South Eastern Europe: Digital Divide or Digital Opportunity?

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The Balkan and Mediterranean area represents a high potential area for growth in IT. Discrepancies in progress on the road to the Information Society can be turn into advantages through right national policies and international cooperation. The European Union plays an important role in this direction. (Abstract)
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1. The General Divide

There is a general concern about the increasing gap between the developed countries and the rest of the world produced by information technology. While the former build the Information Society, the latter often miss the race and the benefits of the potential national competitive advantage brought by the new Digital Economy. This increasing gap creates new barriers to trade and international cooperation and threatens all sides. This is why many analysts speak on the need to something to reduce the gap between the nations who can and cannot afford the new technologies, generally known as Digital Divide. Recently, the report to G8 Kyushu-Okinawa Summit [1] on Global Digital Divide was focused primarily on the opportunity side, asking the international community to promote a Global Digital Opportunity. The enlargement of the European Union is confronted also with problems derived from the difference of levels of deployment of the technologies related to the Information Society in the candidate states. The Digital Divide has many roots, mostly in the area of economic development and a historical laggardness of some regions.

2. The General Divide and South Eastern Europe

The South Eastern Europe (SEE) area presents no exceptions to the above. There are discrepancies among the countries and a gap to the core Western European member states. That is why we will try to answer to some questions:

- How real is the Digital Divide for South Eastern Europe?
- Why this Digital Divide exists?
- What are the opportunities?
- What could be done?
- How the Digital Divide of SEE could be overcome?

How real is the Digital Divide for South Eastern Europe?

The basic IT&C indicators show a real Digital Divide of SEE compared with Europe and even with the world. Per capita information technology and telecommunications expense range between 567 USD for Greece in 1999 [2] to 25 USD for Romania. In the same year the average per capita expense for Western Europe was 1215 USD, almost 50 times more than Romania.

Compared to the Europe's average SEE has 2.4 times less PCs, 2.9 less Internet users, 5 times less domain names. Recent studies show many similarities among SEE...
countries from the IT penetration perspective [3]. South Eastern Europe lags behind relative to the number of PCs, Internet users and DNSs not only of European Union states, but also of Europe and the World as shown in Figure 1. There are also discrepancies among SEE countries and a comparative study of these IT indicators (Figures 2, 3 and 4) gives a clear image on how large is the gap to be filled. We notice particularly that while in Europe there are 6.8 persons around 1 PC, in SEE this figure varies from 14.9 for Croatia to 192 for Albania.

Several studies have tried to assess how ready are different economies for the New Digital Economy, with the result of eReadiness assessment. According to a study by McCornell International [4] most countries in SEE have problems with connectivity, information security and eBusiness climate, but are well placed from human potential perspective. The chart in Figure 5 presents SEE from the point of view of this study in present author's perspective.

Based on all this findings we may speak of a real Digital Divide.

Why this Digital Divide exists?

There is certainly a correlation between IT readiness and the general level of the economic development of a country best described by GDP/capita. Although it is theoretically possible for a country to jump to the use of latest IT technologies and get competitive advantages, in fact this does not happen often.

One reason is the affordability of IT. If a company in the Europe Union finds that a PC is equivalent with the cost of 64 average labour hours, for a company in Romania a PC is equivalent with the cost of 970 labour hours and in Bulgaria with 1141 hours more than 18 times than EU. The Internet cost is still high compared with the average monthly income in SEE countries, reaching up to 60%(!) of a monthly wage for a quite normal Internet access.

Another reason, at least equal in importance with affordability is related to mentalities in SEE countries. For to many segments of the society here, IT and Digital Economy seem to be something for a distant future. For some people by reason of digital illiteracy, for others like the political class by reason of the "other priorities" syndrome. This leads to a lack of enough policies to encourage the IT development.

Especially important are the mentalities and behaviour of the managerial class. Most managers are over 40 years old, they lack IT training and they neglect and sometimes even oppose the introduction of management information systems as they reduce the margin of "manoeuvring" in a non-market environment still present in the area.

