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Anastasia Papazafeiropoulou
Brunel University

Athanasia Pouloudi
Athens University of Economics and Business

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ELECTRONIC COMMERCE POLICY MAKING TOWARDS THE ELIMINATION OF THE DIGITAL DIVIDE: INSIGHTS FROM THE DEVELOPING REGION OF SOUTH EASTERN EUROPE

Anastasia Papazafeiropoulou

Brunel University

anastasia.papazafeiropoulou@brunel.ac.uk

Athanasia Pouloudi

Athens University of Economics and Business

pouloudi@aueb.gr

Abstract

The “digital divide” between developed and non-developed countries in terms of adoption of new technologies and particularly the Internet and electronic commerce is a heavily debated and frequently discussed issue. In this paper we examine south eastern Europe as one of the less technologically advanced regions in Europe. We use data from 8 countries, namely Albania, Bulgaria, Cyprus, FYROM, Greece, Israel, Moldova and Romania, which have been collected from local key stakeholders such as government agencies and professional bodies. The data are analysed using SWOT analysis with the view to portray the situation of electronic commerce adoption in each country under investigation. A collective analysis of the research findings offers the possibility to offer some recommendations about good practices in electronic commerce policy making towards the elimination of the digital divide.

Keywords: Electronic commerce adoption and policymaking, developing regions, south eastern Europe, digital divide

Introduction

The initial euphoria about the power that information superhighway can offer to support new products and services as well as access to information for more people has been lately debated. The “digital democracy” is now threatened by the “information aristocracy” (Carter, 1997). There is the concern that as a number of citizens are unable to access on line services and information either because they don’t have the means or the knowledge to do so, the result will be the reinforcement of existing patterns of inequalities. The “digital divide” is a term that is widely used lately in order to describe these inequalities between developed and non-developed countries. According to OECD {, 2001 #205} (p.5) The term “digital divide” refers to the gap between individuals, households, businesses and geographic areas at different socio-economic levels with regard both to their opportunities to access information and communication technologies (ICTs) and to their use of the Internet for a wide variety of activities”.

The problem of the cultural, gender and race gaps in the use of the Internet and the low Internet penetration in populations with lower education and income has been thoroughly investigated (Hoffman and Novak, 1999). In particular, the penetration of the Internet in developing countries, which lag far behind North America and Europe, is an outstanding issue in the existence of “haves” and “have-nots” in the cyberspace, (e.g. (Bhatnagar, 1997; Blanning *et al.*, 1997; Kim and Hong, 1997; Clark and Lai, 1998)). Developed countries have more access to information that is less expensive, easier and faster while less technologically advanced regions have to deal with problems of inadequate infrastructure, lack of awareness and appropriate legal framework.

The problem of the “digital divide” has been related to electronic commerce policy making as the effective adoption of network technologies by individual users and companies is the result of successful national or international policies (e.g. (Damsgaard and Lyytinen, 1998; GNCEC, 1999; Boon *et al.*, 2000; Bozeman, 2000; Corbitt and Kong, 2000)).

In this paper we examine the situation of electronic commerce adoption in south eastern Europe that is one of the less technologically advanced regions in Europe. We analyse the current trends and future prospects of individual countries in the region in order to draw some conclusions about effective electronic commerce policies, essential for the economic growth of the

region. We get insights from 8 counties, namely Albania, Bulgaria, Cyprus, Former Yugoslavian Republic of Macedonia (FYROM), Greece, Israel, Moldova and Romania. The techniques used for the collection of the data were interviews and documentation provided by key stakeholders in the application of technology policies in each country. The interviewees were asked to offer documentation on national statistics but also give their personal views about the situation of electronic commerce and strategies pursued by national governments in their countries in technical, business, social, financial and legal terms. We analyse this empirical material in order to draw some conclusions about policy making in the countries of south eastern Europe.

The paper is structured as follows. First we describe the research strategy followed by this research giving details about the research objectives, empirical framework and methodology. In the next section we present the research results and after that we offer recommendations for electronic commerce policy making in less technologically advanced regions based on these results. Finally we draw some conclusions and present opportunities for further research in the area.

