



Liberalization Process in Central and Eastern Europe: Challenges for the Future

Jaroslav K. Ponder

Strategy and Policy Unit

International Telecommunication Union

*Presentation prepared for needs of the 11th EATA International Conference on
Networking Entities, NETTIES 2005, 14 October 2005, St. Polten, Austria*

*Note: The views expressed in this presentation are those of the author and do not necessarily
reflect the opinions of the ITU. Jaroslav K. Ponder can be contacted at Jaroslav.Ponder@itu.int*



Contents

- **Introduction**
- **Polit-economic concerns**
- **ICTs in the CEE countries**
- **Investigating particular character of ICT sector in CEECs**
- **Conclusions**
- **Challenges for the future**



Polit-economic concerns by the liberalization process in CEE

- **Difficult starting point for all CEE countries**
 - Poor ICT infrastructure and communications services
 - Insufficient supply and quality of communication services
 - Significant digital and economic divide on the national and international level
 - Socio-economic transformation process
- **First attempts of liberalization of telecommunication market during 90s**
 - Modernization/ Restructuring
 - Privatization
 - Liberalization of particular markets
 - Creation of new legal and institutional framework



Means of the liberalization

- **Opening of the market**
 - Licensing procedures: simple, fast, transparent, non-discriminatory
 - Licensing the use of scarce resources
- **Ensuring a competitive landscape**
 - Numbering / Interconnection / Leased Lines
 - Nomination of operators with Significant Market Power
 - Pricing and Tariffs
 - Supervision of the market / Monitoring of competition
- **Promoting Competition**
 - Service based (Carrier Selection / Preselection)
 - Infrastructure based (LLU, Number Portability)
- **Promoting consumer interests**
 - Universal service
 - Consumer protection and information

New Regulatory Framework 2002 NRF 2006



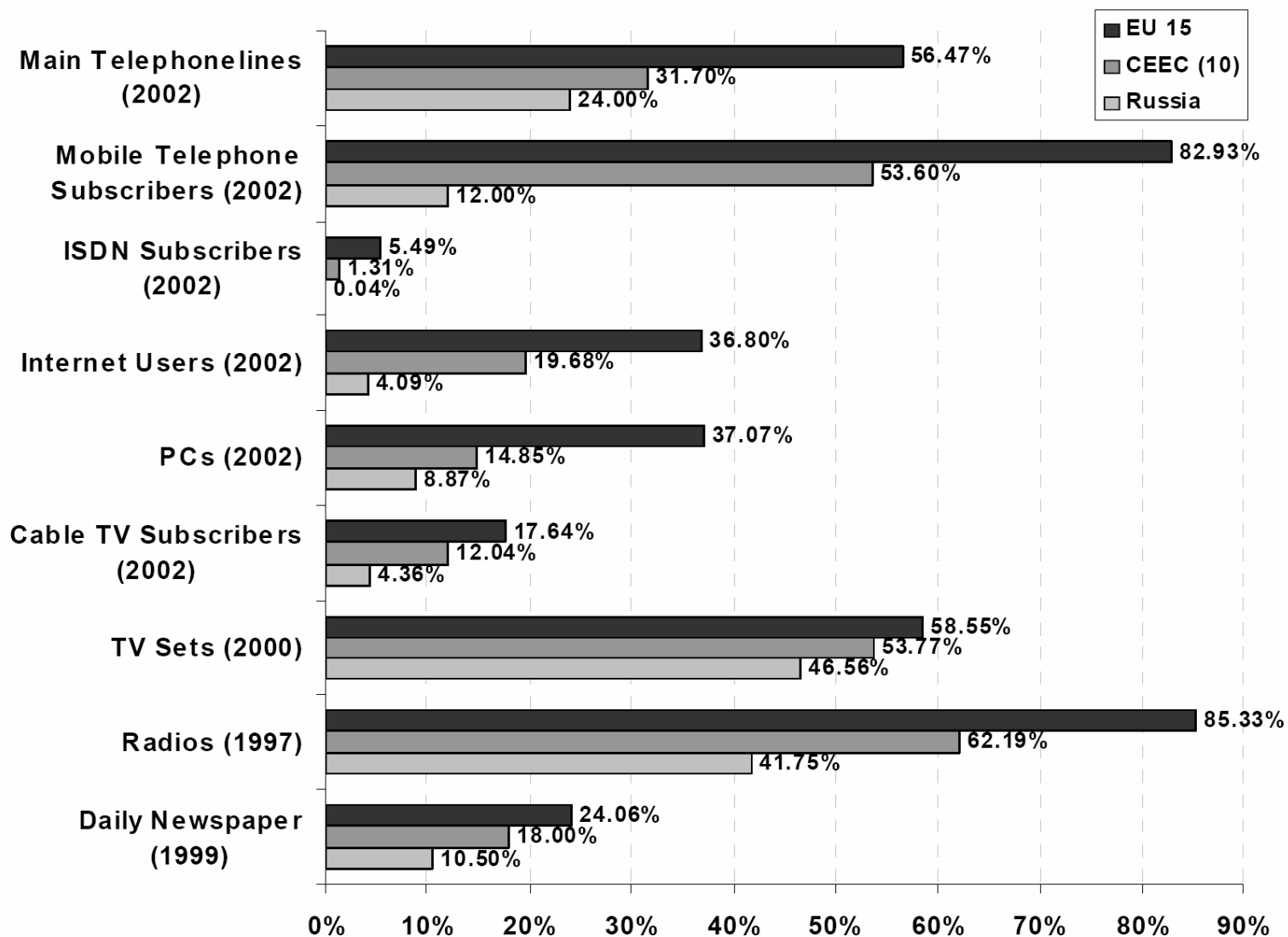
European path

Urgent Need for

- To **bridge the digital divide**
 - through
- The operation of healthy and undistorted **competition**
 - seeking to achieve
- Migration from service based competition to **infrastructure based competition**
 - and the
- **Increase of investments**
 - while ensuring
- The protection of **consumer interests and rights**



