

## **e-Business policy and practice in the southeast Europe**

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**Abstract.** eSEE Initiative, or Initiative for electronic SouthEastern Europe was established in 2002 under the auspices of the Stability pact for Western Balkans with the signing of the eSEE Agenda at the ministerial conference in Belgrade. It continues its work under the umbrella of the Regional Cooperation Council, implementing the eSEE Agenda Plus signed in 2007 at the ministerial conference in Sarajevo. These documents create a regional policy framework and enable monitoring and benchmarking national progress on the regional scale. The paper presents institutional, legal and operative objectives of the regional policy and its current state of implementation. Croatia is showcased as a best practice case for the implementation of a national e-Business strategy.

**Keywords:** information society development, e-Business, regional policy in southeast Europe

### ***Introduction***

Southeast Europe is a region where majority of countries are undergoing a demanding period of transition from the post-communist to a market economy, compounded in large part of the region by consequences of the war that broke established routes of economic cooperation and scattered the regional market. International community supported the rebuilding of regional cooperation through the establishment of the Stability Pact for South Eastern Europe in 1999. Partnership with the European Union through national association agreements, the clear path of accession to the EU for the region, and availability of pre-accession funding contributed significantly to the national and regional restructuring and reform. In 2008 Regional Cooperation Council (RCC – <http://www.rcc.int/>) succeeded the Stability Pact for South Eastern Europe as a regionally owned and led cooperation framework that also supports European and Euro-Atlantic integration.

Information and communication technologies (ICTs) have been recognized as enablers of development and an opportunity for the developing countries to catch-up with the developed world [1, 2]. However, this goal seems to be elusive. Instead of reducing the gap, ICTs seem to be contributing to its growth. World Summit on Information Society (WSIS: Geneva, 2003 and Tunisia, 2005) convened with the goal of reducing this digital divide [3-6]. At the regional level, in southeast Europe, in 2002 an initiative for regionally coordinated development of information society (eSEE Initiative) was formed under the umbrella of the Stability Pact, with the objective to help its members develop the necessary institutional and legal framework that would enable reaping the benefits of ICTs for faster development and creating additional value for citizens and businesses.

Paper provides an overview of the regional information society policy and its implementation with an emphasis on policy issues relevant for electronic business. It showcases the Republic of Croatia, as the only eSEE Initiative member that has adopted a national e-Business strategy. Implementation of the strategy provides some best practices and lessons learned.

### ***Political and Institutional Framework of Regional Cooperation***

Initiative for Electronic Southeastern Europe (eSEE Initiative) was formally established in October 2002, with the signing of the „eSEE Agenda for the Development of Information Society“ (eSEE

Agenda) [7] during the Telecommunications for Development Conference in Belgrade. After the Regional Cooperation Council ([www.rcc.int](http://www.rcc.int)), succeeded the Stability Pact in 2008, the eSEE Initiative continued its activities within the regional cooperation framework.

United Nations Development Program (UNDP) office in Sarajevo provides continuous support to the Initiative by hosting the eSEE Initiative Secretariat and carrying on support projects ([www.eseeinitiative.org](http://www.eseeinitiative.org)). The Secretariat provides administrative support for eSEE Initiative Working group meetings and expert support for monitoring the implementation of policy documents by collecting and collating national reports and publishing an online eSEE Newsletter providing insight into the regional activities and best practices.

In 2008, an innovative regional public-private-partnership institution Centre for e-Governance Development ([www.cegd.eu](http://www.cegd.eu)) was established in Ljubljana, Slovenia, with the objective to provide a sustainable support to the eSEE Initiative. Its founding members are the eSEE Initiative, Government of the Republic of Slovenia, Regional Cooperation Council, United Nations Development Program, INA Academy, European Foundation, Microsoft, Siemens, and SRC.SI. The Centre's mission is coordination of activities, transfer of knowledge, education and research in the field of eGovernance development in southeast Europe.

Activities of the eSEE Initiative have also been supported by other national and international institutions such as European Commission, USA CLDP, Hellenic Aid, Government of the Republic of Italy, INA Academy etc.

### ***Regional ICT Policy***

eSEE Agenda, adopted in 2002, aimed at establishing legal and institutional framework and developing national policy for the development of information society. It had four priority areas:

1. Adoption of policy and strategy for the Information Society;
2. Adoption and implementation of Legal Infrastructure for Information Society accordingly to Acquis Communautaire settled within European Union countries;
3. Establishment of regional cooperation and national implementation mechanisms;
4. Promotion of Information Society for development.

The legal framework of the second priority covered areas of:

- Electronic communications,
- Electronic commerce,
- Electronic contracts,
- Electronic signature,
- Personal data protection, and
- Ratification of the Council of Europe Convention on Cybercrime.

The third priority required establishing:

- Cabinet level body responsible for information society development,
- National ICT Forums, and
- Mechanisms for regional “at cost” interconnection of electronic communication networks.

The fourth priority included:

- Increasing the public access to information,
- Regional cooperation and exchange of information on the regulation of electronic communications markets,
- Regional telecommunication SLA standards,
- Regional electronic labor exchange and promotion of distance employment,
- Regional backbone for national academic and research networks,
- Improving regulation for establishing a company and operation and tax regulation,
- Negotiating lowest tariffs for regional cross-country sales of ICT products and services, and
- Promoting domestic and direct foreign investment in the ICT sector.

In 2005 at the South Eastern Europe Ministerial Conference on Information Society in Thessaloniki, eSEE members signed a Memorandum of Understanding on the regional broadband development [8] and Ministerial Conclusions [9] in which ministers recognize the potential of e-Business models to stimulate economic growth, job creation, and regional trade and acknowledge the proposed guideline National Strategy for Building a Framework for e-Business [10]. UNMIK Kosovo and EU member state Romania joined the eSEE Initiative by signing the Ministerial Declaration, while the Broadband MoU was also signed by another EU member state Greece.

