

Republic of Kazakhstan

Country Economic Memorandum

**Getting Competitive, Staying Competitive:
The Challenge of Managing Kazakhstan's Oil Boom***

Background Paper No. 9:
**Sustainable Development and
Diversification in Kazakhstan -
The Central role of Telecommunications
and ICT: Priority Actions**

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Executive Summary

- The Information and communications technologies (ICT) are particularly important to sustainable development and diversification in Kazakhstan.
- For a modern economy to be sustainable and diversified there is no alternative to the widespread diffusion and application of ICT to all forms of business, civil and government activities, failure to do so is to be excluded from modernity.
- The single most important element of ICT is the telecommunications (electronic communications) infrastructure providing the central networking function which links separate activities within Kazakhstan and the wider regional and global economy.
- ICT and electronic communications are central to productivity, competitiveness, growth, and the knowledge-based economy
- There is not enough “electronic communications infrastructure” in Kazakhstan and its quality is not adequate to fulfill the aspirations of the country. Kazakhstan substantially lags its competitors in access to electronic communications infrastructure.
- The challenge to Kazakhstan is to expand dramatically its electronic communications infrastructure in terms of density, coverage and quality.
- *Self-imposed* restrictions in supply (exclusive rights, foreign ownership restrictions and administrative barriers to entry) limit ICT diffusion and impede sustainable development and diversification. These restrictions also raise prices for all customers and reduce the competitiveness of businesses
- The dominance of KT means it must carry the entire burden of meeting the electronic communications infrastructure requirements of the country. Consequently domestic Kazakh capital faces a heavier burden than competitors in fulfilling demand for electronic communications infrastructure and this flows through into the national economy.
- International experience demonstrates that lifting all restrictions by fully liberalizing the electronic communications market produces a significant decline in prices for all groups of customers, a and substantial growth in market revenues, investment and access.
- In order to Kazakhstan to meet these challenges and fulfill its aspirations for sustainable development and diversification the current action plan needs to be re-worked and compressed. In particular the priority action plan should have 2 main pillars:
 - The re-invention of Kazakh Telecom as a world class competitive operator
 - The effective implementation of a 21st century regulatory environment that promotes sustained private investment, competition and accelerated growth in access and supports the sustainable development and diversification objectives of Kazakhstan
- Regarding the regulatory environment pillar the following priority actions (provided for by any necessary legal instruments) need to be undertaken before 2005:
 - The firm declaration of the expiry of all exclusive rights by 2005 and the amendment of the WTO offer

- The establishment of a credible independent regulator for the sector
- The progressive but rapid re-balancing of tariffs, initially based on a benchmarking exercise
- The establishment of obligatory standard interconnection offer initially based on a benchmarking exercise
- The establishment of light touch licensing or authorization procedures to promote the rapid market entry in service and infrastructure provision without any Universal Service Obligation
- Once the market has been liberalized the authorities can better judge the need for initiatives related to Universal Service. In a competitive environment it is possible to devise innovative and cost effective approaches to Universal Service and Access that promote competition and high service levels.
- Spending the 2004 budget allocations for universal service provision should, therefore, follow rather than precede liberalization. Some of the current allocation could be usefully redirected to finance preparatory work and the further strengthening of the regulator (e.g., interconnection, and tariff rebalancing).
- The World Bank is ready to provide further support to the authorities in the further development and implementation of the telecommunication program, whose implementation is essential for the fulfillment of Kazakhstan's ambitious objectives of diversification and competitiveness in non-oil sectors. A mission to discuss this paper and to provide support to the relevant government agencies and agree on next steps could be launched over the next 4-6 weeks.

Sustainable Development and Diversification in Kazakhstan

The Central role of Telecommunications and ICT

Context

1. The Information and communications technologies (ICT) are found everywhere in the manufacture of products and the delivery of services. Even the humble apple will have its history from orchard to supermarket shelf recorded in ICT. Increasingly, ICT is embedded in many products. The ICT telemetry, sensing, monitoring and control functions seen in Formula One Racing are or will be available in standard BMW, Jaguar, Mercedes and Renault production cars. The importance of ICT is well recognized in Kazakhstan.

2. The ICT are particularly important to sustainable development and diversification in Kazakhstan. For example the OECD comments “Scientific advances and technological change are important drivers of recent economic performance. The ability to create, distribute and exploit knowledge has become a major source of competitive advantage, wealth creation and improvements in the quality of life. Some of the main features of this transformation are the growing impact of information and communications technologies on the economy and on society; the rapid application of recent scientific advances in new products and processes; a high rate of innovation across OECD countries; a shift to more knowledge-intensive industries and services; and rising skill requirements.”¹

3. For a modern economy to be sustainable and diversified there is no alternative to the widespread diffusion and application of ICT to all forms of business, civil and government activities, failure to do so is to be excluded from modernity. Poland, which is not best in class, provides an example of the contribution of ICT to development (see attached Annex) where the diffusion of ICT in SMEs and even micro-enterprises is growing and giving rise to a new pole of economic development and diversity.

4. The single most important element of ICT is the telecommunications infrastructure providing the central networking function which links separate activities within Kazakhstan and the wider regional and global economy. EU Commissioner Liikanen vividly explains telecommunications or electronic communications as they are called in the EU:

5. “The sector of electronic communications is important in its own right. It employs about one and a quarter million people(in the EU)]. It has a turnover of over €200 billion in 2002, which represents more than 2.5% of European Union GDP. But the sector is also of fundamental importance to the full development of the knowledge-based economy. It offers the potential for organizations to make best use of their investment in information technology; realize productivity gains; improve quality and create opportunities for greater social inclusion” and “Electronic communications are a powerful engine for growth, competitiveness and jobs. Actions must be taken now to consolidate this strength

¹ OECD, (2000), “Policy Brief: Science, Technology and Innovation in the New Economy”, Paris, Organisation for Economic Co-operation and Development.

we have in Europe”.² These views are reflected in the “Innovation Industrial Development Strategy” of Kazakhstan.

6. The Commissioner’s key words are “productivity, competitiveness, growth, knowledge-based economy”. Here there is a serious problem – there is not enough “electronic communications infrastructure” in Kazakhstan and its quality is not adequate to fulfill the aspirations of the country. Kazakhstan substantially lags its peers in access to electronic communications infrastructure (see Table 1 and Chart 1 and 2 in Annex).. A report by UNCTAD³ ranked Kazakhstan 166th of 180 countries in 2000 on its ICT Development index. In these circumstances Kazakhstan will not achieve its development and diversification objectives.

7. The challenge to Kazakhstan is to expand dramatically its electronic communications infrastructure in terms of density, coverage and quality. This is recognized in Kazakhstan but the challenge is being addressed in slow motion and without broad involvement of the private sector.

Sharing the burden

8. While the mobile market is growing Kazakh Telecom (KT) is very dominant in the fixed market where it holds exclusive rights in long distance and international communications until a distant 2008 according to the proposed WTO offer. These exclusive rights impinge on the mobile sector and influence the development of the mobile sector especially since KT is a prominent shareholder in the leading GSM operator.

9. The dominance of KT means it must carry the entire burden of meeting the electronic communications infrastructure requirements of the country. Consequently domestic Kazakh capital faces a heavier burden than competitors in fulfilling demand for electronic communications infrastructure and this flows through into the national economy. For example if the ICT sector requires 100 units of investment but domestic capital can only provide 30 units there is a 70 unit shortfall. The shortfall can be filled by foreign capital but if there are foreign ownership restrictions (of say 49%) domestic capital can provide 30 units, foreign capital can provide a matching 30 units and there is still a shortfall of 40 units. All restrictions on foreign ownership limit supply and retard development. *Self-imposed* restrictions in supply limit ICT diffusion and impede sustainable development and diversification.

10. Restrictions on entry (e.g. exclusive rights, administrative barriers), ownership and foreign entry influence the prices charged by telecommunications operators –

² Speeches of Commissioner Erkki Liikanen, Telecommunications Council, Brussels 27 March 2003 and Swiat Telekomunicacji Synposium, Warsaw, 31 March 2003
http://europa.eu.int/comm/commissioners/liikanen/index_en.htm

³ Source: UNCTAD, (2003), “Information and Communication Technology Development Indices”. United Nations, New York.

restrictions provide opportunities for ‘rent’ seeking and inflated costs and as a consequence economic development and social inclusion are stunted.

11. The following table, focusing on Turkey, where the incumbent held exclusive rights, indicates the order of magnitude of domestic and foreign ‘price effects’ (how much higher prices are as a consequence of the restrictions in telecommunications). All EU countries record 0% or 1% price effect unless included in the table.

Price Effect of Trade Restrictions in the Telecommunications Sector

Country	Domestic Price Effect %	Foreign Price effect %
Greece	3	6
Hungary	6	13
Ireland	1	3
Portugal	4	6
Poland	11	20
Spain	2	4
Turkey	20	34

Source: Warren, T. “The impact on output of impediments to trade and investment in telecommunications services”, in Findlay, C. and Warren, T. (eds) (2000), *Impediments to Trade in Services: Measurement and Policy Implications*, Routledge, London & New York.