Existing Digital Divide

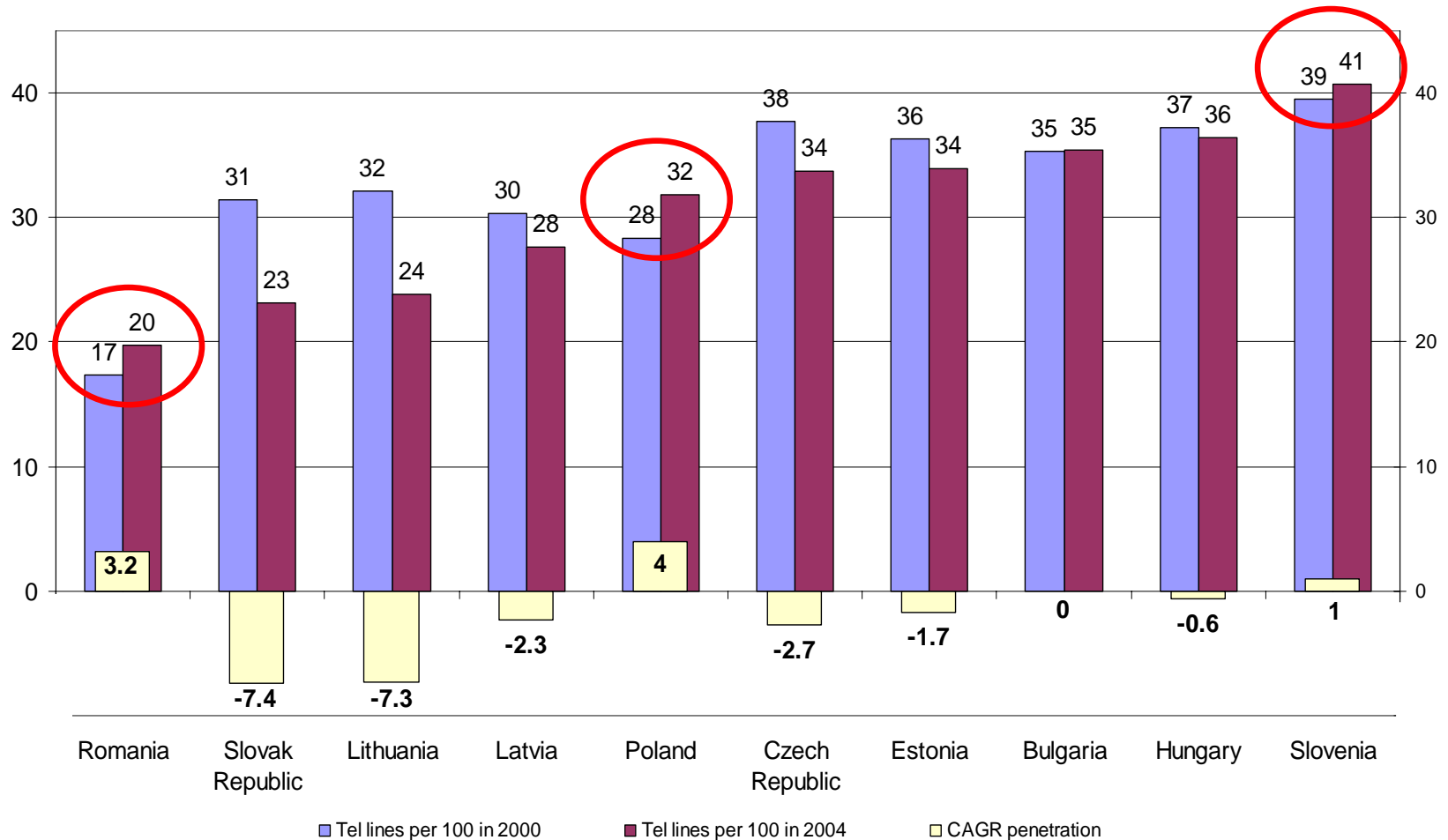


ITU (2004)



Fixed telecommunications

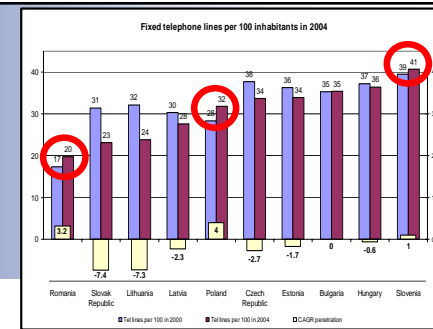
Fixed telephone lines per 100 inhabitants in 2004



Source: ITU (2005)



Fixed telecommunications

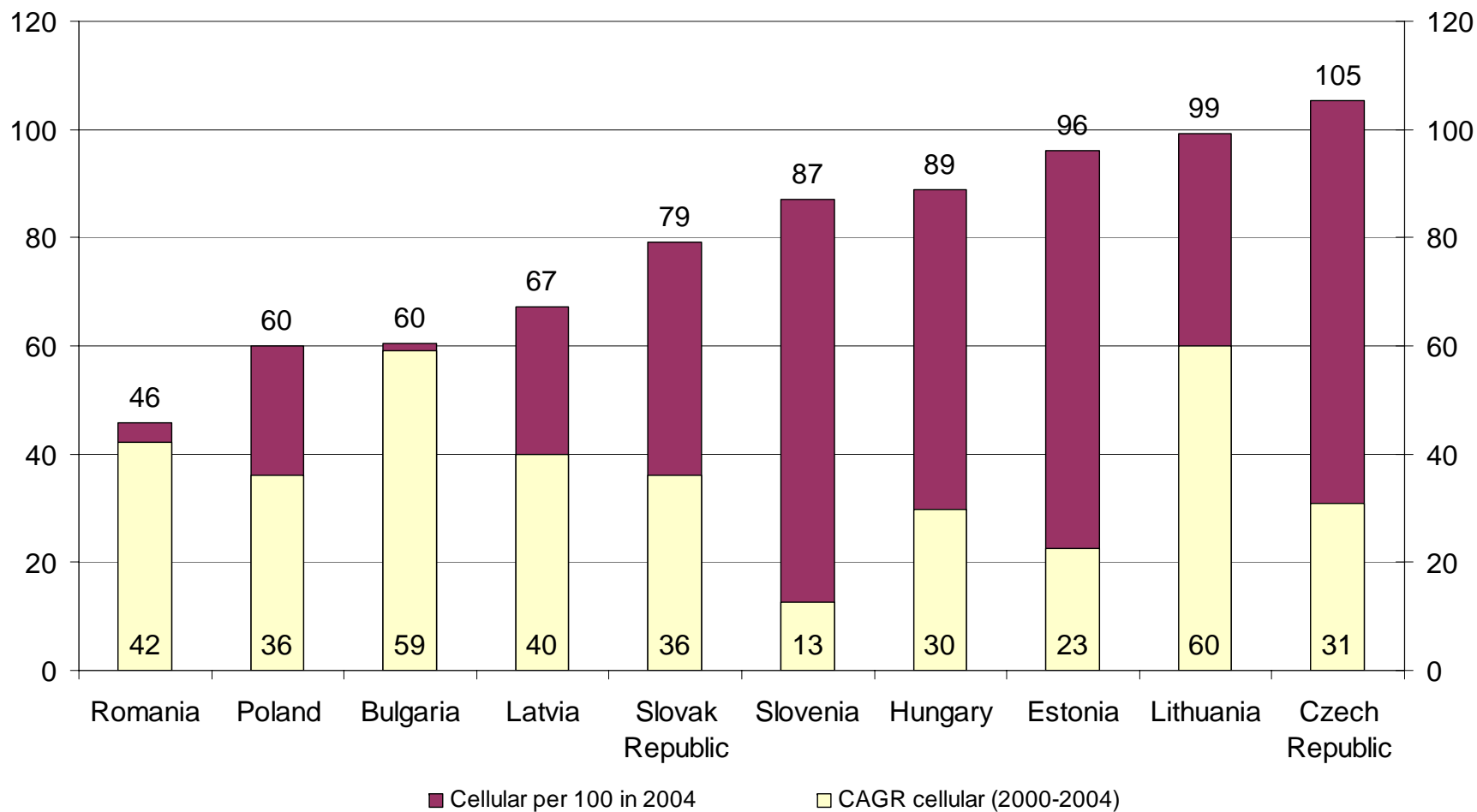


- Since 2002 the rate of fixed lines per inhabitant including ISDN channels per 100 inhabitants and per 100 households decreases in many CEE countries .
 - Are these markets already saturated?
 - Is it effect of emerging communication technologies, especially wireless communication technologies?
 - Is it bad performance of the telecommunication sector?
 - Is it going to change in the close future?
- The following three countries belong to the exceptions:
 - Poland
 - Romania
 - Slovenia
- In Bulgaria the penetration rate has not changed in comparison with situation in 2000.



