-Chachulska\*

### Summary

*The aim of this paper is to present selected telecommunication issues from the Polish perspective in 1996. The Telecommunications Act of 1990 ended the State monopoly on local services, although it retained the State monopoly on international services and State control on domestic long-distance services. The national operator, TELEKOMUNIKACJA POLSKA S.A. (TPSA), has changed considerably since 1992, in particular the company has started to act more like a business. However, there still is a backlog of over two million applicants waiting for phones. Partial competition and private operators could accelerate the development. Clarification of the regulatory environment still remains a major issue to be addressed in Poland during the coming years, however.*

1. The process of system transformation, which started in Poland in 1989, found the telecommunication system in a very bad state. The gap between Poland and EU countries in this sector was estimated as twenty years. This grave backlog was linked to the inefficiencies of the past economic system and the political neglect of telecommunications. Most networks were analog and much of the equipment was outdated and used step-by-step technology. As far as the main lines densities in Europe are concerned, only Albania had a lower rate than Poland (Poland had a penetration rate of 8.3% in 1989). A similar picture was given by rankings according to the share of the sector in the GDP and according to the quality of service. At that time about 10,000 villages were without access to the telephone network.

The change in the political climate, the opening up to foreign technologies and the new international co-operation marked the end of the long era of the analog network. Meanwhile, strong pressure was put on the incumbent operator and on the Polish government, especially by business users, who needed better telephone services, new data and value added services, and who pointed out that the poor telecommunication infrastructure is discouraging potential investors.

2. As a consequence, right from the beginning of the transformation of the political and economic system, Poland was pushed to reconsider the role of telecommunications, which is now understood as the general

development *enabler*. This means that telecommunications has positive economic linkages across the whole economy. It contributes to the efficiency and to the development of all productive activities in the same way as the education system or transport networks. It helps to build and exploit large information systems, and it eliminates time and space barriers between regions and countries. It became obvious, that a country without modern and widespread telecommunications faced a rapid decline of its competitive position in the global markets.

Additional arguments for a quick change of the telecommunications were also provided by the association agreement with the European Union, signed by Poland in 1991. The agreement required the future modification of Polish telecommunication policy principles, the liberalisation of the markets for equipment, services, and infrastructure, as well as the harmonisation of network access, type approval and standards.

In December 1994, the European Council issued a White Paper. This document guides the associated Central European countries towards the alignment with requirements of the European Union's internal market. Obviously, the further accession of the countries to the Union will involve acceptance of the *acquis communautaire* as a whole.

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The White Paper underlines that whichever competition model is adopted by a country, a relevant regulatory framework should be clearly defined. Specifically, the following requirements underlay the creation of efficient legislation, which will assist in abolishing monopolies:

- the establishment of competition rules;
- the effective separation of regulatory functions from the operational responsibility for the public network;
- the creation of an independent organization, which is in charge of granting approvals, licences etc., and has the task of surveying the market;
- the development of cost accounting systems and relevant nondiscriminatory, transparent and cost-related tariff structures to be used by the telecommunication operators and service providers.

All these aspects should be taken into consideration while discussing *de lege ferenda*.

3. Apart from these general requirements, the European Union's experts claim that today, at the beginning of the alignment process, there are two major issues for all Central European countries:

- to extend the traditional services country-wide;
- to propose up-to-date advanced services to satisfy the needs of the modern sectors of the economy and of foreign investors.

According to an optimistic scenario, these tasks could be accomplished by leapfrogging, without following the traditional development path. Rapid advance in telecommunication technology together with falling prices enables a move directly to leading-edge telecommunication technologies. The availability of local, well-educated technical and scientific staff to implement these technologies gives this scenario plausibility. Undoubtly, the re-designing of sector institutions and the improvement of operations are also necessary to achieve a significant improvement.

