

# BEYOND THE INTERNET: RADICAL REFORMER VERSUS SMOOTH TRANSFORMER

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## ABSTRACT

Estonia and Slovenia offer transition and developing countries examples of how to achieve a higher level of Internet diffusion. When comparing these two countries, it becomes clear that a decade ago Slovenia had a much better starting position than Estonia. Whereas Slovenia's smooth transition facilitated the Internet diffusion in that country, the economically less-advanced Estonia achieved a similar outcome in per capita Internet penetration rates. Estonia's large-scale economic liberalization and rapid restructuring of the economy, rather than sector specific policies, have been the most crucial factors in increasing Internet diffusion. A similar outcome in Slovenia is a function of its initial starting position, the wealth effect and a social democratic corporatist bargaining system that has managed to keep the cost of telecom services low. It is important to note that Slovenia is an exception in the context of transition economies. Developing and transition economies have more to learn from Estonia than from Slovenia in increasing their respective level of Internet diffusion.

**Keywords:** Internet diffusion, telecom, liberalization, privatization, transition economies

## 1. INTRODUCTION

Estonia and Slovenia stand out for having the highest Internet penetration rates in Central and Eastern Europe. Considering the recent transformation of the command economy to a market economy in these two countries, their success in the diffusion of Internet poses a challenging political economy puzzle. Estonia has implemented radical economic reforms throughout the 1990s and established a liberal economic regime. Slovenia's transition has been much more gradual and its political economy framework has been strongly influenced by the characteristic features of social democratic corporatism. Why have these two countries with distinctively different paths of transition and political economy systems achieved the same outcome in per capita rates of Internet penetration?

The relevance of the issue is not limited to only Estonia and Slovenia – putting together the pieces of this puzzle can lead to fascinating lessons for other countries by fostering a better understanding of the potential of political and economic factors that enable diffusion of information technology. The paper will outline the key characteristics of the cases of Estonia and Slovenia from a political economy viewpoint; in particular, it will look at their initial starting position, trade policy, foreign direct investment regime, telecom market opening, restructuring the incumbent telecom company and government policies toward the advancement of Internet. An analysis of the differences between the Estonian and Slovenian cases will be followed by policy implications for other countries.

## 2. SMALL IS BEAUTIFUL

Policymakers in the transition and developing countries who aim to increase the level of Internet diffusion in their respective countries are eager to draw policy lessons from Western Europe, USA and Japan. However, Internet diffusion in these countries is a product of broader social, political and economic progress. The developed countries have had decades to build up societies that, to a greater or lesser extent, facilitate the diffusion of new technologies. Hence, the policymakers should instead seek to learn from transition countries instead. Estonia and Slovenia stand out in the CEE region: By 2001 both countries had achieved significantly higher levels of Internet diffusion than other CEE countries and several member countries of the European Union.

Table 1. Internet users per 10,000 inhabitants in selected countries in Eastern and Western Europe from 1999 to 2002.

Country	Internet Users in 1999 (per 10 000 inhabitants)	2000	2001	2002
Czech Republic	682	971	1363	1467
<b>Estonia</b>	<b>1387</b>	<b>2721</b>	<b>3005</b>	<b>4133</b>
Greece	705	947	1321	1815
Hungary	597	715	1484	1576
Italy	1430	2304	2758	3010
Latvia	430	619	723	1331
Lithuania	279	609	679	679
Poland	542	725	978	984
Portugal	1000	2494	3494	3555
Romania	267	357	447	806
Slovakia	1112	1203	1203	1604
<b>Slovenia</b>	<b>1257</b>	<b>1507</b>	<b>3008</b>	<b>4008</b>
Spain	703	1343	1828	1931

*Source: International Telecommunications Union (2003) [1].*

Both countries have gone through the transition from having a command and control economy to a market economy, having, at the same time, enabled the Internet to diffuse rapidly. Such utilization of Western technologies is remarkable when considering the impact of the export control regime of the Cold War era on the initial starting position of CEE countries [2]. The paths taken by Estonia and Slovenia in their transition from the socialist model to the market economy differed radically. Hence, the same outcome in Internet diffusion was achieved through different means. Adding to that their relatively similar size, a close proximity to Western Europe and relatively high openness, a comparison of these two countries offers practical insight on public policies that facilitate Internet diffusion.