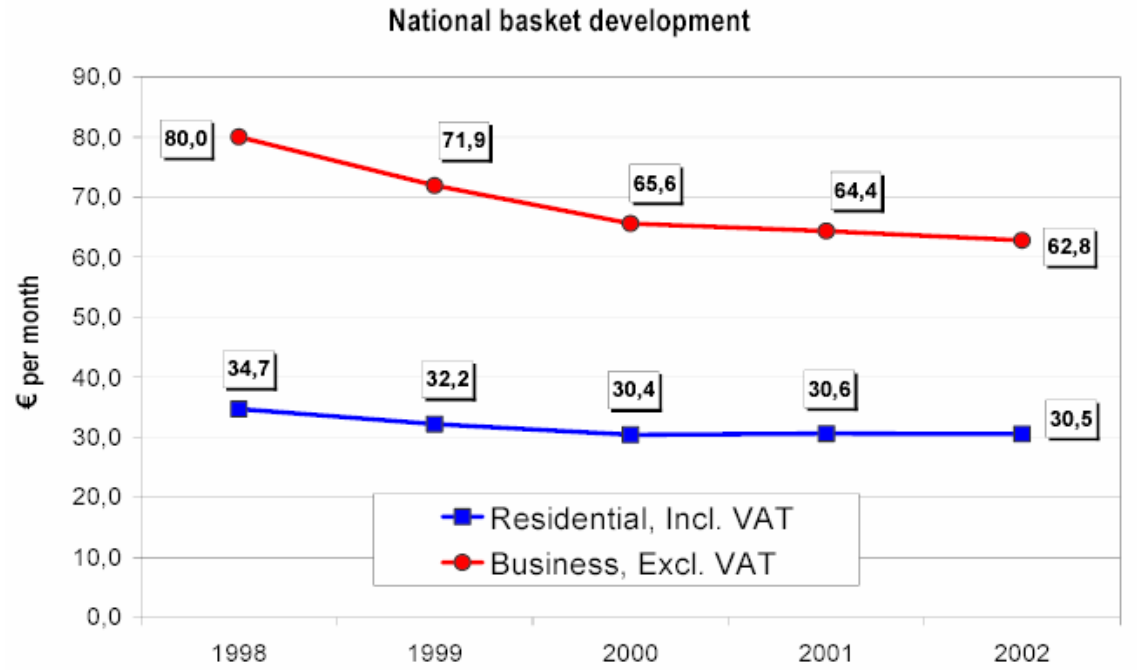
12. Those EU member states included in the table still retained restrictions in the sector at the time of the study and recorded price effects, the other member states had largely lifted all restrictions and recorded zero or negligible price effects. It is likely that Kazakhstan is experiencing a price effect similar to that of Turkey. The consequences for the competitiveness of Kazakhstan are clear.

Sharing the burden - the EU and OECD experience

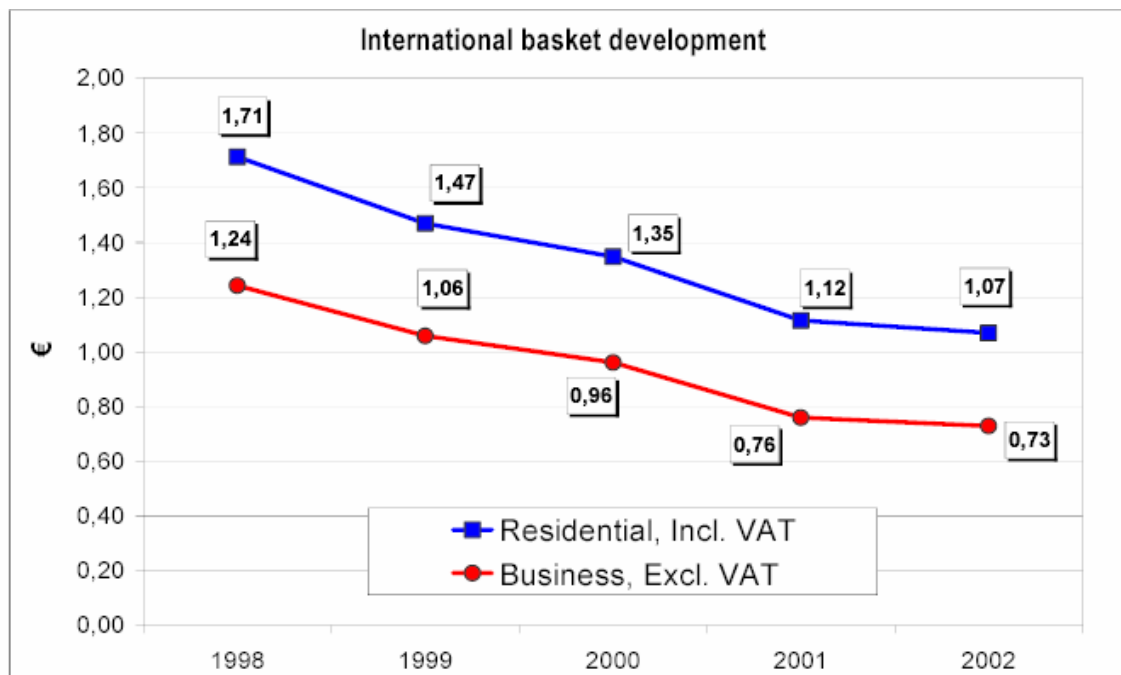
13. In 1998⁴ the EU fully liberalized its telecommunications markets, that is lifted the restrictions on market entry. As consequence the burden of providing electronic communications infrastructure was shared between the incumbent and large numbers of new entrants. What happened?

14. The following 2 charts illustrate the impact on national and international tariffs for residential and business customers.

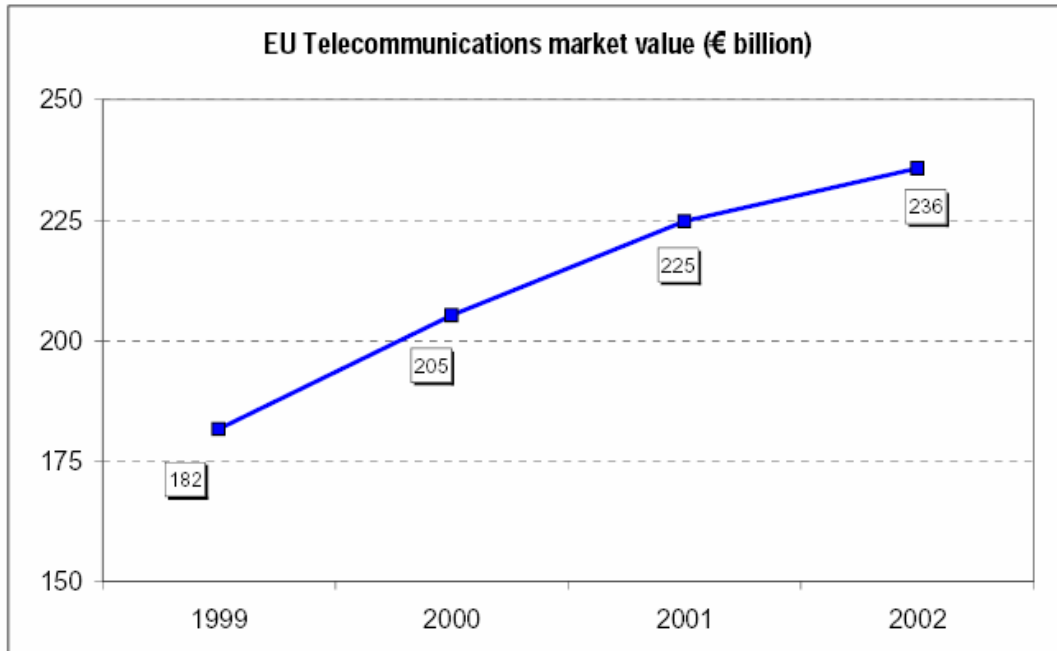
⁴ Several countries liberalized their markets will before 1998.



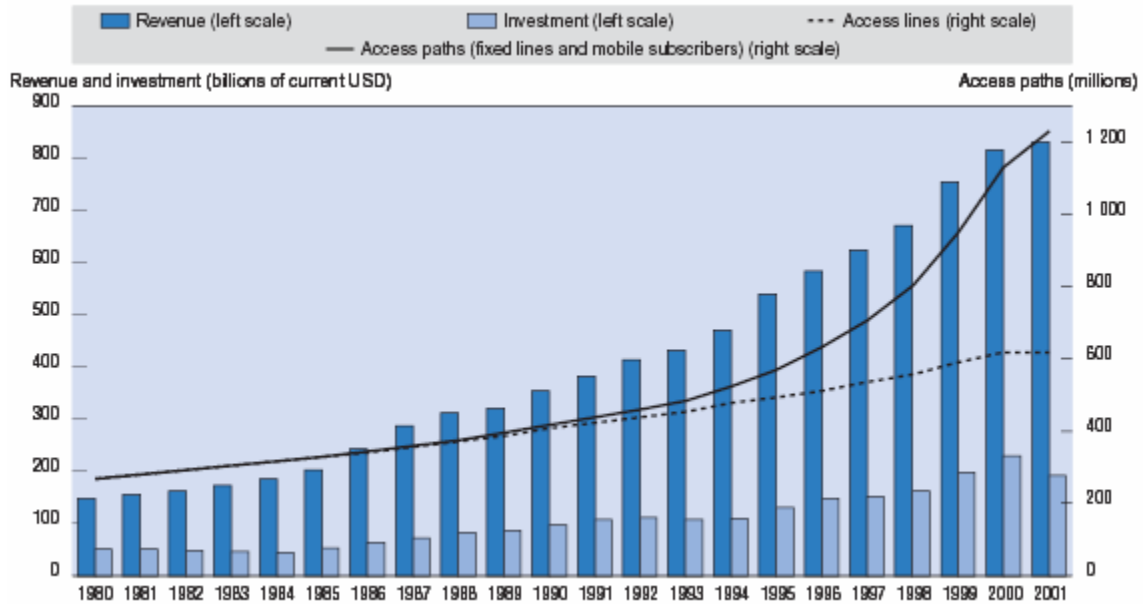
15. The substantial decline in tariffs for businesses had a very positive impact on the competitiveness of EU companies big and small. The EU has now set itself the target of becoming the most competitive knowledge based economy in the world by 2010 largely as a result of the initial burden sharing liberalization. More importantly, revenue in most incumbent operators not always decreased as growing levels of use compensated falling prices.



16. The holders of exclusive rights often perceive burden sharing, competition and liberalization as a zero sum game. In many instances they try to delay competition, obstruct new entrants, new technology and deny benefits to customers. But as the following chart demonstrates this is a false perception – the EU market exploded post-liberalization.



17. The experience of the OECD countries provides further evidence of the market benefits of burden sharing liberalization. Over the period 1980 to 2001 – when nearly all OECD markets were opened to competition. Revenues, investment and access all grew significantly. The message to Kazakhstan is **grow the market** to the benefit of all players customers and economic development.