Mobile telecommunications

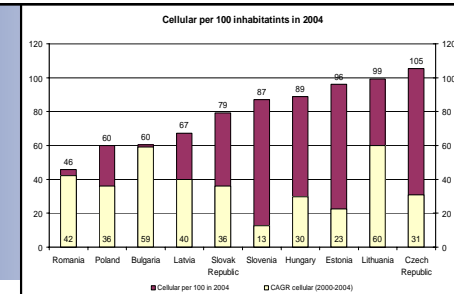
Cellular per 100 inhabitants in 2004



Source: ITU (2005)



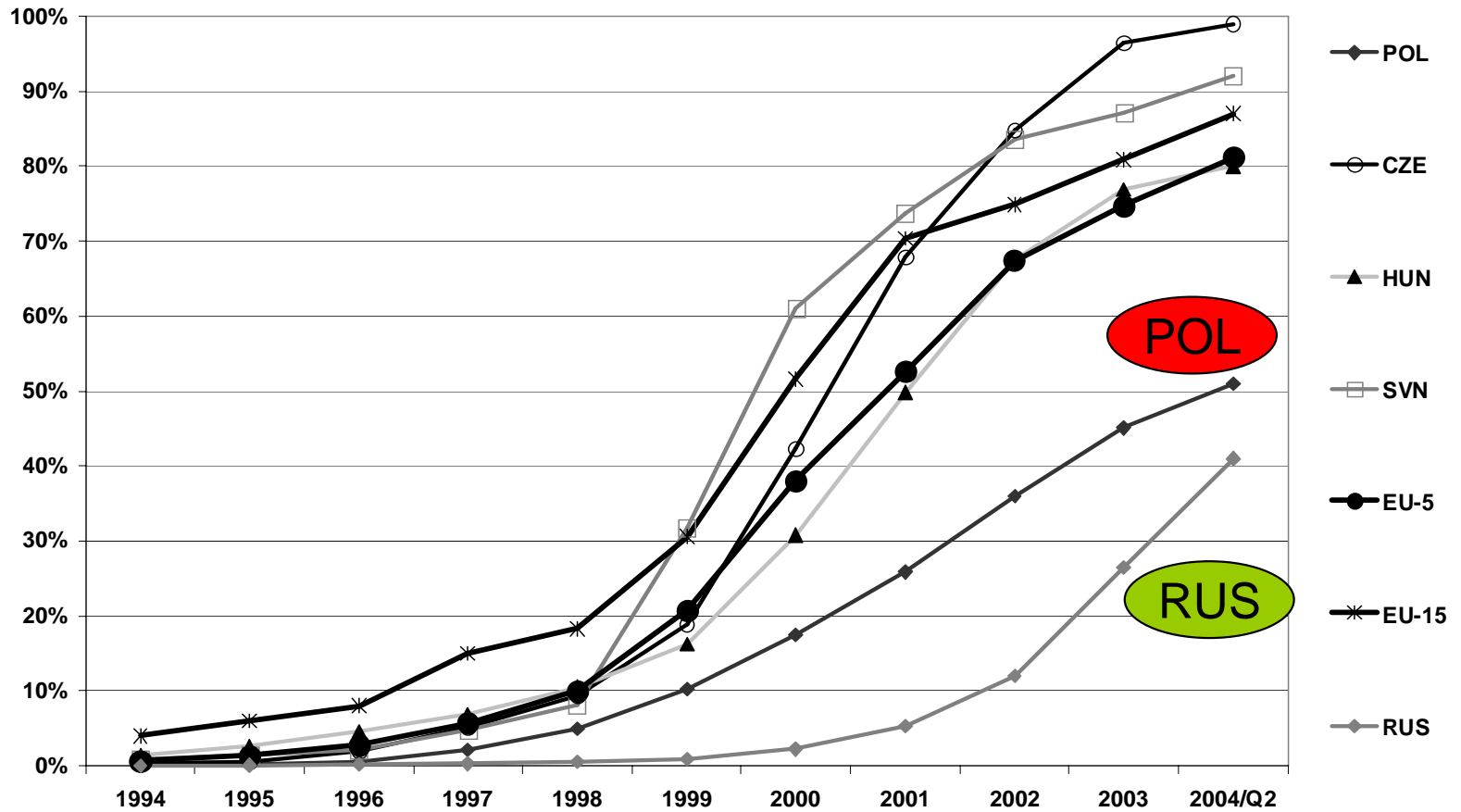
Mobile telecommunication



- The popularity of the mobile telecommunications is still increasing. Mobile penetration remained below the EU average only in Slovak Republic, Latvia, Poland, Bulgaria and Romania but the situation rapidly changes.
- The prevailing technologies include: GSM in 3 frequency bands, NMT 450, CDMA 450 MHz (e.g. Romania, Russia, Latvia).
- WiFi and WiMAX start to be implemented and popularized. For instance Poland issues the new licenses in order to foster popularization of wireless broadband.
- The value added services sometimes are implemented on CEE markets even faster than in western European countries: MMS, GPRS, HCDS. The mobile access to the internet becomes more and more popular and affordable.
- Most of the countries has already started to implement UMTS however the numbers of users are rather very small. Some of countries are just in the process of granting of additional licenses, e.g. Poland.
- In many countries the market segment of costumers with the high willingness to pay for the communication services has been exhausted. The operators look for the new business strategies.



Mobile telecommunication: Diffusion process

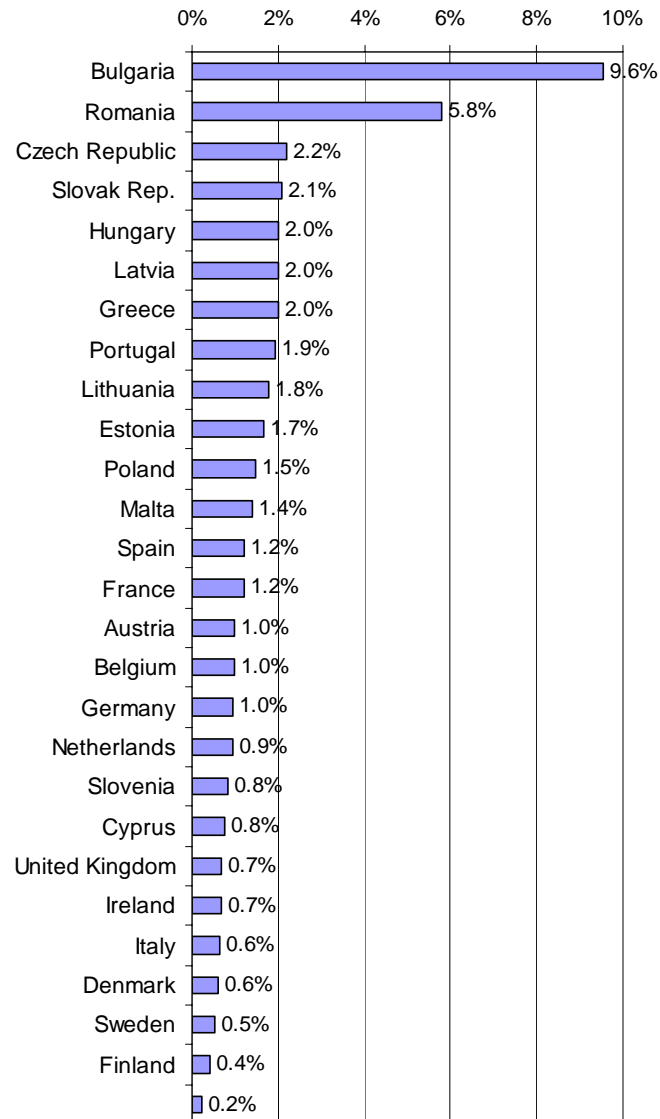


Source: ITU (2005)



Mobile telecommunication

Low user basket as proportion of GNI (2005)