4. At the beginning of the decade, Poland planned a crash type program for the development of its telecommunication system. The major task was to achieve a significant improvement in the spread (Table 1 and Table 2) and

penetration of the network (with the aim to balance supply and demand for telephone services by the year 2000) and to introduce new digital technology. The plan consisted of measures to decongest the international and long-distance networks, to install international exchanges and a fibre optic cable connecting Poland with international networks and with satellite stations. A digital overlay network was planned to connect the major urban centres. The efforts which have been undertaken since 1989 to improve the state of telecommunications, should result in the forecasted level of teledensity of 16.9% by the end of 1996 as well as the installation of new digital exchanges and the construction of optical fibre lines, which are still under the way. The number of villages lacking access to the network was reduced to 2 250 in 1995.

In the last two years, the incumbent national operator, TPSA, invested US-\$ 1.4 billion in modernisation and expansion of the network, and it plans to install 4.95 millions main lines in the next 5 years (reaching the level of 10.7 million subscribers). According to J. Michna's speech at the Warsaw Comnet'95 Conference, TPSA claims, that a penetration ratio of 30 per cent by the end of 1999 will satisfy customers' needs (following Sofrecom investigations on the demand forecast for the Polish telecommunication market). Given these circumstances, the national operator believes that it is able to achieve this goal alone, by carrying an investment program with 13 — 14 % of annual growth (Table 3).

The second task of the telecommunication program, decided at the beginning of the decade, was to modernise the services that are on offer. The data network (a packet switched data network POLPAK X.25 with 2,500 subscribers by the end of 1995), satellite connections (systems Inmarsat, Intersat, Intersputnik, Eutelsat, services VSAT) are being developed, and new services as ISDN, audiotex, videophone, mobile communications (60 000 subscribers by the end of 1995), paging (30 000 subscribers), freephone services, electronic mail are being introduced. The investment program is based on state-of-the-art technological innovations.

5. In Poland, the incumbent operator is granted *de jure* and *de facto* monopoly in the most profitable market segments to develop the national network with cross sub-

Table 1

Evolution of the Number of Connected Subscribers 1980-1995

Year	1980	1985	1989	1990	1991	1992	1993	1994	1995
Total number of connected subscribers (in thousands)	1 943	2 480	3 121	3 293	3 565	3 938	4 416	5 006	5 716
Number of new subscribers (in thousands)		107	160	172	272	379	478	590	710
Capital expenditures (US-\$ million)						439	594	598	814

Table 2

## Telecommunications Development in Poland 1990-1994

TPSA	1990	1991	1992	1993	1994
Main lines	3 293 000	3 565 000	3 938 000	4 416 000	5 006 000
Business lines	724 460	770 000	833 000	867 000	924 000
Penetration rate	8.6	9.3	10.2	11.5	13.0
Number of lines/employee	51.1	53.6	55.9	61.7	69.4
Public payphones	28 282	28 630	29 198	30 018	31 717
Cardphones		500	1 265	4 683	7 820
Waiting list	2 412 000	2 334 000	2 268 500	2 268 500	2 352 500
Cellular Telephony Subscribers (PTK Centertel)			3 365	15 699	38 942
Source: TPSA Annual Reports.					

sidies within the sector and to recoup the huge investments made in the telecommunication infrastructure. The costs of the rural network development are met by cross-subsidisation from more profitable long-distance and international calls. This reason, together with the costs of further extending the basic voice service is a strong argument for the government to maintain the monopolistic status in the "upper levels" of the network.

According to the Communications Act of 1990, amended in May 1995, activities in the field of telecommunication can be performed by:

- Telekomunikacja Polska S.A. (TPSA, national operator);
- a few departments of some ministries (for their own purposes);
- entities which have been given a telecommunication concession or permit.

Permits are granted for the installation and use of telecommunication facilities, lines and networks, while concessions are granted for the provision of services. New concessionnaires are chosen in a tender process, organized by the Ministry, in order to limit the number of new entrants and to make the decision process more transparent.