By the end of 2006, most of the countries had reached the objectives of the eSEE Agenda, and a new document eSEE Agenda plus [11] was prepared. It was adopted at the Ministerial Conference of Electronic South Eastern Europe Initiative in Sarajevo in 2007. eSEE Agenda Plus shifted the focus from legal and institutional enablers to implementation projects. Document is closely aligned with the goals of the EU i2010 Initiative, with objectives adjusted to the regional context and resources.

eSEE Agenda Plus defines three priority areas:

- Single SEE information space,
- Innovation and Investment in ICT research and education, and
- Inclusive information society.

Within these priority areas several objectives are directly relevant for the development of e-Business e.g. availability of broadband and rich online content, electronic identity management, development of ICT skills, e-Government and e-Business. In particular, eSEE member states have agreed to

- Develop national strategies for e-Business development,
- Remove barriers for e-Business,
- Stimulate business incubators, techno-parks and business start up centers through partnership with universities and private sector, and
- Create environment for all companies to use ICT in their daily operations.

### ***Implementation and Monitoring***

Following the adoption of the eSEE Agenda, signatory countries nominated e-Envoys and Senior Policy Officials to participate in the eSEE Initiative Working group that meets four times a year to discuss progress, plan further activities and exchange regional best practices. UNDP Sarajevo provided support by hosting the eSEE Initiative Secretariat responsible for operational activities. The Working group meets quarterly, its members provide regular reports on implementation of the eSEE

Initiative policy documents and eSEE Initiative Secretariat has created instruments for monitoring implementation of the eSEE Initiative commitments in the form of Matrix of Fulfillment.

Timeframe for implementation of the eSEE Agenda was 2002-2004. With technical support from UNDP and INA Academy at the beginning of 2003 eSEE Working group adopted Terms of Reference for Information Society State Bodies [12] and eSEEurope Initiative Common Guidelines for National Information Society Policies [13] envisaged under the first priority of the eSEE Agenda. In 2004 UNDP and Stability Pact prepared a Status and Usage Report [14]. At the time, most countries had adopted national ICT policies and strategies, they had initiated liberalization of the telecommunications sector, and legal framework was partially established. However, internet penetration was very low due to insufficient infrastructure and low purchasing power of the citizens and businesses. Internet penetration in Croatia, at 30%, was more than double the highest in the rest of the region. There was practically no broadband offer (only in Croatia there were several business users, with penetration well below 1%). Croatia was also the only country to have adopted law on electronic signature and with a functioning certificate authority (CA). On-line services were practically non-existent, and the report related this finding to low internet usage and lack of e-Signature infrastructure. It was expected that the countries would adopt all the necessary legislation within the next two years.

At the beginning of 2006 UNDP Bratislava prepared the Review of the eSEE Agenda Policy Impact [15]. Although the deadlines generally have not been met, the review concluded that in most countries there was a significant impetus behind the information society process, and that eSEE Agenda contributed to it. As of July 2010, only Bosnia and Herzegovina has not met all the obligations (there is no cabinet level body responsible for information society development, there is no law on electronic document, but the law on e-Commerce has entered parliamentary procedure.

eSEE Agenda Plus has an implementation time frame 2007-2012. Its status of implementation is updated quarterly for the eSEE Initiative Working group meetings, and published on the eSEE Initiative web as a Matrix of Fulfillment of eSEE Agenda Plus [16]. The Agenda has set very ambitious deadlines that most countries could not meet, and the global crisis contributed to further slowdown of implementation, due to the lack of funding. Still, there is a steady progress in all eSEE member states. Table 1 summarizes a selection of indicators relevant for e-Business. Current internet penetration in the region ranges from 20% in Bosnia and Herzegovina to 51% in Croatia, and fixed broadband penetration ranges from 2,5% in Albania to 13,4% in Croatia. Three countries have established internet exchange centers. Only two countries (Croatia and Romania) have established national Computer Emergency Response Teams (CERTs), showing the regional lack of government support to citizens and businesses for dealing with on-line treats. Number of national top level domains varies widely. However, the extreme number of domains registered in Montenegro is not due to the high development of local e-Business environment. It is a consequence of an attractive top-level country code .me, and the liberal policy for registration of national domains by foreign entities. Most countries have established a central e-Government portal, but only two (Croatia and Macedonia) have established a single window for international trade documents. Only Croatia has adopted a national e-Business strategy, while Macedonia and Serbia have included e-Business policy issues in their respective national information society strategies. Even though all countries but one have adopted e-Signature legislation, functioning CAs have been established only in four countries. Still, other countries have reported some initial activities in this area. Croatia is the only country where voluntary accreditation scheme was established.

In 2005 European Commission started regular ICT related monitoring in southeast Europe. Cullen International was contracted to prepare four reports between August 2005 and November 2007 on telecommunication services sector and related aspects [17-20]. Between 2008 and 2010 additional four reports were contracted widening the scope with information society services. The first three have



Table 1. A selection of indicators on implementation of eSEE Agenda Plus related to e-Business development as of July 2010. Column labels are ISO 3166 two-letter country codes.

	<b>AL</b>	<b>BA</b>	<b>HR</b>	<b>MK</b>	<b>MD</b>	<b>ME</b>	<b>RO</b>	<b>RS</b>	<b>XK</b>
<b>Internet penetration*</b>	32%	20%	51%	42%	37%	41%	32%	39%	36%
<b>Fixed broadband penetration**</b>	2,5%	4,9%	13,4%	10,3%	19%	6,7%	12,3%	6,4%	5,8%
<b>Internet Exchange Centre</b>	NO	NO	YES	NO	YES	NO	YES	NO	NO
<b>CERT</b>	NO	NO	YES	NO	NO	NO	YES	NO	NO
<b># of internet domains</b>	3200	8958	77099	14000	14662	407422	281569	50356	NO
<b>Central e-government portal</b>	YES	NO	YES	YES	NO	NO	YES	YES	YES
<b>e-signature NRCA</b>	YES	NO	YES	NO	YES	NO	YES	NO	NO
<b>Single window for international trade and electronic trade documents</b>	NO	NO	YES	YES	NO	NO	NO	NO	NO
<b>e-Business Strategy***</b>	YES	NO	YES	YES/NO	NO	NO	NO	YES/NO	NO
<b>Actions to support use of ICTs in business</b>	YES	NO	YES	NO	NO	NO	NO	YES	NO

Notes:

\*Internet penetration is defined as percent of population of age 16 years and older regularly using internet. Data were provided by eSEE Initiative Working group members. Methodologies and definitions may differ.