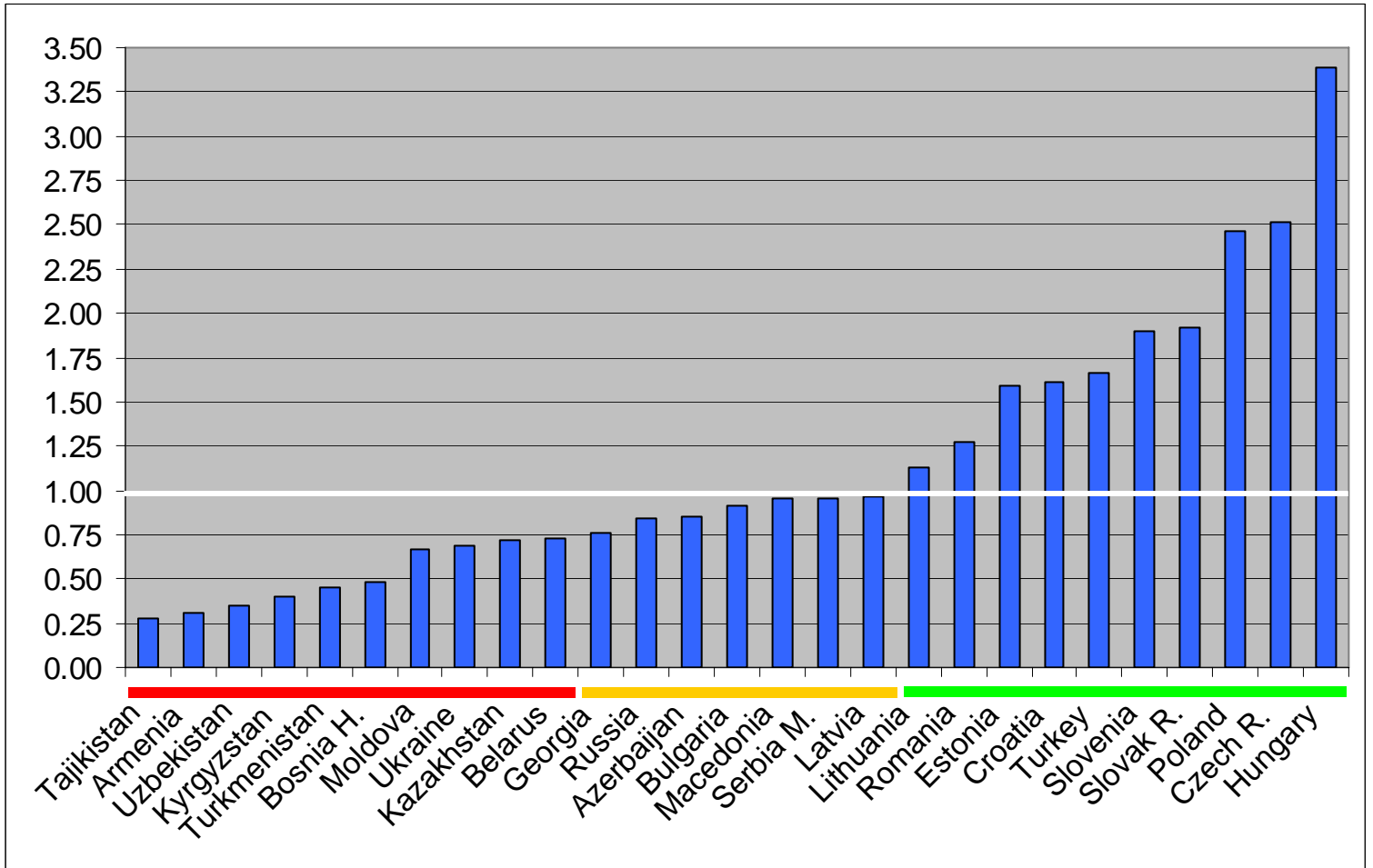


Strategic Priority Action Plan

18. The extent to which Kazakhstan must accelerate growth in access to electronic communications infrastructure to sustain its development objectives is illustrated by the following chart. This benchmarks Europe and Central Asia countries against the overall EU growth rate in access between 1990 to 2002 which is set at 1.00. Countries above 1.00 grew faster than the EU average growth rate – and Albania has been excluded since its growth rate is off the scale at 6.70. Kazakhstan is in the group below 1.00 and while it compares favorably in the region, the performance of Kazakhstan will not win any gold medals in the ICT Olympics and will not support the successful sustained development and diversification of the Kazakh economy.

19. The “Programme for Kazakhstan Telecoms Sector Development for 2003 to 2005” – (the Action Plan) needs to be reworked and compressed in order to accelerate growth in access, produce a positive sum game for all players, businesses, the telecom sector and customers and share the burden. Turkey liberalized its telecommunications market in January 2004, Serbia will be the last European operator to do so in 2005 – the Kazakhstan date of 2008 cannot be justified and the date of 2005 as foreseen in the action plan should be firmly adopted.

Total Penetration Rate Growth in ECA Related to EU (1990 to 2002)



20. The action plan must adopt as its objective the full liberalization of the sector by 2005 with a second action plan to cover the details post 2005. The priority action plan should have 2 main pillars:

- The re-invention of Kazakh Telecom as a world class competitive operator
- The effective implementation of a 21st century regulatory environment that promotes sustained private investment, competition and accelerated growth in access and supports the sustainable development and diversification objectives of Kazakhstan

Re-inventing Kazakh Telecom

21. KT appears to be a solid company with no problems since it is one of the most profitable in the world. But this is possibly a false impression reflecting not the efficiency of the company but the market power and exclusive rights of the company. With a target of liberalization set at 2005. KT should consider employing consultants to develop and implement a modern business plan to position KT as a super-efficient high technology operator in a fully competitive market place.

22. The re-invented KT should be a willing supporter of full competition recognizing the financial benefits it will bring. For example, the customers of new entrants will call the customers of KT and vice versa thereby generating new call revenues and interconnection payments. The size of the interconnection market can be large. For example in 2000/01 in the UK “inland calls” (local and long distance) generated a turnover of 3.4 billion pounds and “outgoing internal calls” generated 1.2 billion pounds. But “interconnection” generated 6.5 billion pounds of revenue (in a total market for all telecommunications of over 40 billion pounds). To say “no to competition” is to say “no to good business”. Re-inventing the culture of KT will be an important task for the suggested consultants.

23. The re-invention process needs to be supported by the effective implementation of a 21st century regulatory environment which in particular allows for the progressive yet rapid re-balancing of time metered tariffs using international benchmarks for guidance (see below). Liberalization will allow the market to contribute to the provision of the Universal Service sharing the burden with KT. In these circumstances KT will be a more willing player.

21st Century Regulatory Environment

24. It takes time to implement in full a 21st century regulatory environment. But if Kazakhstan waits for perfection it will drift into obscurity. The current action plan foresees the progressive liberalization of the market in a step wise fashion where movement from one step to another is only undertaken once all the activities in the first step are completed. This is a recipe for delay especially since some of the tasks listed have taken other countries many years to resolve. For instance, separate cost accounting

and allocation has proved to be beyond the capabilities a large number of telecoms operators in a short time period.

25. The following priority actions (provided for by any necessary legal instruments) need to be undertaken before 2005:

- The firm declaration of the expiry of all exclusive rights by 2005 and the amendment of the WTO offer
- The establishment of a credible independent regulator for the sector
- The progressive but rapid re-balancing of tariffs, initially based on a benchmarking exercise
- The establishment of obligatory standard interconnection offer initially based on a benchmarking exercise
- The establishment of light touch licensing or authorization procedures to promote the rapid market entry in service and infrastructure provision without any Universal Service Obligation

26. Once the market has been liberalized the relevant authorities can better judge the need for initiatives related to Universal Service. In a competitive environment it is possible to devise innovative and cost effective approaches to Universal Service and Access that promote competition and high service levels.

Credible Independent Regulator

27. Twenty years ago in Europe there were no independent telecommunications regulators. The responsible ministry, the state owned telephone company, the standards and certifications bodies were largely indistinguishable and people moved from one department to another. The introduction of competition in the supply of services and infrastructure changed this system. New entrants required assurances that they would be treated impartially, that there would be no favoritism for the state owned company and that they would not experience any discrimination. It is largely these concerns that have driven the development of independent telecommunications regulators. The same concerns will prevail in Kazakhstan – if the country wishes to fulfill its development objectives it must establish a credible independent regulator in order to encourage large scale private investment. The regulator must be credible to market players. Also the independence of the regulator needs to be balanced with accountability.

28. The WTO requires that the telecommunications regulator is independent of the operator, which means where there is a state owned operator the regulator cannot report to or be accountable to the same ministry which supervises the state owned operator. However, the WTO requirement is the lowest common denominator – reflecting a consensus between a large number of countries with very different perspectives on competition, liberalization and independence. The EU has gone much further and set the standard for independent telecommunications regulators.

29. Effective and credible regulation requires a substantial degree of independence of the regulator from political influences, especially on a day-to-day or decision-by-decision basis. The agency must be an impartial, objective, nonpolitical enforcer of policies set forth in the controlling statutes, free of transitory political influences.

30. Clearly, absolute independence of these regulatory agencies is neither possible nor really desirable. “Independent” telecommunications regulators are not out of control. The executive branch must ensure that the regulators it appoints implement the policy of the government. However, regulators need insulation from political intervention, so that the regulatory process is not politicized, its decisions are not discredited, and the policy of the government is implemented. Clearly, a balance is needed to ensure that the regulator is both independent and responsive to the broad policies of the elected government. Several formal safeguards can be implemented to achieve such a balance:

- Providing the regulatory agency with a distinct statutory authority, free of ministerial control
- Prescribing well-defined professional criteria for appointments
- Mandating the participation of both the executive and the legislative branches of government in the appointment process
- Appointing regulators for a fixed period and prohibiting their removal, except for clearly defined due cause (subject to formal review)
- Staggering the terms of the agency’s board members so that they can be replaced only gradually by each successive administration
- Funding the agency’s operations with user fees or levies on the regulated industry, to insulate it from political interference through the budget process
- Exempting the agency from civil service salary caps, to enable it to attract and retain well qualified staff
- Prohibiting the executive from overturning the agency’s decisions, except through new legislation or appeals to the courts on existing law.

