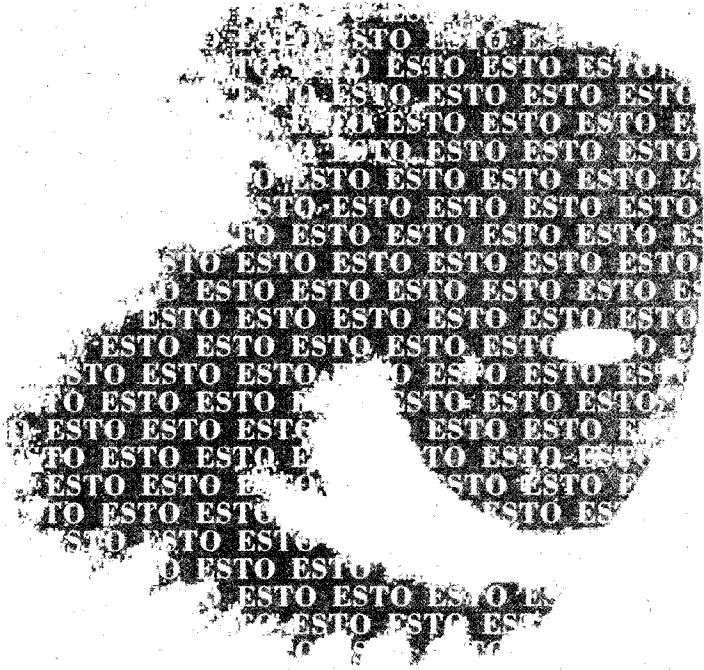


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SPECIAL ISSUE: THE INFORMATION SOCIETY AND EU ENLARGEMENT

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The acceding and candidate countries, in particular those in Central and Eastern Europe, have during the last decade undergone a set of three radical transformations: the shift to a market economy, integration into the European Union – the so-called Enlargement Process – and finally, a move towards the Information Society, today enshrined in the different initiatives of the eEurope Action Plans.

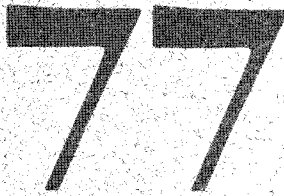
These three transformations aim, at various levels, at the emergence of an enlarged European knowledge society as referred to in the March 2000 declaration of the Lisbon Council¹. In doing so, they challenge the economy, institutional and political structures, constitutional and legal frameworks, and working conditions in the countries in question.

The question of what the Information Society means for countries entering the European Union from next year onwards is a fascinating and complex one. Fascinating, because it opens up a real window of opportunity for these countries to leapfrog technical, economic and social divides, thereby enabling them to meet the Lisbon objectives by 2010. Complex, because building the Information Society is only one of many priorities these countries have today and because there is no single recipe for achieving it. The research carried out into these issues at IPTS and reported herein has attempted to break down this complex picture into the following straightforward questions:

- Have we learnt anything from the experience of the EU-15 Member States that is transferable to the CC-13? Does industrial development of the IGT sector constitute a major opportunity for the acceding and candidate countries?*
- How best can use be made of the benchmarking efforts of the eEurope+ Action Plan? To what extent do these tools fit methodologically into the context and the issues to be analysed in acceding and candidate countries? How can an Enlarged Europe benefit from “benchmarking” tools?*

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Special Issue: The Information Society and EU Enlargement

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6 Information Society Strategies for the Candidate Countries: Lessons from the EU-15

Policy-makers today are confronted with hard choices about Information Society strategies for Candidate Countries at regional, national and European levels. A number of lessons may be available from earlier EU-15 MS Information Society experiences.

14 Adoption of e-Services: I-banking in the Candidate Countries

The provision and adoption of e-services are key components for the development of the Information Society. As one of the most developed e-services in the candidate countries, Retail Internet banking is a useful case through which to study the dynamics of Internet service adoption.

24 The Impact of ICTs on Productivity and Economic Growth in the Candidate Countries

ICT-based sectors of the Candidate Countries' economies can enhance growth potential but to utilize this opportunity to promote convergence these countries need to establish the appropriate institutional, structural and policy preconditions.

31 The Potential Role of Mobile Technologies in the Candidate Countries

Providing universal service may prove to be a problem in some candidate countries, given the limitations of their existing telecommunications infrastructure. Less costly wireless alternatives may help provide a solution.