\*\*Data source [23] as of July 2009.

\*\*\*YES/NO means e-Business strategy is part of the national information society strategy

URLs of Internet Exchange Centers are <http://www.cix.hr> and [www.ronix.ro](http://www.ronix.ro)

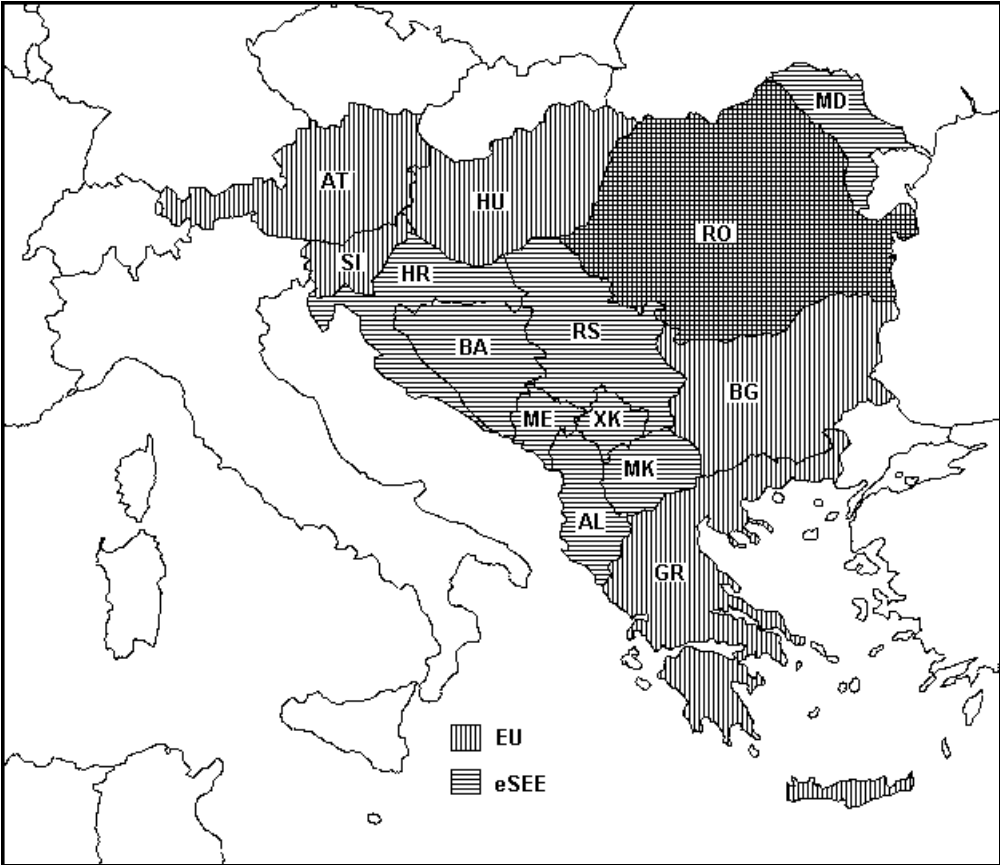
URLs of CERTs are <http://www.cert.hr> and <http://www.cert-ro.eu>

URLs of central e-government portals are <http://www.e-albania.al/>, <http://MojaUprava.hr>, <http://www.uslugi.gov.mk/>, <http://www.e-guvernare.ro/>, <http://www.euprava.gov.rs/> and <http://www.rks-gov.net/>

been published [21-23]. These reports provide additional information about regional development of information society. According to the last report, in Croatia, Kosovo, Macedonia and Serbia proportion of small enterprises with access to internet ranged from 77% in Kosovo to 97% in Croatia. In all these countries proportion of medium sized enterprises with access to internet was 90% and above, and percentage of large enterprises was 98% and above. For other eSEE Initiative countries data were not available. Regarding the fighting against cybercrime, all the countries except Bosnia and Herzegovina have made cybercrime activities a criminal offense.

**Network Readiness**

In order to look at these findings from a slightly wider perspective, it is interesting to compare trends in rankings of the region and its most immediate surroundings in the World Economic Forum (WEF) reports on network readiness [24-32]. eSEE Agenda Plus was signed by Albania, Bosnia and Herzegovina, Croatia, UNMIK/Kosovo, FYR Macedonia, Moldova, Montenegro, Romania, and Serbia. In addition, memorandum of understanding on broadband was also signed by Greece. Figure 1 shows the map of the region highlighting EU and eSEE Initiative members included in the analysis.