### 3. ESTONIA: A RADICAL REFORMER

Estonia's orientation toward technology and skills, exploited by the information technology and telecommunications industries in the 1990s, were to some extent embedded in the economy before the break-up of the USSR. The presence of light industries (including electronics) and high-level technical education in Estonia created critical know-how for Estonian IT companies in the 1990s and raised the technical elite so crucial in shaping the use of the Internet in public administration [3].

The dismissal of the export control regime of the Coordinating Committee of the Consultative Group on Export Controls (COCOM) enabled successful utilization of the embedded factors. Utilization of security regime change was reinforced by positive spill-over from Finnish and Swedish firms through business contacts and progressive public policies of the government of Estonia. Hence, the international regime change created initial conditions for successful diffusion of Western ICTs. Domestic policies that led to the high level of openness allowed the change in the international regime to be exploited to the full extent. The domestic decision-makers carried out more radical reforms than imposed by any international regime ever. Policies, such as unilateral free trade, flat income tax, no corporate income tax and a currency board, were not on the agenda of the international organizations. Therefore, the domestic policies that opened up the economy were the result of bottom-up rather than top-down initiatives [4].

Most importantly, Estonia's rapid economic opening and the lead role played by reformers helped the country become an Internet adapter. Government policies toward Internet diffusion should be seen as

part of a broader picture of reforms that helped modernize the public sector by increasing efficiency and transparency, rather than a sector-specific approach towards the Internet. As successful diffusion depends on the increasing number of users and requires sophisticated users in order to boost innovation, the diffusion of Internet in Estonia is the result of a broader framework created by the government rather than direct social engineering imposed by the government. Particularly the ability to attract foreign direct investments into the telecom sector, and concurrently, the ability to hold the incumbent telecom company accountable and be credibly committed to market opening has been crucial in determining the relatively low prices for Internet access. Low prices, in turn, have encouraged more use of the Internet.

#### **4. SLOVENIA: A SMOOTH TRANSFORMER**

Before the abolishment of COCOM export controls, Slovenia was economically more advanced than any other country of CEE, as it was benefiting from the limited technology transfer from the West and almost 50 percent of its exports went to the West [5]. The country's higher degree of economic openness led to a higher level of ICT diffusion and advancement of intellectual capital before the break-up of Yugoslavia. This advanced position was noticed by multinational companies, such as Siemens, who established joint-ventures in Slovenia immediately after the first relaxation of the COCOM export control list [6].

However, Slovenia's relatively advantageous starting point did not motivate the country to be in the forefront of privatization and economic liberalization. The almost non-existent inflow of FDI into Slovenia's telecom sector over the last decade is a combined result of the state's unwillingness to privatize the incumbent telecom company and reluctance to truly open the telecom market [7]. Constant delays in the market opening have also kept away potential "Greenfield" FDI in the telecom sector, as the incumbent controls the network in reality and the local loop (the so-called "last mile" that connects individual users into the main network) has not been unbundled. Not only has this allowed the incumbent to completely control the fixed line voice telephony market but also all other services that are made possible through fixed line telephony (e.g. ISPs) and that have to at some point connect to the fixed line telephone network (e.g. mobile telephony). This outcome in the telecom sector is a clear reflection of the broader selective protection given inward FDI in Slovenia, which aimed to minimize the increased influence of international economic factors on the Slovenian economy and rapid distributional effects thereof. The social democratic corporatist system facilitated a smooth transition in which the prices of telecom services were kept low and domestic stakeholders were protected from competition. Recently, the domestic decision-makers have been under constant pressure from the European Union to liberalize Slovenia's telecom market

#### **5. REFORMATION VS. TRANSFORMATION**

Before the fall of the Berlin wall, Slovenia had a more advanced infrastructure and higher mainframe and personal computer penetration than any other country or region in the East Bloc. Slovenia's ability to trade facilitated technology transfers from the West. Estonia, on the other hand, was part of the rigidly closed economic system of the Soviet Union and certain technologies (such as mainframe computers) never reached the country. Technology diffusion is path-dependent – in other words, the historical development of the given country matters [8]. Hence, Slovenia inherited the best starting position of the former East Bloc.