40 Bread, Broadband and the Benchmarking of eEurope in Candidate Countries

Policy-makers at national and international levels are turning increasingly to the results of benchmarking exercises as a basis for decision making. Methodological and qualitative aspects of data gathering and benchmarking activities therefore require careful consideration.

- to catch up in technological terms, but not necessarily by taking advantage of technological leapfrogging opportunities – such as with say third generation mobile networks – this is not so straightforward;
- to match or even challenge western standards in the area of technological education, bearing in mind that the transition to market economies has temporarily weakened the economics of the educational system (with a consequent need for strengthening it during the coming decade), and that the continuing high demand for ICTs might reveal skills shortages in certain sectors such as public administration, SMEs, etc.
- to develop numerous content-related initiatives in media, e-business and e-government, but recognizing the particular context and challenges that will make this a more difficult exercise than in the case of the EU-15 countries;
- to attract existing global companies, in particular those in the ICT sector, but with attendant risk of their plants relocating to other trade blocks, ironically in the face of increasing economic growth in candidate countries.

As a result, a simple scenario for the way forward, a single and common Information Society strategy for the candidate countries, appears an unlikely outcome. The recipe which made an economic success of certain regions and countries in EU-15 seems almost impossible to repeat in the candidate countries.

First and probably most important, candidate countries already confront difficult choices, expressed in one paper as that between “bread or broadband”. Only even-handed trajectories that will offer a compromise between these two poles, and feed simultaneously into overall welfare issues and economic growth will be politically sustainable. Technology is perceived as unaffordable, unless it can be demonstrated to be a clear tool for the country’s well-being. The strong disparities that

accompany the enlargement process at the European level, and the potential complex digital divide that may derive from these disparities are illustrations of this dilemma. Moreover, many countries may need institutional and managerial strengthening rather than plain infrastructure or technological upgrading. The question is therefore how best to put the Information Society policy strategies at the service of a country’s democratic and social development, while optimizing its resources and economic output.

Second, while the example of west European countries could be seen as showing the way forward, the simple emulation of those “best practices” is seen as decreasingly relevant for candidate countries. In particular, Information Society developments should not be seen exclusively as targeted industrial developments around the ICT sector itself. While this has been a possible trajectory for so-called “Tiger” countries of the EU-15 during the last decade, today’s economic conditions – the burst of the speculative bubble around the new economy, and the overall downturn of the global economy – do not seem to favour such scenarios any longer. In the realm of a strongly competitive and global industry, it is obvious that not everybody can play a major role. Moreover, current market developments are bringing uncertainties to the future of the ICT industry, even in EU-15 countries or regions. “*Benchmarking*” from EU-15 successes and failures is making the best possible use, not only of the accumulated European knowledge base, but also of Asian, US and developing countries’ experiences.

Third, ICTs are tools for the modernization of the economy, and for the building of an equitable, democratic and sustainable society. Just as in most advanced economies, growth in the enlargement countries is expected to come from productivity gains in ICT user-intensive sectors – at present these being expected to be mainly in retail and wholesale, banking and insurance, etc. – rather

ings allowing for such processes to develop are a core lesson of EU-15 experience: there is a role to play in each specific context for a variety of actors from national politicians to industrialists, unions or NGOs. Bottom-up strategies are needed and should be put in place whenever possible.

Finally, following the terms of the Lisbon objectives, there is an essential issue about integrating Information Society Strategies in the broader development of a Knowledge-based society, seen as the broad orientation of Europe's contemporary development trajectory. In such frame, ICTs are seen much more as enablers for economic, political, social and intellectual development, rather than self-sufficient goals.

The studies illustrated in this special issue are therefore part of a larger picture taking in strands of economic development resulting from technological change. Along with the Information Society issues described herein, the *IPTS Enlargement*

Project addresses the agricultural transition to be made by the acceding and candidate countries and the question of how sustainability in the areas of energy, waste management and transport can be achieved when economies are growing. The Project assesses how technological change in these areas affects overall productivity and competitiveness under different policy scenarios.

The Enlargement Project is being carried out jointly with scientists and experts from the countries concerned, and is guided by a Steering Committee made up of high-level representatives from all ten acceding countries. The results are to be discussed in a forthcoming conference in Florence in November 2003, co-organized by the JRC-IPTS and the European University Institute, and part of the official programme of the Italian Presidency. The conference will bring together European academic researchers and policy-makers to debate the issues involved and their implications for future policy.