31. The above should form the primary tasks, together with capacity building in the regulator, for the authorities in Kazakhstan for the immediate future.

Benchmarking Tariffs and Interconnection

32. The establishment of methodologies, and the economic analysis of relevant costs and rates of return is a particularly difficult and time consuming exercise. However, while labor costs differ from country to country, the costs of technology and approximately the same across the world. In these circumstances it is justifiable to use international benchmarks to derive a first approximation of tariff levels and interconnection charges which can be adjusted at a latter date once appropriate methodologies and data have been agreed.

Charts 3 to 8 in Annex provide benchmarks for tariffs for EU accession and candidate countries together with EU averages. Charts 9 to 15 in Annex provide similar

benchmarks for interconnection. In the first instance these benchmarks should be used to guide tariff and interconnection setting in Kazakhstan.

33. Noticeably, for local, long distance and some international calls the charges in EU accession and candidate countries are very similar to EU average rates. The most important exceptions are monthly access charges and calls to the USA. The similarity exists despite the variance in labor costs between the EU and the other countries. However, the biggest challenge, as in Kazakhstan will be to re-balance monthly access charges.

34. In this context some consideration should also be given to encouraging tariff packages and special low user tariffs. The latter may involve lower monthly access charges but higher usage charges.

35. With respect to interconnection there is less convergence with EU average rates. Nevertheless, the benchmarks provided can provide guidance in interconnection charge setting by indicating ranges of charges for a reference interconnection offer.

Licensing and Authorization

36. In order to accelerate growth in access to electronic communications a light touch approve to granting permission must be adopted. Heavily regulated, lengthy form filling processes will present a severe obstacle if not an outright barrier to investors. The EU has adopted such an approach in its new regulatory package. Article 3.2 of the “Authorisation Directive” (2002 (20) EC) defines the process as follows:

37. “The provision of electronic communications networks or the provision of electronic communications services may ... only be subject to a general authorisation. The undertaking concerned may be required to submit a notification but may not be required to obtain an explicit decision or any other administrative act by the national regulatory authority before exercising the rights stemming from the authorisation. Upon notification, when required, an undertaking may begin activity, where necessary subject to the provisions on rights of use in Articles 5, 6 and 7.”

38. And a notification is described as:

“The notification referred to in paragraph 2 shall not entail more than a declaration by a legal or natural person to the national regulatory authority of the intention to commence the provision of electronic communication networks or services and the submission of the minimal information which is required to allow the national regulatory authority to keep a register or list of providers of electronic communications networks and services. This information must be limited to what is necessary for the identification of the provider, such as company registration numbers, and the provider's contact persons, the provider's address, a short description of the network or service, and an estimated date for starting the activity.”

39. Where Article 2.2 provides the following definition of an authorization:

“general authorisation means a legal framework established by the Member State ensuring rights for the provision of electronic communications networks or services and laying down sector specific obligations that may apply to all or to specific types of electronic communications networks and services, in accordance with this Directive.”

40. The authorization process is one of the key instruments used by the EU to promote itself as the most competitive knowledge based economy because it eases private investment in electronic communications. Individual licenses are still required where national resources are scarce (for example radio spectrum) but otherwise entry is obtained with minimum bureaucratic hurdles.

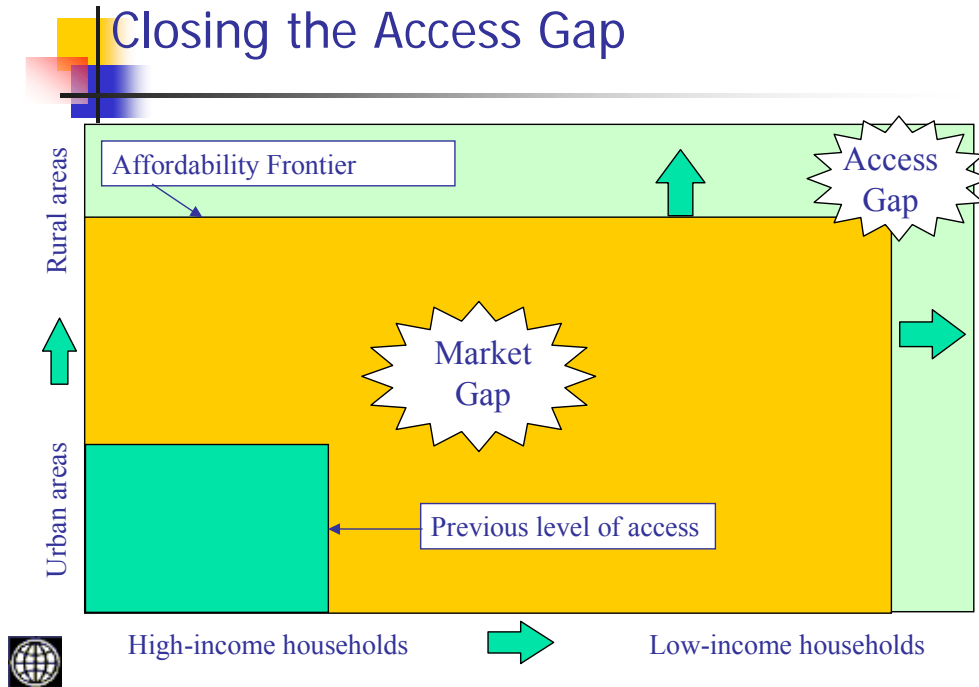
41. The authorities in Kazakhstan should adopt a similar approach as a priority to support its sustainable economic development and diversification aspirations.

The “Smart Subsidy” Approach to Universal Access

The Access Gap

42. Two forms of “access gap” can be identifiedⁱ as illustrated in the figure below: “market gap” and “pure” access gap. The first of these is the gap that results because a monopoly is in place and the forces of competition are not allowed to make their full contribution to close it (see “previous level of access” in the figure). The second kind of gap is because some customers cannot afford the access provided by market forces owing to low income or location (e.g., the rural poor). In response to this kind of gap, public intervention may be justified.

Closing the Access Gap



43. When the telecommunications market is effectively and fully liberalized, it will start to make its full contribution to the provision of access to commercial customers, particularly when the required regulatory environment is in place. However, the “pure access gap” will persist as a function of income distribution and demand, which raises the question: should the state intervene?

44. Frequently a Universal Service Obligation (USO) is imposed on an operator with Significant Market Power (SMP) in order to ensure that the access gap is closed. It is normal practice to undertake an exercise to determine the net cost (taking account of the benefits and cost) to the operator designated as SMP and then to design a system to share these costs among appropriate market players.

45. Alternatively, as proposed here, policy can be directed at an interim solution of “Universal Access” to facilitate the availability of a wide range of ICT services, including the Internet, at public access points or tele-centers in targeted communities where there is a pure access gap. This approach can be refined to include “smart subsidies” and to allow for local private or municipal participation in the operation of public tele-centers. The “smart subsidy” approach is described below.

The Concept

46. The smart subsidy concept can be outlined as follows:

- Aims to mobilize private entrepreneurship and investment to supply services;
- Focuses on providing public access to voice services, computers, the Internet, and other ICT services through telecenters (or cyber cafés) in rural and low-income urban areas on a commercial basis by charging fees for services;
- The range of services and ICT available on a shared basis is wider than available on an individual, "at home" basis;
- Allows public or quasi-public agencies to become important commercial clients or partners in the tele-center;
- Encourages local entrepreneurs to manage and have a stake in the tele-center as well as forming partnerships with bigger industry players; and
- Recognizes that in certain circumstances a tele-center providing universal access may not be commercially viable and that a subsidy may be required for a portion of the start-up and investment costs.

47. The subsidies are allocated in the following manner:

- The licensing authority defines a level of service for a defined geographic territory for a set period (say, 10 years) and issues an invitation to bid for a one-time subsidy;
- Bidders are allowed to make their own technological choices;
- Bidders calculate their required subsidy on the basis of expected income streams from fees, capital, and operational expenditure;
- Bidders may find additional individual, commercially attractive customers in the territory who may be reached for a small incremental cost once the public access points are in place. Bidders will take account of these extra commercial opportunities when calculating the required subsidy;
- The required subsidy is an amount that is just sufficient to make the tele-center commercially viable—it is not a full subsidy;
- The bidder requiring the lowest subsidy is declared the winner and is obliged to provide the defined level of service over a specified period of time on a commercial basis;
- The disbursement of the one-off subsidy is linked to operational performance indicators regarding the establishment of the public access points; and
- The bidding ensures that the subsidy is minimized and generates substantial private investment.

Smart Subsidies for Rural Access in Latin America

48. Smart subsidies have been used to stimulate private investment in Latin America. It should be noted that the level service and access in these initiatives is less sophisticated than is proposed for Kazakhstan.

49. The Table below illustrates the size of subsidies involved, the number of localities covered, and the subsidy per locality. The “maximum subsidy available” indicates the sums set aside for the purpose, based on the estimated subsidy amount before the competitive bidding process. In the majority of cases the subsidy allocated after the

bidding process was less than the sum available. Financing was through the government budget, levies on the revenues of operators, or funds generated by auctioning off the radio spectrum. (Financing from EU Structural Funds or similar mechanisms is not available in Latin America.)

Smart Subsidies in Latin America

<i>Country</i>	<i>Source of finance</i>	<i>Period</i>	<i>Localities served</i>	<i>Maximum subsidy available (US\$M)</i>	<i>Subsidy given (US\$M)</i>	<i>Subsidy per locality</i>
Chile	Government budget	1995–97	4,504	24.2	10.2	2,256
		1998–99	1,412	14.4	9.8	6,919
		2000	142	1.9	1.8	12,727
Peru	1% operator levy	1998	213	4	1.7	18,800
		1999	1,937	50	11	5,700
		2000	2,290	59.5	27.8	12,100
Colombia	Operator levy and government contribution	1999	6,865	70.6	31.8	4,600
Guatemala	Spectrum auctions	1998	202	NA	1.5	7,587
		1999	1,051	NA	4.5	4,282
Dominican Republic	2% operator levy	2001	500	3.8	3.4	6,800

NA. Not available.

