

Beyond Commitment

Telecom development in Hungary in the 1990s

Abstract

The Hungarian telecom sector is an inspiring post-socialist success story. Hungary in the late 1980s was the epitome of the failure of socialist states to provide adequate infrastructure: now, just a decade later, the country stands out as one of the most advanced in the region in provision of telecom services. How do we explain this development? Has it to do with the formation of sectoral institutions? And if so: is the Hungarian answer a universal standard of telecom institutions that provide superior outcomes in any context (the globalist institutionalist argument?) Or are institutions designed in such a way that they 'fit' into the local context (the localist institutionalist argument)? Cross-country statistical analyses and process analyses indicate that both globalist and the localist institutionalist arguments are pertinent. However, to explain the Hungarian telecom success we should supplement the institutional explanations with the roles played by country specific institutional endowments in conjunction with leadership choices, forming a state guided private monopoly modernization. Telecom development is also indicative of overall state capacity in complex policy areas.

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Post-communist countries provide some of the most radical examples of liberalization in recent history. Starting from a position in which domestic and international economic relations were under strict political control, most of these countries within a decade cast previously state owned companies onto the global market place. The process was particularly brutal in heavy industry and infrastructure, where foreign investment was badly needed to update technological, organizational, and managerial practices. Now, more than a decade after the beginning of the transformations, the post-communist countries differ extensively in the extent to which they have managed to liberalize foreign economic relations, attract Foreign Direct Investment (FDI) and modernize backward sectors. How do we explain these differences?

This paper approaches the issue by exploring one case: the development of Hungarian telecommunications during the last decade. Following the work of other researchers (Vogel, 1997; Weselius, Stern, 1994; Melody, 1997; Singh, 1999; Sinha, 1994; Bauer, 1994; Bauer and Straubhar, 1994; McDowell, 1996, 1997; Molano, 1997; Petrazzini, 1995), telecom was chosen because it represents a critical case of the ability of states to handle the restructuring process. This sector is characterized by a combination of massive investment requirements, politization and strong vested interests, and it is thus a difficult policy area to handle for any government. In post-communist countries telecom is an example of a socialist monopoly confronted with the urgent demands of liberalization but buttressed by resourceful interest groups. It is also a sector whose development has wider implications for the economy and society at large (Thatcher, 1999; OECD, 2000, 2001). Hungary was chosen because it is a surprising success story. Starting out as one of the least developed telecom sectors in Central and Eastern Europe and epitomizing the predicament of state owned and managed enterprises, Hungarian telecom is now among the most advanced in the region, boosted by substantial foreign investments.¹

How was this success achieved? Is it the outcome of prudent (liberalization) policies in which local institutions were tailored to the universal demands of the new international markets (the globalist institutional argument)? Is it the outcome of skilful institutional engineering where local institutions were crafted to fit local endowments in order to match the expectations of foreign investors in the emerging market (the localist institutional argument)? Or is it rather the result of a broader legacy that – all misfortunes notwithstanding – proved less damaging than in other countries in the region in a process where formal institutional arrangements had little impact? These three arguments will be examined in this paper. Section one formalizes the three arguments that structure the empirical analyses. Section two describes the development of the Hungarian telecom sector in a regional perspective. Section three examines the globalist institutional argument in a regional perspective. Section four pursues the alternative localist institutional argument in a case study of the Hungarian regulatory system. Section five presents the third argument, that none of the institutional approaches provides a satisfactory explanation, but must be combined with a historical-institutional perspective if we are to understand the Hungarian telecom case. It is a core argument of the paper that while early commercialization (and mode of privatization) was a determining factor behind the influx of FDI into the sector, these policies proved effective only because they were sustained by an emerging regulatory framework, national institutional legacies, political leadership and fortuitous timing.

¹ Another reason for choosing Hungary is that telecom development in this country cannot be explained solely by the initial conditions. Previous research has demonstrated that telecom development in the region (growth in main lines) is primarily explained by a number of initial conditions and not by institutional arrangements. In this model, however, Hungary stands out as a significant outlier, opening for an interpretation of institutional factors as having an impact. See *Telecom and State Capacity in Transition Countries. A framework for analyses*. DEMSTAR Research Report No. 5, 2002 (http://www.demstar.dk/html/policy_studies.htm)

1. Institutional structure and sector development: a framework for analyses

The analytical framework applied in our analysis of Hungarian telecom outlined in Figure 1 draws on insights from Levy and Spiller’s influential book on institutional credibility and foreign investment (1997), on Fine’s (2000) discussion on the same subject,² Vogel’s (1997) analysis of state structures and market openings, Sing’s (1999) analyses of state structures and sector development, and the approach applied in Nørgaard’s (2000) analyses on institutional reform strategies in economic transition countries. In addition it was inspired by a number of other writers in the field (Bauer, 1994; Schenk, Kruse and Müller, 1992), Campell, 1995; Cowhey, 1994; Henten and Skousby, 1995).

Figure 1.1. Analytical framework for development of the telecom sector

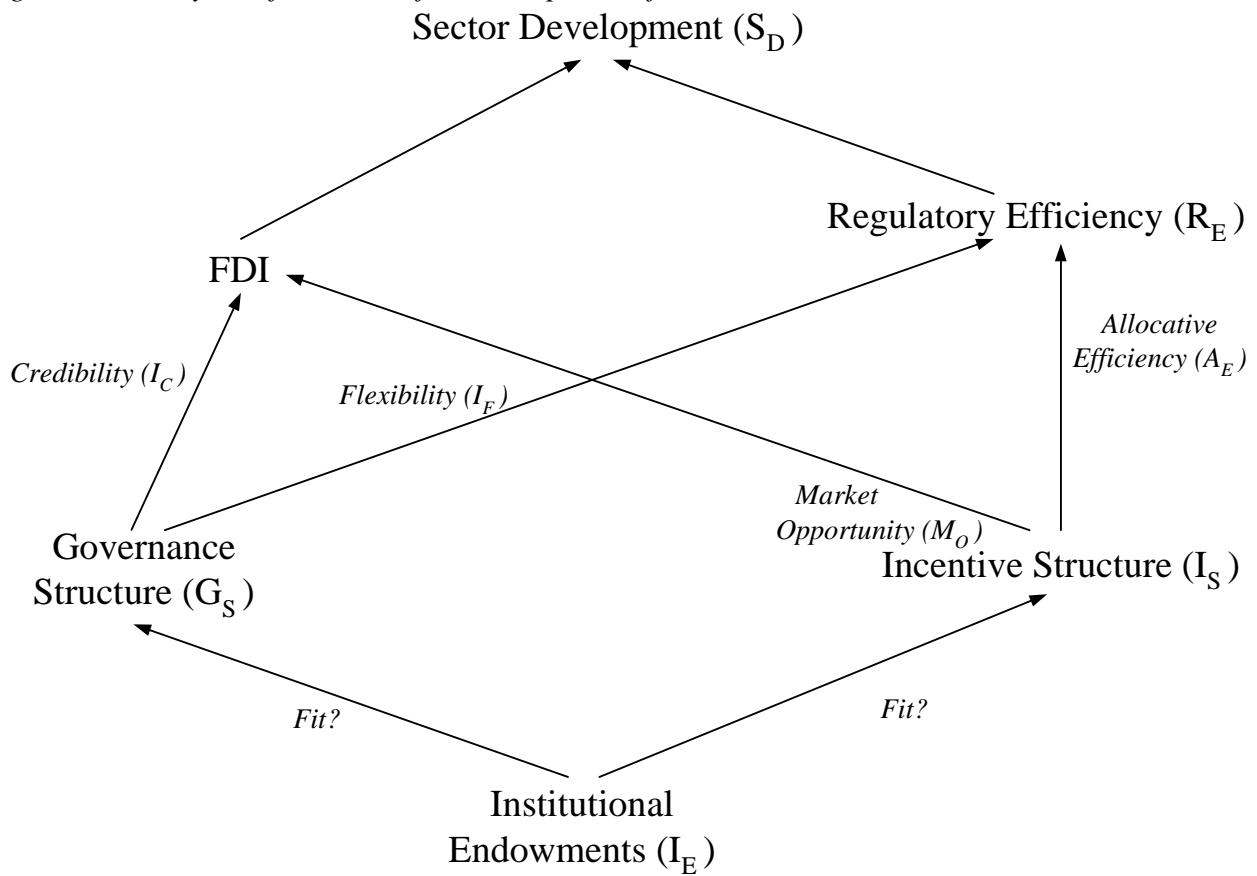


Figure 1 outlines hypotheses at three levels about what generates development in the telecom sector in transition countries. Below we will explicate the arguments behind these hypothesized relationships and summarize them in simple models that will guide our subsequent inquiry into Hungarian telecom developments.

At the first level the argument is that sector development – SD - (described in section 2) is a function of the amount of FDI and the regulatory efficiency structure (RE).

$$(1) \quad S_D = f(\text{FDI}; \text{R}_E)$$

² Fine (2000) provides an extensive overview of the literature on credibility and investment.