The different paths of transition in the 1990s is well reflected by the 2001 Index of Economic Freedom, published by *The Wall Street Journal* and Heritage Foundation, which ranked Estonia 4<sup>th</sup> on the list, a position shared with the United States. Slovenia scored 79<sup>th</sup> in the same index [9].

##### **5.1 Path-dependence of technology diffusion**

Although Slovenia's GDP is 2.5 times higher than that of Estonia and Slovenia had a significantly better starting position a decade ago, Estonia's Internet diffusion level is equal to that of Slovenia. At the same time, Slovenia has progressed tremendously in the comparative perspective. In this light, Estonia's

independence from path-dependent technologies that age relatively quickly, combined with the country's large-scale economic opening, actually facilitated the adoption of new technologies.

Estonia's *tabula rasa* position made it possible to bring in the newest technologies, and combined with new investments in the infrastructure, Internet diffusion was accelerated. Slovenia's dependence on older technologies also created disadvantages, as the interconnectivity between older and newer technologies is not always feasible. This phenomenon is well characterized by the statistic that shows Slovenia's population as having a large number of personal computers that are not connected to the Internet. Technically, it may be difficult or near impossible to implement connectivity between newer and older technologies. Hence, path-dependence may also lead to higher transaction costs being affiliated with the adoption of certain new technologies. In other words, sometimes it costs as much to renovate an old house as it does to build a new one; in fact, there are occasions when building a new house might even cost less.

### **5.2 Vested interests and the extent of regulatory capture**

On the balance, the uncertain market opening and privatization of telecom in Slovenia reflects a higher degree of regulatory capture of government policies by vested interests and the dominance of an "old boy network" than seen in Estonia. A desire to minimize the negative effects of changing the economic environment did not allow the positive impact of creative destruction by wiping out the informal networks of the Socialist era. The existence of higher barriers for entry in Slovenia is well reflected in the fact that Slovenia had 148 Internet hosts per 10,000 inhabitants in 2001. The comparative figure for Estonia was 357 hosts [10].

Such a large difference indicates structural impediments on the supply side in Slovenia. Particularly the domestic nature of complete ownership, rather than just state ownership (in many privatized telecom companies the state is still an important shareholder and many state or partially state-owned telecom companies privatize telecom companies in other countries), has socialized the telecom business and allowed domestic interest groups to gain leverage against privatization and market opening. The dominant state ownership has created a conflict of interests in which the state is the main owner of the incumbent telephone company as well as the regulator of the monopoly through the National Telecommunications Administration at the Ministry of Transport and Communications. Slovenia created the Ministry for Information Society in 2001 with one of the ministry's top priorities being pushing for the opening of the telecom market. Slovenia's targeted intervention is quite different from Estonia's approach, which has not created a special ministry for ICT. The new ministry was justified on the grounds that the cozy relationship between the Ministry of Telecommunications and the incumbent *Telecom Slovenije* had hindered the efforts in the market opening so far.

However, the fundamental policy changes in Slovenia are subject to a complex bargaining system, and the establishment of a new administrative body may not bring the necessary breakthrough. Slovenia's current inability to deliver an e-government (e.g. online government services for citizens) despite the efforts of a special ministry also indicates a lack of incentives in the government and deadlock resulting from facilitated rent-seeking.

### **5.3 Prices of Internet connection**

What makes the Slovenian and Estonian cases educational for all transition economies and other countries is the fact that both countries achieved a similar outcome in terms of Internet penetration rate (number of users per 10,000 inhabitants) under monopoly conditions in fixed line voice telephony. Internet access costs in Estonia and Slovenia were significantly lower than those in Czech Republic, Hungary, Latvia, Lithuania, Poland and Slovakia [11]. Before and after the market was liberalized in Estonia, Slovenia was able to maintain somewhat lower prices for Internet access than in Estonia, especially in the peak hours. However, local calls are usually subsidized under monopoly conditions as the incumbent monopolistic telecom company usually subsidizes local telephone calls at the expense of long distance calls in order to provide universal service.