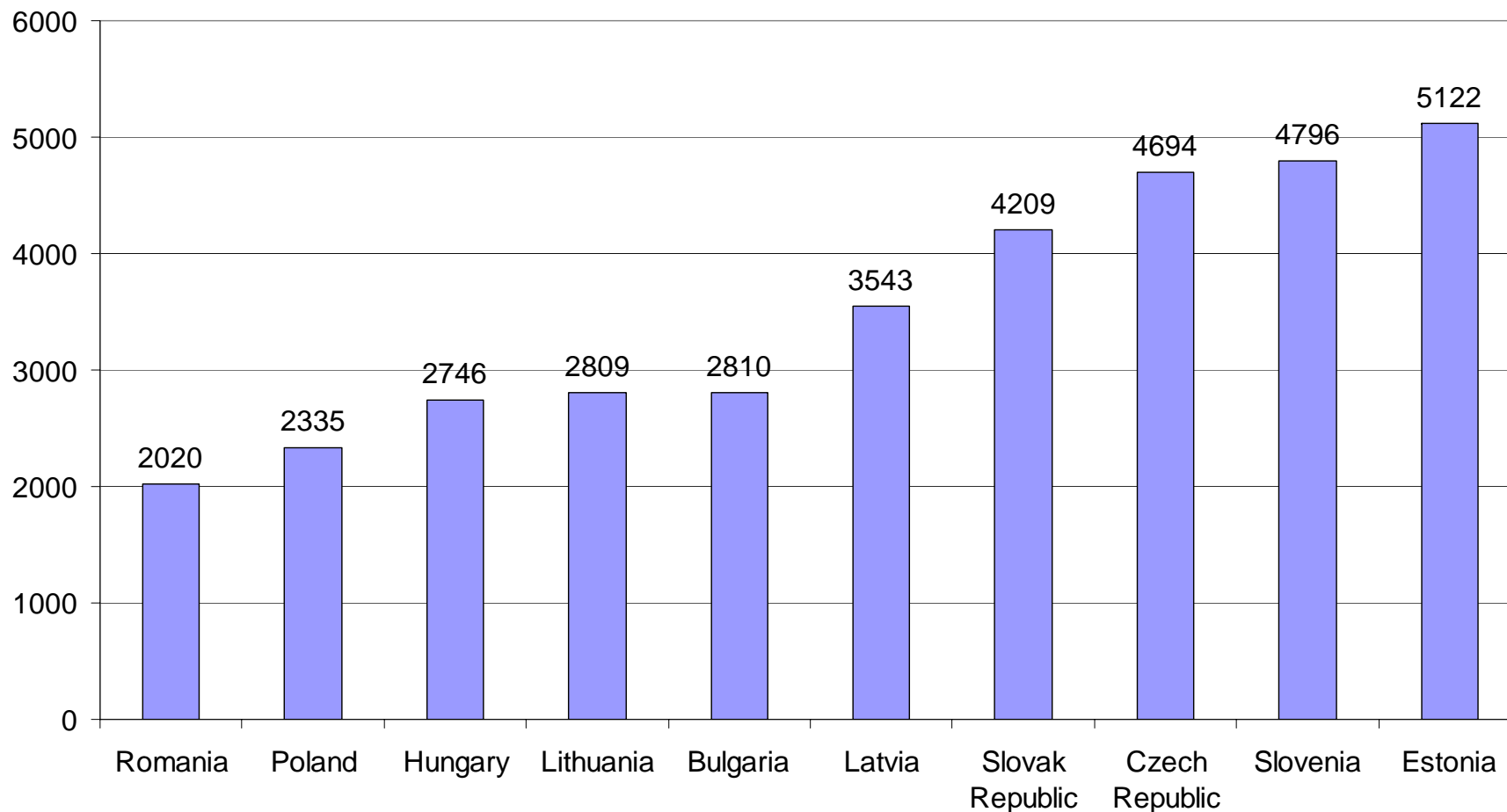
Ways to increase competition:

- Mobile Virtual Operators
- National Roaming Obligation
- National Number Portability
- Interconnection costs



Internet

Internet users per 10000 inhabitants in 2004

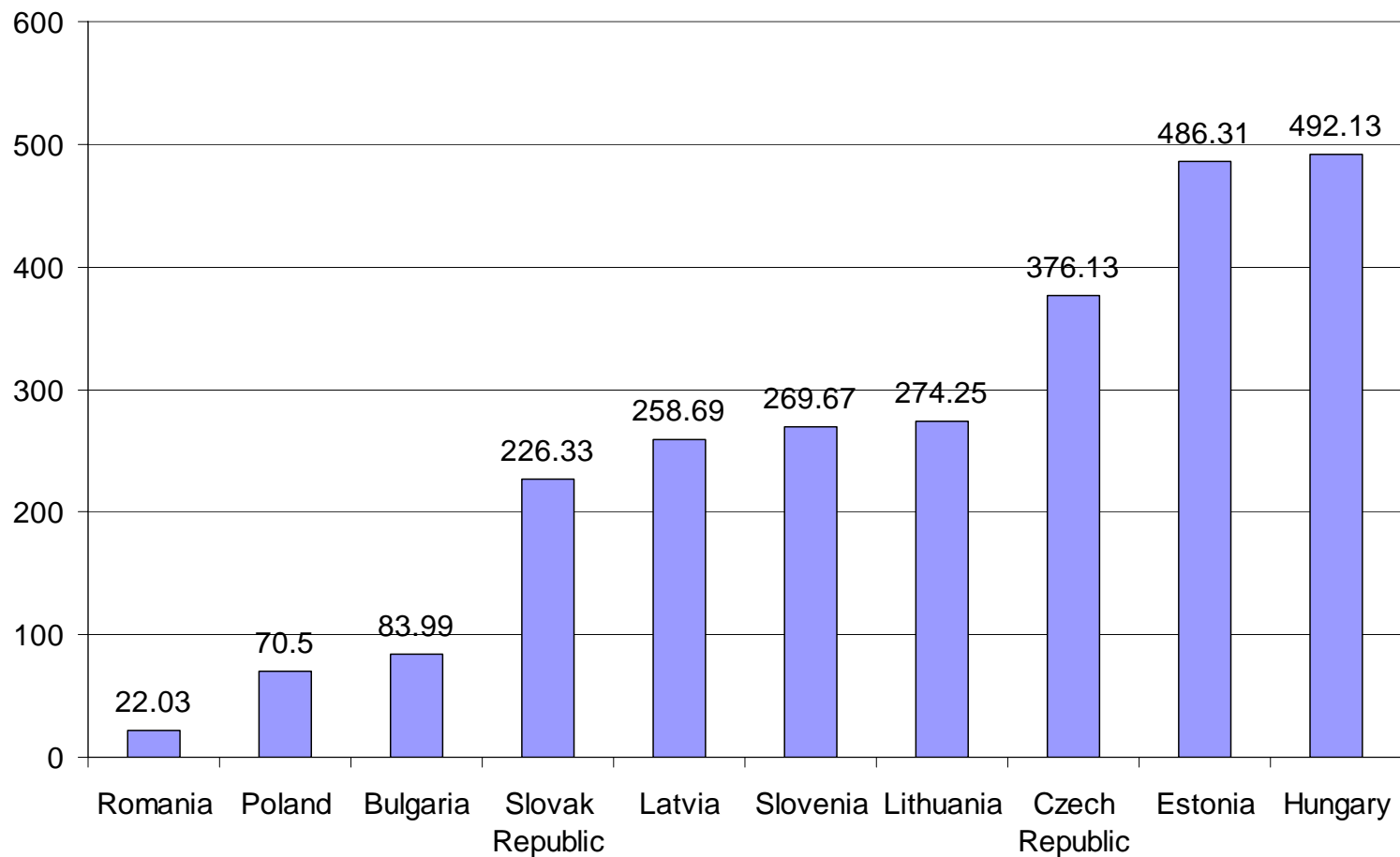


Source: ITU (2005)