FDI is essential to finance a sector badly in need of investments in basic networks, updated technologies and management techniques. Regulatory efficiency (RE) facilitates investments, efficient utilization of scarce resources, for example an efficient pricing system that supports the introduction of new services, allocative efficiency and public service obligations.

At the second level FDI and Regulatory efficiency are produced by what Levy and Spiller term ‘Governance structure’ (Gs) and ‘Incentive Structure’ (Is). Governance encompasses aspects of Institutional Credibility (Ic) and Institutional Flexibility (If). Incentive structures provide for allocative efficiency (Ae) and market opportunities (M0). We may thus stipulate:

$$(2) \quad \text{FDI} = f(I_c; M_0) \text{ and}$$

$$(3) \quad R_E = f(I_f; A_e)$$

FDI is here seen as being partly contingent upon the institutional credibility that guarantees foreign investors that they do not risk exposure to administrative expropriation, partly a result of market opportunities (M0) engendered by the extent of external and internal liberalization. Regulatory efficiency is generated by the flexibility inherent in the institutional arrangements (in a sector characterized by rapidly changing technologies and markets) combined with the allocative efficiency of the incentive structure.

At the third level, Gs and Is are outcomes of a political process in which initial conditions (what Levy and Spiller call ‘institutional endowments’ – IE) provide an opportunity space within which political leaders may act and choose among alternative formal institutional arrangements. Both governance structure and incentive structures are thus outcomes of the political possibilities inherent in the institutional endowments and the leadership factor L. In that respect we must move beyond the commitment argument if we are to understand what formed, and can form, successful institutions.

$$(4) \quad G_s = I_E + L$$

$$(5) \quad I_s = I_E + L$$

To the extent Gs and Is engender positive sector development, we term the formal institutional core of these structures effective institutions.

Moving from description to analysis we may then ask what the formal institutional preconditions are for good Governance and Incentive structures? Is there a universal type of institution that in all contexts will provide superior outcomes, as argued by the classical political modernization theorists and, in a slightly different version, is the reasoning of present days globalists and economic neo liberalists? (Singh, 1999; Vogel, 1996; McDowell, 1997).³

$$(6) \quad R_E = f(I_u)$$

$$(7) \quad \text{FDI} = f(I_u) \text{ and hence}$$

$$(8) \quad S_D = f(I_u)$$

where I_u describes an institutional arrangement that is assumed to possess superior effectiveness in all contexts.

Or is the effectiveness of formal institutions dependent upon the institutional context or endowments in which they find themselves, as argued by scholars from a wide array of

³ For a more elaborate discussion about arguments for the homogenizing influence of globalization, see, for instance, Sørensen, 2001, chpt. 5.

disciplines, from structural and institutional economists to institutional sociology and political science? (North, 1990; Danilovich, 2001; Nørgaard, 2001.)

- (9) $R_E = f(I_U)$
- (10) $FDI = f(I_U)$ and hence
- (11) $SD = f(I_U)$

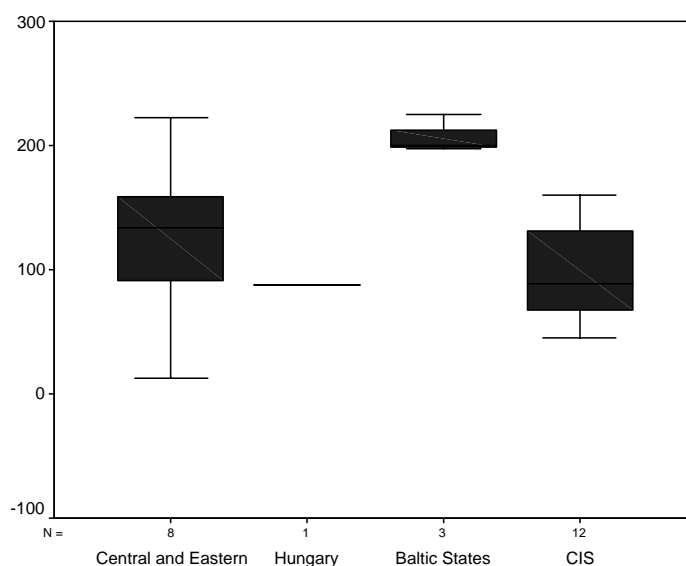
implying that the effect (or lack thereof) of institutions on outcomes has to be analyzed case by case.

After a summary account of the development in the Hungarian telecom sector we will explore the arguments of equations (8) and (11).

2. Development of Hungarian telecom

When Hungary in the late 1980s faced an economic crisis, the telecom sector belonged to the most underdeveloped part of society (Schenk, Kruse and Müller, 1997). Conditions in the sector seemed almost catastrophic compared to the neighbouring countries because of an underdeveloped network, low digitalization rates and endless waiting lists (Müller and Nyevrikel, 1994; Straubhaar, 1995). One indicator of development is the number of main lines. As illustrated in Figure 2.1 Hungary in 1989 found itself 25 percent below the median, the same level as most CIS countries. This situation served as a warning that unless radical measures were enforced to restructure and modernize the sector, prospects for economic recovery would be bleak. During the following years the telecom sector underwent a complete transformation, spearheading the restructuring of other sectors of the economy.

Figure 2.1: Level of main lines, 1989.

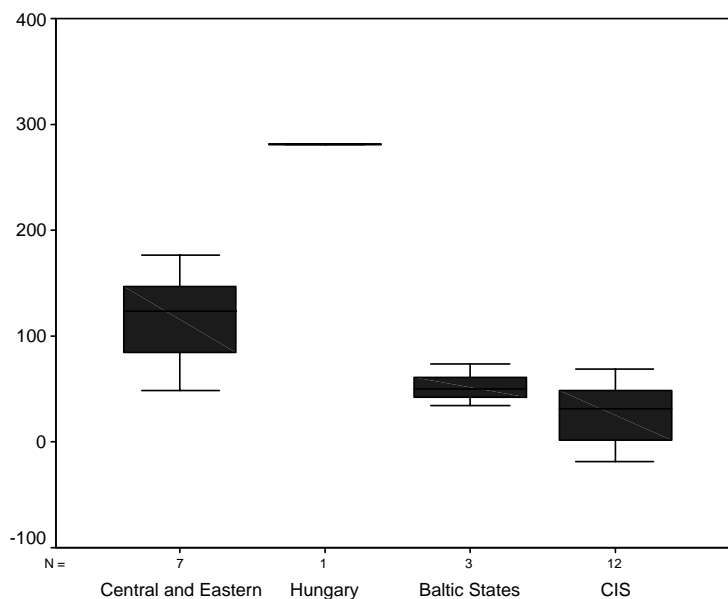


Source: World Development Indicators, 2000.

Note: Each box shows the median, quartiles and extreme values within the category.

As Figure 2.2 shows, Hungary became an absolute overachiever in the development of its network. Relative to starting point the country developed its telecom infrastructure much more rapidly than any other country in the region. Especially in the countryside, where the network was almost non-existent, the number of main lines increased by several hundred percent.

Figure 2.2. Growth of main lines 1989-1998 (percent).



Source: World Development Indicators, 2000.

Hence, privatization boosted investments in the sector as seen in Table 2.1. In the first years after 1993 the telecom share of total investments increased significantly, reflecting network expansion. In the following years investment levels stabilized at four percent higher than before privatization, 1998 being an exception.

Table 2.1: Investments in Hungarian telecommunications and broadcasting as a percentage of total national investments.

1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
4,4	4,3	6,9	7,4	9,8	9,4	8,0	8,4	6,6	8,0

Source: Communication Statistical Yearbook 1999 (HIF).

This investment exceeds in relative terms all other countries in the region up till 1997 – as shown in Table 2.2.

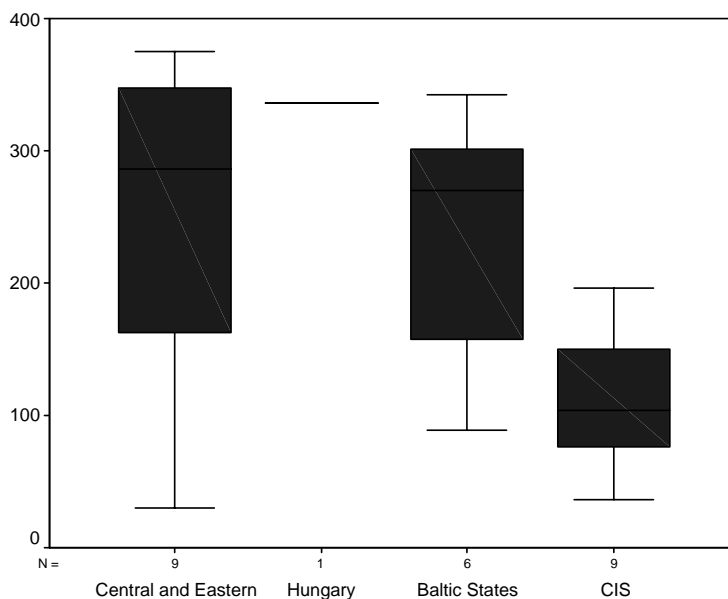
Table 2.2. Public telecommunication investments per capita, millions of USD.