Notes

1. European Commission, Report to the Spring European Council on the Lisbon Strategy, Brussels, 21 March 2003, COM(2003)5.
2. European Commission, 2002. Industrial Policy in an Enlarged Europe. Communication from the Commission. COM(2002) 714 Final. Brussels, December 2002.

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wed the CCs to catch up in technological terms and to achieve above EU-15 average penetration rates. In some countries (the Czech Republic, Estonia, Hungary, Slovakia, Slovenia and Turkey) fixed line penetration has overtaken that of the EU-15. However, as progress in ICT penetration is correlated to a large extent with the level of economic development, the investment capacity and the purchasing power of the population, countries with low per capita GDP are not capable of sustaining such a high rate of penetration growth. On average, the CCs continue to lag behind EU Member States in most, if not all, measures of ICT access and usage. Furthermore, the overall economic situation in the CCs – and the resulting uneven revenue distribution – is widening the gap between the people and organizations that can access advanced technologies and services and those for whom they are a luxury.

Close observation of the educational system also shows that CCs at least match Western European standards in technological education. This is an asset clearly inherited from the past institutional settings in the educational area, and current changes – privatization, shifts in the vocational and on-the-job training system, brain drain, public funding crises, etc. – may offer opportunities as well as weakening the inherited system.

Such achievements, some of which are very recent, should also be assessed in the light of the disparities on many levels that can be observed within the CCs and in a broader Enlarged Europe. With enlargement it is estimated that the income dispersion between regions in EU-28 will double relative to that existing in the current EU-15.² The impact and complexity of the digital divide resulting from this fact, added to disparities between countries in terms of the distribution between their rural and urban populations, regional situations and demographic trends, is expected to be such that it could endanger market growth, social cohe-

sion and democratic participation. In such circumstances, there is a very high risk of developing a complex digital divide between and within groups of European countries, among sectors and businesses, generations and cultures, etc. Such a pronounced divide would weaken the economy, social cohesion and the building of democracy in the CCs, and would run counter to the European objective of an inclusive society.

Finally, most of the CCs today are new democracies with comparatively weak economies and are still dealing with the overall challenges of the transition to market economies, and the implementation of the political and economic framework required by the European Union.³ Striking a balance between two sets of policy objectives – acute societal day-to-day needs and longer term IS-related development needs – is probably their most difficult policy challenge.

From this point of view, it is clear that the strategic political choices made today could have important implications for the CCs' economies and societies:

- If present development imbalances are not properly addressed and provisional achievements not consolidated, the CCs will certainly succeed in creating ICT islands but large disparities between countries, regions, businesses and populations will remain, both in the ICT domain and others. CCs run the risk of not reaping the political, social and economic benefits of their societies' transformation. Economically speaking, these countries may even become isolated in the role of low wage/low quality countries constrained to lower added-value production and consumption patterns.
- If the CCs wish to achieve a more balanced development of the Information Society and strengthen their position, a strong policy commitment (policy push) is needed which clearly focuses on meeting the Lisbon competitiveness,

The disparities within the CCs and in the broader Enlarged Europe risk endangering market growth, social cohesion and democratic participation

The strategic political choices made today could have important implications for the CCs' economies and societies

synergies that may help to create common goals and trajectories for all. The concept calls for innovative institutional arrangements in public-policy management, which include the delegation of decision making and implementation capacity, and a citizen/entrepreneur-oriented mindset. It promotes the idea that reciprocal responsibilities pay better than a "winner takes all" approach. Coordinating co-opetition involves meeting the challenge of difficult 'policy learning', in particular because the environment for policy-makers and partners becomes highly complex and constraining.

EU policies can play a powerful role in framing these political conditions. In most cases they have supported national initiatives as much with mandatory regulation frameworks as with awareness raising, direct subsidies or benchmarking initiatives. However, EU policies can have the opposite effect. The focus on EMU and the stability pact, and on the overall enlargement process and its conditions, may have distracted some governments from other priorities or legitimized less open cooperative schemes.

As well as the right political conditions, IS initiatives need financial support that offers a variety of tools adapted to the diversity of initiatives necessary to explore and develop traditional and new opportunities – with very different degrees of risk – for business and civic life. Foreign Direct Investment (FDI) is a major tool, particularly for funding and developing an ICT (manufacturing) sector, but also for any development plan. Other essential tools for the promotion of domestic ICT-related development are venture capital, seed capital, public subsidies and the protection of revenues through adequate regulation (for example, intellectual property rights).