Research Outline

South eastern Europe is one of the less technologically advanced European regions. Historical changes in borders, political and economical systems left the area in a less advanced position than other European countries. Following the conflict in former Yugoslavia, there is still political unrest in the area. In order to overcome this situation, several initiatives have aimed to assist the region to re-form at social economic and political level. The stability pact, for example, is an proposal made by the European Union and adopted in Cologne on the 10th of June 1999 (SCSP, 1999) in order to: “achieve the objective of lasting peace, prosperity and stability for south eastern Europe”.

This research started by examining the situation of electronic commerce adoption in south eastern Europe as a means of getting a better understating of the phenomenon of the digital divide. More specifically, the main *aim* of this research is the examination of factors influencing the adoption and use of electronic commerce in order to draw some conclusions about the necessary policy measures towards the elimination of the digital divide.

A number of research objectives are derived from the above aim giving a clearer idea about the focus of the study. These objectives are:

- To examine the current status of electronic commerce adoption in the countries under investigation
- To draw implications for policy makers in individual countries and the region as a whole.
- To get better understanding of the phenomenon of the digital divide and examine possible actions for its elimination.

To meet its research objectives this research worked along a project funded by the European Commission looking at the examination of the current situation of electronic commerce in the region of south eastern Europe. More specifically, the project was called SEED¹ (South Eastern European Digital economy) and was aiming at the delivery of practical frameworks describing appropriate environments for the employment of electronic commerce capturing the particularities of south eastern Europe (Seed consortium, 2001). Its final objective was the delivery of dissemination and exploitation strategies that could be useful to policy makers in the participating countries. The project duration was 2 years from October 2000 to 2002 and the consortium consisted of professional organisations such as chambers of commerce and industry, public bodies and business consultants. These organisations were selected to participate in the project because of their key role in the design and application of electronic commerce strategies in their countries. All of them were in collaboration with their national governments and policy makers while they had a good knowledge of the local market. The participating counties were Albania, Bulgaria, Cyprus, FYROM, Greece, Israel, Moldova and Romania.

The partners of the project were asked to offer information from their organisations (internal recourses) as well as official national statistics and other on line or off line information (external recourses) about the use of Internet and electronic commerce in their countries. It was realised early that the collection of data from the area was not an easy task as available statistics were rare and

¹Organisations participating in SEED: ICCS-NTUA from Greece, AUEB-eLTRUN from Greece, GMD-FOCUS from Germany, CCCI from Cyprus, BCCI from Bulgaria, TIPS ANB from Albania, TIPS ANB from Romania, Trajkovski & Partners from FYROM, FICC from Israel, MCCI from Moldova, Sofosnet from Greece, INTRASOFT International from Luxembourg. Project manager: Dr. Nineta Polemi, Institute of Communication and Computer Systems (ICCS), National Technical University of Athens (NTUA), Herron Polytechniou 9, GR-15773 Zografou, Athens, e-mail: polemi@softlab.ece.ntua.gr. The opinions expressed in this paper are those of the authors and do not necessarily reflect those of the consortium.

sometimes conflict with each other. Therefore, the personal views of the partners, especially their opinion about the future prospects of the situation was also recorded in order to get a vision about the future of electronic commerce in the region. They were advised to give a brief description of technical, business, social, financial and legal issues in terms of present situation and future prospects.

The description of the present situation included the following elements:

- Facts (e.g. speed of networks, number of Internet users etc), major players (e.g. the role of government, chambers of commerce, trade associations etc), cases (good or bad) (e.g. a successful case of business to business in the retailing sector), initiatives/policies (e.g. subsidies for Small and Medium Size enterprises from the government), problems (e.g. lack of trained personnel for the development of web applications)

The future prospects included predictions and personal opinions about the future of electronic commerce in the country. These were described in terms of:

- Goals to be achieved (e.g. increasing of on line transactions by 10% for the next year), role of major players (e.g. strengthening of the role of banks), appropriate initiatives/policies (e.g. development of legal framework for digital signatures), obstacles to overcome (e.g. liberalisation of the telecommunications sector), plans for international collaboration (e.g. closer collaboration with European Union).

The sources of evidence (Yin, 1994) used for our research were primary interviews with the partners of the Seed project and secondary sources were documentation (Seed project deliverables) and archival records (organisational records of organisations participating in the project). The interviews were based on a semi-structured topic guide and their average duration was almost an hour. Most of them were tape-recorded while additional notes were taken during the course of the interview. Transcripts from interviews were prepared shortly after each individual interview, usually the same day. Two to four employees from each organisation were typically the interviewees for this research. They were contacted before or after Seed consortium meetings or other occasions such as regional conferences and meetings, while a number of unofficial discussions concerning the issues under investigation were taking place during the life-span of the study. A total of around 50 interviews were conducted in a period of two years.