The Communications Act states that no concession can be given for the provision of public international telecommunication services. The amendments, however, have opened access to non-public service providers, except in the case of foreign applicants or if more than 49% of the shares in the Polish company are held by a foreign entity. The basic trunk telephone network also remains currently in the hands of TPSA, but the law allows the participation of foreign capital up to 49% in inter-urban telecommunication lines or networks and services. However, no concession for international or long-distance telecommunications has as yet been issued. The same limit (49%) of foreign capital is applied to the cellular telephony service providers. Currently there is only one provider of a NMT 450 system (PTK

*Centertel*, shareholders: TPSA: 51%, Ameritech: 24.5%, France Telecom: 24.5%). Two GSM concessions were awarded in a tender process at the beginning of 1996 (*Polska Telefonii Cyfrowa S.A. PTC*, major shareholders — Elektrim SA: 32.5%, US West Inc.: 22.5%, DeTeMobil GmbH: 22.5%; BRE S.A.: 5%, Kulczyk Holding: 4.8%, Elektrim Autoinvest S.A.: 4.6%, Warta S.A.: 4.1%, Polpager Ltd.: 4% and *Polkomtel S.A.* major shareholders: Plock Refinery S.A., Polish Coppermine KGHM Polska Miedz, TeleDenmark S.A. and AirTouch Int. — each with 19.25%, Polish Power Grid Co.: 11.5%, Stalexport S.A. 5.5%, Weglokoks S.A.: 4%, Telenergo Ltd.: 1%, Telbank S.A. and BIG S.A., each: 0.5%).

The Ministry claims that an additional reason to grant *de facto* monopoly to TPSA for providing the international and trunk services (until the end of the decade or at least until January 1998), is to enable it to face international competition and to make its future privatisation profitable.

6. The theoretical alternative to the traditional model of massive funding by the national monopoly consists of opening the local networks to competition in order to attract private investment in infrastructure. Concerning the local telephone networks, no limitations of participation of private domestic or foreign capital were specified.

Today, the Ministry anticipates that 20-30 % of new lines to be built by local, private operators. There is, however, a risk that the existing situation, due to cross-subsidies benefitting TPSA, can have far reaching consequences for the development of competition in Polish telecommunications. The tariff structure, despite the Antimonopoly Office's efforts to enforce its rebalancing, still discourages investors from entering those segments of the market where getting concessions is relatively easy. Due to the Communications Act TPSA is solely responsible for local tariffs, while the Ministry has to approve international tariffs and has the right to impose maximum tariffs for voice services.

Table 3

## Forecast 1996-2000

Year	1996	1997	1998	1999	2000
Number of new subscribers (in thousands)	800	900	1 000	1 100	1 150

The law contains provisions which are of great importance with respect to competition regulation. They specify that the operator of the public telecommunication network cannot refuse to connect another telecommunication network with its own. They also state that the conditions and charges for interconnection are to be specified by a contract between the owners of the two networks.

7. The first few licenced local networks have been put into operation, although all of them are relatively small — like the ones in the rural communities of Laka, Tyczyn or Swidnik.

Taking into account the solutions implemented in the U.S. and in Finland, where the development of telephone networks in rural areas is based mainly on a co-operative structure, similar solutions were implemented in Poland. The U.S. National Telephone Cooperative Association, which set up the Tyczyn Telephone Cooperative, has been at the heart of that movement.

Another solution was to secure foreign capital resources in such projects. RP Telekom (Danker Investment Ltd, Trefoil Capital Investors, Goldman Sachs Group and other shareholders) is engaged in development of local telecommunication networks in ten voivodships<sup>1</sup> (together with participation of municipalities), providing financing and supervision of the construction of each project (Telekom Kalisz, Torun, Puchaczów, TelStar, Telekom Lublin, Modlin, Rol-Tel, Telekom Józefów, Kujawy, Pila). RP Telecom holding includes, among others:

- TELCO, a joint venture between RP Telecom (75%) and Telia (25%), which controls and operates 11 project companies; each holds a license to construct and operate a regional network;
- SRP Telekom, a joint venture between RP Telekom (41.7%), Sprint International<sup>2</sup> (25%), IFC (11.7%) and other investors, which controls and operates a project company in Silesia (Telekom Silesia).