The EU-15 case studies also show that the presence of foreign and indigenous ICT manufacturing multinationals and/or a dynamic SME-sector

that successfully develops international ICT-related niche-markets (such as software development, maintenance, services, etc.) have been essential ingredients in some major IS developments. During the second half of the 1990s several national economies benefited from the contribution of ICT industries to added value, GDP and employment. But it is also evident – if not more important – that national/regional economic structure matters, as much for development opportunities as for growth. Countries and regions, which have a tradition in industrial manufacturing, may succeed in modernizing that industry through ICT use. The adaptive use of ICTs is at the core of these IS strategies. But other nationally or regionally specific assets – particularly in services – can help to transform relevant sectors into ICT-intensive ones. Exploring, creating and exploiting these 'sweet spots', which may be either historical or new, is a complementary strategy which may be more reliable in the long term than a basic industrial policy that concentrates on ICT manufacturing clusters.

More surprisingly, geographical position or size may allow for a specific role in geopolitics or international trade. Traditional migration flows may reveal unexplored networking capacities as well as access to foreign resources. Language specificity may translate into market access or identity seeking. The historical background may support sudden attractiveness. Such features can be embedded in international alliances, in marketing behaviours and mobilizing visions or in the distribution of managerial responsibilities. Strategic creativity matters more than the hurdles. Addressing those specific features that are seemingly hurdles to ICT-related development at national or regional level has often revealed opportunities for creating competitive advantages. Not addressing them has turned them into real weaknesses.

Finally, education – often little acknowledged in excessively short-term assessments – is always

In most cases EU policies have supported national initiatives as much with mandatory regulation frameworks as with awareness raising, direct subsidies or benchmarking initiatives

During the second half of the 1990s several national economies benefited from the contribution of ICT industries to added value, GDP and employment

It is thus quite possible that times have changed for national Information Society projects relying strongly on the building block of growth in ICT manufacturing industries. This issue affects the transferability of the observed factors determining success and failure, into the context of the CCs and more precisely to the support given to their ICT Manufacturing industries.

Potential CCS "Tigers": repeatable trajectories towards the IS?

The above observations question to what degree "Tigers" scenarios are possible for some or all of the CCs? Do their ICT industries show signs of being able to reproduce a "Tiger" renaissance or not?

A closer look at the ICT manufacturing industry in those CCs which are seen as ICT manufacturing champions today - namely Hungary, Poland, the Czech Republic, Estonia, Turkey - indicates some specific weaknesses which may have a negative effect on their development in the medium term:

- The development of their ICT manufacturing capacity is highly dependent on external factors. For example, fluctuating FDI flows and their relation to incentive policies have a considerable influence. Foreign firms, whose strategies are designed to deal with an ultra-competitive environment may also decide that relocation of activity is the easiest option. Competition from other European and non-European countries, access to market-based competition for plant and R&D centres, and strong dependency on overall economic health as export-oriented industries also have an effect.
- There is an observable shift in production specialization towards lower-value ICT manufacturing such as Consumer Electronics (which represent today less than 10% of total world production value) or even Components. This

shift accompanies a general shift towards assembling activities with low added value and little accompanying knowledge intensive activity (R&D, for example). This has happened partly as a result of a focus on competition strategies that are cost-based rather than knowledge-based.

- Those CCs that are seen as ICT manufacturing champions - with the exception of Hungary - have negative overall trade balances in ICT goods. Even though they have stronger ICT manufacturing industries than the other CCs, their economies have to absorb the effects of a much larger demand.
- Last but not least, it may well be that these strategies, and the industries themselves, will be sensitive to the potential impacts of accession. While the single market rules will further boost export capabilities as the logistics of doing business are made easier, it may well be that some aspects of today's policies will come under scrutiny in order to make them meet fair competition rules. Excessively generous incentive policies, for example, may be cut back.

Bearing these factors and the most recent company decisions (to relocate to Asia, for example) in mind, it is fair to conclude that developing "classical" Tiger strategies by encouraging foreign or domestic companies to foster and grow in the domain of ICT manufacturing may be, today, a mistake. Though these strategies were rewarding in the 90s, today the position of western European "Tigers" - Ireland, Finland, Sweden - has been weakened not only by the downturn of the market and the difficulties in the telecoms sector, but even more by the pervasive trend of globalization and one of its obvious consequences: the rise of the Asian countries as both major economic partners and challengers. The timing now after two decades of progressive globalization may thus play against new entrances in terms of industrial scenarios.