The empirical material has been analysed using SWOT (Strengths, Weaknesses, Opportunities, Threats) analysis. SWOT analysis can be simply understood as the examination of an organization's internal strengths and weaknesses, and its environments, opportunities, and threats. It is a general tool designed to be used in the preliminary stages of decision-making and as a precursor to strategic planning in various kinds of applications (Johnson *et al.*, 1989; Bartol and Martin, 1991). For our research SWOT has been used in the context of electronic commerce adoption by a country. The rationale for using SWOT analysis was that understanding of the external factors (comprised of threats and opportunities), coupled with an internal examination of strengths and weaknesses assists in forming a vision of the future of electronic commerce in every country. Such foresight would translate to initiating competent strategies or replacing redundant, irrelevant policies with innovative and relevant ones. In the next section we give an overall presentation of the results of the study, as they correspond to the objectives of this research.

Electronic Commerce Adoption in Southeastern Europe

The analysis of the results has been made initially by country and then some common characteristics have been identified in order to draw some conclusions and give policy recommendations for the region.

Tables 1 to 8 depict the results of the SWOT analysis in each country participating in the research.

Table 1. SWOT Analysis for Electronic Commerce Adoption in Albania

<p>Strengths</p> <ul style="list-style-type: none"> • The Internet growth is relatively high (30% per year) • A considerably high number of ISPs operates in the country
<p>Weaknesses</p> <ul style="list-style-type: none"> • Limited Internet access by companies and individuals • High cost of developing and maintaining a web site • Lack of skilled personnel • Lack of computer equipment • Lack of telecommunication infrastructure • Lack of flexible payment systems by the banks
<p>Opportunities</p> <ul style="list-style-type: none"> • Relatively high mobile phone use • The telecommunications sector is planed to be privatised within this year and in two year after its privatisation another fixed telephony provider will be licensed against an international tender • The business community recognises the importance of e-commerce for the economic growth of the country
<p>Threats</p> <ul style="list-style-type: none"> • Lack of vision and strategy for e-commerce by the government • Non-technology oriented educational system • Lack of cooperation between the public and private sector • There is no obvious, pressing need for e-commerce use in the society

Table 2. SWOT Analysis for Electronic Commerce Adoption in Bulgaria

<p>Strengths</p> <ul style="list-style-type: none"> • Qualified technical personnel • Constantly improving economic and financial environment, including macroeconomic indicators, banking system and the stock market • Flexibility and good distribution of cheap and quality software products • Relatively good traditional infrastructure (telephones, railways, roads, etc.) • Many entrepreneurs understand the role of R&D for better competitiveness • Tendency of R&D market reorganisation • Increasing import share of high-tech products
<p>Weaknesses</p> <ul style="list-style-type: none"> • Low Internet penetration • Difficult access to subsidies, especially for new entrepreneurs • Unfavorable fiscal environment (social insurance, VAT, depreciation) • Low level of marketing, financial, accounting and legal knowledge from managers • Limited domestic market and lack of access to new markets • Negative export trends - decreasing share of high-tech products • Low computerization • Lack of attractive online services • Low e-commerce awareness in the public • Limited knowledge of the English language (common in most Internet applications) by the public
<p>Opportunities</p> <ul style="list-style-type: none"> • Internet use increase rapidly especially amongst young people • Growing number of local Internet portals, web directories, mass media websites, public institutions, etc. • Leading foreign technology companies are active in Bulgaria, which classifies the Bulgarian market as an open market with high level of competitiveness • It has been realized by the government the necessity for new strategies in education and new technologies • Decreasing costs for transfer of knowledge, technologies and goods • Good existing educational infrastructure • Fast growth of the new high tech sectors as Internet, multimedia, biotechnology • De-monopolization of the Bulgarian telecommunication market • High share of European countries in the Bulgarian foreign trade
<p>Threats</p> <ul style="list-style-type: none"> • The “Brain drain” phenomenon • The educational system is not practically technology oriented and there is lack of modern equipment in the field of communication and information technologies • Low level of R&D expenditures • Delay in the high-tech legislation development and slow process of European Union standards adoption in the field of high-technologies • Lack of high-tech parks and centers • Lack of co-operation between Universities, R&D institutes and business