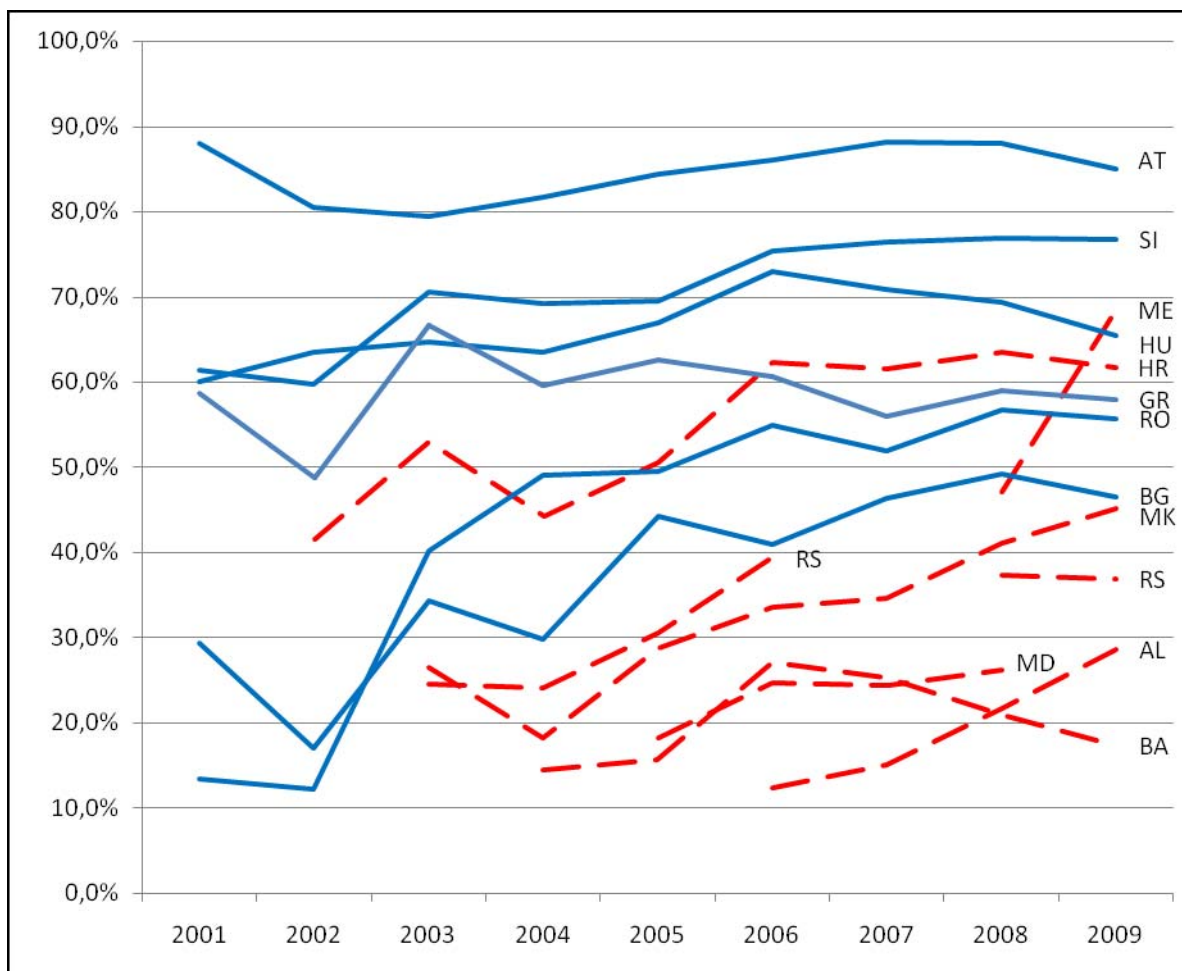
**Figure 1** Map of the Southeast Europe and the neighboring countries included in the analysis of network readiness.

WEF started the network readiness report series in 2002, with the objective to assess countries’ capacity to exploit the opportunities offered by the ICTs. Network readiness index (NRI) was constructed with the aim to measure the “...degree of preparedness of a nation or community to participate in and benefit from ICT developments” [25]. NRI consists of three component indexes and nine subindexes:



- Network Readiness Index
  - Environment component
    - Market subindex
    - Political / regulatory subindex
    - Infrastructure subindex
  - Readiness component
    - Individual readiness subindex
    - Business readiness subindex
    - Government readiness subindex
  - Usage component
    - Individual usage subindex
    - Business usage subindex
    - Government usage subindex

**Figure 2 Proportion of countries scoring below on Network Readiness Index in eSEE Initiative countries and their immediate neighbor EU member states. (EU MS full line, eSEE Initiative MS dashed line)**



Number of countries included in the report has been steadily increasing from 75 in 2002 report to 133 in 2009, and one country less in 2010. In order to be able to compare rankings across the time-span, we have computed the percentage of countries ranked below each country for each year. Figure 2 shows trend lines of NRI for eSEE Initiative and the immediate neighbor EU member states (Austria, Bulgaria, Greece, Hungary and Slovenia). Ranking from e.g. report 2010 is mapped to year 2009, because data reference period for each report predates the report by 1-2 years. There is an obvious separation between the EU and eSEE member states, with Austria and Slovenia consistently staying in the top 20% and 30% respectively, Hungary in the top 40% and Greece in the top 50%. Romania and Bulgaria, countries of the last EU enlargement show remarkable growth until 2005, and then remain around the middle of the ranks, with Romania consistently scoring higher than Bulgaria. eSEE Initiative countries show relatively stable, but slow shift towards upper part of the rankings. Only Croatia and Montenegro score higher than the bottom ranking EU member states. Montenegro, as a newly formed state, was included only in last two reports. It has shown remarkable progress in 2009, surpassing Croatia, which has consistently been the leader in the region. Trends for Albania (monitored since 2006) and Macedonia are steadily positive, while Croatia's fast growth in 2004-2006 has been followed by stagnation. After a short progress in 2004-2006, Bosnia and Herzegovina is the only country in the region showing steady decline in the last three reports.