	Average 1988-90	Average 1991-93	Average 1994-96	1997	1998	1999
Czech Republic	14.09	21.77	79.7	100.69	121.67	79.36
Hungary	20.73	41.46	69.63	109.15	53.62	53.47
Poland	3.57	12.75	23.22	26.06	35.34	48.2

Source: OECD Communications Outlook 2001.

The result of these investments is that the Hungarian telecom network is now among the most developed in the region, as depicted in Figure 2.3.

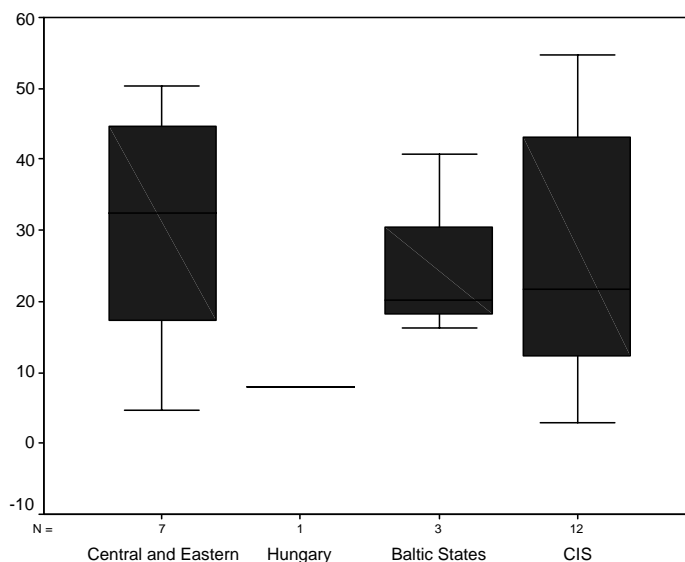
Figure 2.3. Level of main lines, 1998.



Source: World Development Indicators, 2000.

At the consumers' end the lack of investments resulted in endless waiting lists until reforms in the early 1990s as demand increased with technological and economic development.⁴ Figure 2.4 shows that one effect of the expansion of the network was that Hungary despite bleak prospects managed to reduce waiting lists to some of the shortest in the region.

Figure 2.4. Main lines, waiting lists per 1000 people, 1998.

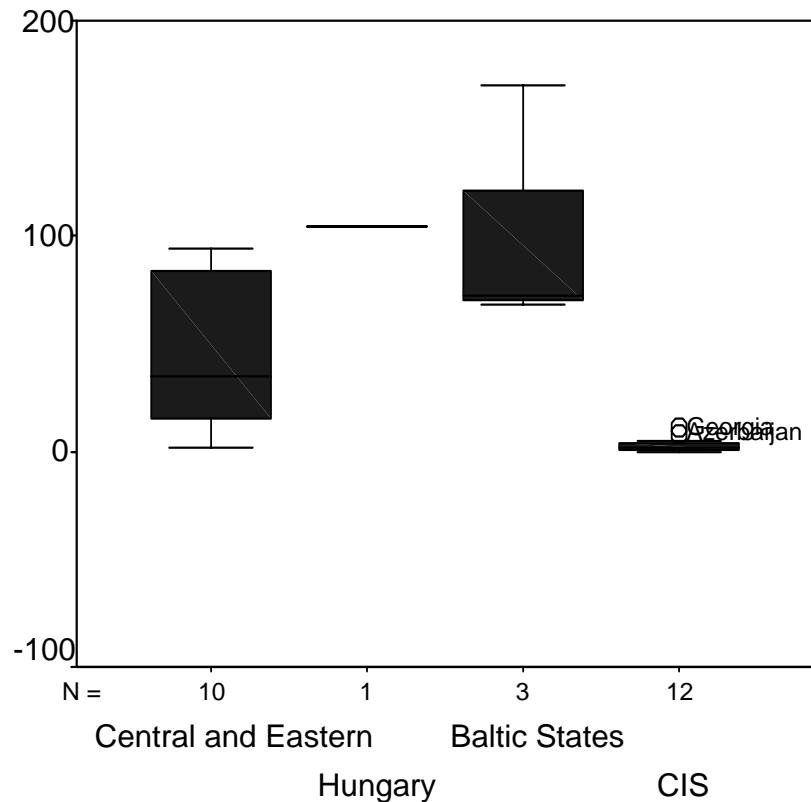


Source: World Development Indicators, 2000.

⁴ The system was not only underdeveloped but also plagued by petty corruption. In an interview a high-ranking civil servant described how he ordered a telephone connection 1960. He waited for 12 years before he was informed that it was now his turn. However, when the technician showed up he installed the phone in an apartment belonging to a neighbor, a young pretty woman! Fortunately for our informant, he was on good terms with that neighbor, and they agreed to share the line.

The Hungarian network was not only extended to all parts of the country. Because of the long waiting lists and the early issuing of licences for NMT analogue technology in 1990, a lot of people acquired mobile phones instead. People kept their mobile phones as the network expanded, however, giving Hungary one of the highest mobile densities in the region, surpassed only by the Baltic states.

Figure 2.5. Mobile telephones per 1000 people, 1998.

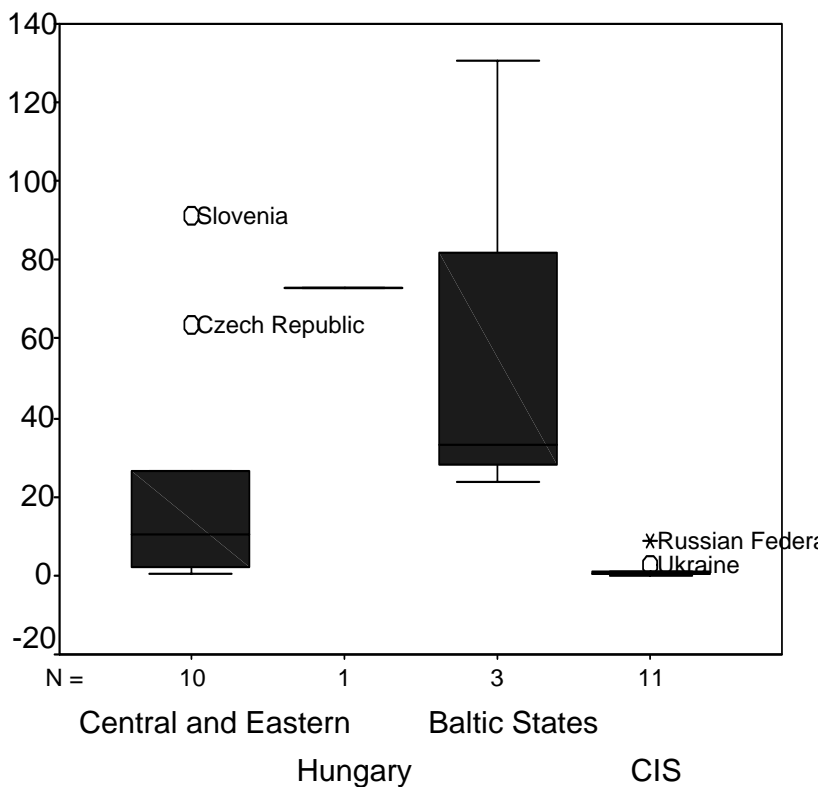


Source: World Development Indicators, 2000.

Hungary also has a high share of internet hosts compared to most other countries, primarily limited by relatively high access prices. In particular few people have internet access at home (30 percent) compared to the working place (70 percent).⁵

⁵ Interview with Balint Magyar.

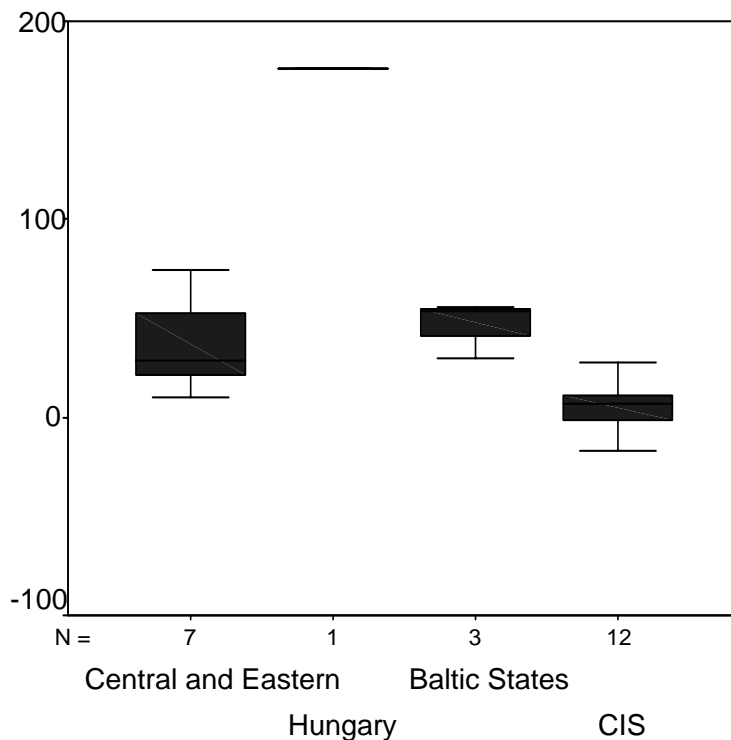
Figure 2.6. Internet hosts per 10,000 people, 1998.