Table 3. SWOT Analysis for Electronic Commerce Adoption in Cyprus

<p>Strengths</p> <ul style="list-style-type: none"> • Widespread use of the Internet by business (about 90%) • Extensive penetration of PCs in Cypriot companies • Relatively satisfactory web presence of Cypriot enterprises • Highly qualified human resources • Active involvement of professional bodies in e-commerce training • Maturity of the financial sector in supporting electronic financial transactions • Satisfactory number of ISPs and related Internet services. • Relatively highly developed telecommunications sector • Widespread usage of electronic payment systems • Relatively high number of Internet connections within the population and the increasing trend • Relatively high use of computers and the Internet within the broad education system • Ease of finding information about e-commerce • Relatively high standard of living
<p>Weaknesses</p> <ul style="list-style-type: none"> • Limited use of e-commerce • Over-concentration on business to consumer applications • Relatively low level of e-commerce business planning • Shortage of information technology skilled personnel • Relatively inadequate infrastructure necessary for the growth of new types of e-commerce services • Lack of an integrated legal and regulatory framework for e-commerce • Low level of satisfaction with electronic financial services • Lack of Public Key Infrastructure (PKI) and Trusted Third Parties (TTP) services • Lack of the usage of standards in relation to e-commerce applications/services • Relatively low usage of the Internet by the population at large • Absence of information technology education at primary schools
<p>Opportunities</p> <ul style="list-style-type: none"> • Fairly high level of development of the information technology sector and the high degree of information technology usage in Cypriot enterprises • Relatively satisfactory web presence of Cypriot enterprises (with a clearly international focus) that creates opportunities for e-commerce • Increased interest on e-commerce use by entrepreneurs • Intention of professional bodies to offer TTP services with the view to support electronic commerce transactions • Increasing number of security solutions offered in the market • Increasing number of venture capital firms and schemes • Liberalisation of the financial sector • New industrial policy providing opportunities for information technology investments • Increased participation of Cyprus in relevant European Union programmes • Increasing standard of services in the area of electronic financial transactions, particularly as far as security is concerned. • Expected (full) liberalisation of telecommunications and related services with the consequence of increasing their range as well as their affordability and accessibility. • Expected accession of Cyprus to the European Union and the harmonisation process which is well under way (including information technology related harmonisation). • Expected introduction of the necessary legal and regulatory framework • High degree of computer and Internet literacy among the young population • Increasing trend of providing training courses on e-commerce and related subjects
<p>Threats</p> <ul style="list-style-type: none"> • Lack of awareness about the full benefits of e-commerce by a relatively large proportion of enterprises. • Lack of business planning by the majority of companies • Expected delays in the implementation of the necessary legal and regulatory framework • Relatively high cost of network facilities and specialists • Relatively low level of satisfaction with the financial support schemes and the reliance on own funds • Security concerns by a large proportion of the population • Unfamiliarity of most of the Cypriots with trade and financial transactions over the Internet and their reluctance to trade/transact on-line

Table 4. SWOT Analysis for Electronic Commerce Adoption in FYROM

<p>Strengths</p> <ul style="list-style-type: none"> • Successful e-government initiatives • Large number of portals and content based web sites operate in the country • Internet is considered as a major information source for companies • Extended e-commerce research taking place at technical universities • Electronic signature law in place
<p>Weaknesses</p> <ul style="list-style-type: none"> • Bad telecommunication infrastructure • Very low Internet penetration in the public
<p>Opportunities</p> <ul style="list-style-type: none"> • Interest from the government to support ecommerce adoption • Plans for modernisation of university technical infrastructure • Internet use is growing fast (almost double every year) • The mobile telephone market has been liberalised and is growing rapidly • Cooperation with large international organisations such as the European Union, the World Bank and UNESCO
<p>Threats</p> <ul style="list-style-type: none"> • Lack of awareness about electronic commerce by companies and the public at large