Internet

Hosts per 1000 inhabitants in 2004

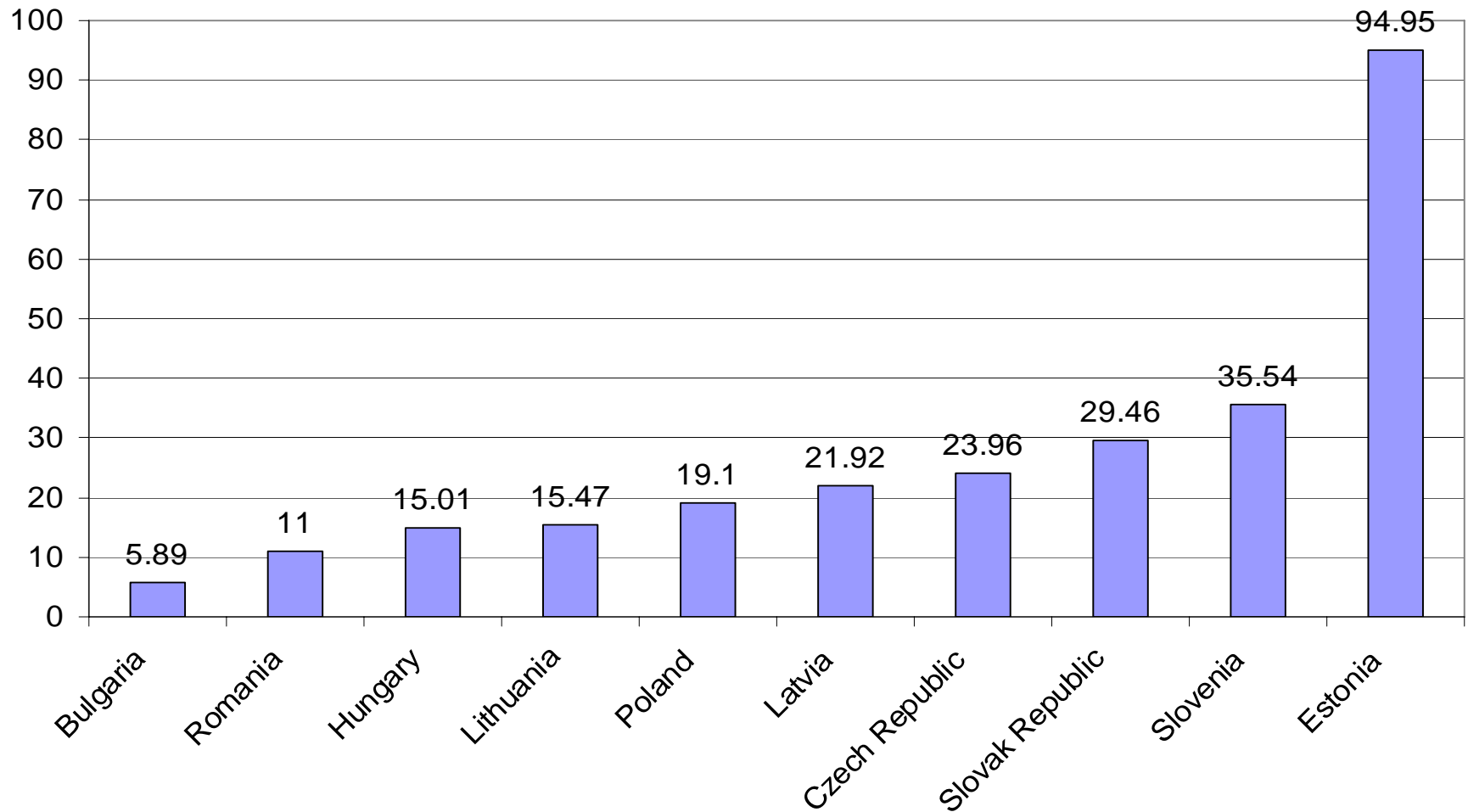


Source: ITU (2005)



Internet

PCs per 100 inhabitants in 2004



Source: ITU (2005)



ADSL: Internet access prices

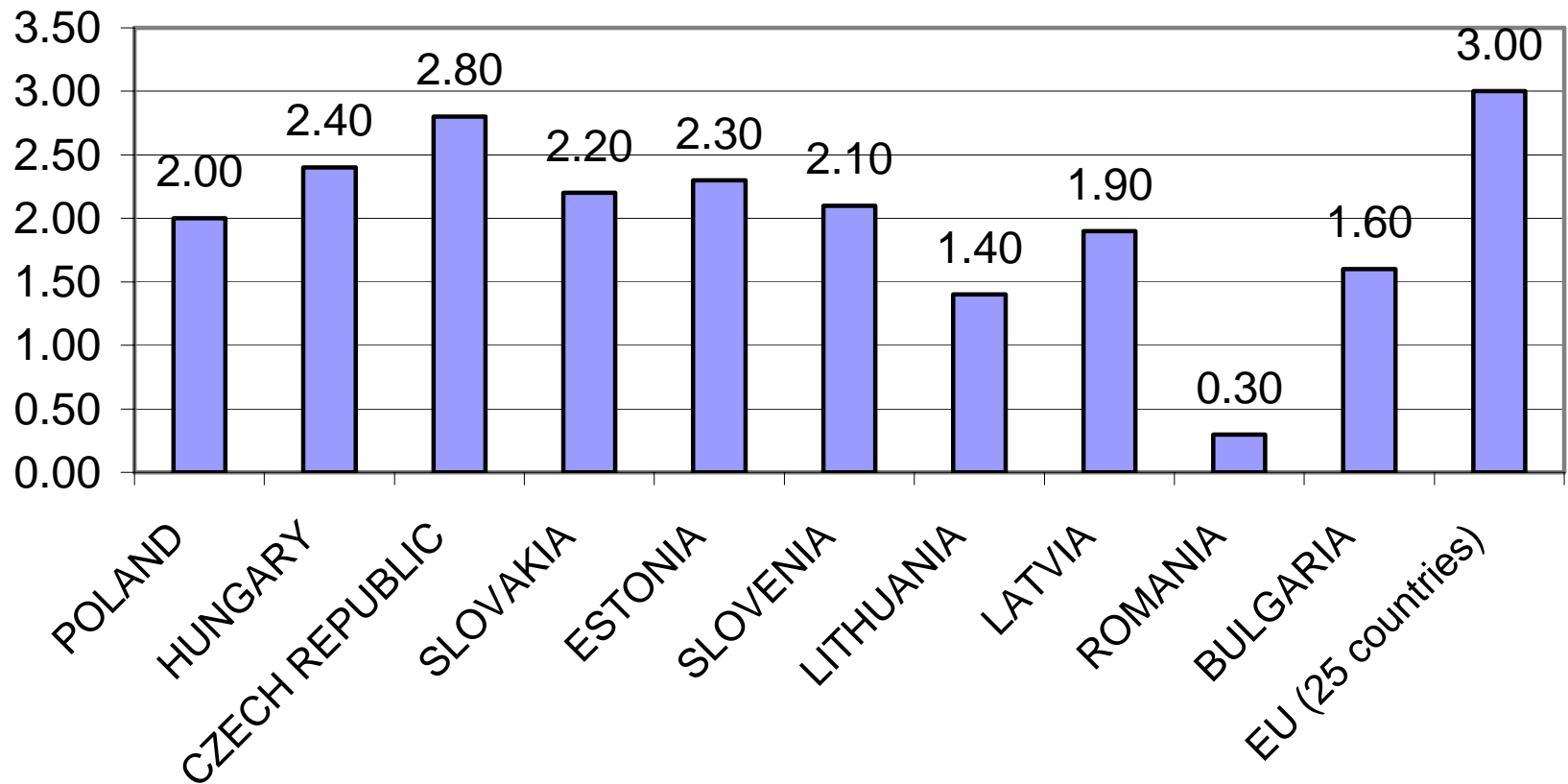
| the cheapest ADSL tariffs in CEE region | | | |
|---|---------|------------------|-------------------------|
| country | ADSL | Operator | tariff |
| POLAND | \$17,84 | TP.S.A. | Neostrada 128 |
| HUNGARY | \$24,90 | INVITEL | for surfers |
| CZECH REPUBLIC | \$16,50 | CESKY TELEKOM | IMPULS |
| SLOVAKIA | \$12,41 | TELECOM | FLAT HOME |
| ESTONIA | \$20,63 | ELION | DOM 1 |
| SLOVENIA | \$31,91 | VOLJANET | |
| LITHUANIA | \$13,72 | TELECOM | TAKAS Id2 |
| LATVIA | \$15,70 | LATTELEKOM | Apollo city internet |
| ROMANIA | \$48,59 | ROMTELECOM | ADSL Express 2048 |