Source: World Development Indicators, 2000.

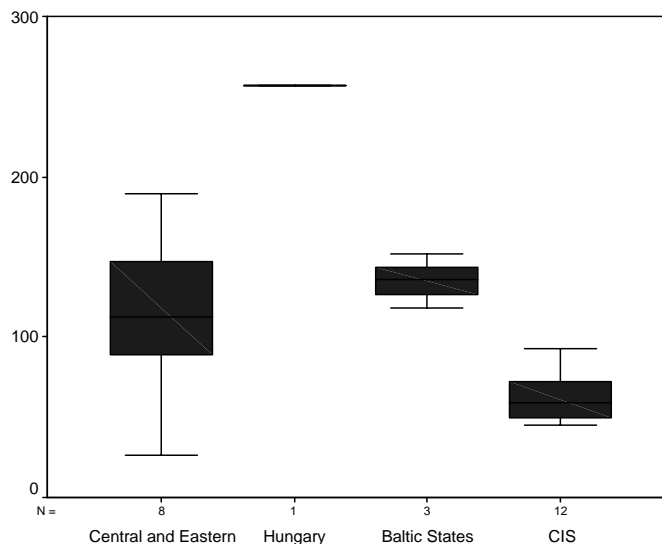
Although the strategic investor MagyarCom had invested \$400 million during its first years of ownership, substantial financing was still required to update networks and technologies, which generated a very positive development in productivity that by far outpaced the neighbouring countries, as illustrated in Figure 2.7. Today the standard measure of productivity (main lines per employee) exceeds that of any other country in the region (Figure 2.8).

Figure 2.7. Development in mainlines per employee 1993-1998.



Source: World Development Indicators, 2000.

Figure 2.8. Main lines per employee, 1998.

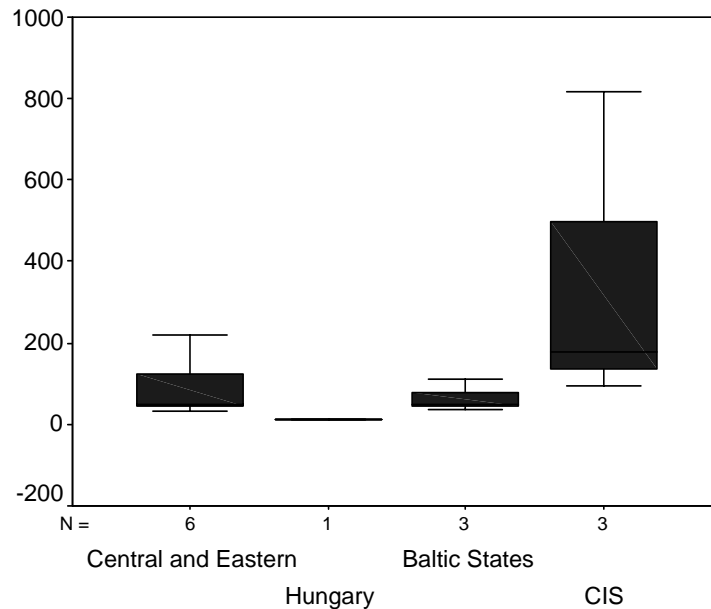


Source: World Development Indicators, 2000.

The original telecom structure was set up under the previous regime and therefore reflected the persistent attempts to control and structure information. As later development proved, the political elite held that liberalization of telecommunications would threaten the fundamental institutions of the existing system (Dizard and Svensrud, 1987). Foreign lines in particular were very scarce and – in the most rigid systems – tapped by security agencies. The tariff system also reflected social

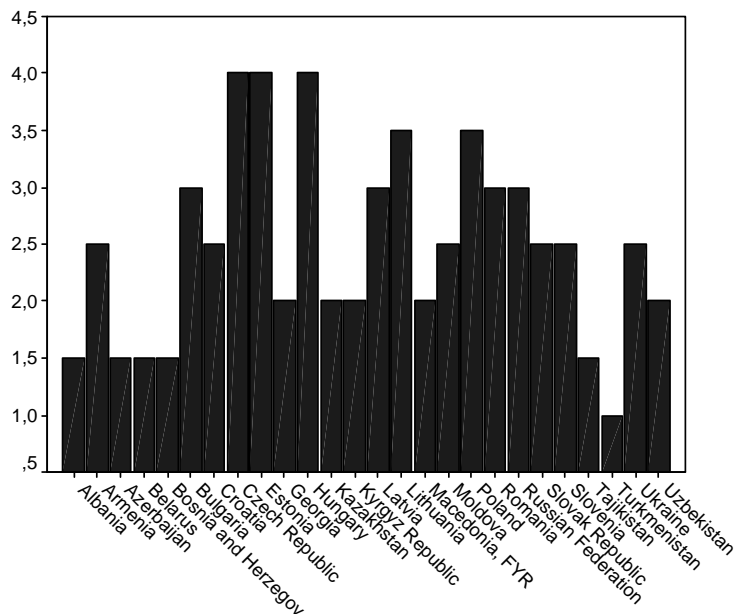
priorities, international calls being heavily taxed, which resulted in very high price ratios of foreign to local calls. After the transition to market economy the pricing structures had to be rebalanced in order to facilitate external liberalization and financing. Hungary has achieved the best results in the region also on this dimension (the narrowest ratio between the price of domestic and international calls).

Figure 2.9. Price ratio of foreign to local calls.



Turning to the institutional development of the telecom sector, Hungary together with Estonia and the Czech Republic has led the reform process as shown in Figure 2.10. The figure shows the positions of a series of countries according to an index developed by the European Bank for Reconstruction and Development (EBRD) (Transition Report 1998), aggregating country ratings on commercialization, tariff reform and institutional design in the telecom sector and ranging them from 1 to 4+ (here + is measured as 0.5). Commercialization encompasses the introduction of hard budget constraints and competitive pressures, including all types of private sector participation, from management service contracts to full private asset ownership and operations. Tariff reform comprises costs-reflective tariffs that eliminate cross-subsidies and improve collection ratios. Regulation and institutional design include establishment and implementation of independent regulatory institutions that protect consumers by limiting the power of monopolies and protect investors by ensuring entry and fair competition in liberalized markets. Hence, the index measures institutional adaptation to a liberalist blueprint as predicted in the globalization thesis. In the following section we will examine the effect of restructuring on sector development.

Figure 2.10. Institutional development of telecommunications.



Source: EBRD Transition Report 1998: 44.

3. $S_D = f(I_w)$? Or is sector effectiveness related to universal institutions?⁶

In the previous section we saw that Hungary, closely followed by Estonia and The Czech Republic, attained the highest ranking in institutional adaptation to global type institutions in telecom, using the EBRD telecom index as a proxy. This observation, however, does not infer a causal relation. Instead we may explore whether in a comparative perspective institutional development toward the global (EBRD) model will generate superior outcomes. This exercise is reproduced in Table 3.1, which also includes the general institutional development (the EBRD transition index) and two separate variables that also form part of the telecom index: level of commercialization and the existence of an independent regulator (dummy variable).

⁶ Tom Y. K. Nielsen helped with the statistical work in this section.

Table 3.1. The impact of institutional choice variables on Telecom development (multiple regression. Beta weights and explained variance. T-values in parentheses).

	Absolute level of main lines per 1000 people, 1998 (1)	Per cent growth of main lines 1989-98 (1)	Mobile phones per 1,000 people 1998 (1)	Internet hosts per 10,000 people 1998 (1)	Productivity (Main lines per employee) 1998 (1)	Increase in productivity 1993-1998 (Main lines per employee) (1)	Ratio of foreign to local calls 1998 (1)	Waiting lists per 1000 persons 1998 (1)
EBRD Transition Index 1998 (2)	0.04 (0,149)	0.52 (1,606)	0.11 (0,430)	0.19 (0,657)	-0.20 (0,599)	0.18 (0,588)	-0.20 (-0,342)	-0.28 (-0,858)
Institutional development of Telecom 1998 (2)	0.77* (2,733)	-0,03 (- 0,008)	0.56* (2,123)	0.45 (1,465)	0.67 (1,868)	0.32 (0,999)	-0.46 (-0,663)	0.89* (2,556)
The state's share of dominating operator 1998 (2)	0.008 (0,466)	0.06 (0,298)	-0.04 (-0,218)	-0.76 (-0,389)	-0.13 (-0,592)	-0.12 (-0,628)	-0.32 (-0,672)	0.51* (2,288)
Existence of an independent regulator (dummy) (2)	-0,01 (-0,050)	0.27 (1,300)	0.17 (1,058)	0.06 (0,288)	0.08 (0,362)	0.27 (1,438)	-0.28 (-0,773)	-0.36 (-1,676)
R-square (adjusted)	0.49	0.30	0.523	0.38	0.27	0.41	0.05	0.25
N	24	22	25	24	23	22	12	22

** significant at the 0.01 level.

* significant at the 0.05 level.