The first lines were installed in 1993. Some customers have been on TPSA waiting lists for years, and others are switching over from TPSA. The company is getting no revenue from traffic that is forwarded to it and it has to pay 30% of its revenues for local traffic and 70% for international traffic to TPSA.

Investments of the holding will amount to over US-\$ 500 million in the years 1995-1997. Credits have been provided

by IFC and EBRD. As a result of these investments, RP Telekom hopes to build over 500 000 telephone lines. Only in 1996 the group is planning to connect 100 000-150 000 main lines, depending on the state of negotiations with TPSA. Most of the new potential operators plan to install up-to-date cost-effective technologies such as wireless communications in the local loop or combined cable TV and telephone networks.

8. Larger players, including Polish companies quoted at Warsaw Stock Exchange, like *Optimus* (computer industry) and *Elektrim* (trade), are also preparing their entry into the telecommunication market (*Elektrim* is moreover the shareholder of consortium *Polska Telefonía Cyfrowa S.A.* — one of the winners of GSM concessions). *Optimus* wanted to obtain the concession, for its subsidiary *Polish Telemedia*, for a network covering 30% of Polish territory — regions where the company is present on the computer market. The company plans calling for the investment of US \$ 2 billion to provide 3 million telephone lines, had to be reduced to 450 000 new subscribers, when it turned out in July 1995 that the concession was granted only for 4 voivodships, without the municipalities.

9. TPSA was often accused of suffocating its competitors. In particular, in its dealing with small rural operators, TPSA delayed negotiation processes, frequently in order to use the time to develop their own network in a given area and to improve its competitive position vis-avis the new entrants. The absence of precise interconnection rules and of an independent body having the right to mediate in case of a potential conflict, thus created a major obstacle to the development of real competition. For instance, one of the private operators, Telekom Silesia negotiated cooperation rules with the regional management of TPSA for 8 months, from July 1994 — until February 1995. Then, the Directory Board of TPSA refused to sign the agreement, and the re-negotiations lasted till September 1995 (the internal procedure requires the conditions to be discussed at local level, and the agreement to be signed by the Directory Board of TPSA). Similar procedural delays were experienced by Telekom Torun, Tel-Star, Telekom Modlin and Telekom Lublin, operators from RP Telekom holding. In 1995, the Anti-Monopoly Office took an unprecedented

<sup>1</sup> Regional unit in Poland.

<sup>2</sup> Sprint was replaced in 1996 by Telia.

decision. TPSA has been fined US-\$ 200 000 for hindering the business of the local operator Lublin Telekom. They were ordered by the Office to abstain from using monopolistic practices, including unjustified delays in connecting the new operator's network to the national telecommunication network.

The problem of interconnection has not been definitively solved since the passing of the Communications Act in 1990, and there were many protests and discussions *de lege lata*. In February 1994 the Ministry, trying to find a remedy, issued a document called *Settlement Principles between Telecommunication Operators*, its legal status, however, was uncertain. At present, due to the last Amendments of 1995, the Ministry has the authority to make the final decision in case two operators cannot reach an agreement within three months.

All these facts explain why, despite the fact that more than 80 permits have been issued, only a limited number of operators started providing services (in September 1995, the Ministry decided to examine the results of activities of private operators and to withdraw the licences of those companies whose performance was not satisfactory or who had not started to operate. In October 1995 agreements were reached in thirteen cases, the decision in ten more cases is pending).

It seems that the main cause of this state of affairs is the absence of the effective control mechanism of TPSA. Various aspects of telecommunications are regulated by different institutions, and economic regulation is exercised by the Anti-monopoly Office. The Ministry is placed in a schizophrenic situation. On the one hand, it represents the only shareholder of TPSA. On the other hand, it is the decision-maker in the telecommunication sector, and has the authority to grant concessions to the potential competitors of TPSA. Hence, the possibility of a conflict of interests is evident.