Source: Operator's price lists



IT market

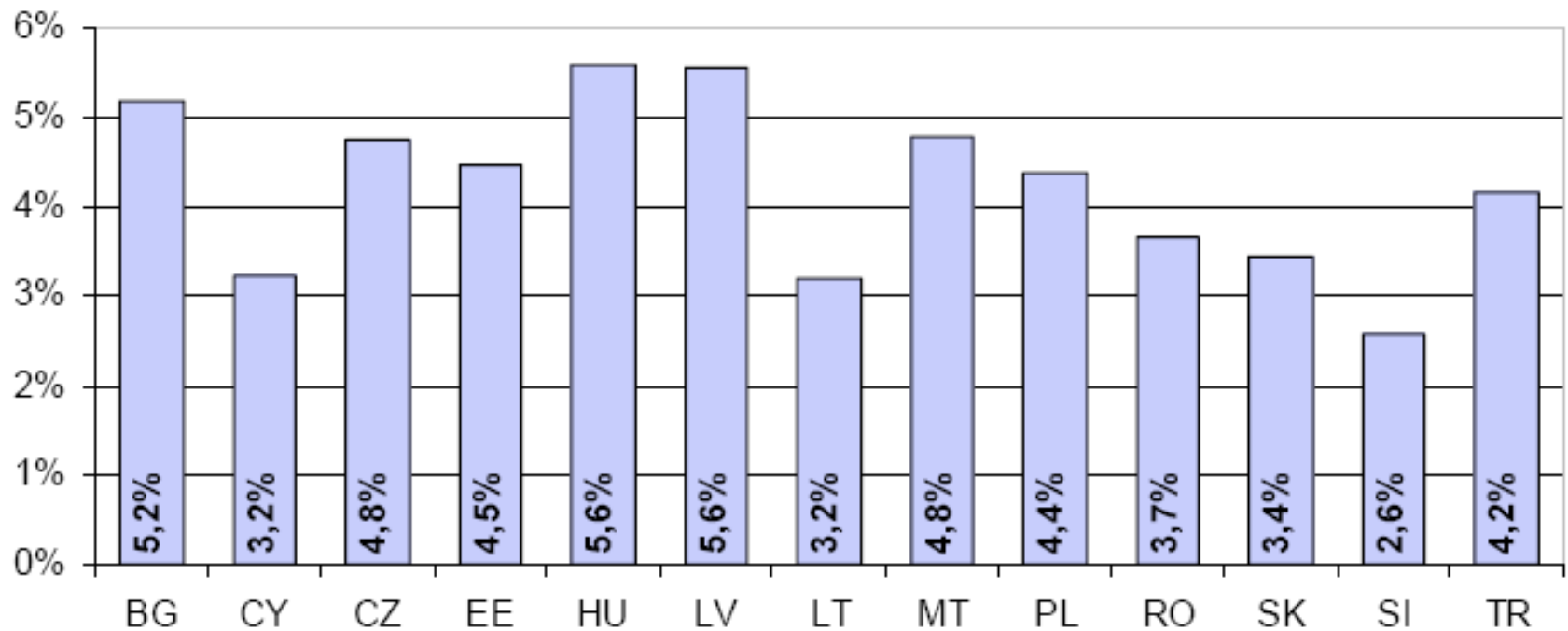
IT expenditure as % of GDP in 2004





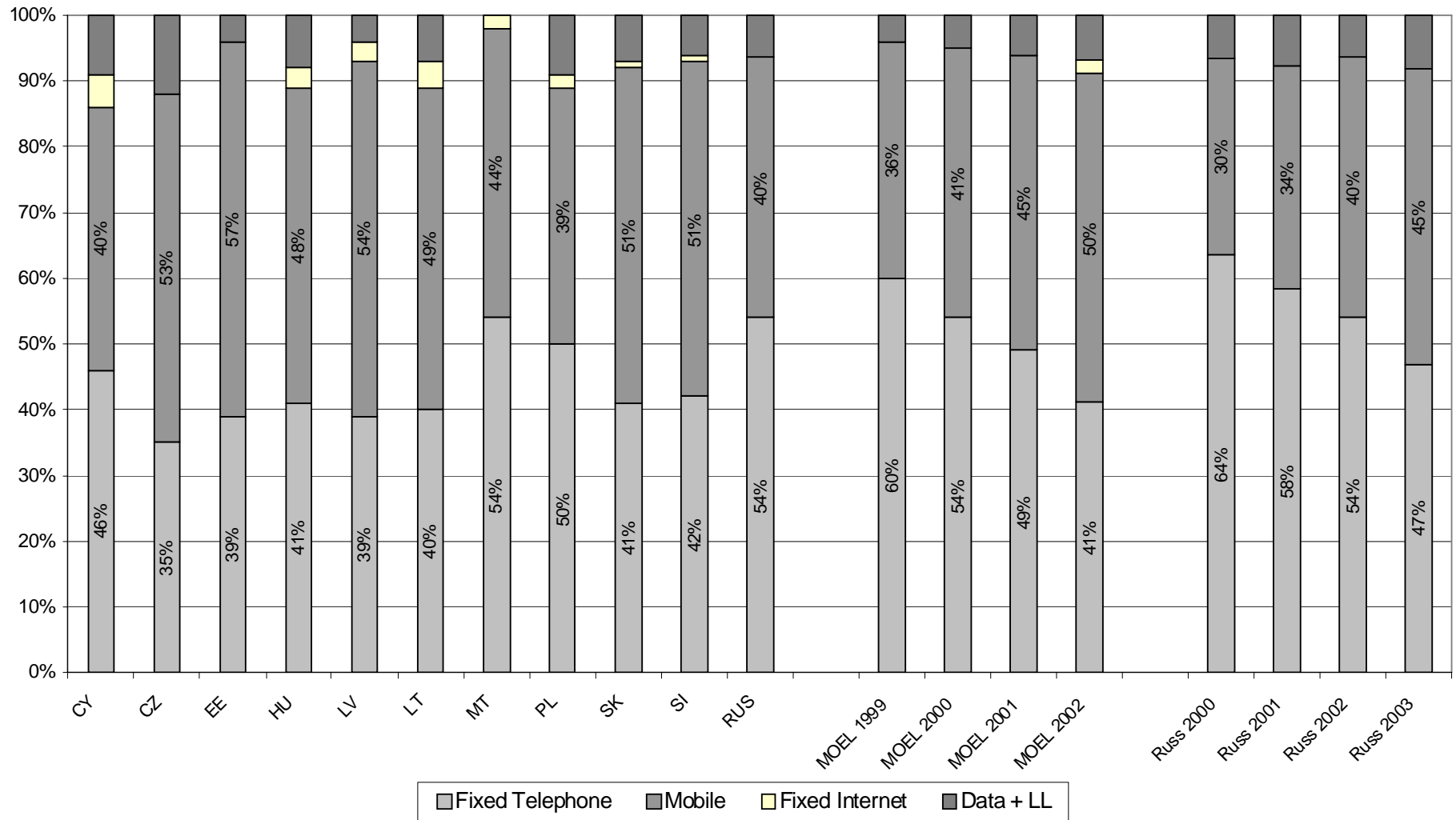
Telecommunications market

Size of telecommunication market compared with GDP in CEE





Telecommunications revenues

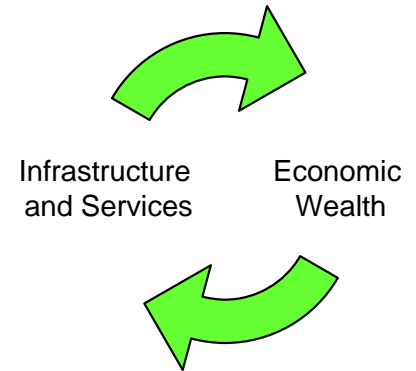
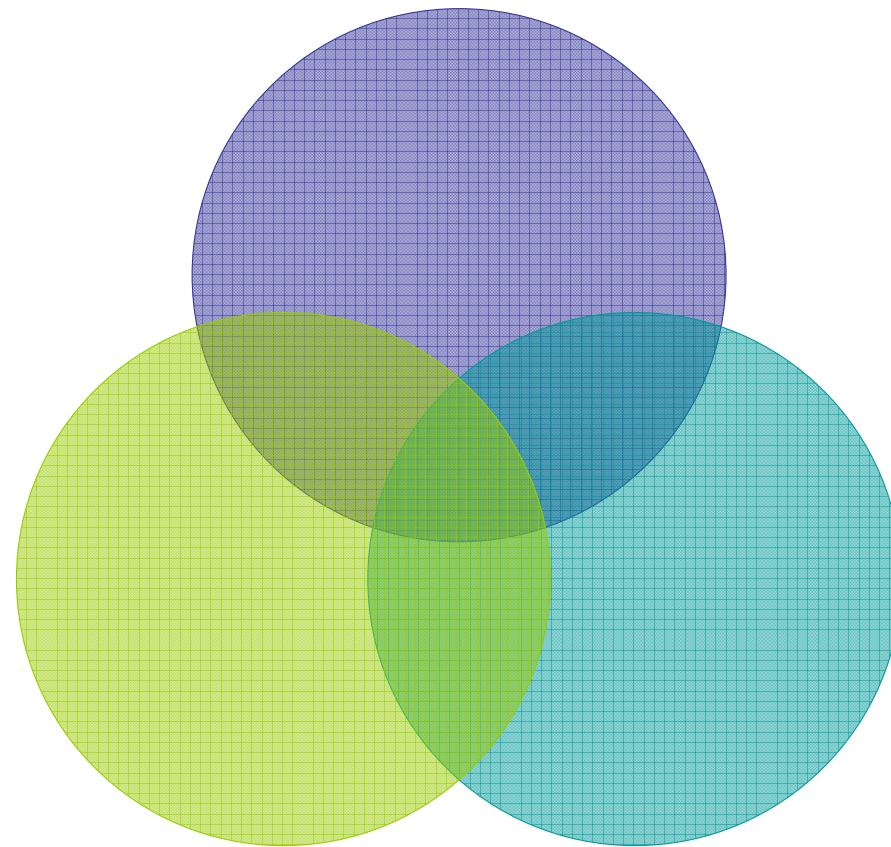


Source: ITU (2005)



Investigating particular character of the CEE ICT sector

Diffusion Determinants



Institutional Approach

Economic impact of ICTs



Investigating particular character of the CEE ICT sector

Diffusion of ICTs in CEECs

- *Muller, Salsas (2003)* – Determinants of the Internet Usage : internet hosts, income per capita, openness, education, political and civil freedoms, state of transition towards a liberalized telecommunications regime, the state of the telecommunications infrastructure, cost of telephone
 - Internet usage costs do not explain cross-country differences in the number of Internet hosts and users
- *Muller, Salsas (2004)* – Significant determinants of the Internet usage in enterprises: trade, company size, computer usage, degree of the telecom market liberalization
- *Ponder, Markova (2005)* – Diffusion of mobile telecommunications



Investigating particular character of the CEE ICT sector

Institutional Approach

- Piatkowski (2003) – **New Economy Indicator** – level of institutional readiness of transition economies for adoption of the New Economy. Slovenia, Czech Republic, Hungary and Estonia belong to the regional leaders. (NEI Factors: regulation, infrastructure, trade, financial system, R&D, human capital, labour market flexibility, product market flexibility, entrepreneurship, macroeconomic stability)
- Piech (2004) – **Knowledge Assessment Methodology of World Bank** (KAM Methodology: GDP, HDI, Tariffs, Property rights, Regulation, Researchers in R&D, Manuf. Trade, Adult literacy, ..., Telephones, Computers, Internet hosts). Czech Republic and Estonia, the most promising countries of region. The same structure as developed countries.



Investigating particular character of the CEE ICT sector

Institutional Approach