1. Source: World Development Indicators, 2000.

2. Source: EBRD Transition Report, 1998.

Table 3.1 shows a multiple regressions analysis using the dimensions of telecom development introduced in section 2 as dependent variables. The institutional variables are subject to (political) decision in each country, and thus demonstrate the role (capacity) of the state to foster development. The table give rise to three observations:

1. The relatively high association between the telecom index and the absolute level of main lines has to do with the simple fact that the most 'modern' countries (in Central and Eastern Europe) are those with the highest telecom density.
2. Institutional development of telecom, the EBRD Transition Index and the existence of an independent regulator all contribute to growth in the number of main lines, the three variables representing a cluster where the positive effect of one also engenders a positive effect on the others, and where institutional development of telecom appears to be the most important aspect.
3. As for the remaining indicators, the signs of the beta weights are positive, indicating an association between institutional development and telecom development.⁷ In particular the beta weights indicate that globalist institutional reforms (general or sectoral) may have a positive effect on development (and implicitly on investments) in the new mobile and internet markets, on productivity and on tariff structure reform. The correlation between

⁷ Because we are dealing with a non-sample data set, significance levels are not decisive. See appendix one for a more detailed discussion of the models in Table. 3.1.

waiting lists and institutional development indicates that institutional reform not only improves developments – it also heightens consumer expectations!

These observations indicate that the globalization thesis does have some explicatory power. Institutional development following the principles in the EBRD general and telecom institutional indexes may impact sector development.⁸

An alternative to this conclusion is the observation that no general set of institutions is applicable in all contexts. The ‘best’ institutional solution may be different for different countries, depending on their national institutional endowments. Levy and Spiller attempted to define the variables that may be included in such an institutional fit. This alternative institutional explanation of how institutions may influence outcomes in the Hungarian telecom sector is explored in the following section.

4. Endowments, institutions and actors in Hungarian telecom development

Argument (11) in section 2 stipulated that institutions are important for telecom development, but that institutions must ‘fit’ into the local context to provide the stability and credibility needed to attract investors and spur development. An important attempt to operationalize this assumption was provided by Levy and Spiller in their book on regulatory reform in five countries. They demonstrate how institutions must be adapted to the local context to provide the political credibility and commitment needed to attract foreign investors and generate an efficient incentive structure. They explicitly claim that this approach is applicable to any country that needs foreign investment to develop the telecom sector (or any other major infrastructural program) – in particular developing and transitional countries. A contract based license system may be a good idea in a country with a strong and independent judiciary, but will not induce much confidence in countries where judges are corrupt or under strong political control. Similarly, while a legal contracted license may be enough in a country with a unified government, it will not suffice where the government is divided between various departments that issue conflicting regulations or have overlapping competences. Nor will a law-based license system be satisfactory in a country where conflicting parties alternate in government – here a legally based contract will induce more confidence. The positive outcome of the choices is the establishment of reliable institutions that can convince prospective investors about the commitment of the political level to the existing system. The negative outcome would be inefficiency, renewed government ownership or various types of foreign guarantees that may substitute for domestic credibility. When defining institutional endowments Levy and Spiller follow North (1990), who defines institutional endowments on four levels: 1) the formal political and judicial institutions that frame the political and administrative process and sector developments; 2) customs and norms, values, attitudes, beliefs, as well as habituated actions; 3) contending interests (material or ideological); 4) the administrative capacity that determines if institutional solutions produced by institutions, structures and agents can be implemented. Levy and Spiller think of all four levels of endowments as exogenous to the formation of G_s and I_s – an argument that may be somewhat controversial in countries where state institutions are core elements in the transition process.⁹

⁸ Controlled for a number of initial conditions, the effect of institutional variables on growth of main lines disappears, however. In this equation Hungary is nevertheless a significant outlier. See Ole Nørgaard & Luise Pape Møller, *DEMSTAR Research Report* no. 4, *Telecom Development and State Capacity in Transition Countries. A Framework for Analyses*, Aarhus, 2002.

⁹ A final step of analysis would be to identify the roots of the different layers of endowments. I have done this in my book on reform of economic institutions, distinguishing between initial conditions of the 1st order (those originating in the communist period) and of the 2nd order (those originating before that period). Applied to Levy and Spiller’s

Applying the logic of Levy and Spiller's analyses, this section looks into the second argument: that institutions are decisive for development, but that they must fit into the local context if they are to provide reliable outcomes. The first part summarizes the institutional endowments within which the telecom sector developed. The second part deals with the concrete development of sector institutions.

4.1 Institutional endowments of the Hungarian Polity¹⁰

Hungary is one of the new democracies in Eastern Europe where policy changes were paralleled by radical changes in institutions and in the character and access of political actors. The transformation of the Hungarian economic and political system was begun earlier than in other Central and East European countries, the character of the polity being formed originally by the events of 1956. While the traumatic events of the 1956 uprising had produced consensual trends in policy making, it was the 1968 economic reforms that paved the way for the incipient market actors that gave Hungary a clear lead compared to other centrally planned economies. From Duch's (1991) study we know that open, pluralist political systems are more likely to initiate liberalization and privatization than are closed, corporatist systems. Still, while the historically formed endowments in Hungarian society might explain why the country was able to lead the economic and political transformation, it was only when the international framework conditions changed in 1989 that much needed institutional transformation could be launched. The institutional endowments formed by history and by the early decisions of the new regime that can have influenced the choice of specific sector institutions can be summarized in 6 point:

1. In the democratic sphere the new regime opted for a continental (German) institutional solution with a strong chancellor (corresponding to a prime minister), in which individual ministers are responsible only to the prime minister's office and not to parliament. Petrazzini's (1995) study showed that telecom privatization and liberalization are more successful in developing countries with a high level of state autonomy and power concentrated in the executive
2. The constitutional court established in 1990 played an important political role in overseeing the rule making process and the rule adherence behaviour of parliament and government
3. The 1990s saw a gradual formation and consolidation of a multiparty system where parties alternated in government. In fact, the three general elections in 1990, 1994 and 1998 produced 3 governments whose politics differed a great deal, but nevertheless succeeding each other in a smooth parliamentary process.
4. In the initial stage of economic market reforms political leaders opted for a privatization process that involved the sale of assets at auctions where a liberal foreign trade regime (OECD, 2000: Chpt. 4) allowed foreign investors to participate. This choice differed from that which took place in most other post-communist countries, where social and political considerations gave the broad public and insiders a much larger stake, in many cases through voucher-like arrangements that disseminated ownership without engendering new finance and know-how.
5. The bureaucracy remained relative strong, in fact overseeing its own devolution in the early years when minimal state arguments dominated the domestic discourse.

distinction (b) and (d) are 2nd order and (c) first order initial conditions. (a) is partly a legacy of the communist area, partly a choice variable alongside sectoral institutions.

¹⁰ This section is based on Agh, 2001.

6. Finally, Hungarian political culture is even now carried by a general preference for consensual solutions.

Following the logic of Levy and Spiller, decision makers working in the context of such institutional endowments should opt for solutions that regulate governmental relations with private operators through legally binding contractual arrangements administered by an independent regulatory authority. Such arrangements should keep new governments from changing concession arrangements, because current and future investors can defend their rights in court. Such arrangements would also be sustained by a consensual culture, where governments tend to find solutions that obtain broad support, making them resilient to changes of government. Combined with an open privatization strategy that opens the market to foreign investors, these endowments would thus provide for the inflow of FDI needed for development. To the extent that the bureaucracy retains competence, contractual arrangements can also contain complex rules (administered by the independent regulator) that will ensure the flexibility needed for efficiency.

Hence – if the solution prescribed by the logic of Levy and Spiller actually has been installed in the Hungarian telecom sector – we have an explanation of the positive development described in the previous section.

4.2 Institutions and actors in the Hungarian telecom sector.

Since they were inaugurated, institutional reforms in the Hungarian telecom sector have passed through the ‘normal’ four stages of sector reforms, although in a somewhat atypical sequence: (Bruce, Kessides and Kneifel, 1999; Canning, 1999; Heller, 1994; Milne, 1998) 1) separation of the traditional *Ministère des Postes, Télégraphes, et Téléphones* (PTT) into state owned postal, telecommunications and broadcasting companies; 2) separation of policy making, regulation and operational function between independent institutions; c) privatization of operators and; 4) liberalization of the telecom market. This sequence is summarized in Table 4.1.

Table 4.1. Key episodes in the Hungarian telecom sector, 1989-2001.