50. The lessons learned in Latin America are that success is highly dependent on:

- Well-designed bidding mechanisms that are easily understood, transparent, and accessible to all potential bidders with a clear statement of minimum service requirements;
- Careful and full preparation by the licensing authority of data on potential market demand, both to establish the maximum available and for inclusion in a "data room";
- A one-stop shop for licenses and radio frequencies (where required) and for multiple license applications, thereby providing new entrants with a clear path into the market;
- Regulatory support for the process, in particular in allowing tariff flexibility (better to have access at a cost than no service at all) and in ensuring adequate and timely interconnection;
- Providing a choice in technology solutions, for example allowing for fixed and wireless technologies;
- Offering training and support services to operators;

- Generating supplier interest (many new entrants in Latin America associated themselves with suppliers of telecommunications equipment; in the case of Kazakhstan this would include ICT suppliers);
- Promoting local stakeholders—usually in conjunction with a bigger player to achieve economies of scale; and
- Monitoring and evaluating results and disseminating best practice.

51. The lessons from Latin America regarding major risks and challenges are as follows:

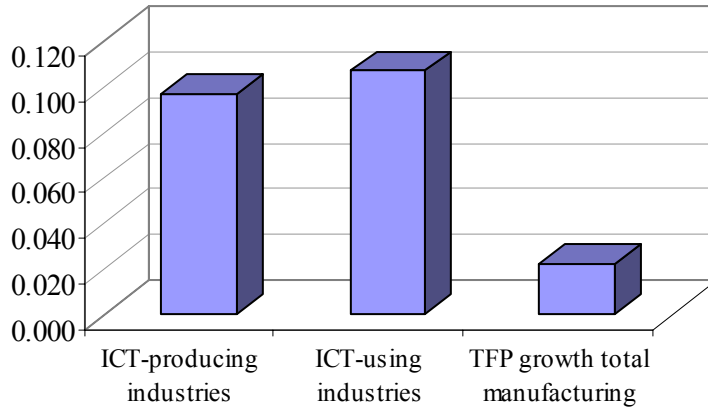
- The bidding process must be sustained through more than one round of bidding. In Chile, the first round for 4,500 localities was the most competitive as bidders sought strategic positions;
- Bidders may have operational inexperience—especially with marketing, customer service, and investment optimization;
- Under-bidding may occur because of inexperience and poor business planning;
- Financial markets may deteriorate, resulting in the need for "senior institution" commitment; and
- The solicitation of bids must be ensured for the more marginal and least viable localities.

52. If adopted in Kazakhstan, it would be prudent to commence smart subsidies with a limited number of carefully considered pilot projects across a range of circumstances both to refine the smart subsidy approach to Polish circumstances and to benchmark the likely subsidies required.

BenchmarkAnnex
The Polish example
ICT use and diffusion in business

Poland illustrates the impact on manufacturing of the increasing use and diffusion of ICT

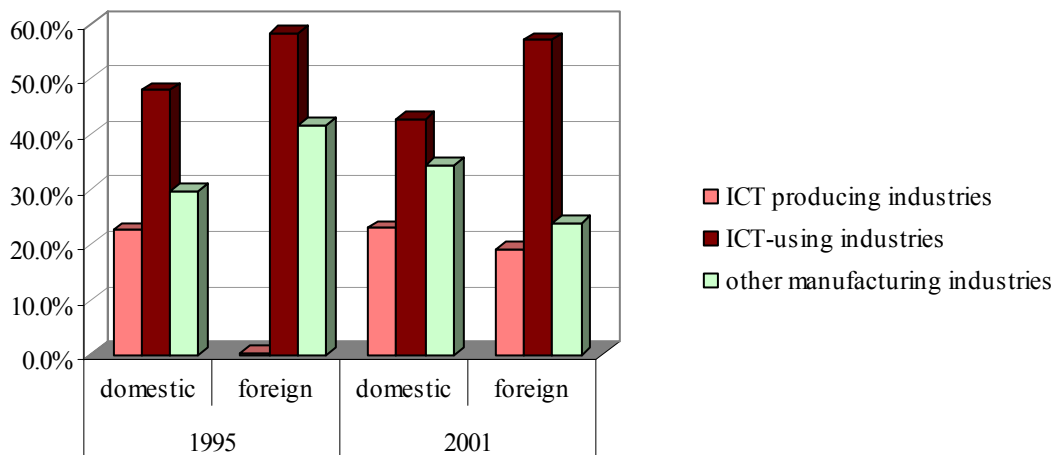
Figure 1 Productivity growth of ICT-producing and ICT-using industries and total factor productivity growth 1994-2000



Source: CASE

ICT-using industries accumulated around 50% of the whole manufacturing technology stock in 2001 (see Figure 2), with foreign firms leading. Together ICT-using industries, and ICT-producing, accumulated over 68% of total manufacturing technology stock. This indicates that productivity of these two groups of industries should be increasing in the near future.

Figure 2 Share of ICT-producing and ICT-using industries in manufacturing technology stock, 1995-2001

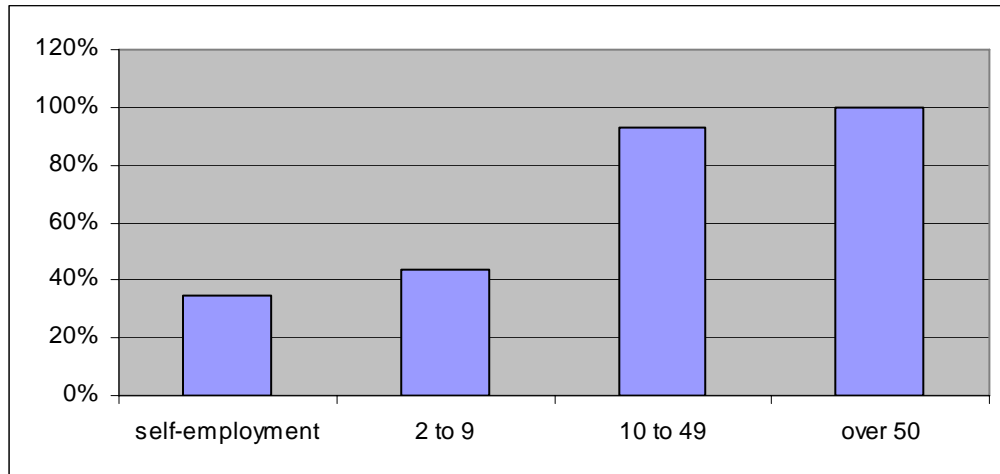


Source: CASE

The diffusion of ICT brought about organizational changes increased total factor productivity growth outside the ICT sector.

All medium and large enterprises in Poland have PCs (see Figure 3). Around 35% of self-employed persons and nearly 50% of micro-enterprises (employing up to 9 persons) have PCs.

Figure 3. Percentage of companies with PCs, by company size (employment)

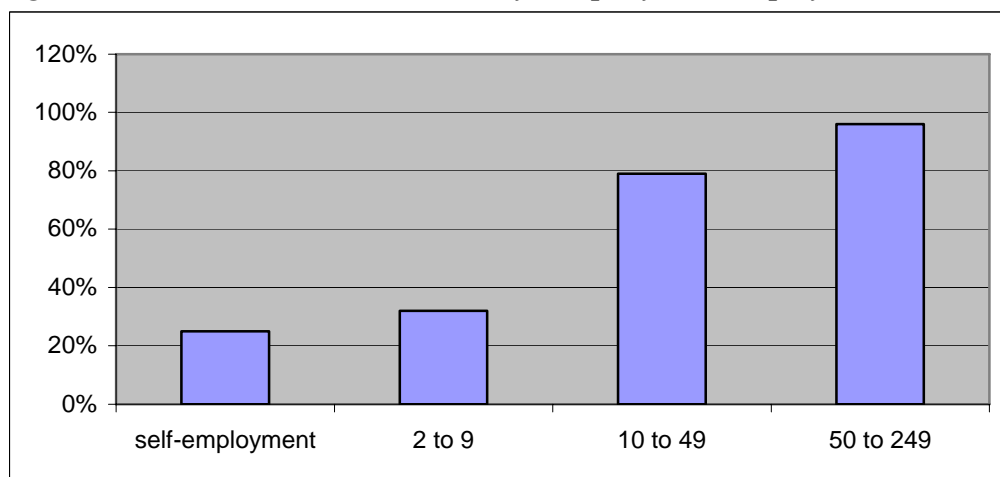


Source: PARP (2003)

The Polish Central Statistical Office reports (GUS 2003), the number of enterprises employing over 49 employees connected to internet was 74.9% in 2002 up from 61.6% in 2000. 54% of all enterprises had web sites, as opposed to 41% in 2000 (GUS 2003).

According to PARP, 25% of the self-employed and 32% of micro-enterprises use the internet, while 79% of small companies and 96% of medium companies are connected with internet (see figure 4).

Figure 4. Access to internet in SMEs, by company size (employment)



Source: Central Statistical Office (2003)

Table 1.
Selected Indicators for Telecommunication Infrastructure – Kazakhstan vis a vis Selected Middle-Income Economies

Countries Indicators	Kazakhstan	Russia	Belarus	Ukraine	Czech Republic	Hungary	Poland	Europe and Central Asia	Lower-middle income
Telephone mainlines per 1,000 people (2001)	113	243	279	212	357	374	295	235	139
Revenue per line, \$ (2001)	147	195	45	146	683	1,017	646	268	288
Mobile phones per 1,000 people (2002)	57	121	47	44	849	646	363	502 ^a	..
Internet hosts per 10,000 people (2002)	10.4	27.9	4.1	14.3	223.2	191.6	170.3	229.7 ^a	..
Memo: Income per capita ^a									
GDP pc.	\$ 1,350	\$ 1,750	\$ 1,290	\$ 720	\$ 5,310	\$ 4,830	\$ 4,230	\$ 1,970	\$ 745 - \$ 2,975

Source: World Bank Development Indicators (2003), International Telecommunication Union.

Symbols: a. . Data are for Europe only (EU accession countries and southern Europe).