- WSIS (2005) - Digital Opportunity Index

| CATEGORY | WEIGHT within category (%) |
|--|----------------------------|
| Opportunity | |
| percentage of population covered by mobile cellular telephony | 33 |
| mobile cellular tariffs as a percentage of per capita income | 33 |
| internet access tariffs as a percentage of per capita income | 33 |
| Infrastructure | |
| Proportion of households with fixed line telephone | 20 |
| mobile cellular subscribers per 100 inhabitants | 20 |
| proportion of households with Internet access at home | 20 |
| mobile internet subscribers per 100 inhabitants | 20 |
| proportion of households with a computer | 20 |
| Utilistaion | |
| internet users per 100 inhabitants | 33 |
| ratio of broadband internet subscribers to internet subscribers | 33 |
| ratio of broadband mobile subscribers to mobile internet subscribers | 33 |

| | | Opportunity | Infrastructure | Utilization | DOI |
|----|----------------|-------------|----------------|-------------|------|
| 1 | Korea (Rep.) | 0.97 | 0.70 | 0.65 | 0.77 |
| 2 | Hong Kong | 0.99 | 0.67 | 0.37 | 0.68 |
| 3 | Japan | 0.96 | 0.66 | 0.38 | 0.67 |
| 4 | Denmark | 0.97 | 0.67 | 0.35 | 0.66 |
| 5 | Sweden | 0.97 | 0.69 | 0.33 | 0.66 |
| 6 | Canada | 0.96 | 0.53 | 0.43 | 0.64 |
| 7 | Singapore | 0.98 | 0.65 | 0.28 | 0.64 |
| 8 | Taiwan | 0.98 | 0.65 | 0.28 | 0.64 |
| 9 | Netherlands | 0.95 | 0.60 | 0.33 | 0.63 |
| 10 | Switzerland | 0.96 | 0.62 | 0.27 | 0.61 |
| 11 | United States | 0.97 | 0.54 | 0.33 | 0.61 |
| 12 | Austria | 0.94 | 0.54 | 0.36 | 0.61 |
| 13 | United Kingdom | 0.96 | 0.58 | 0.30 | 0.61 |
| 14 | Israel | 0.93 | 0.55 | 0.35 | 0.61 |
| 15 | Australia | 0.95 | 0.60 | 0.25 | 0.60 |
| 16 | Germany | 0.95 | 0.57 | 0.25 | 0.59 |
| 17 | Belgium | 0.95 | 0.48 | 0.34 | 0.59 |
| 18 | Spain | 0.94 | 0.49 | 0.25 | 0.56 |
| 19 | Italy | 0.97 | 0.48 | 0.22 | 0.56 |
| 20 | France | 0.95 | 0.45 | 0.26 | 0.55 |
| 21 | Hungary | 0.88 | 0.36 | 0.19 | 0.47 |
| 22 | Czech Republic | 0.87 | 0.40 | 0.11 | 0.46 |
| 23 | Poland | 0.90 | 0.35 | 0.12 | 0.46 |
| 24 | Malaysia | 0.90 | 0.26 | 0.15 | 0.44 |
| 25 | Chile | 0.79 | 0.26 | 0.24 | 0.43 |