Table 5. SWOT Analysis for Electronic Commerce Adoption in Greece

<p>Strengths</p> <ul style="list-style-type: none"> • Successful e-government applications • Cooperation of public bodies for supporting ecommerce adoption by companies • High quality educational system • High level telecommunication infrastructure connecting universities • High participation to relevant European Union programmes
<p>Weaknesses</p> <ul style="list-style-type: none"> • Relatively low Internet penetration • Inadequate technical infrastructure in primary schools
<p>Opportunities</p> <ul style="list-style-type: none"> • Possibilities of provision electronic commerce infrastructure and services to Balkan and Mediterranean regions • Dynamic national strategy towards e-commerce adoption
<p>Threats</p> <ul style="list-style-type: none"> • Lack of awareness about electronic commerce benefits

Table 6. SWOT Analysis for Electronic Commerce Adoption in Israel

<p>Strengths</p> <ul style="list-style-type: none"> • High Internet penetration in the public • The educational system promotes extensively the use of Internet in primary schools • The government actively promotes e-commerce adoption • The cost of developing and maintaining a web site is relatively low
<p>Weaknesses</p> <ul style="list-style-type: none"> • Relatively bad telecommunications infrastructure • There is not an established legal framework for e-commerce
<p>Opportunities</p> <ul style="list-style-type: none"> • The number of Internet shoppers is rising rapidly • Plan for increasing the number of PCs with Internet access at schools • There are plans for e-commerce law
<p>Threats</p> <ul style="list-style-type: none"> • Security concerns from the consumers part are main impediments for e-commerce growth

Table 7. SWOT Analysis for Electronic Commerce Adoption in Moldova

<p>Strengths</p> <ul style="list-style-type: none"> • Financial support for information technology use by international organisations
<p>Weaknesses</p> <ul style="list-style-type: none"> • Computer and Internet use is very low and it takes place mainly at the work place and universities. • Bad telecommunications infrastructure • Relatively low mobile phone penetration • High cost connecting to the Internet • There is no legislative framework to support electronic commerce transactions in place
<p>Opportunities</p> <ul style="list-style-type: none"> • Offer of good technical education by state universities • Professional bodies are active in supporting companies to invest on e-commerce • Plans for modernisation of the educational system
<p>Threats</p> <ul style="list-style-type: none"> • Lack of skilled personnel • Monopolistic telecommunication market

Table 8. SWOT Analysis for Electronic Commerce Adoption in Romania

<p>Strengths</p> <ul style="list-style-type: none"> • The information technology development overcomes the predicted level foreseen in the initial plans • The information technology and communications sector is competitive, strong, coherent and well integrated in the market • The private companies have a major share in the information technology sector • High qualified human resources • High adapting capacities to modern technology • High increasing rate of Internet users (23%). It is estimated 1 millions users by the end of 2002 • High increasing rate of mobile users • Consolidation of the communication operators market
<p>Weaknesses</p> <ul style="list-style-type: none"> • Research and equipment production is below the general standard • Inefficient use of limited resources • Big delays in rural development • Monopoly on fixed telephony and hired lines until 01.01.2003 • Tariffs are not cost oriented • Low communication infrastructure • Low penetration of fixed telephony • Low salaries in information technology and communications sector compared to developed countries
<p>Opportunities</p> <ul style="list-style-type: none"> • Romanian market liberalisation can afford new business models • New pan-European technologies will assure a new market for Romania • The European Union legislation, will be adopted by the Romania law • Presence of many international banks in the country • The presence of private capital in the banking sector • Accessing European Union imposes conditions for in information technology and communications development • Available international funds for IS implementation in development countries • Technological progress makes available the communication channels convergence
<p>Threats</p> <ul style="list-style-type: none"> • Low population income limits the requirements and the investments opportunities • Legal and fiscal instability • The number of specialised human resources is decreasing due to a high require from the developed countries (the brain drain” phenomenon). • Using alternative infrastructure leads to supplementary investments for operators

The SWOT analysis performed over the empirical material collected by this research portray the situation of electronic commerce in the countries under investigation. Analysing the research findings collectively we can draw some conclusions about electronic commerce adoption in the region. Specifically, with the exception of Israel and to some extent Greece where electronic commerce seems to have been embedded in the economy and there are optimistic projections for its growth, the rest of the countries seem to lag behind in terms of Internet penetration and electronic commerce use.