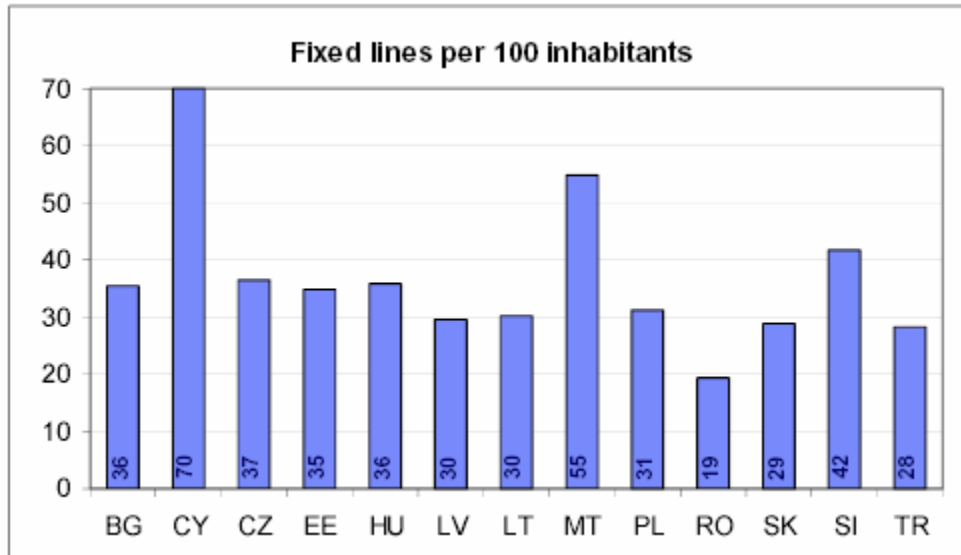
b. Calculated using the World Bank Atlas method in 2001 or 2002.c. Data are for Europe only.

\$ means current U.S. dollars.

.. “.” Means that data are not available or that aggregates cannot be calculated because of missing data in the years shown.

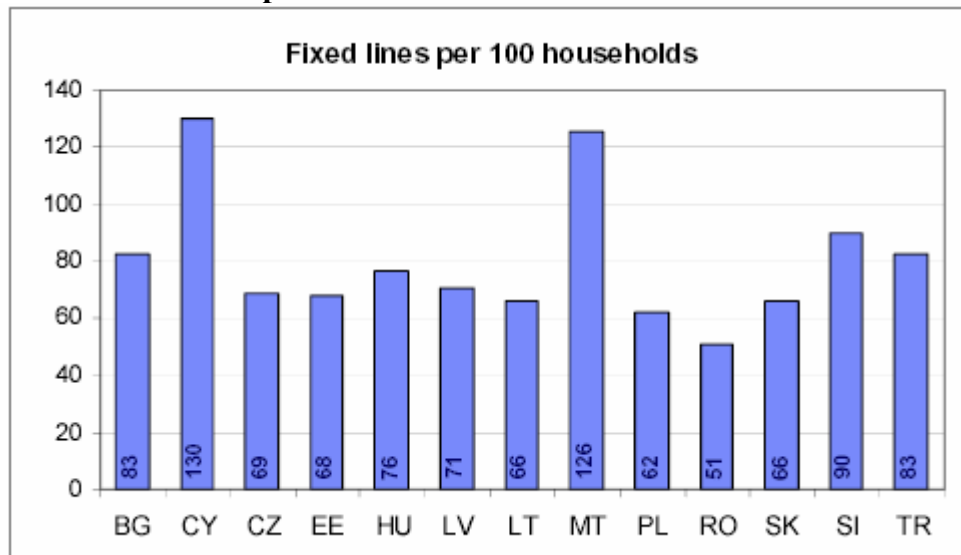
PENETRATION EU Accession and candidate countries

Chart 1 Fixed lines per 100 inhabitants – June 2002



Source: IBM (2002), “2nd Report on monitoring EU Candidate Countries (Telecommunications Services Sector), European Commission, Brussels.

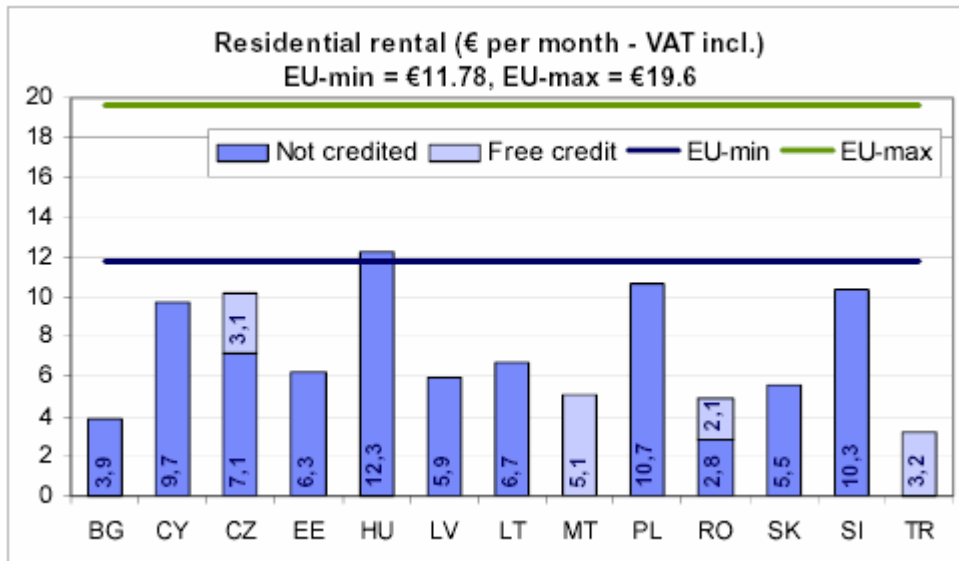
Chart 2 Fixed lines per 100 households – June 2002



Source: as above

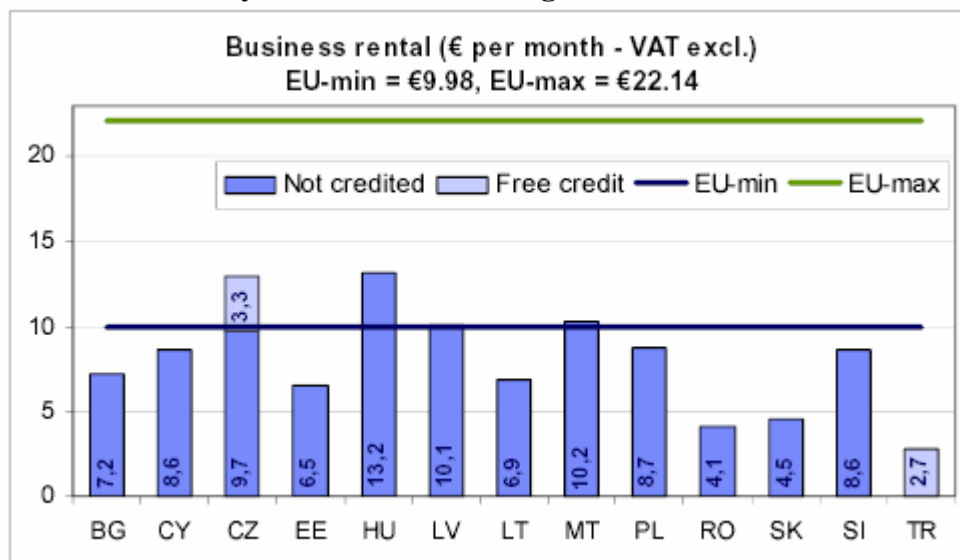
TARIFFS AND CHARGES EU Accession and candidate countries