1989	<ul style="list-style-type: none"> • Hungarian PTT is divided into three separate service providers: the Hungarian Telecom Company (MATAV), the Hungarian Broadcasting Company (Antenna Hungaria), and The Hungarian Postal Service???
1990	<ul style="list-style-type: none"> • State owned Westel 450 (subsequently 51 percent owned by Matav and 49 percent by US West) is awarded a concession contract with rights to offer NMT 450 analogue service.
1991	<ul style="list-style-type: none"> • Act on concessions: <ul style="list-style-type: none"> - defines the possibility of transferring the right to operate state owned companies to companies under concession agreements.
1992	<ul style="list-style-type: none"> • Act on telecommunications: <ul style="list-style-type: none"> - defines the responsibilities of the state - grouped telecom services into two categories: concession-bound services and competitive services - assigns policy and concession rights to the Ministry for Transport, Communication and Water management (KHVM)
1993	<ul style="list-style-type: none"> • General inspectorate of Communications is formed (later called the Communication Authority or HIF) as the licensing, supervising, regulatory and administrative agency for telecommunications, postal services and frequency management. • MagyarCom, a consortium consisting of Deutsche Telecom and Ameritech International, purchased 30.2 percent ownership in Mátav, the incumbent operator. • GSM licences are granted to Westel 900, owned by Mátav (43 percent) and US West (49 percent), and to Pannon, owned by a number of Scandinavian and Hungarian companies. • Concession contract granted to Mátav covering long-distance and international telephony with the right to operate for 25 years (with possibility for extension) and exclusive rights for 8 years.
1994	<ul style="list-style-type: none"> • Concession contracts granted to several operators with the right to operate in 54 primary areas (of which 39 are run by Mátav) for 25 years with the right of exclusive provision for 8 years.
1995	<ul style="list-style-type: none"> • MagyarCom buys a further 37 percent of Mátav.
1996	<ul style="list-style-type: none"> • National Council for Communications and Informatics is established (NHIT) as an advisory body to the Government.
1997	<ul style="list-style-type: none"> • A governmental decree extends the scope and independence of the HIF.
1999	<ul style="list-style-type: none"> • Concession awarded to Primatel (led by Airtouch-Vodafone) and DCS 1800 licences granted to Westel GSM and Pannon GSM.
2000	<ul style="list-style-type: none"> • Telecommunications is moved from the Ministry of Transport Communication and Water Management to the Prime Minister's Office in preparation for creating an independent Telecommunications Ministry. • Deutsche Telecom becomes the sole shareholder in MagyarCom after acquiring Ameritech's (now SBC Communications) 50 percent holding. The government continues to hold a "golden share" (referred to in the concession as the B share) which enables the government to institute the "controls necessary for national economic, political and security reasons. Further, Mátav cannot sell or transfer more than 10% of its assets without the approval of the holder of the B share (the Government)".
2001	<ul style="list-style-type: none"> • Act on Communications facilitating adaptation to EU standards.

In 1989 the first step was taken by separating Mátav from the Hungarian PTT, making it an independent operator. This also meant financial independence for the telecom sector because cross subsidies from the telecom sector to the postal service stopped. As the first country in Eastern Europe the Hungarian Government in 1990 offered Westel 450 a concession contract, enabling it to provide mobile services nationwide. The concession was awarded before any legislation existed in the area, so conditions were negotiated with the ministry. The Act on Concessions was adopted in 1991, clarifying conditions for private companies. This was to prepare for a partial privatization of Mátav, even though it took two years before it was accomplished. In the debates leading up to

privatization, Mátav on the one hand took the view that modernization could proceed faster if the prevailing monopolistic market structure were retained – into which a foreign professional (service) provider and investor could then be recruited. On the other hand, however, local governments organizations preferred to break up the monopoly, which reflected their lack of confidence in Mátav and the still intense demand for telephones (Szanyi,1994). In this conflict Mátav emerged as the definite winner, setting the terms for an almost monopolistic privatization. The Act on Telecommunications of 1992 established a clear divide between responsibilities assigned to the state and the market and grouped telecommunications services into concession-bound and competitive services. In 1993 the regulatory agency, called the General Inspectorate for Communications (renamed HIF in 1995), was founded in order to fulfil the obligations of the state. Its task was to undertake the responsibilities of licensing, regulation and provision of technical and information background.

Mátav was partly privatized the same year when MagyarCom¹¹ bought 32 percent of the shares. Until till then, MÁTAV and the ministry did what they could to maintain Mátav's monopoly in order to increase the market value of the company in the impending privatization (Schmideg, 1997). A few months later Mátav was granted a concession contract in long-distance and international telephony with the right to operate for 25 years (extension to be negotiated) and exclusive rights for 8 years. Licensing conditions included facilitating network development of at least 15.5 percent per year, quality of service obligations and a requirement that 25-50 percent of purchases consist of Hungarian products.¹² One year later the ministry called for tenders in 25 out of 54 primary areas on conditions corresponding to those regulating long-distance and international telephony.¹³ Mátav won five of these and was simply awarded the concession in two areas because there were no other bidders. As pointed out by Prössdorf (1997), the emphasis in the concession on regional development probably had to do with pressures from interest groups formed by companies and inhabitants of rural areas where telecommunication infrastructures were extremely underdeveloped.

The two operators, Westel 900¹⁴ and Pannon,¹⁵ won rights to provide digital cellular mobile services from 1994 with 15 years of operating rights. By the end of 1996 Hungary was fully covered, and in 1999 the total number of GSM subscribers exceeded 1.6 million (HIF 2000: 17). In 1999 a third provider, Primatel¹⁶, was granted the rights to access the digital mobile market.

The regulatory framework has been continuously elaborated since the major transformation in 1992. Among the most important steps were:

- The Act on Frequency Management of 1993 defining the responsibilities of the minister
- The establishment of the National Council for Communications and Informatics in 1996 by the Act on Radio and Television as an advisory body to the Government.
- The increased independence of HIF in 1997 as the single authority responsible for supervision, regulation and licensing.
- The 2001 Act on Communication replacing former legislation on broadcasting and telecommunications, further increasing the independence of HIF and creating the framework for complete liberalization of the telecom market.

¹¹ Originally owned by Deutsche Telecom (51 percent) and Ameritech (49 percent).

¹² OECD Reviews of Regulatory Reform: Regulatory Reform in Hungary, 2000.

¹³ In the other 29 areas the municipalities had accepted Mátav as the local operator.

¹⁴ Owned by Mátav with 51 percent and US West 49 percent.

¹⁵ Owned by a number of Scandinavian and Hungarian companies

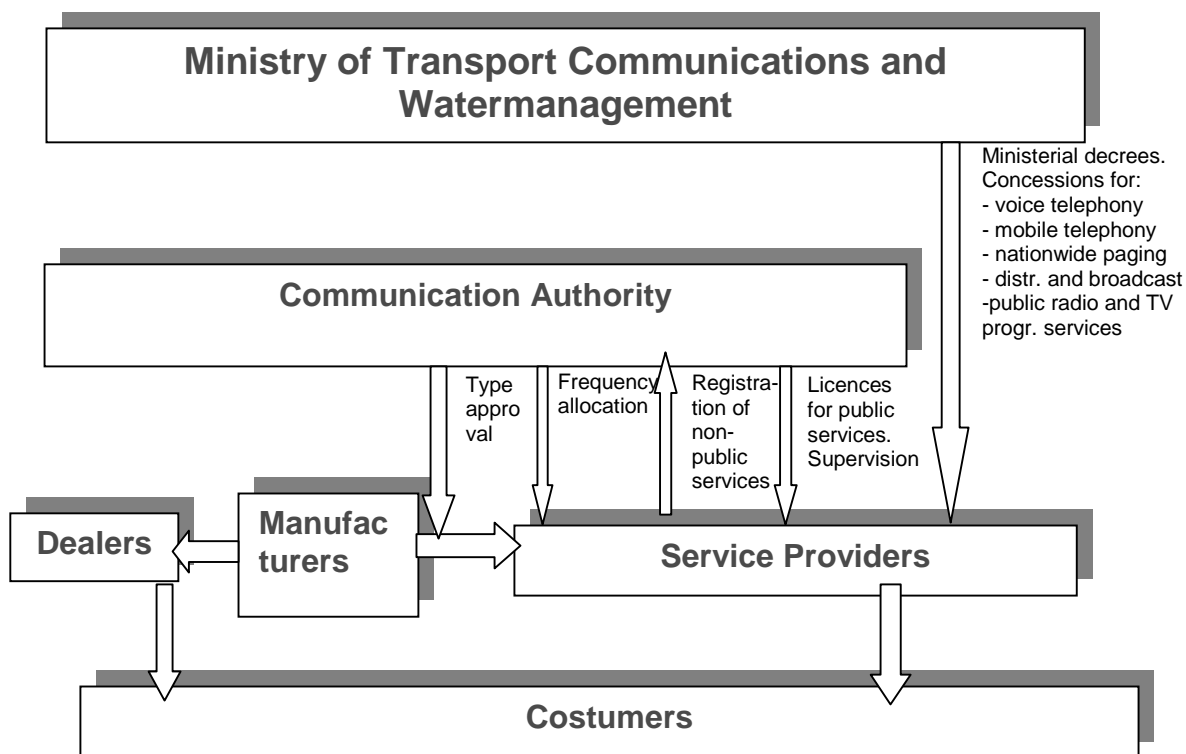
¹⁶ A consortium led by Airtouch (US) and RWE (Germany)

Recently there have been institutional changes as well. All responsibilities with respect to communications were transferred to the Prime Minister's Office in July 2000 under the leadership of a Government Commissioner. This was done in preparation for the creation of an independent Telecommunications Ministry after the elections, and it also signalled a further prioritization of the sector in preparation for EU accession.