These mentalities make the average manager or politician to accept in words IT as important, but to be reluctant to accept the new technologies in his organisation.

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1 The graphs are created based on data from ITU sources
2 Calculated by the author considering a 1000 USD PC and the labour hours costs for 1999 as released by Oesterreich Wirtschaftkammer /Abteilung fuer Statistik
and to show what I previously called the ‘repellence effect’ [5].

To national problems we may add the regional cooperation, yet very limited.

But looking at these and other weaknesses, one can not avoid noticing many elements of IT strength of the countries of the region.

First and probably the most important the quality of the educational system. Each year an impressive number of IT specialists graduate from universities with a good level of training. Many of them emigrate now to work in the European Union or North America.

Next is the emptiness of the IT related markets. This allows leapfrogging directly to state-of-the-art technologies avoiding intermediate investments. Probably mobile telephony and eCommerce are the most notable examples. The GSM penetration is a widely recognised success story. In only 2 1/2 years the number of mobile lines jumped in Romania to 10% of the population, almost the same penetration as of the conventional telephone lines in 1989.

In other countries of the area the growth of mobile telephone lines recorded similar performances. With such a base, it is not difficult to predict a new success story with future eCommerce applications based on mobile terminals.

**A Study Case: Romania**

Romania is in many ways typical for SEE. The tables presented in Appendix 1 show several facts regarding IT&C in Romania. While they confirm data of Figures 1-6, there is much encouragement derived from the quick evolution of mobile telecom and the good start of eBusiness.

### 3. IT in South Eastern Europe – a General Opportunity

Some questions arise. Is the advent of the Information Society a threat or an opportunity for countries of the area? Will than be the General Divide prevalent over the General Opportunities?

There are several conditions that favour prevalence of General Opportunities:

- SEE is recognised as a region able to participate to the Digital Economy
- Past eLeadership achievements - e.g. some Asian countries - show the potential of success of the national policies and induce optimism for adopting them
- Human resources are abundant in the area; the education system is performant
- eBusiness offers a chance to leapfrog; the presence of multinationals can improve eBusiness climate as they cannot ignore the region
- Chances for new trade patterns produce interest for the New Economy
- Software and IT services outsourcing capabilities put SEE countries in a better position in the Global IT World
- Performance/cost capabilities may be turned in a competitive advantage

A real use of opportunity could be achieved only through domestic policies aimed to encourage IT development and subsequently through international co-operation.

The European Union member states encourage the development of IT in the Balkan and Eastern European countries. First, because the enlarging of the gap will produce new barriers to trade as all forecasts show a phenomenal increase of business-to-business eCommerce in the next few years.

Then, the countries in the area abound in skilled workforce needed by the European Union states to build the Information Society. By long term planning of training of this workforce in new IT skills the lack of IT specialists in Western Europe can be compensated. The new technologies of digital communications and telework make possible to use this workforce in the countries of origin without the need to increase immigration, be it of skilled people. By right policies, IT could
create jobs in Eastern and Central Europe responding to needs of both sides. Once again, let us take the example of Romania, which is by far not singular. The old centrally planned system concentrated the work force in low productivity units, mostly in Industrial Age factories. Most of these factories are being restructured and the population occupied in the classic industries diminishes drastically. For young people the most frequent alternative is now unemployment as the service sector has not had yet the growth needed. Large scale training in IT would solve a Romanian problem, but also an European need, as most of Western Europe lacks IT trained people, applying in several cases to “niche’ official immigration. The new technologies allow not only software development through outsourcing, but also the trend to ASPs - Application Service Providers - makes possible to use the information resources globally.

The creation of a large scale IT workforce in the South Eastern Europe would not only help solving one European Union problem, but its existence would help to create the Information Society in their own countries.

There are also problems and threats within this Digital opportunity. One good example is eCommerce. Its development in Romania shows weaknesses of the needed Internet and telecom infrastructure, lack of electronic payments environment and of some basic legislation provisions. However, there is a good start and operational B2B and B2C sites [6].