The "European Tigers" are models that CCs with strong ICT manufacturing sectors might wish to emulate, although there appear to be some specific weaknesses which may have a negative effect on their ability to do so in the medium term

With the exception of Hungary, even the CCs that are seen as ICT manufacturing champions have negative overall trade balances in ICT goods

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- Can lessons be learnt for other sectors' e-services in the CCs?
- What are the potential private/public policy options to address these specific issues?

Internet banking services supply

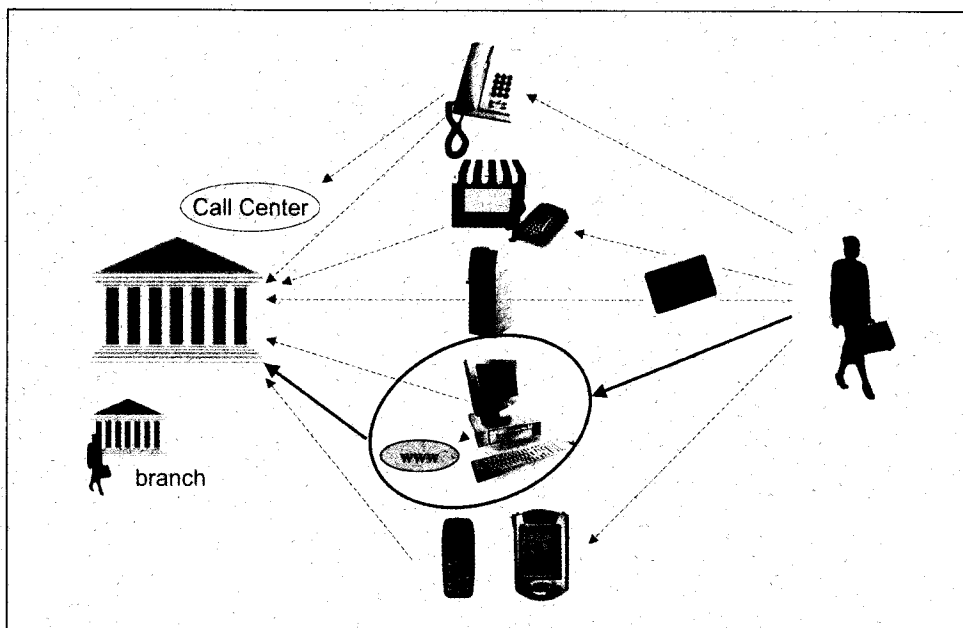
Internet banking is one of a variety of remote distribution channels that banks have deployed over the last 20 years as a way of providing services to their customers away from bank branches. These alternatives are shown schematically in Figure 1. Phone banking, electronic payment debit, credit and electronic purse cards, cash machines (ATMs), bank kiosk machines, PC banking, Internet banking, mobile banking using mobile phones and PDAs (Personal Digital Assistants) and interactive Digital TV banking are examples of the multitude of channels and technologies used. Among the different delivery channels, Internet banking, a content based secure application based on the open information Internet infrastructure, has the most similarities with other IS services infrastructure and is the target research application here.

The functions provided by banks over the Internet have evolved from allowing customers to consult their accounts to providing a full range of banking services. In the most developed applications, the Internet can be used to access almost the whole range of services available at branches or by phone. In addition to offering nearly all "branch-based" services, the technology allows banks to offer new added value services only available on-line such as personalized financial information menus, e-mail alerts, electronic commerce, real-time share trading and 3rd party services such as the management of utility bills and tax payments.

The banks' motivations for offering Internet banking have mainly been increasing cost-effectiveness, extending customer reach, and retaining market share. Estimates for the cost of transactions using the various channels (e.g. physical branches, phone, ATMs, PC-based dial-up access) show Internet transactions to be the cheapest with a ratio of 1-2:100 compared to physical branches, 1-2:30 compared to ATMs and 1:2-10 compared to PC-based dial-up banking (BIS, 2001).

Internet banking is one of a variety of remote distribution channels that banks have deployed over the last 20 years as a way of providing services to their customers away from bank branches

Figure 1. Banking distribution channels



In addition to offering almost the full range of "branch-based" services, the Internet channel allows banks to offer new added value services only available on-line, such as personalized financial information menus, e-mail alerts, electronic commerce, real-time share trading etc.