Some common characteristics in all the countries are the slow but constant growth and the intention of the national governments to support electronic commerce adoption in a long run. It is noticeable that all governments support the use of Internet and electronic commerce. The development of electronic commerce in these countries is related to social benefits associated to grater use of information and communication technologies and improvements to the employees' skills. Additionally, the increased competition in the telecommunication markets derived from extensive electronic commerce use can lead to economic development, by stimulating new investments and offer of innovative products and services.

Furthermore, the commitment of the governments in the region to support electronic commerce development is evident from their efforts to digitise the public sector making e-government applications some of the most advanced and promising in the region. Indeed the role of e-government in the promotion of electronic commerce is twofold. Firstly helps the better organisation of the public sector, which consist a major part of the economies in south eastern Europe and secondly offers best practice examples to business and citizens making them familiar with telecommunication technologies and applications (Papazafeiropoulou *et al.*, 2001). Entities that are most commonly important within the government are the ministries of telecommunications, trade and economy.

Governments can either be influential or regulatory, when it comes to the strategy formulation for information technology (King *et al.*, 1994). In the case of south eastern Europe, the governments from one hand put a lot of effort in influencing the public in using electronic commerce technologies and on the other hand have done some positive steps towards the establishment of a regulatory framework that will support electronic transactions. Co-operation with international organisations such as the European Union and the World Bank is common in the area and shows the anxiety of the national governments to implement a policy that complies with international standards.

Apart from the government per se there are number of other organisations that play important role in the promotion of electronic commerce to individuals and companies. These are public or private organisations such as international agencies, professional and trade and industry associations, research-oriented higher education institutes and financial institutions. These organisations interrelate creating network of entities involved in electronic commerce diffusion and use. The Chambers of commerce and industry have a special role to play as they act between the government agencies and their companies-members in order to influence the latter towards the adoption of electronic commerce. Their role is important as they are in direct contact with SME managers and can have a great influence on their decisions. The transfer of their knowledge to SME managers is very important and is the essence of the effort to help companies invest on electronic commerce. Chambers of commerce need to be neutral and independent of commercial influences, which makes their role even more difficult as companies depend on their neutrality when selecting information technology providers.

An important aspect that seems to appear as important is the establishment of a legislation framework that can support electronic transactions. Regulation as mentioned before is an important aspect of the government policies and is an issue bothering not only policy makers in developing regions such as south-eastern Europe but those in technologically advanced countries. Lack of a sound legislative framework posing serious barriers for further development of electronic commerce. It is important to note that according to the data collected for the Seed national reports, the countries in the region have worked towards the development of such a framework, putting in use digital signature laws for example, offering a good example to neighbouring countries.

Conclusively, the research findings give a picture of the situation of electronic commerce adoption in the south eastern Europe which is not very positive for the moment but offers optimistic prospects for the future.

Policy Recommendations for the Region Towards the Elimination of the Digital Divide

The material collected thought the interviews that were conducted during this research as well as informal discussions with partners of the Seed project about the future of electronic commerce in region of south eastern Europe revealed interesting issues

about electronic commerce policy making in less technologically advanced regions. These issues and recommendations are presented in the next paragraphs.

Electronic commerce helps communications and strengthens co-operation. Successful initiatives are always the result of fruitful coordination of the public and the private sector. It is important for policy makers to take into consideration all relevant agents and promote co-operation.

Application of standards and cooperation at an international level is an important element for a successful electronic commerce policy. The membership of Greece in the European Union is in that sense positive for the region since that country can play the role of the “change agent” (Rogers, 1995) facilitating the relationship between European Union and non-European Union member countries. Co-operation at international level helps national policy makers to follow directives that incorporate the expertise of multiple national constituencies and have been tested.

It is important for policy makers at the highest level to take into consideration ideas and thoughts of stakeholders at lower levels of decision making. The “good intention” of national governments is not always enough for making companies invest at a level commensurate with governments policy settings (see (Debreceeny *et al.*, 2000) for the case of Singapore). The knowledge of the market and companies needs that local multipliers such as professional bodies and associations have can be very useful for designing an effective electronic commerce policy.

The early electronic commerce experience of Western Europe and the U.S can benefit countries that are now at an initial stage of electronic commerce adoption. It is important to learn from previous mistakes and best practices followed in order avoid the former and learn from the latter.