Hence, during a ten-year period Hungary has moved from a telecom sector regulated, operated and owned by the state to a sector characterized by the existence of all the institutions necessary for a liberalized market and a legal framework compatible with EU standards. Only the initial strategy of postponing full liberalization until after privatization of the incumbent operator and the awarding of generous concession conditions maintained a heavily monopolized market.

Figure 4.1 shows the institutional structure of the Hungarian telecom licensing and administration regime during most of the ten-year period described in this article. As seen from the figure the Ministry formulates sector policy through ministerial decrees that directly affect the service providers. The ministry is also responsible for granting concession contracts. As shown, the Communication Authority is formally independent from the Ministry. Only its president is politically appointed. Formally the Communication Authority can thus issue licences, supervise, allocate frequencies and issue specific regulatory measures, for example on pricing, without ministerial interference.

Figure 4.1. Institutional structure of the Hungarian telecom sector



This brief description indicates that the formal institutional framework of the Hungarian telecom sector meet the demand for success inherent in Levy and Spiller's decision three. Operators, regulators and policy makers are divided into separate institutions with clearly delineated competences. The operators are licensed through binding contracts with a unitary government (disciplined by the chancellor-likier system), preventing political changes from upsetting market conditions. And an impartial judicial system headed by the constitutional court reinforces the impression of credibility of the system and the governments commitment to the existing rules. Hence, following the logic of Levy and Spiller we would infer the following line of causality (referring back to Figure 1.1):



The problem with this explanation is that when moving below the level of formal institutions, it is questionable whether this type of regulatory governance induces the level of credibility that is assumed to generate investments. First, despite the formal rules criticism has been raised by foreign analysts that the respective roles of the major regulatory agencies and the Ministry have not been clearly delineated.¹⁷ In the official version the ministry is responsible for policy issues, while the HIF is responsible for the enforcement of sector specific regulation. Despite these rules the Ministry of KHVM and the Ministry of finance continued to be heavily involved in price regulation, often overruling decisions based on the official price cap system instituted in 1994. These two ministries have also been instrumental in setting interconnection prices and overseeing compliance with concession agreements. Interviews with actors in the field left the same impression. Major actors always circumvent the regulatory HIF and go straight to the minister, and lobbying seems to be the major way to obtain influence. 'Lobbying is everything,' to quote one centrally place informant. This situation was also tacitly acknowledged by the Hungarian government in the statement that upon 'completion of liberalization, following the new act on Communications, it is necessary to establish the full independence of the Communication Authority' (OECD, 2000: 307). Hence, in the period under discussion in this paper, the real regulatory governance in Hungary has not functioned in a way that could move competition from the political to the economic market and thereby induce the institutional credibility and stability that is alleged to be necessary if the country is to attract foreign investors.

A second complaint from market actors is that the incumbent operator MÁTAV, now fully controlled by Deutsche Telecom, enjoys privileged access to decision makers on both the political and administrative level. The HIF and the Ministry of KHVM employ a large number of people with a past in the MATAV organization, providing this company with privileged access and information. There have also been concerns that the HIF may not be completely independent of the operators, because state organizations retain significant stakes in two fixed line companies, PanTel and Primatel.

Without going further into detail, the overall picture is that if we look beyond (or below) the formal institutional arrangement in the Hungarian telecom regulatory system, it does not – in the time perspective dealt with here – inspire the institutional credibility that can in turn explain investments and development. So the Hungarian success in telecom development cannot be unconditionally ascribed to far-sighted institutional reformers who, by taking decisive action, created the institutional setup or governance structure that laid the ground for investments and development.

¹⁷ 'Fourth report on the implementation of the telecom regulatory package',. November 1998. Quoted in OECD 2000, p. 322.

5. History, institutions and telecom development: a theoretical synthesis

The two previous sections examined two hypotheses that – from different perspectives – argued that the institutional setup of the Hungarian telecom sector explains the development success described in section two. Neither of these hypotheses was entirely satisfactory. The globalization thesis – that the introduction of universal type institutions derived from standard Western arrangements – was only partly associated with sector development. The ‘institutional fit’ hypothesis, that institutions must adapt to the local context to provide credibility, did not match Hungarian reality because there was a gap between formal institutions and informal processes. Below we make an attempt to integrate the insights from the two institutional perspectives with a historical perspective that emphasizes the crucial role of broader definitions of institutional endowments. To structure the argument we will apply the logic formalized in section 1.

$$(1) S_D = f(\text{FDI}; R_E)$$

This argument has been clearly substantiated by available hard data and information obtained from the interviews. FDI was a prerequisite to start development in the first place, and the foreign investors furthermore provided financial and marketing know-how (American investors), management skills (American and Scandinavian investors) and technical expertise (German investors). Also regulatory efficiency and in particular the license contract between MÁTAV and the government from 1993 became crucial factors of development because they compelled the company to meet the developmental goals formulated by the government. Whether the price, an eight-year monopoly concession, has been too high remains a matter of heated controversy. The minister who made the agreement, mr. Kálmán Katona, today concedes that he did not at the time really know what he was dealing with, and the majority of Hungarian players in the field find that MÁTAV earns excessive profits.

$$(2) \text{FDI} = f(I_c; M_o)$$

It was a major argument in the previous section that a stable and credible institutional environment drives foreign investment. However, this picture was more or less an illusion in a system in which the regulator remained dependent on the political level. It may nonetheless still be argued that the credibility thesis could be valid on two counts. First, if we accept that initial perception rather than later experience counts we may follow the official who stated that ‘Foreigners erroneously believe that they are operating in a stable regulatory environment’. Once locked in by major investments it may be difficult for investors to extract themselves from the market without incurring major losses. It could also be argued that once established, the foreign investors become a new reform constituency active on the local political stage, trusting their ability to mould institutions to their taste (and interests). The approaching EU membership and the ongoing adaptation of Hungarian legislation to European standards has, as shown in section 3, served as a stable framework condition, but one that it shared with other and less successful countries in the region (Eliassen, Mansen, Sjövaag, 1999). Finally, it can also be argued that the sought-after EU membership serves as an implicit foreign guarantee that may constrain politicized regulators. This was the impression given by a Hungarian official who argued that one of the reasons why Hungarian politicians refrained from changing MÁTAV’s (on many counts too profitable) concession by reducing the license period was fear of German reactions and the impact this might have on the accessions negotiations! An alternative (or complementary) – argument is that the major foreign investors (the buyers of MÁTAV) only paid limited attention to the regulatory environment, being more interested the monopoly rents they saw coming form MATAV’s advantageous concession contract, and because of their strong position on

the political market that still ruled the telecom sector. This is the impression we get from other foreign investors in the telecom market.

Regarding the second part of the argument, it seems evident that the market opportunity afforded by Hungary in the early 1980s was crucial for attracting investors. Hungary was the first country in the region to privatize telecom and thus benefit from being first on a dynamic market where many Western telecom companies were searching for investment opportunities in an increasingly competitive global market. The country practised at that time a privatization procedure (open tender and selection of strategic investors) that put foreign investors in a privileged position. Finally, Hungary in general had a very friendly foreign trade regime.¹⁸

(3) $R_E = (I_f; A_e)$

This paper has primarily focused on the effects of investment and not the efficiency of existing arrangements. It nevertheless remains a general complaint that retail and interconnect prices are still high in Hungary compared to other OECD countries, indicating a lack of competition in a market where one operator dominates the fixed line market and has strong interests in the mobile sector. These problems are similar to those found in third world countries where monopoly modernization does not necessarily lead to a smoothly functioning telecom sector in the long term (Cowhey, 1994; Moltano, 1997). These problems may in fact be so severe that allocative efficiency is lost, primarily because of a low degree of flexibility and also because of the possible consolidation of the strong market position after liberalization reforms have been put in place.

(4) $G_s = I_E + L$

(5) $I_s = I_E + L$

The final level of analysis has to do with the historically formed endowments that explain the origin of governance and incentive structures. These endowments comprise the institutions identified by Levy and Spiller, but particular attention is paid to the administrative and technical capacity in the country at the beginning of reforms, and 'leadership' is also a factor in the analysis.

