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THE DEVELOPMENT OF TELEPHONE SERVICES IN POLAND (1989–1996)

THE ROLE OF TELECOMMUNICATIONS IN BUSINESS

The significance of information (both creating and transmitting it) in economy causes more frequent analysis concerning telecommunications services. This is especially interesting from the geographic perspective, if we take the assumption that the chief purpose of telecommunication is to transmit information over distances. What is more, in line with the theory of entrepreneurial localisation, some say telecommunication plays a substitutive role to such localisation factors as costs of transport, and that the development of telecommunication consequently allows a much more flexible choice for entrepreneurial locations.

Polish social-economic geography research of telecommunications' spatial development was until recently carried out as part of geography of communication. The main focus was on the characteristics of the telephone network (usually omitting telegraph and postal services). This was due to the special role of the telephone as the basic element of the whole telecommunication system (Hoff, 1992, p. 48).

THE STATE OF TELEPHONE SERVICES TODAY

Since the start of Polish economy's transformation (late 80s), it is the state of telephone services which is considered one of the great barriers impeding economic development. The growing internationalisation of Polish economy is reflected both in increasing foreign trade exchange, but also in the growing presence of foreign investors on the Polish market, often global multi-plant companies. This group of entities is very strongly stressing the need to use reliable telephone connections.

Although it is still difficult to describe the state of Polish telephone network as satisfactory, it should be very clearly stated that the years 1989–1996 showed a significant increase in the tempo of building a cable

telephone infrastructure. There were only 3.1 million cable telephone users in 1989. In seven years, this number doubled (to 6.5 m. in 1996). (Fig. 1).

The telephone distribution index rose from 82 to 169 users per 1000 citizens. Despite significant changes, it is difficult to describe this state as satisfactory, especially if one compares it to the situation in European Union countries (some 460 users per 1000 citizens), or in relation to Central Europe (e.g. 209 in the Czech Republic). One important change is the growing share of private users among all telephone users, which changed from 75 to 83% in the years 1989–1996. However, we are still very far from reaching a point where the telephone is standard equipment in every household.

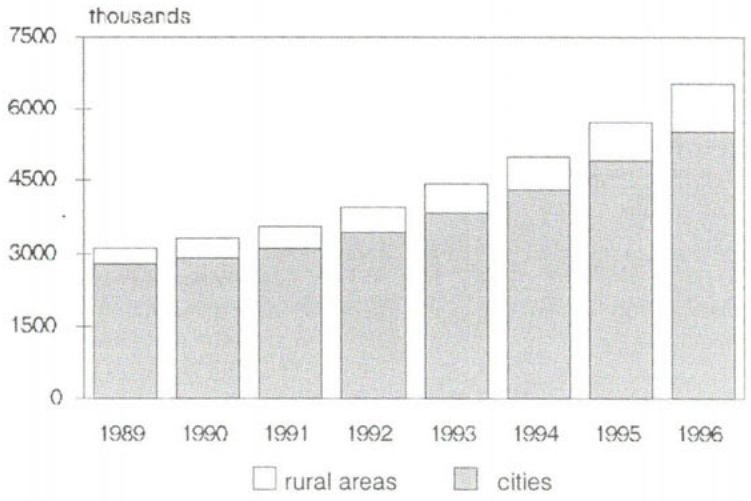

Fig. 1. The growth of cable telephone users in 1989–1996.

A complete novelty was introduced to the Polish market — the cellular phone network. Since it began operating in 1992, this service has been expanding very dynamically. There were already three independent networks (including two digital GSM systems) in late 1996, sharing some 300 thousand users*.

The level of network development may be measured both in respect of the amount of newly-connected telephone users, but also in relation to the level of technological infrastructure. The nineties are a period of gradual removing backwardness in telephone network technology, especially in relation to telephone switchboards and cable lines. The process of updating

* As this paper was being prepared (late 1997), the number of users increased threefold to some 900 thousand — barely within a year's time.

telephone networks is connected with the restructuring and privatisation of state-owned companies, producers of telephone appliances. Foreign investors, in exchange for few-year exclusive contracts for deliveries of switchboards to the public telephone service, started the production of modern digital switchboards at the acquired plants. Today, such equipment is produced in Poznań (Alcatel), Bydgoszcz (Lucent Technologies, formerly AT&T) and in Warsaw (Siemens).

Inter-city telephone systems were nearly completely automated in 1989–1996. The automation level of inter-city calls increased from 69 to 98% during this period. At the same time, most of these connections are made by digital switchboards (53 out of 63 inter-city switchboards). International calls are facilitated by three digital switchboards (in Warsaw, Poznań and Katowice).