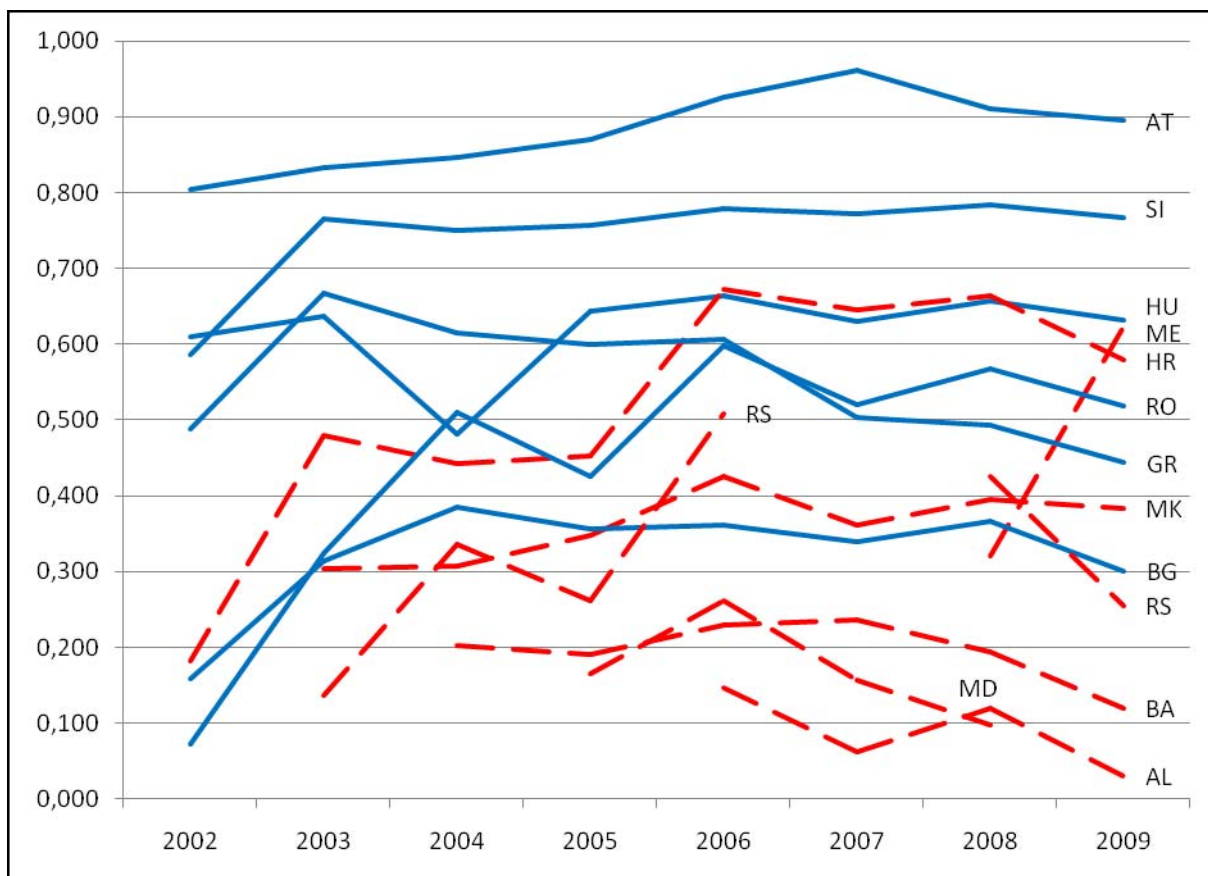


Figure 3 shows trend lines for Business Readiness Subindex in the same countries. When it comes to business readiness, there is more overlap between the EU and eSEE member states. Similar to the overall network readiness, Austria and Slovenia stay within the top 10% and 25%, respectively. The middle range from top 30% to the top 70% contains most other countries. However, Albania, Bosnia and Herzegovina, and Moldova remain within the bottom 30% with a steady decline in the last few years. 2007 data for Serbia are missing, but 2008 and 2009 also show decline in respect to the 2006 ranking. In 2009 Serbia has actually fallen to the bottom 30%. Among the EU member states, Greece is showing a steady decline in business readiness since 2003, when it was among the top 35%, to 2009 when it dropped below 50%. Croatia is showing the same pattern of rise and stagnation as for overall network readiness, losing its regional leadership to remarkably progressing Montenegro in 2009.

#### ***e-Business Strategy in Croatia – a Case Study***

Croatia is the only eSEE Initiative member to have adopted a national e-Business Strategy [33]. The Strategy was adopted by the Government in 2007. Public body responsible for coordination of its implementation is Ministry of economy, labor and entrepreneurship, with the implementation timeframe 2007-2010. The purpose of the strategy was to:

1. Speed-up development of e-Business and enable coordinated activities of national authorities and businesses at the national level.
2. Remove barriers to e-Business.
3. Focus activities and projects on achieving effects.
4. Adopt guidelines and standards and launch projects of high visibility encouraging self-organization.

5. Focus on building a supporting environment for adoption of e-Business by SMEs.
6. Increase national competitiveness and improve country rating in international reports.
7. Establish objectives and mechanisms for strategy implementation, specially timing and sequencing of actions by national authorities.
8. Recognize value chains in public authorities and at the national level and mechanisms supporting cooperation among the business, state and research communities.
9. Motivate large businesses to create their own ecosystems of e-Business implementation in respect to their customers and supply chains.

Strategic objectives in the Strategy are divided in two categories. The first category are objectives related to common e-Business infrastructure. These are e.g. removal of general and specific legal barriers to e-Business, building the institutional capacity, adopting standards and regulations for e-Business and establishing infrastructure for development of public knowledge (awareness raising campaigns, education, portal, public knowledge base etc.). The second category are objectives related to developing e-Business. These are e.g. adopting standards for e-Business documents (e-Invoice, e-Payment, e-Orders etc.), establishing a system of consulting support for the SMEs, increasing the funding of science and technology, establishing a system of quality marks in e-Business, implementing e-Public Procurement and e-Government services, and achieving the target values in selected eBusiness W@tch indicators. These objectives are well aligned with and expand on the e-Business related objectives of the eSEE Agenda Plus. In the Strategy, expected savings from adoption of e-Invoicing in Croatia were estimated at 850 million € in private sector over the six year period, and at 310 million € in public sector over the same period. The estimates were based on the estimates from Danish and French implementation [34].

In 2008 Ministry of economy, labor and entrepreneurship launched six projects related to the objectives of the e-Business Strategy and established an e-Invoice committee, as its advisory body. Ministry initiated a benchmarking study [35] to establish the baseline indicators of the development of e-Business in Croatia. It also contracted three Croatian faculties to:

- Research business process models for implementation of e-Business and design e-Modules (open source components for receiving and creating electronic business documents),
- Analyze best practices in e-Business standards, provide recommendations for standards evaluation criteria and develop draft Croatian e-Invoice XML schema, and
- Design an e-Business knowledge-base that would support business consultants and businesses throughout the strategic cycle of e-Business development (from strategy to implementation and monitoring).