The initial capacity factor describes the resources available in telecom when Hungary launched the changes. To these belong first of all the liberal economic and political environment that in the 1980s had distinguished Hungary from other Central and East European countries. Internally this had prepared the country for liberal reform, which could be implemented without the resistance faced in many other countries. Furthermore, in the 1980s (and even earlier) Hungarian specialists were allowed to travel abroad and keep abreast of the rapid technological developments. The Hungarian telecom sector at the beginning of reform therefore had a larger group of updated technical specialists aware of new opportunities and challenges than other countries in the region. The 1980s also saw the launching of large development programs in infrastructure (including telecommunication). It was therefore no accident that Hungary was the first country to initiate reforms in the sector – it only continued a process that was begun before the systemic changes. Already at that time political leaders had realized that development of the telecom sector was a precondition for attracting foreign investment in other sectors, and that foreign investment in the telecom sector was needed to start this process. The problem was how to escape this catch22 dilemma. Finally – and somehow contradictory – the huge foreign debt that Hungary carried into the new époque made it essential to attract foreign capital. The proponents of a liberal foreign economic policy thus had very strong cards on their hands in the debate over foreign economic policy in the early 1990s.

¹⁸ See OECD, 2000a, Chpt. 4.

The leadership factor adds an agency factor to the analysis. There was a small group of people inside MÁTEV in the 1980s who at an early stage realized the need for reforms. These people, actually a change-team around a small core group consisting of management and the R&D staff at the Hungarian PTT – even before the changes carried out the groundwork for development that might be implemented immediately after the systemic changes became effective. At the political level the development was spurred by far-sighted (or fortuitous) decisions, in particular the decision about privatization strategies, which was made at the right time.

To sum up: while the regulatory system developed in Hungary during the 1990s has met the formal demands of credibility and predictability, real world processes make it less likely that formal institutions have been the only, and much less decisive, factor behind investment and sector development. We must also include the broader qualities of Hungarian society before and after the changes, and the importance of leadership in the general economic policy and in sector institutions. The historical institutional endowments and political choices to put privatization ahead of full liberalization, in conjunction with a concession agreement that emphasized developmental goals add important insights to our understanding of the relative success of Hungarian telecom development.

6. Concluding observations: telecom development and state capacity

The purpose of this paper has been to examine three possible explanations for Hungary's successful development of the telecom sector. The globalist institutional thesis argues that adaptation to a universal regulatory institutional standard explains development. Cross-country statistical analyses partly supported this argument. The 'localist institutional fit' argument claims that regulatory institutions must be adapted to local endowments to provide the credibility that is a precondition for investment and development. While Hungarian regulatory institutions match the institutional endowments formally, available evidence indicates that the environment is not as stable and predictable as suggested by the formal institutions, and that thesis therefore cannot serve as the major explanation. As an alternative or supplement to the institutional explanations it was suggested that the successful development of the Hungarian telecom sector also has to do with the a broader set of resources available in society prior to the changes, spill-over from general economic policies, and leadership and fortuitous timing in attracting foreign investment. These investments, in conjunction with a regulatory regime that prioritized developmental objectives, were the direct sources of development. This does not imply, however, that the setup of regulatory institutions had no effect. The original institutional separation of policymaking, regulation and operator set the stage for bringing new people into power. And the gradual adaptation to European and global institutional standards has produced a stable symbolic perspective for sector development, even if the way the system actually worked did not live up to its own ambitions. But other factors also sped developments up till this point. It was driven by a near monopoly that profited from a privileged position in the economic as well as the political market. And it was driven by a state that proved capable by forcing the monopoly onto a track that channelled at least part of the monopoly rents into sectoral and ultimately societal development.

Still, the monopoly modernization that was chosen in the early 1990s has come at a price. The perseverance and strong market position and political weight may be major obstacles to developing the competitive market that is a precondition for future development. Already today the telecom scene is beset by complaints over end user prizes, excessive interconnect fees and gossip over the political privileges accorded MÁTEV and their German owners.¹⁹ If the success is to continue the regulatory system will therefore have to live up to its own ambitions.

¹⁹ That Monopoly rents do exist is indicated for example by Schmideg (1997: 91), who reported that while the yearly revenue of a main line in Hungary is around 12 percent of percapita GDP, the figure in Western Europe is 3-4 percent.

Appendix. The Statistics of Table 3.1.

Absolute level of main lines per 1,000 people, 1998 used as dependent variable.

There is multicollinearity between the two institutional variables, the EBRD Transition Index (institut) and Institutional development of Telecom (insttele), but not invalidating as tolerance values are 0.306 for institut and 0.267 for insttele. However, both institutional variables have high significant bivariate correlation with the dependent variable.

Percent growth of main lines 1989-98.

There is severe multicollinearity between the EBRD Transition Index, Institutional development of Telecom and the existence of an independent regulator (independ). The severe multicollinearity is revealed by the fact that no individual variable in the equation is significant, and yet the entire model is significant. The pairwise bivariate correlations between percent growth of main lines, the EBRD Transition Index and Institutional development of Telecom are all positively related and, as expected, significant, but significant and negatively related to the state's share of dominating operator. The control for institut, insttele and share still shows a significant negative relation, while the control for insttele, institut and share is not significant, but still has the expected negative sign. The substantial interpretation of this pattern is that Institutional development of Telecom, the EBRD Transition Index and the existence of an independent regulator all contribute to the growth of main lines, and the positive effect of one also signifies the positive effect of the other, insttele still yielding a positive effect of its own, (seemingly) rendering it the most important.

Mobile phones per 1,000 people, 1998.

The EBRD Transition Index (institut) and Institutional development of Telecom (insttele) both have significant positive relationships with mobile phones, but only Institutional development of Telecom has a significant effect when controlling for the rest of the institutional choice variables.

Internet hosts per 1,0000 people.

Same pattern as percent growth of main lines 1989-98 as dependent variable. Independent regulator probably has a positively logarithmic (positively declining) relationship with internet hosts per 1,0000 people.

Productivity (main lines per employee) 1998.

Same pattern as percent growth of main lines 1989-98 as dependent variable.

Increase in productivity, 1993-1998:

Same pattern as percent growth of main lines 1989-98 as dependent variable. Hungary is an outlier with a large positive residual, showing that it is an overachiever on a far greater scale than predicted by the model.

Ratio of foreign to local calls, 1998.

The full model is insignificant, which is not surprising considering the low explanatory power of the model. Even though there is no significant relationship between the model and ratio of foreign to local calls, the collinearity between the EBRD Transition Index (institut) and Institutional development of Telecom (insttele) is still ascertainable.

Waiting lists per 1,000 persons.

Although the collinearity between the EBRD Transition Index (institut) and Institutional development of Telecom (insttele) is observable in this model both variables remain strongly significant, indicating that their distinct explanatory variance is stronger with respect to waiting lists than the other telecom development variables. The relationship between the state's share of dominating operator and waiting lists per 1,000 persons is not linear but shows logit form with threshold pattern.

The multiple regression analysis of the impact of institutional choice variables on Telecom development reveals three features. First, the collinearity between the EBRD Transition Index (institut) and Institutional development of Telecom (insttele) and, to some extent, the existence of an independent regulator (independ) is present for telecom development variables measuring growth in a dynamic way, but not for a static measure of growth, that is, the absolute level of main lines. Second, for the variables measuring telecom development dynamically, collinearity between the EBRD Transition Index (institut) and Institutional development of Telecom (insttele) is not present for waiting lists, which indicates that we here have to do with other – possibly psychological – mechanisms. Third, the substantial interpretation of the pattern of collinearity between the institutional choice variables is that Institutional development of Telecom (insttele), the EBRD Transition Index (institut) and the existence of an independent regulator (independ) all contribute to the growth of main lines, indicating the existing of a cluster of independent variables linked to each other by a general institutional development of society.

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- Bertram, Ole (28. November 2001), president and CEO at Hungarian Telephone and Cable Corp.
- Bötskei, Imre (3. December 2001), Matav.
- Deménd, György (12 April 2001), Dty. Head of Infocommunications Regulatory Department, Prime Ministers Office.
- Endre, Toth (12 April, 2001), computerjournalist.
- Erenyi, Istvan (3. December 2001), senior advisor to Zoltan Sik, Government Commissioner.
- Dombi, Gabor (14. April 2001), secretary general at the Conciliatory Forum for Informatics.
- Havas, Miklós (12. April 2001 and 28. November 2001), leader of the Business School Szamalk and member of the National Council for Telecommunication and Informatics.
- Horváth, Ferenc (12 April 2001 and 30. November 2001), Director General of Infocommunications Regulatory Department, Prime Ministers Office.
- Horvath, Marcel (12 April 2001), Councillor M.Sc.E.E, Communication Authority.
- Janos, Kis (19 April 2001), computerjournalist, founder of MIME
- Lakatos, Péter (28. November 2001), Clifford Chance limited liability partnership
- Mihály Gál (12 April 2001), Head of Price , Regulation Department.
- Magyar, Balint (29. November 2001), MP in the Hungarian Parliament.
- Pósvári, Sándor (19 April 2001), journalist, owner of euroASTRA Internet Magazine, founder of MIME, former member of the Free Democrats.
- Sarolta, Baksa (3. December 2001), Head at Department, Legal Counsel, Mátav.
- Schmideg, Ivan (26. April 2001 and 29. November 2001), acting executive vice president in the International Secretariate, Communications Authority.
- Solyom, Ivan (28. November 2001), Clifford Chance limited liability partnership.
- Tibor Soós (26. April 2001), lawyer and specialist in telecommunications legislation.