Source: ITU (2005)



Investigating particular character of the CEE ICT sector

Economic Growth

- Kolasa, Zolkiewski (2004) – **Poland**: ICT investment contributes positively to TFP growth
- Piatkowski (2003) – **CEEC-8**: ICT capital contribution to output growth and labour productivity (extraordinary increase in real ICT investment caused by a) falling prices of ICT, b) higher-than-normal returns on investment due)
- Rajasalu, Laur (2003) – **Estonia**: low contribution of ICT sectors in Estonia's output. The evidence of direct positive impact of high-tech, medium, high tech and knowledge intensive industries on economic growth is not very convincing. High dependence on subcontracting and transfer pricing makes the contribution of high and medium-high tech industries rather low. Economic growth is influenced more by indirect impact of ICT that made the economy as a whole more competitive and helped to attract investments and create new jobs.



Investigating particular character of the CEE ICT sector

Economic Growth

- Van Ark (2004) – **Old and New Europe**: Contribution of ICT investment to productivity growth is positive and significant but differentiates between all CEECs exist.
 - Champions: Czech Republic, Hungary
- Perminova (2004) – **Russia**: ICT contribution to the labor productivity growth 1996-2000 in:
 - ICT using sector - even 5 times bigger than in Europe and 2 times as big as in USA,
 - non ICT using sector - like in USA,
 - ICT producing sector - very small 1/10 of European or USA achievements.



Conclusions

- Liberalization process has not been finished yet in the CEE Countries.
- Liberalization process fosters accelerated digital modernization.
- Digital modernization should be a key word for the CEECs looking for the factors accelerating the process socio-economic catching-up.
- The first proves of the economic meaning of ICT sector in CEECs opens the new perspectives in terms of the economic policies (also for the developing countries).



Conclusions

- The existence of the digital divide should motivate the CEECs to look for the most efficient digital ICTs. (Fixed telecommunications is important but the emergence of all wireless technologies can minimize its role)
- The ICT diffusion strongly depends on the prices that is why especially in countries of a low average disposable income the fostering of competition in ICT markets should become the most important objective of each policy maker.
- The state should use the potential of digital ICTs for its modernization what can be connected with plenty of economic advantages. In the process of creating of workable e-government the sequencing should play the most important role.



Challenges

- **Independence, powers, resources of NRAs**
- **Efficiency in Market Analysis, Significant and use of remedies.**
- **Development of fast, effective appeal mechanisms**
- **Review of European Regulatory Framework in 2006**
- **Elaboration of real national ICT strategies**
- **‘New’ factors: Broadcasting, Broadband, VoIP, Next Generation Networks, etc.**



Thank you very much for your attention!

Jaroslav K. Ponder

International Telecommunication Union

Strategy and Policy Unit

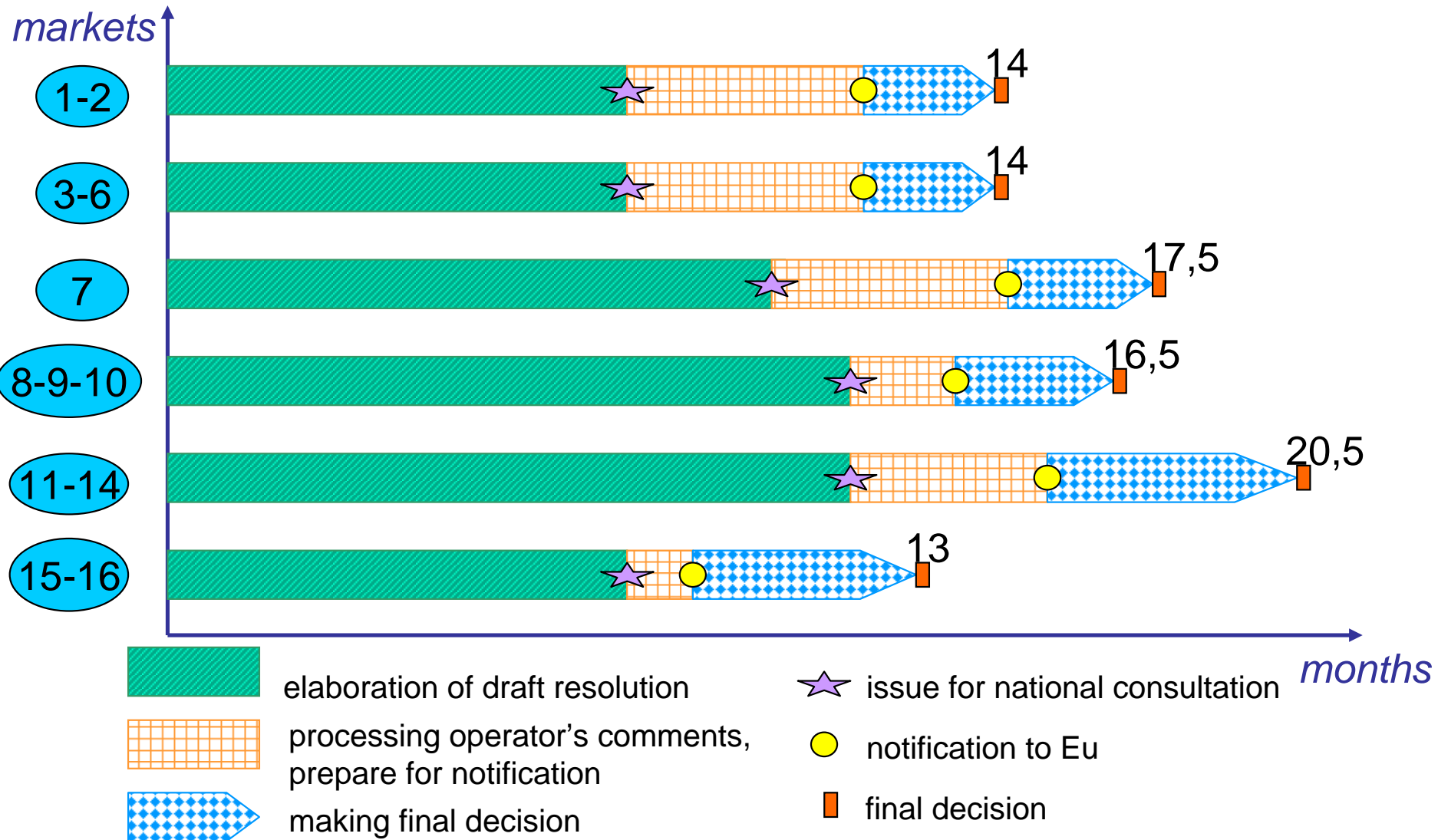
E-mail: Jaroslav.Ponder@itu.int

<http://www.itu.int/spu>

Tel: 00 41 22 730 60 65



Case of Hungary: First Market Analysis



Source: HEC (2005)