The state of local telephone systems is less impressive. Digital switchboards are still in minority (44% in 1996) of the overall local switchboard capacity. Some users still rely on making connections using outdated manual switchboards.

Despite a constant increase in the length of cable telephone lines, only one fifth of inter-city connections use modern optical fibre lines. Significant investments in this field involved the construction of two optical fibre lines (each some 1500 km in length). The 'north–south' line (from Koszalin, through Bygdoszcz, Gdańsk, Warsaw, Kraków and Katowice to the southern border) was built by state operator Telekomunikacja Polska SA (TP SA) in co-operation with Danish investor Tele Danmark. The second one, from Zgorzelec to the eastern border (with branches to Poznań and Bydgoszcz) was built by Lucent Technologies. Local telephone systems are gradually phasing out overhead wiring. The development of the optical fibre cable network is moving ahead very slowly (only 2% of local networks in 1996).

The development and modernisation of telephone infrastructure requires significant investments. Figures allocated only in 1996 for the development of the telephone network amounted to nearly PLN 2.5 billion (some 700 million dollars). The larger part of investments is taken by TP SA, which gradually increases its commitments by taking credits for particular investments. One typical factor for the development of local telephone networks in Poland is the significant share of local communities starting in the initial phase of investment financing. This especially refers to rural areas, where the neglect in network development is heaviest. Over 1300 community initiative committees for the connecting of rural areas to telephones were registered in 1990. Their share of financing investments reaches up to 50% of all costs. These are then turned by the operator (TP SA) into free calls to use within a given period. This co-operation between TP SA and local communities has allowed the connection of an additional 300 thousand users in 1989–1996 (over a quarter of all connected rural users during that period).

TELEPHONE MARKET STRUCTURE

It was only in 1992, when two separate entities were formed (Poczta Polska and Telekomunikacja Polska), that telecommunications started being developed — in a sense — irrespective of other communication services. However, the similar nature of these services and the long period of common functioning as one entity, causes many post offices to continue offering telecommunication services, especially telephones (although to a limited degree). The primary company on the telephone services market is state-owned Telekomunikacja Polska SA (TP SA), the national operator. Its 1996 figures showed revenue exceeding PLN 6.6 billion (nearly 2 billion dollars), with over 73 thousand employees.

The Polish telephone services system is monopolised. It operates under the telecommunications bill of 1992 (updated in 1996). The document guarantees TP SA a monopoly for providing international and inter-city telephone services. A second operator (besides TP SA) is possible at the local level (telephone areas limited mostly to one province). The operator would have to be selected during a tender, the conditions of which would describe clearly the range of operation. TP SA maintains a dominating position also in this respect. It needs not to participate in the tender if it wishes to expand its own network. What is more, the second operator's range is often limited to an area less than a complete province (district). Most exclusions refer to the best market segments, like a province capital — and so an administrative centre (and usually an economic one as well). TP SA, using its dominating market position, is also making extensive investments (often offering more competitive prices) in some areas, where independent private operators (who received a licence) are only beginning their operations.

The relatively short period that these new regulations are in power, their favouritism of TP SA, and the high costs of constructing a cable telephone network — all these factors contribute that to this day (1996), non-public operators have only 230 thousand users (compared to 6.5 million of TP SA). Of the 130 operators who received licences, 99 have started operating. Interestingly, in non-public networks, the majority of users are institutions (over 60% compared to 17% in TP SA). The largest non-public operators include international holding company Netia, with over 50 thousand users, which is building telephone networks in 15 provinces.

Unlike cable telephone systems, the cellular telephone market is currently shaped by three, freely competing national networks. The basic differences between them are length of operation and the type of transmission technology used. The analogue CENTERTEL network (a TP SA and France Telecom joint company) has been operating since late 1992. Two digital GSM networks (Plus and Era) began operating only in late 1996, but today jointly have more users than CENTERTEL.

SPATIAL DIFFERENTIATION IN TELEPHONE NETWORK DEVELOPMENT

There is a large spatial differentiation in the density of telephone networks, both cable and cellular. There are differences both between regions (provinces) (Fig. 2), and very clear ones between urban and rural areas. The Polish telephone services market gives reason to believe it has a structure similar to that as in developing countries (Salomon, Razin 1988, p. 125). A typical feature is the large discrepancy between the network density in metropolitan and peripheral areas. The best-developed cable telephone network in 1996 was in the Warsaw province (358 users per 1000 citizens). A relatively high network density index (over 200) is also registered in urban provinces — Łódź and Kraków. The least developed telephone network is in the least urbanised regions, provinces with dominating farming economies (e.g. Siedlce — barely 81 users per 1000 citizens). Many provinces — mainly south–east Poland — have an index barely exceeding 100 (Krosno, Przemyśl and Tarnobrzeg provinces).