10. Today, the Ministry forecasts, that 20 — 30% of new lines should be built by local, private operators. From 1996 on, the Ministry is going to announce subsequent invitations to tenders in chosen voivodships. Bids will be evaluated from the technical point of view (proposals should point out the financial sources of planned undertakings as well as the technical project of the telecommunication network and a development strategy), while the amount of the concession fee will be the second criterion. There are no limitations concerning the participation of foreign capital in candidate companies.

The first two procedures were opened on May 27, 1996, for the voivodships of Bydgoszcz (1.1 million inhabitants, teledensity 17%, minimal concession fee ECU 747 000) and Lublin (1.02 million inhabitants, teledensity 13.7%, minimal fee ECU 538 000). Winners are awarded the concession (valid within 15 years) to provide telephone and ISDN services, and to lease lines. The permits to construct alternative networks were granted at the same time.

Licence holders are normally obliged to commit themselves to the construction of a specified number of lines within a given period.

There were 4 bids proposed for the concession in the voivodship of Bydgoszcz by the following companies: Telefonía Polska Zachód, Telefony Bydgoskie, Telekom Torun (from RP Telekom holding) and El-Net (new Elektrim subsidiary) and one in the voivodship of Lublin, submitted by Telekom Puchaczów (also from RP Telekom holding), a present holder of a few concessions covering a small percentage of local communities in the region. The winners of the tender were known in September 1996 — El-Net and Telekom Puchaczów. Later, by the end of the year 1996 the Ministry is going to announce the next tenders for the following voivodships: Wrocław, Wałbrzych, Jelenia Góra, Bielsko Biala, Tarnobrzeg, Słupsk, Koszalin, Kielce, Elbląg. The ultimate objective is to create duopolies (TPSA and a new local operator) in every voivodship within the next two years. Thus, the Ministry wants to introduce competition in local telephony while retaining control over the development of the sector and the position of market players.

11. With regard to further changes, the Polish authorities plan neither the privatisation of the national operator nor the choice of a strategic partner in the nearest future. The rules and the scope of privatisation will be formulated by the Ministry no earlier than by the end of 1996. Two independent consultants were chosen in late June 1996 to propose a privatisation strategy: Schroeders and CS First Boston. A third study will be prepared by specialists from TPSA. The most probable scenarios include the flotation of the shares at the Warsaw Stock Exchange and the choice of a strategic or passive investor. In June 1996, the Minister of Ownership Changes announced that in the next three years some 10-15% of TPSA shares will be sold, resulting in US-\$ 2-3 billion of income for the State budget.

12. Meanwhile, TPSA is to be transformed into a corporate structure; its operations are streamlined, and product groups as well as independent cost centres are being established. Distinct programs and action plans have to be formulated for the following organisational segments: the international network, the long-distance network, the local loop and telecommunication services (including Value Added Services). The State monopoly would be maintained practically in all the most profitable areas (a monopoly for the international network, a dominant position in the longdistance network up to 1999). In regional networks, however, it would be possible to set up independent operating companies (the participation of TPSA in these enterprises is not excluded) — with both domestic and foreign shareholders. Presence of the State in the local segment would be confined regulatory and supervision functions as well as to the control of the share of foreign capital. Competition in local networks should be limited to two operators.

This approach of "planned diversity" should result in encouraging new partnerships, sales of shares, strategic

alliances and commercialisation, which in turn are expected to increase investment capabilities and management efficiency as well as to improve the position of the restructured incumbent in international competition. The Ministry wants to change the centralised management philosophy of the operator to a decentralised one, that pays close attention to market conditions. It seems that the most critical issue would be the re-orientation of the staff from administering networks and services towards entrepreneurial accountability. These changes should enhance flexibility, as staff working close to its market is able to evaluate customer needs and make on-the-spot decisions.