Chart 3 Monthly residential access charge of incumbent nominal €at 30/6/02



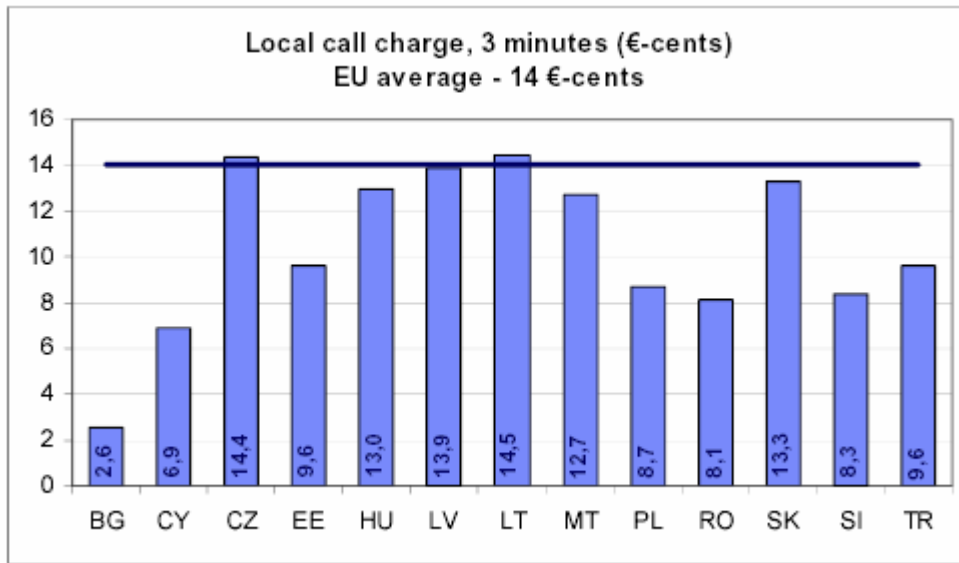
Source: as above

Chart 4 Monthly business access charge of incumbent nominal €at 30/6/02



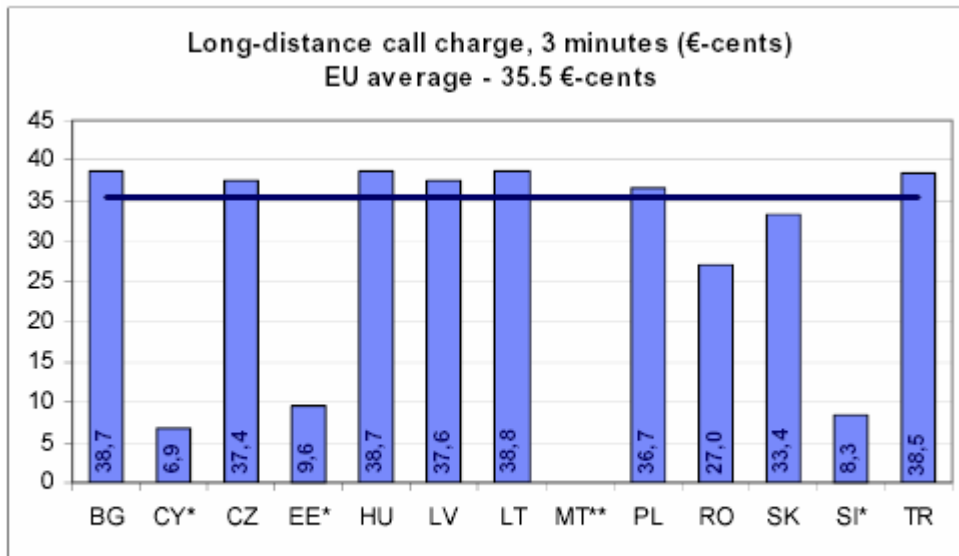
Source: as above

Chart 5 3 minute local call with incumbent nominal € at 30/6/02



Source: as above

Chart 6 3 minute long distance call with incumbent nominal € at 30/6/02

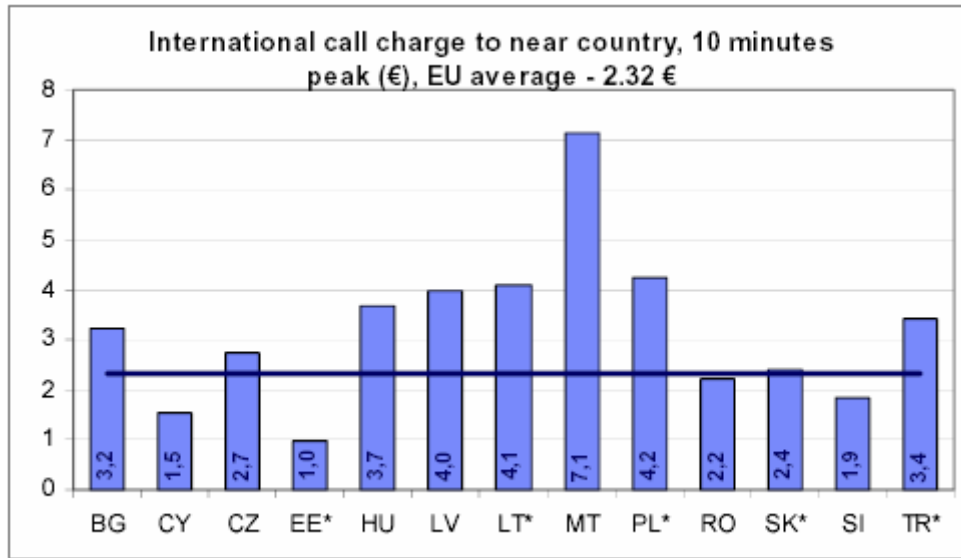


* Local and long-distance charges do not differ due to size of the country

** Not applicable due to geographical size of country

Source: as above

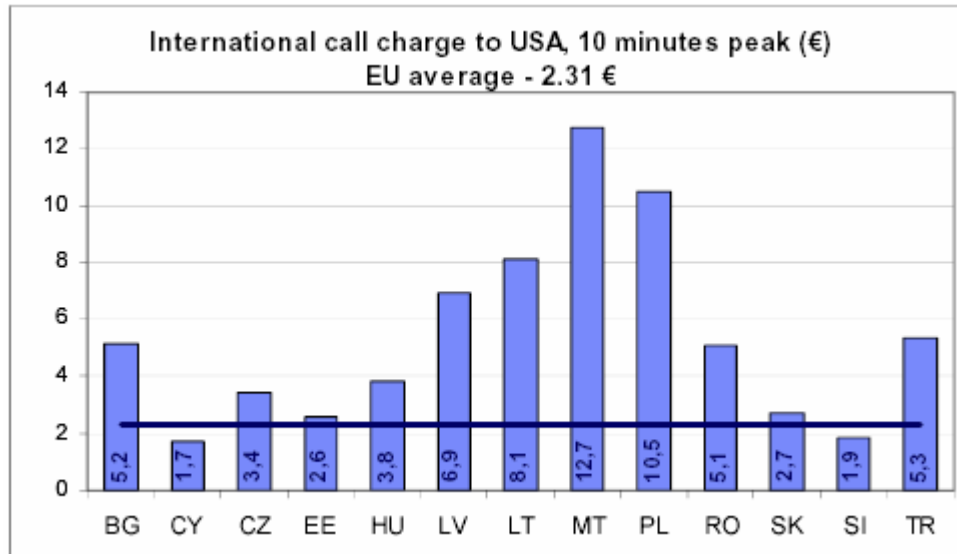
Chart 7 10 minute international call to near country with incumbent nominal € at 30/6/02



* Charges not unified for calls to all near countries, the lowest charge is presented

Source: as above

Chart 8 10 minute international call to USA with incumbent nominal € at 30/6/02



Source: as above

INTERCONNECTION CHARGES EU Accession and candidate countries

Chart 9 Fixed-to-Fixed interconnection charges for call termination on fixed network of incumbent operator – local level as of 30 June 2003

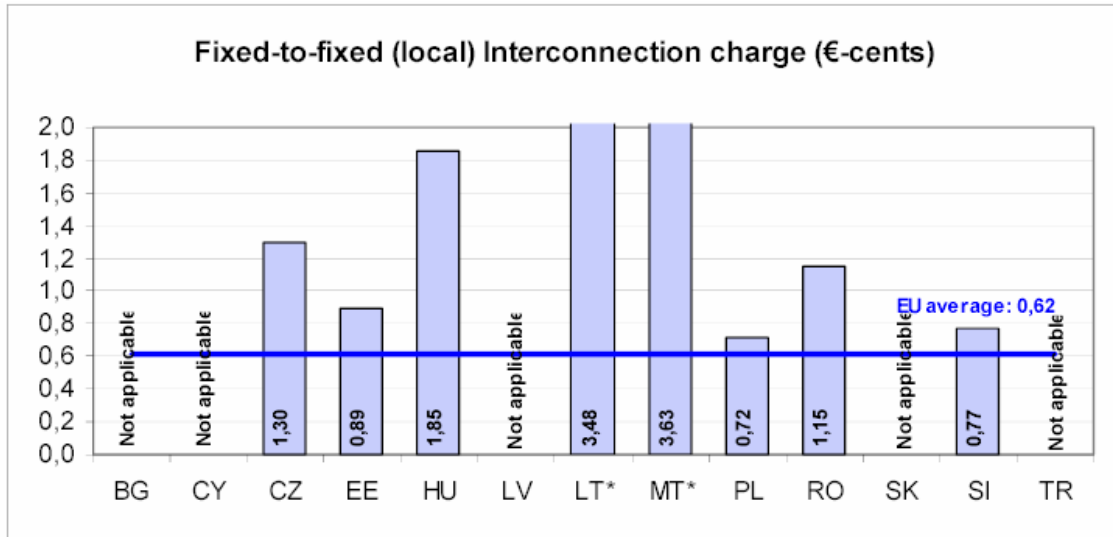


Chart 10 -Fixed interconnection charges for call termination on fixed network of incumbent as of 30 June 2003

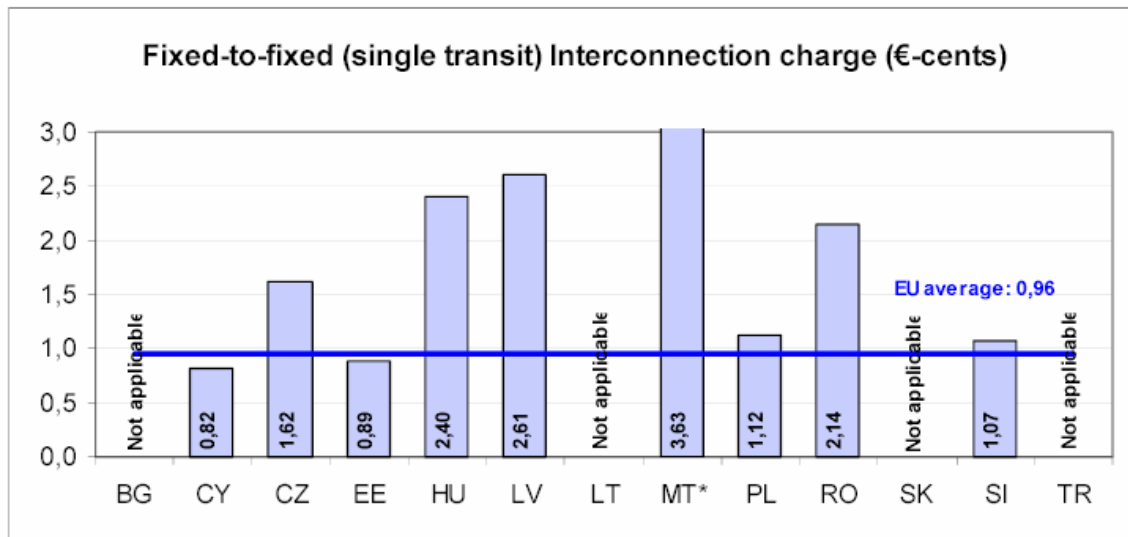


Chart 11 Fixed-to-Fixed interconnection charges for call termination on fixed network of incumbent operator – double transit as of 30 June 2003