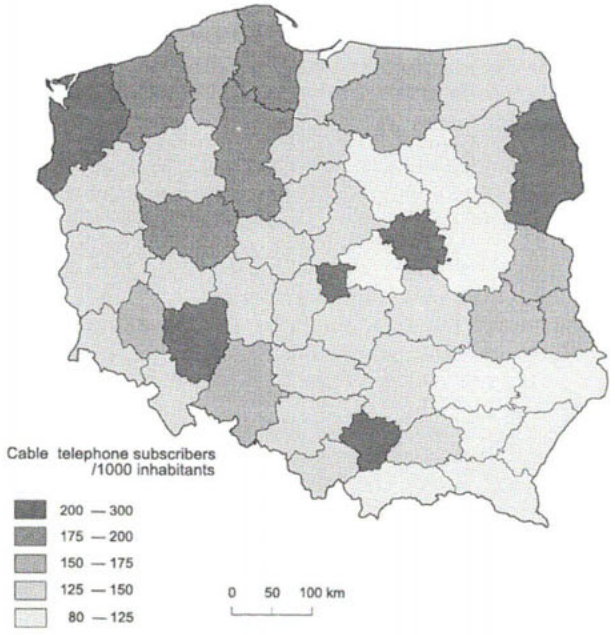

Fig. 2. Density of cable telephone network per 1000 citizens in 1996 based on *Łączność. Wyniki działalności w 1996 r.*, 1997, GUS, Warszawa.

The tempo of changes in telephone network density in 1989– 1996 had some regional characteristics. The number of users grew slowest in north–west and south–east regions of Poland. While today the distribution index for the first mentioned region is very high, south–east parts of the country remain the worst equipped region. A similar situation occurs in the surroundings of the capital province, which is one more proof of the deepening socio-economic polarisation in the Mazowsze region.

The disproportional distribution of telephone networks is most clearly visible when comparing urban to rural areas. This is due to economic reasons. Telecommunication investments are made in regions which can provide a quick return. Cable telephone systems in rural areas are not as profitable as urban networks, built for many users. It is estimated that in Polish conditions, the average cost of installing one telephone line in a village is 1.5 to twice the price of that in a city. This is mainly due to dispersed buildings, making it difficult to connect particular households.

If the state influences the investment policy of the telephone operator (TP SA), some modifications to this strictly economic attitude are possible. The state tries to equal this disproportion in spatial development, by assuring equal access to elementary services (like the telephone). Many investments into developing rural telephone networks were made in 1989–1996, often with significant financial share of local communities. This has led to diminishing the disproportion in telephone network density between urban and rural areas from 5:1 to 3.5:1. In some regions, however, these differences actually deepened. This refers to north–east Poland, areas of high unemployment.

The number of telephone users per 1000 citizens in rural areas rose from 22 (in 1988) to 67 in 1996. Despite this, it is the cities — homes for 62% Poles, and locations for most economic enterprises — that have over 5.5 million (85%) connected users.

The village vs. city differences are especially visible with cellular telephone networks. The first (and still the largest) cellular telephone network CENTERTEL covers nearly the whole country. All three operators, however, began developing their networks starting from large cities and trunk roads. Expanding the covered range into regions of smaller population density (like main tourist destinations) is a secondary goal. The range of these networks, which are built strictly for commercial profit, covers trunk roads and routes, where trade (exchange) is developing most and population density is high. This is also the place with the largest potential demand for portable telephone services (due to a possible quicker return on investments).

CONCLUSION

The development of the Polish telephone market in the 90s is specific both in terms of organisation and space. In cable telephones, market liberalisation and relaxing the dominating position of one operator (TP SA) is taking place significantly slower than in highly-developed countries. Portable telephone systems are developing at a much faster pace — owing much to free competition.

Despite large investments, access to telephone services in Poland is relatively limited. This is especially true of rural areas. Over one thousand

villages had no regular telephone connections still in 1996. Important market changes are awaited when the (partial) privatisation of TP SA begins. This is even more important bearing in mind that in a few years' time, Poland is obliged to open its telephone services market to foreign operators.

A further interlacing of telephone and computer services markets also seems unavoidable. Telephone connections — also in Poland — are more and more commonly used (apart from sending voice) for transmitting signs, pictures and using databases of many computer networks. Currently (1996), the number of Polish Internet users is estimated at over 0.5 million.

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