The eCommerce experience in Romania revealed also the need for a large effort to increase security on Internet, both by technical means and co-ordinated legal actions, as the countries of the region produce not only good programmers, but also sophisticated hackers.

4. What could be done?

There is not too much to be invented. The examples of other countries show that progress toward a Digital Economy can be achieved through:

- Improvement of access and use of Internet for business and education
- Development of the business environment through a better legislation and help to SMEs, mainly to Internet start-ups
- Acceleration of the development of digital infrastructure, Internet, telecom, including eCommerce infrastructure for B2B applications and ePayment infrastructure
- Large scale investment in training and educating people, a recognised region strengths, promoting Digital Literacy and eEducation
- Improvement of security of information and data bases, through enforcement of specific legislation and anti-piracy and prevention of hacking framework
- Increase of the IT “absorption” capability
- Enhancement of Inter-Regional Co-operation

5. How the Digital Divide can be turned in Digital Opportunity

Despite of competition from Asia, the Balkan and Mediterranean areas are potential emerging IT zones. It consists of countries with quite different backgrounds in IT. Its main competitive advantage is its closeness to European Union area.

There is a general opinion that international aid is essential for a General Digital Opportunity. However, it has to be pointed out that adoption and implementation of national programmes are prevalent over international help.

EU and Western European countries could then help through aid to infrastructure of the New Economy. The eEurope 2002 confirms participation of less-favoured regions. Other projects could be good seeds of future developments, like IST Key Actions II - KA II or more regional focus projects as SEED.
Among these projects, priority could be given to large-scale training or to building Consumer to Administration sites, with the aim of increasing the general awareness of the public at large of the benefits of the information technologies. There are some good examples of international cooperation among countries in the area, but there is enough room for larger regional projects. Recently UK gave an impulse to regional initiatives with the programme eBalkans within the Stability Pact, a programme with a potential big impact.

These initiatives and other European Union Plans could help Balkan and Central and Eastern Europe countries to progress quicker to the Information Society.

One may question if a new Marshall Plan like IT initiative for SEE could not be the answer?

References
http://www.mcconnellinternational.com/ereadiness/report.cfm
Appendix 1 Study Case: Romania

Digital Divide: Study case
IT in Romania: PC Technology

- IT&C spending (1998) 450 Million USD
- IT&C spending / GDP (1998) 0,5%
- Total number of PCs (end 1999) 640.000
- Number of PCs per 100 inhabitants 2,8
- Rate of Growth PCs (1999/1998) 30,3%
- PC consumption per year ~ 75,000 units
- PCs networked 25%
- SoHo market stagnant
- PC market in 5 year (CAGR) 11,2% (IDC)

Digital Divide: Study case
IT in Romania - Telecom

- Number of telephone lines (1999) 5.3 mill.
- Density of telephone lines (%) 23,5
- Number of mobile telephone lines 2.3 mill.
- Density of mobile telephone lines 9%
- Rate of growth mobile lines 1999/1998 108%
- Network digitization 55%
- Main operator Romtelecom privatized
  voice monopoly ends 2002
- Mobile operators 4 (3 GSM, 1 NMT)
  GSM: both 900/1800
Digital Divide: Study case
IT in Romania - Internet

♦ Internet Hosts
  « January 1999  23,508
  « September 2000 36,793 (+56.5%)
    Important increase - reasons for optimism!
♦ Internet Users
  « 580,000 /ESIS, 600,000 /ITU
  « penetration of only 2.68%
♦ Cards
  « 770,000 End July 2000

SOURCE: ITU Network Coordination Centre, International and National Bank Research

Digital Divide: Study case
IT in Romania - eCommerce

♦ A promising start
  « B2B Sites >10
  « B2C Sites >25
♦ Home Banking offered by important banks
♦ Trust Authority is set to issue Digital Certificates
♦ Draft for Laws on Electronic Signature, Electronic Commerce, Data Protection Software Parks, etc.
♦ eMail Start-ups