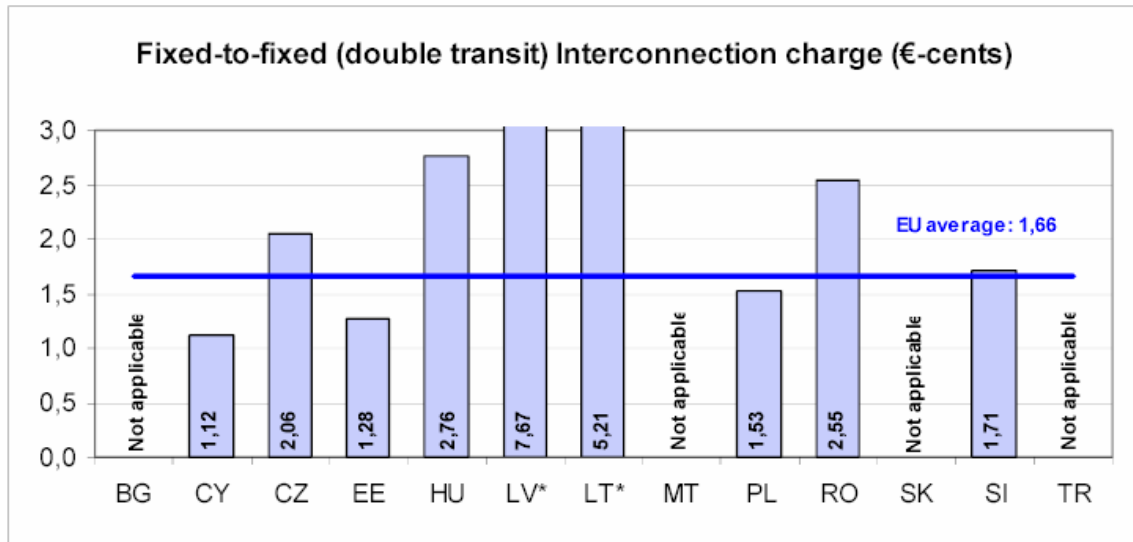


Chart 12 Comparison of fixed-to-fixed interconnection charge (local level and single transit) to the price of a local call

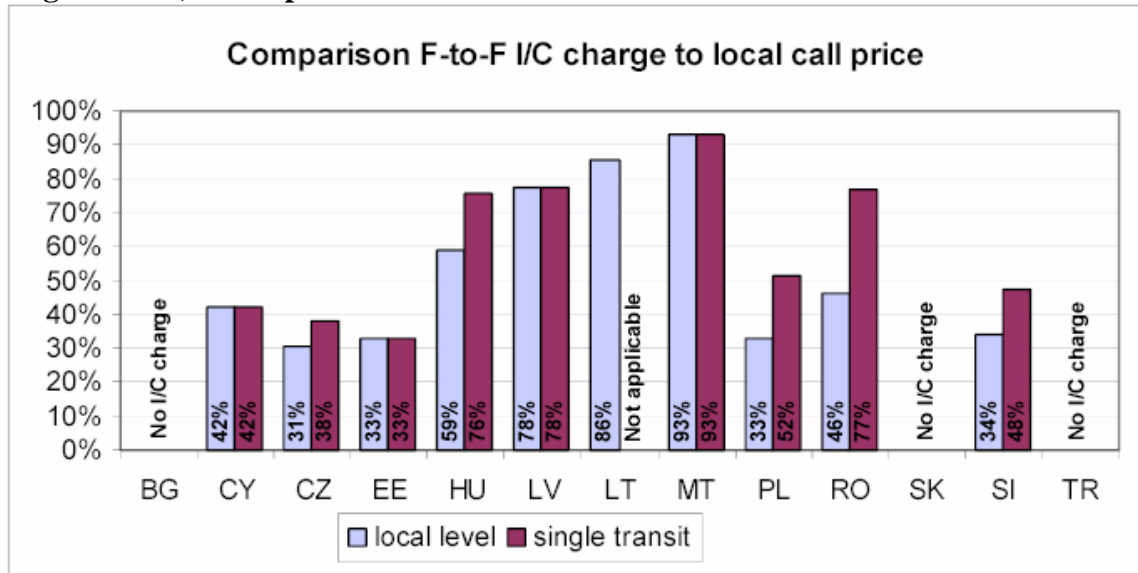


Chart :13 Fixed-to-Fixed interconnection charges for call termination on fixed network of incumbent operator – double transit as of 30 June 2003

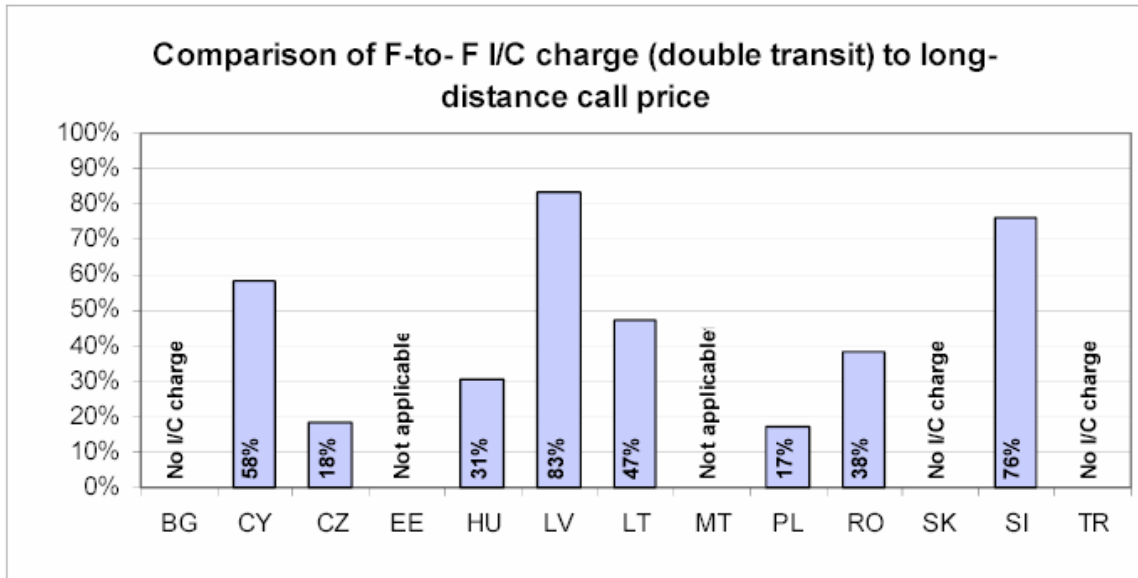


Chart 14 Mobile-to-Fixed interconnection charges for calls from the mobile network terminated in the network of the fixed incumbent operator – double transit as of 30 June 2003

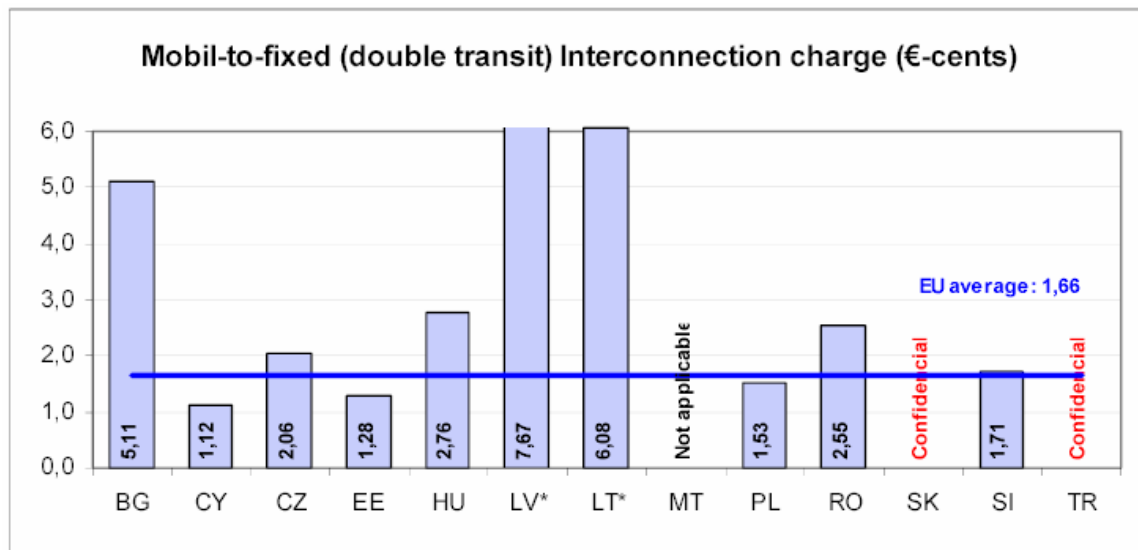
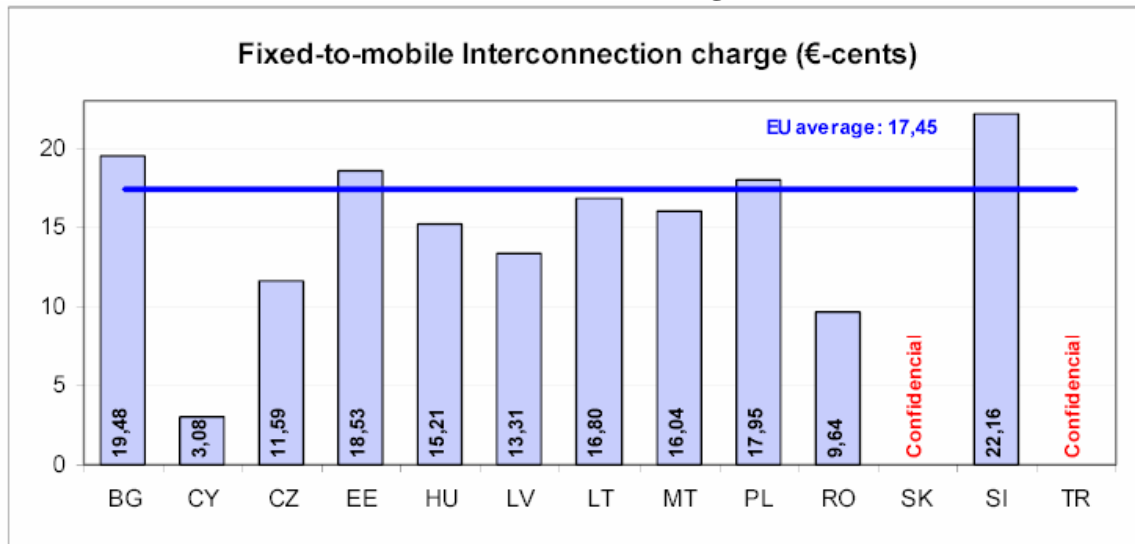


Chart 15 Fixed-to-mobile interconnection charges as of 30 June 2003



ⁱ Navas-Sabater, Dymond, and Juntunen (2002).