Obviously, it will be necessary to identify customers and target market segments on the one hand and core products and services that the company plans to offer on the other. This step should be followed by the definition of new business processes including performance measures and an appropriate new company structure. Such a change of structure constitutes a big challenge as it requires the re-definition of competencies and of the knowledge necessary for the company to adapt to these changes.

13. Undoubtly, such a restructuring of the incumbent operator is a step in the right direction. But it still seems that with respect to other aspects of sector reforms at least two more issues should be discussed:

- the monopoly of TPSA in international and long distance traffic and limitations concerning the foreign ownership of potential operators;
- the conflict of interests between the Ministry of Communications as the regulator and as the authority exercising ownership rights with respect to the dominant incumbent.

As the last amendments have left many issues unclear, the Polish Parliament passed a resolution "*On the development of telecommunications*" which obliges the government to create a new legal environment for the telecommunication market no later than in 1997. The regulation should reflect the strategy of sector development and attract serious and long term investments.

The issue of the extent of monopoly rights should be taken into account by the new regulation, knowing that

voice telephony will have to be liberalised before Poland joins the European Union. A new legislative framework whose draft text will be submitted by the end of 1997 is intended to be a starting point for effective liberalisation and harmonisation with respect to fair competition principles. According to EC experts' opinion, special attention should be given to the definition of interconnecting principles, transparent and objective licensing procedures, universal service obligation, independent supervision and control, and the reduction of Ministerial responsibilities. In order to find the remedy to the existing and potential conflicts of interests, an independent regulatory agency should be created among others with the mandate of issuing permits and concessions, controlling prices and quality levels and mediating conflicts between operators. Generally speaking, the harmonisation process will embrace not only laws concerning market operations but also the whole institutional structure of the sector.

14. In summer 1996, an updated version of the policy for the development of telecommunications (up to the year 2010), prepared by the Ministry, was accepted by the Council of Ministries. The document specifies the forecasted demand for telecommunication services and defines development targets to be reached as well as the sector strategy. As an element of the currently planned government reform (the reform of the so-called "*Economic Centre of the Government*"), the ownership rights of TPSA might be transferred to the newly created Ministry of the National Treasury. The obligations of the incumbent should be defined on a contractual basis (comprising standard concession obligations together with universal service as well as defence and security related duties). Meanwhile, the Department of Communications (intended to be incorporated in the future Infrastructure Ministry) will still exercise regulatory rights, monitor the marketplace to guarantee effective provision of telecommunications, enforce standards and control access to universal service. The separation of regulatory and ownership duties is believed to be (at least formally) compliant to EU principles. Two issues are still to be solved: the financing and the stability of the regulatory structure.

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## **Zusammenfassung**

### **Einige Aspekte der Telekommunikationsentwicklung aus polnischer Sicht**

*Der vorliegende Aufsatz stellt ausgewählte Aspekte der Entwicklung von Telekommunikationssystemen aus polnischer Perspektive vor. Durch das Telekommunikationsgesetz von 1990 wurden das Staatsmonopol für örtliche Fernmeldedienste beendet, das für internationale Dienste sowie die staatliche Kontrolle über Inlandsdienste im überörtlichen Bereich aber beibehalten. Der nationale Betreiber von Fernmeldediensten, TSPA, hat sich seit 1992 beträchtlich gewandelt, insbesondere entwickelte er ein stärker unternehmerisch orientiertes Verhalten. Es gibt jedoch noch immer eine Warteliste von mehr als zwei Millionen Antragstellern, die auf einen Telefonanschluß warten. Die Einführung von Wettbewerb in einigen Bereichen und das Auftreten privater Betreiber könnte die Entwicklung beschleunigen. Die Schaffung eines klaren Regulierungsrahmens bleibt aber weiterhin eine wichtige Aufgabe, die in Polen in den nächsten Jahren angegangen werden muß.*