Ministry initiated development of content for the e-Business web-site within the central government portal MojaUprava.hr and a joint program with the Croatian Agency for SMEs (HAMAG) for certification of consultants on e-Business and providing grants for SMEs to use consulting services for adopting e-Business.

During the 2008 the e-Invoice Committee collaborated with the faculties on XML-Schema and Business Requirements for e-Invoice exchange, and adopted these documents at the end of 2009. During the same period Ministry prepared changes to the Law on electronic signature and Law on electronic commerce that completed alignment of national legal framework in this area with the EU

Acquis Communautaire. However, Law on VAT and accompanying by-laws were not fully harmonized, and VAT by-law still requires issuing of paper based invoices for VAT compliance.

In 2009, due to the global financial crisis, budget rebalance left the Ministry without funding for e-Business Strategy implementation, postponing the implementation of the annual plan to 2010. This year Ministry launched call for tenders for three more projects - research on interconnectivity of service providers, and development of national guidelines for implementation of related CEN CWAs, development and implementation of the e-Business Knowledge Base, and a pilot-project of implementation of e-Invoice exchange. It also established National Council on e-Business, an advisory body with representatives from government, business, public sector and research community that will provide guidance and advice to the Ministry on implementation of the e-Business Strategy.

Evaluation of the implementation and the impact of e-Business Strategy in Croatia helped identify some best practices:

- Involving all stakeholders in the e-Invoice Committee and National Council for e-Business drew wide support for the implementation of the Strategy and enabled tapping into the expertise and knowledge of all stakeholders, thus increasing the quality of measures and activities taken,
- Research projects resulted in studies in Croatian language, accessible to all businesses as a rich source of expertise on business processes and standards, as well as a framework for implementing e-Business solutions,
- Benchmarking study was an indispensable tool for monitoring the actual effect of Strategy implementation,
- Developing of a national recommendation for e-Invoice XML Schema aligned with international standards and national invoicing regulation and practices is expected to facilitate development of interoperable solutions for e-Invoice exchange,
- Presentations at business conferences helped raise awareness on benefits of e-Business.

However, the implementation also exposed some weaknesses:

- Lack of policy alignment between the Ministry of Commerce, Labor and Entrepreneurship and the Ministry of Finance led to delays in removing of legal barriers to e-Invoicing in the area of VAT regulation,
- Lack of institutional capacity slowed down the implementation of all projects; high personnel turn-over due to low salary of public servants severely undercut the capacity of the Ministry to implement the Strategy. Hiring restrictions and budgetary cuts since 2009 only exacerbated the circumstances,
- There is still lack of awareness of the benefits of e-Business, particularly among the SMEs, and a wider campaign and education effort is needed to raise business readiness,
- In particular, there is a lack of understanding of the structure and size of the effects of e-Invoicing. Businesses do not fully understand the cost structure of invoice processing, and do not believe that foreign estimates are valid under local circumstances. A national study on the effects of e-Invoice could help achieve better understanding of the variability of expected savings in relation to the industry segment, company size and e-Business readiness level, and

identify structure of savings in a way that would help businesses build more reliable business case for implementing e-Invoicing,

Due to financial restrictions and lack of institutional capacity some measures are implemented more slowly than envisaged. Consulting scheme for SMEs is expected to increase the business readiness, and e-Business quality mark, developed with the National Chamber of Commerce is expected to make it easier to choose regulatory compliant and interoperable solutions. National awareness campaign was postponed until the regulatory framework is completed. Even though the timeframe of implementation is drawing to the end, the measures that have not been fully implemented still remain valid and valuable, and we hope that the Government will decide to prolong the implementation of the Strategy, rather than launch a long process of drafting a new strategy that would stall any activities, or deciding not to implement any e-Business strategy, which would be even worse.

The Croatian e-Business Strategy identifies three possible scenarios:

- A The Government decides not to adopt an e-Business Strategy
- B The Government adopts an e-Business Strategy, but does not provide adequate resources and political support, and
- C The Government adopts an e-Business Strategy and provides full political support and resources for its implementation.

At the time when the Strategy was adopted we had hoped for the scenario C to happen. From today's perspective, what happened was closer to the scenario B. Still, observing the negative trend in business readiness subindex in the region, we may be confident that the Croatian trend, which is more similar to that in Austria and Slovenia than to the rest of the region, and does not show a sharp decline, can be at least partially attributed to the implementation of the e-Business Strategy.

### ***Conclusions***

Countries of the Southeast Europe have made a significant progress in establishing legal and institutional framework and infrastructure for information society development, but they still lag far behind the EU. eSEE Agenda and eSEE Agenda Plus have helped the region create a common policy framework and develop national strategies and implementation plans. Global crisis had a negative impact on the speed of implementation of eSEE Agenda Plus, but steady progress was still maintained. Croatia has been the regional leader since the establishment of the eSEE Initiative, however recently its leadership position is challenged by other countries that have increased and focused their efforts. Albania, Kosovo, Montenegro and Serbia have increased their activities for the development of information society, and the effects are already visible.

When it comes to specific activities related to e-Business development, eSEE Initiative members have missed most deadlines. Croatia is the only country to have adopted national e-Business Strategy. Serbia and Macedonia have included e-Business related objectives in their information society strategies. All countries except Bosnia and Herzegovina have included cybercrime as a criminal offense in their penal code, and all have adopted regulations of e-Signature, e-Commerce and e-Document. However, market for e-Signature certificates is still emerging.

Implementation of e-Business Strategy in Croatia has accomplished some best practices, as well as taught us some lessons. It has confirmed the value of involving all stakeholders in the development and implementation of the national strategy, the importance of standardization in ICTs and the

indispensability of benchmarking. It also proved the importance of information dissemination. Lack of policy alignment and the lack of institutional capacity were the main barriers to more successful strategy implementation, which was exacerbated by the global crisis and the reduction in funding. Croatian lasting regional leadership in network and business readiness confirms the quality of the national information society development framework. However, Montenegro, Macedonia and Serbia have picked up the speed and are prepared to challenge this leadership.