The initial diffusion of Internet via dial-up access can occur at a relatively low cost (e.g. at the expense of international calls). In other words, as long as monopolist local call prices are acceptable and the quality of service is tolerable, the market opening in fixed calls is not a precondition for Internet diffusion. However, this approach is not sustainable in the long run. As users become more sophisticated, there will be increased demand for more competitive services, a factor that will start to work against the incumbent, thereby limiting Internet diffusion. Therefore, Estonia's adherence to the planned market opening in 2001 also happened to be incidentally good timing (Slovenia delayed the opening).

#### **5.4 Accountability of the incumbent**

The ability to maintain relatively low prices for telecom services in Estonia and Slovenia indicates that the respective governments were keep the incumbent telecom company in check (at least to a greater extent than other CEE countries). This accountability was achieved through different means. However, the importance of transparent regulation and the avoidance of regulatory capture should be a cornerstone of government public policy toward the telecom sector, be it a monopolistic or competitive market structure. In this sense, liberalization may often mean more rules; the competitive nature of the market must be preserved and incumbent companies are eager to push telecom markets toward a state of monopoly [12].

At the same time, Estonia's experience suggests that the market opening of the telecom sector is more achievable under pressure from diverse interest groups rather than under a centralized national bargaining system. Estonia's economic openness increased the competitive pressures and made the dominance of narrow interests unlikely. Slovenia's engagement in selective protectionism (where trade openness was preferred to FDI and foreign ownership) and the social democratic corporatist nature of the country has constantly been an obstacle to opening the telecom sector. The market opening should have occurred in a consistent manner and in accordance with the dates originally announced. Constant delays in the market opening and the gap between the formal and informal rules of the game create distrust among foreign investors and keep them away. This scenario is especially true in the case of industries with high "sunk costs," and bargaining power is asymmetrically favorable to the host country [13]. The telecom sector is an obvious example of high sunk costs and the relatively high bargaining power of the host country: The infrastructure cannot be taken along in the case of exit, and government regulatory policies are an instrumental factor in determining business profitability.

Slovenia has benefited from its inherited system, and the advancement of Internet diffusion could have been even greater had there been a higher level of competition in the telecom market. Involvement of diverse investors could reduce inefficiencies in allocation of capital. For instance, Slovenia has more main telephone lines (i.e. invested more money into infrastructure development) than Estonia, yet as is demonstrated by the same Internet diffusion outcome, such a high number of main lines is not necessary for Internet diffusion. Hence, the social democratic bargaining system through centralized decision-making may lead to inefficiencies in accumulating capital in the telecom sector.

## **6. CONCLUSION**

Hence, with some reservation, it can be claimed that similar outcomes in the per capita penetration rate of the Internet are achievable through different paths of transition. However, such a conclusion holds only theoretical value. For the other countries of CEE, Slovenia's experience reflects an exception rather than a rule. Most other transition and developing countries have not inherited such an advantage in the form of initial starting position. As Slovenia's initial starting position was much better than that of Estonia, it is obvious that Estonia's more radical approach of changing the formal rules of the game has reduced the transaction costs of the diffusion of Internet. Therefore, the Estonian experience can be considered a relevant source from which to draw lessons for other countries. However, both cases offer broader lessons; it would be naïve to assume that a specific Internet policy without changes in the broader framework of policies will help to increase the Internet diffusion.

It is also important to note that the Estonian example cannot be directly copied due to significant changes in the policy environment. In 1992, when Estonia started restructuring its telecom company, many OECD countries were starting the same process. The overall development of a country indicates which policy options are most appropriate for increasing the Internet diffusion. Furthermore, certain countries are bound by regional and international commitments that determine the limits on policy changes. More advanced transition countries (those that will join the European Union in 2004) have to focus on strengthening the regulatory regime that would keep companies accountable and reduce barriers, both informal and formal, for competition. Other transition and developing countries should focus on reducing the barriers for FDI and attracting investments into the telecom sector with credible commitments to privatization and market opening

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