In this paper we considered electronic commerce as an innovation that can change radically the everyday life of the people around the globe. We examined the “digital divide” as a negative consequence of electronic commerce for countries with less advanced technical and economic infrastructure. The case of south eastern Europe as an example of a non-advanced technologically region was presented. We collected data from 8 countries of the region in order to have an in-sight view of the electronic commerce situation in the region. Finally, using the data collected and previous research in the field we presented some recommendations for the application of an effective policy in less advanced technologically countries were described. The application of effective technology policies can assist in narrowing the gap between south eastern Europe and the rest of the region offering opportunities towards the elimination of the digital divide.

Future research in the area could include the examination of the validity of the results presented in this paper in other less technologically advanced regions. A longitudinal approach to the subject can also be an interesting option for research. We believe that the results of an extensive research in the field can be useful to policy makers at national or international level.

References

- Bartol, K. M. and Martin, D. C. 1991. “*Management*”, McGraw Hill, New York.
- Bhatnagar, S. 1997. “Electronic commerce in India: The untapped potential”, *Electronic Markets*, 7(2): 22-24.
- Blanning, R., Bui, T. and Tan, M. 1997. “National information infrastructure in Pacific Asia”, *Decision Support Systems*, 21(215-227).
- Boon, O., Hewett, W. G. and Parker, C. M. 2000. “*Evaluating the Adoption of the Internet: A study of an Australian Experience in Local Government*”, Proceedings of 13th International Bled Electronic Commerce Conference, 19-21 June, Bled, Slovenia, 724-737.
- Bozeman, B. 2000. “Technology transfer and public policy: a review of research and theory”, *Research policy*, 29(627-655).
- Carter, D. 1997. “‘Digital democracy’ or ‘information aristocracy’. Economic regeneration and the information economy” *In The Governance of cyberspace* (Ed, Loader, B.) Routledge, London, 136-152.
- Clark, J. and Lai, V. 1998. “Internet comes to Morocco”, *Communications of the ACM*, 41(2): 21-23.
- Corbitt, B. J. and Kong, W. 2000. “*Issues Affecting the Implementation of Electronic Commerce in SMEs in Singapore*”, Proceedings of 13th International Bled Electronic Commerce Conference, 19-21 June, Bled, Slovenia, 474-494.
- Damsgaard, J. and Lyytinen, K. 1998. “Governmental intervention in the Diffusion of EDI: Goals and conflicts” *In EDI and Data Networking in the Public Sector* (Ed, Andersen, K. V.) Kluwer Academic publishers, Boston, 13-41.
- Debreceeny, R., Putterill, M., Gilbert, L. and Tung, L. 2000. “*Inhibitors to Electronic Commerce in Singapore Insights Below the Surface*”, Proceedings of 13th International Bled Electronic Commerce Conference, 19-21 June, Bled, Slovenia,

- GNCEC 1999. "New subsidy methods and recommended government interventions (In Greek)", GNCEC (Greek National Committee on Electronic Commerce).
- Hoffman, D. and Novak, T. 1999. "The evolution of the digital divide: Examining the relationship of race to Internet access and usage over time", Proceedings of Understanding the Digital Economy: Data, Tools and Research, Washington, USA,
- Johnson, G., Scholes, K. and Sexty, R. W. 1989. "Exploring strategic management", Prentice Hall, Scarborough, Ontario,
- Kim, E. and Hong, P. 1997. "The government's role in diffusion of EC in Korea", *Electronic Markets*, 7(2): 6-8.
- King, J., Gurbaxani, V., Kraemer, K., McFarlan, F., Raman, F. and Yap, F. W. 1994. "Institutional factors in information technology innovation", *Information Systems research*, 5(2): 139-169.
- OECD 2001. "Understanding the digital divide", OECD (Organisation for Economic Co-operation and Development).
- Papazafeiropoulou, A., Pouloudi, A. and Currie, W. 2001. "Applying the stakeholder concept to electronic commerce: extending previous research to guide government policy makers", Proceedings of Hawaii International Conference on Systems Sciences (HICSS-34), 3-6 January, Maui, Hawaii,
- Rogers, E. M. 1995. "Diffusion of innovations", Free Press, New York,
- Seed consortium 2001. *Project Seed, Annex 1: "Description of work"*, Athens, Greece.
- Yin, R. K. 1994. *Case Study Research, Design and Methods*, Sage publications, Newbury Park, CA,