## **References**

- [1] United Nations Millennium Declaration. Adopted by the UN General Assembly at the 55<sup>th</sup> session, 18.9.2000. New York: UN, 2000.  
(<http://www.un.org/millennium/declaration/ares552e.pdf> accessed 2010-09-30)
- [2] Ministerial Declaration at the United Nations Economic and Social Council (ECOSOC) session on “Development and international cooperation in the twenty-first century: the role of information technology in the context of a knowledge-based global economy”. New York: UN ECOSOC, 2000. (<http://www.un.org/documents/ecosoc/docs/2000/e2000-19.pdf> accessed 2010-09-30)
- [3] WSIS Geneva Declaration of Principles, Geneva: UN, 2003 ([http://www.itu.int/dms\\_pub/itu-s/md/03/wsis/doc/S03-WSIS-DOC-0004!!PDF-E.pdf](http://www.itu.int/dms_pub/itu-s/md/03/wsis/doc/S03-WSIS-DOC-0004!!PDF-E.pdf) accessed 2010-09-30)
- [4] WSIS Geneva Plan of Action. Geneva: UN, 2003 ([http://www.itu.int/dms\\_pub/itu-s/md/03/wsis/doc/S03-WSIS-DOC-0005!!PDF-E.pdf](http://www.itu.int/dms_pub/itu-s/md/03/wsis/doc/S03-WSIS-DOC-0005!!PDF-E.pdf) accessed 2010-09-30)
- [5] WSIS Tunis Commitment. Tunis: UN, 2005 (<http://www.itu.int/wsis/docs2/tunis/off/7.pdf> accessed 2010-09-30)
- [6] WSIS Tunis Agenda for the Information Society. Tunis: UN, 2005  
(<http://www.itu.int/wsis/docs2/tunis/off/6rev1.pdf> accessed 2010-09-30)
- [7] eSEE Agenda, Belgrade, 2002  
(<http://www.eseeinitiative.org/sadrzaj/eAgenda/eSEEEurope%20Agenda.pdf>)
- [8] Memorandum of Understanding on the development of a unified market of broadband networks fully interconnected to the European and global networks - Initiative for ‘bSEE’ - Broadband South Eastern Europe, Thessaloniki 2005.  
(<http://www.eseeinitiative.org/sadrzaj/RelatedDocuments/sadrzaj/terms/bSEE%20MoU.pdf>)
- [9] Conclusions of the SouthEastern Europe Ministerial Conference on the Information Society. Thessaloniki, 2005  
(<http://www.eseeinitiative.org/sadrzaj/RelatedDocuments/sadrzaj/terms/Ministerial%20Conclusions.pdf> accessed 2010-09-30)
- [10] Guidelines for a National Strategy on Building Framework for e-Business, Thessaloniki, 2005  
(<http://www.eseeinitiative.org/sadrzaj/RelatedDocuments/sadrzaj/terms/Guidelines%20for%20a%20National%20Strategy%20on%20Building%20Framework%20for%20e-Business.pdf> accessed 2010-09-30)
- [11] eSEE Agenda Plus, Sarajevo 2007  
(<http://www.eseeinitiative.org/sadrzaj/eAgenda/eSEE%20Agenda%20Plus%20signed.pdf> accessed 2010-09-30)
- [12] eSEE Initiative Terms of Reference on Information Society State Bodies. Bled, 2003  
(<http://www.eseeinitiative.org/sadrzaj/RelatedDocuments/sadrzaj/terms/ToR%20State%20Bodies-DC-v2-1.%20nd%20draft%2027..03.03.pdf> accessed 2010-09-30)

- [13] eSEEurope Initiative Common Guidelines for National Information Society Policies. Bled, 2003  
(<http://www.inatelecom.org/Portals/0/PDFs/eSEEurope%20Initiative%20Common%20Guidlines.pdf> accessed 2010-09-30)
- [14] eSEEurope Regional Information and Communications Technologies Sector Status and Usage Report: Building an Information Society for all. UNDP, Stability Pact: Sarajevo, 2004.  
(<http://www.eseeinitiative.org/sadrzaj/Organisational/ICT%20Sector%20Status%20Report%20for%20South-Eastern%20Europe%20Web.pdf> accessed 2010-09-30)
- [15] The eSEE Initiative: Review of the eSEE Agenda's Policy Impact in the area of Information Society in South Eastern Europe, final report. UNDP: Bratislava, 2006.  
(<http://www.eseeinitiative.org/sadrzaj/RelatedDocuments/sadrzaj/terms/Review%20of%20the%20eSEE%20Agenda%20Policy%20Impact,%20Final%20version%2006022006.pdf> accessed 2010-09-30)
- [16] Matrix of Fulfillment of eSEE Agenda Plus, July 2010  
([http://www.eseeinitiative.org/sadrzaj/RelatedDocuments/sadrzaj/terms/Matrix\\_of\\_Fulfillment\\_of\\_eSEE\\_Agenda\\_Plus%20July%202010.pdf](http://www.eseeinitiative.org/sadrzaj/RelatedDocuments/sadrzaj/terms/Matrix_of_Fulfillment_of_eSEE_Agenda_Plus%20July%202010.pdf))
- [17] Cullen International: Report 1 – Country Comparative Report – Supply of services in monitoring of South East Europe – telecommunications services sector and related aspects. Brussels, August, 29, 2005. (<http://www.cullen-international.com/cullen/cipublic/studies/balkan/report1comparative.pdf> accessed 2010-09-30)
- [18] Cullen International: Report 2 – Country Comparative Report – Supply of services in monitoring of South East Europe – telecommunications services sector and related aspects. Brussels, June, 29, 2006. (<http://www.cullen-international.com/cullen/cipublic/studies/balkan/report2comparative.pdf> accessed 2010-09-30)
- [19] Cullen International: Report 3 – Country Comparative Report – Supply of services in monitoring of South East Europe – telecommunications services sector and related aspects. Brussels, March, 2007. (<http://www.cullen-international.com/cullen/cipublic/studies/balkan/report3comparative.pdf> accessed 2010-09-30)
- [20] Cullen International: Report 4 – Country Comparative Report – Supply of services in monitoring of South East Europe – telecommunications services sector and related aspects. Brussels, November 2007. (<http://www.cullen-international.com/cullen/cipublic/studies/balkan/report4comparative.pdf> accessed 2010-09-30)
- [21] Cullen International. REPORT I: Supply of services in monitoring regulatory and market developments for electronic communications and information society services in Enlargement Countries, Brussels, September 2008. ([http://www.cullen-international.com/cullen/cipublic/studies/balkan2/enlargement\\_countries\\_monitoring\\_report\\_1.pdf](http://www.cullen-international.com/cullen/cipublic/studies/balkan2/enlargement_countries_monitoring_report_1.pdf) with Annex [http://www.cullen-international.com/cullen/cipublic/studies/balkan2/enlargement\\_countries\\_monitoring\\_report\\_1\\_annex.pdf](http://www.cullen-international.com/cullen/cipublic/studies/balkan2/enlargement_countries_monitoring_report_1_annex.pdf) accessed 2010-09-30)
- [22] Cullen International. REPORT II: Supply of services in monitoring regulatory and market developments for electronic communications and information society services in Enlargement Countries, Brussels, June 2009. ([http://www.cullen-international.com/cullen/cipublic/studies/balkan2/enlargement\\_countries\\_monitoring\\_report\\_2.pdf](http://www.cullen-international.com/cullen/cipublic/studies/balkan2/enlargement_countries_monitoring_report_2.pdf) with Annex [http://www.cullen-international.com/cullen/cipublic/studies/balkan2/enlargement\\_countries\\_monitoring\\_report\\_2\\_annex.pdf](http://www.cullen-international.com/cullen/cipublic/studies/balkan2/enlargement_countries_monitoring_report_2_annex.pdf) accessed 2010-09-30)



- [23] Cullen International. REPORT III: Supply of services in monitoring regulatory and market developments for electronic communications and information society services in Enlargement Countries, Brussels, 2010  
([http://ec.europa.eu/information\\_society/activities/internationalrel/dialogue\\_coop/enlargement/Enlargement%20Countries%20Monitoring%20Report%203%20-%20March%202010.pdf](http://ec.europa.eu/information_society/activities/internationalrel/dialogue_coop/enlargement/Enlargement%20Countries%20Monitoring%20Report%203%20-%20March%202010.pdf) with Annex  
[http://ec.europa.eu/information\\_society/activities/internationalrel/dialogue\\_coop/enlargement/Enlargement%20countries%20monitoring%20Report%203%20-%20Annex%20-%20March%202010.pdf](http://ec.europa.eu/information_society/activities/internationalrel/dialogue_coop/enlargement/Enlargement%20countries%20monitoring%20Report%203%20-%20Annex%20-%20March%202010.pdf) accessed 2010-09-30)
- [24] Kirkman G, Cornelius P, Sachs J, Schwab K (eds.) The Global Information Technology Report 2001–2002: Readiness for the Networked World. New York: Oxford University Press, 2002.
- [25] Dutta S, Lanvin B, Paua F (eds.) The Global Information Technology Report 2002-2003 - Readiness for the Networked World. New York: Oxford University Press, 2003.
- [26] Dutta S, Lanvin B, Paua F (eds.): The Global Information Technology Report 2003-2004 – Towards an Equitable Information Society. New York: Oxford University Press, 2004.
- [27] Dutta S, Lopez-Claros A (eds.) The Global Information Technology Report 2004-2005: Efficiency in an Increasingly Connected World. New York: Palgrave Macmillan, 2005.
- [28] Dutta S, Mia I, Lopez-Claros A (eds.) The Global Information Technology Report 2005-2006: Leveraging ICT for Development. New York: Palgrave Macmillan, 2006.
- [29] Dutta S, Mia I (eds.) The Global Information Technology Report 2006-2007: Connecting to the Networked Economy. Hampshire: Palgrave MacMillan, 2007.
- [30] Dutta S, Mia I (eds.) The Global Information Technology Report 2007–2008: Fostering Innovation through Networked Readiness. Hampshire: Palgrave MacMillan, 2008.
- [31] Dutta S, Mia I (eds.) The Global Information Technology Report 2008-2009 – Mobility in a Networked World. Geneva: World Economic Forum, 2009.  
(<http://www.insead.edu/v1/gitr/wef/main/fullreport/index.html> accessed 2010-09-30)
- [32] Dutta S, Mia I: The Global Information Technology Report 2009-2010 – ICT for Sustainability. Geneva: World Economic Forum, 2010.  
(<http://networkedreadiness.com/gitr/main/fullreport/index.html> accessed 2010-09-30)
- [33] Strategy for the development of electronic business in the Republic of Croatia for the period 2007 – 2010. Zagreb, 2007.  
(<http://www.mingorp.hr/UserDocsImages/STRATEGY%20FOR%20THE%20DEVELOPMENT%20OF%20ELECTRONIC%20BUSINESS%20IN%20THE%20REPUBLIC%20OF%20CROATIA%20FOR%20THE%20PERIOD%202007-2010.pdf> accessed 2010-09-30)
- [34] EC Task Force on e-Invoicing: European Electronic Invoicing (EEI) Final Report. Brussels: European Commission, 2007. ([http://www.facturae.es/es-ES/IniciativasInternacionales/EC%20Expert%20Group/EEI\\_3\\_2\\_eInvoicingFinalReport.pdf](http://www.facturae.es/es-ES/IniciativasInternacionales/EC%20Expert%20Group/EEI_3_2_eInvoicingFinalReport.pdf) accessed 2010-09-30)
- [35] Study on the Development of Electronic Business in the Republic of Croatia for 2006 and 2007 (In Croatian). Zagreb, IDC Adriatics, 2008.